

## **Donald Moore**

This is an interview with Dr. Donald Moore on July 14, 2006, at the Centers for Disease Control and Prevention in Atlanta, Georgia, about his experience and involvement with the West African Smallpox Eradication Project. The interview is being conducted as a part of a reunion marking the 40th anniversary of the launch of the program. The interviewer's name is Diane Drew.

**Drew:** Welcome to Atlanta, and I hope you have a good visit. Could you start by telling me where you're from, your background and education, and anything that strikes you?

**Moore:** Okay. I was born in El Centro, California. I came to San Diego in 1942, was raised there, on the beach actually, in Pacific Beach. I did a lot of surfing, spear fishing, swimming, and water sports. I went to Mission Bay High School and attended the University of California at Berkeley, graduating in zoology. I was briefly employed by the State of California Department of Fish and Game as a research biologist and then was accepted to medical school. I completed medical school at L.A. County, at USC Medical School, and then did my internship at San Diego County, UCSD Hospital. After I completed an internship, I entered the US Public Health Service as an EIS [Epidemic Intelligence Service] Officer, but not exactly, because I was entering the smallpox and measles program.

I was married then and had 2 children. We moved to Atlanta and lived in North Decatur while I was training for this position.

I was advised that I would need to speak French on entering the country, and so as soon as I found out that I was likely to go to a Francophone country, I started learning French, even before I had finished my internship.

**Drew:** Could we back up for just a second, because I'm interested in how you happened to decide to go into medicine? Was there anything that particularly influenced that choice?

**Moore:** I had been interested in clinical work early on. Sort of in the back of my mind, I was interested in medicine and surgery.

**Drew:** It sounds like you must have found out about this program while you

were an intern, if you had started to learn French.

**Moore:** Yes. While I was at the University of California, in Berkeley, I was accepted into the dental program at UC-San Francisco and into the veterinary program at UC-Davis, and I just kept thinking that I may as well become a doctor, so I just proceeded along that path. I had an opportunity to take over a family business in electronics or stay in research biology with the Department of Fish and Game. The Department of Fish and Wildlife, the federal government, also actually offered me a job. But I decided the best thing to do would be to go to medical school, so that's what I did.

**Drew:** So you started picking up French and then came to Atlanta at some point with a family already. Your wife and a couple of kids?

**Moore:** Yes. I wouldn't say that I was particularly facile at learning languages, but I did know Spanish from working at L.A. County. One had to speak Spanish. So French was not that difficult to learn.

As I said, we lived in North Decatur, in what seemed to be rehabilitated military housing of some sort.

The training period started in July 1966. It was supposed to be 3 months long in immersion French and a lot of epidemiology and infectious disease background training.

Living in North Decatur was fun. The kids picked up southern accents.

**Drew:** How old were they then? Like little toddlers?

**Moore:** Toddlers, yes. I guess one was 5, and one was 2. They enjoyed running around with the other kids in this project we lived in. The kids would run as a herd from house to house, so it was a wonderful place for children.

We always felt safe because it was an enclosed project. And it was nice to come to Georgia and get a feel for a different area of the United States. I'd always been a Southern California sort of beach boy before, and I guess returned to it.

We were scheduled to go over to Niger in the fall, around October. However, the bilateral agreements had not been signed, so we were delayed another 3 months. We arrived in December in Niger. It was very hot. When we first came, it was a strange place to adapt to, but we had read books on Africa, books on

Niger, so we knew what to expect.

**Drew:** And your wife and children went?

**Moore:** My wife and children. My wife was totally prepared to do it, and she loved Africa too, and took good care of myself and the children.

I remember that we had to wash all of our vegetables in iodinated water. We took Aralin twice a week to prevent malaria.

Interestingly enough, I had been told a scare story that the female secretary for the embassy had been shipped home in a lead casket only about 10 days before because she refused to take her cloraquin. We did not want to make that mistake.

**Drew:** That's interesting. I do remember hearing that a person wouldn't take her cloraquin, but I also heard about somebody who wound up with hepatitis. I guess there were really a lot of health risks.

**Moore:** Oh, there were many diseases that one could contract there, a lot of them parasitic diseases. We were always concerned about that. Schistosomiasis could be contracted in the Niger River; malaria was everywhere; onchocerciasis was around, schistosomiasis was just recently controlled but still around. So there were many health dangers over there.

**Drew:** That must have been particularly challenging with children in terms of keeping them healthy and safe.

**Moore:** It was. But they seemed to do very well. They adapted to the French schools nicely. It was a little different because my son was used to a little more freedom. The French were very disciplined and kind of rigid in teaching.

One time I recall that my son was doing something, probably misbehaving, and the teacher slapped him, and we were up in arms. Then we had to just think back and consider where we were and what the cultural aspects of being in that situation were. We complained, but we did not make a big deal out of it. One always had to be careful of cultural interactions that could result in adverse consequences.

We lived in a very nice home there, as the homes go. It was on about an acre and had a fence around it and had a nice patio and deck, where we held many parties, inviting people from the embassy and the Peace Corps.

The program itself got under way quite nicely, I thought. We were shipped 7 trucks, which arrived in the port, Cotonou at Dahomey, and we went down there and picked these trucks up with drivers.

**Drew:** Were these the infamous Dodge trucks?

**Moore:** Dodge trucks, yes, extended-cab trucks. Tony Masso [Anthony R. Masso], a very competent individual and a wonderfully gregarious and nice person, was my Operation Officer. He and I went down to this port to drive these trucks back up with other drivers. Dahomey was a very interesting place. I had read a little bit about it. But at the time, we were quite young and just over from the United States. It was a little shocking, driving up along the road, to see bare-breasted women. I think that Tony, who was younger than I, and not clinically used to seeing nude females, was pretty impressed with these beautiful women.

And the roads were red clay, which got all over the trucks.

Some goats ran across the road, and, unfortunately, we hit 1 or 2. But we heeded advice not to stop because in the outer villages you could be attacked if that happened. You couldn't explain why you had hit the goat. So we didn't stop. But later, the villagers were compensated for those goats, I believe, by our embassy.

**Drew:** And this was at the very beginning?

**Moore:** It wasn't at the very beginning because we moved into an office at the building facility called the Service des Grandes Endemies (SGE), which was also called the Trypano [phonetic]. The government of Niger furnished us with a nice office there.

Niger was a French colony before it was granted independence, but the French still were involved in the infrastructure of Niger. And one of those places was the health service. Their director was French, Dr. Shamrun [phonetic]; he was very nice, very cooperative, and very intelligent. I understand that in some areas, the Medical Officers had difficulty with the French counterparts because they looked at them as competitive, but we did not at all. Dr. Shamrun [phonetic] cooperated fully, and the Minister of Health did everything he could to help us. So it wasn't difficult to organize the vaccinating teams, 7 of them.

We also got a big map of Niger and all the arrondissements [sp.] that we had to vaccinate.

**Drew:** Was that like a French overlay on the local system? Because I associate that terminology with Paris.

**Moore:** Yes. The country is organized along the French lines of geography and names. I can't quite remember the name they used for the larger sections.

But, in any case, we formulated a plan of vaccination and trained the teams with a vaccinating gun, and it seemed to work out quite well. We had leaders in the teams who were quite good, and they were well motivated. And for our program, it worked well. In an organized fashion, we were able to vaccinate the entire country.

**Drew:** Was your program coupled with measles control as well?

**Moore:** Yes. This brings another point. One of the difficulties we had was that the measles vaccine needed to be refrigerated. We really didn't have any method to do that. We had ice chests, which we could periodically keep the measles vaccine in. And, of course, in Dahomey, that was no problem because we could have the vaccine refrigerated. But when we went out in the field, we had to keep the measles vaccine cool, which was somewhat difficult.

But I do remember an incident when we traveled to Agadez. And this is always with me. It was a sad occurrence. We were vaccinating all over the country. My Operations Officer, myself, and a vaccination team went up to Agadez because we'd heard that they were having a measles epidemic there, and, sure enough, they were. But when we arrived, we asked, "Where is the chef de village?" and we were told, "Well, he's over there." And we went over there, and "over there" happened to be a cemetery for the children who had died from measles. There were, as I recall, about 30 or 40 graves, maybe more, and the people were sitting around them mourning. And, of course, we came and said, "We're the measles-smallpox vaccination team," and they said, "Well, doctor, I wish you could have been here about a month earlier."

**Drew:** Wow!

**Moore:** We felt badly because we had moved as quickly as we could and

did everything. Of course, we vaccinated everybody for smallpox and measles. But it was sort of like closing the barn door after the horse escaped. I never forgot that. So from that time on, we tried to be as expeditious as we could getting the vaccine out to the rural parts of the country, which was difficult.

**Drew:** I'm sure a part of that too, must have been how you would get information from rural areas about measles occurrence.

**Moore:** Yes. We got this information usually by telephone or telegraph.

A lot of peculiar things happened. Tony Masso was with me on a trip to Zinder, and then, from Zinder to N'guigmi, which was called au fin du monde, the end of the earth. It was near Lake Chad. And it was really primitive.

But it was interesting. We had to fly out there in a small plane flown by the French. When we took off, the door fell off of the aircraft. And we're sitting there with open air right beside us, and they said, "No problem. We'll land and put it back on." So they landed the plane, put the door back on, and we got back in. But I noticed that my Operation Officer turned white. And I said, "It'll be okay. These guys, they know what they're doing."

So then we took off, and we're flying near Lake Chad, and they kept changing course. I asked them, "Do you know where we are?" and they said, "Well, we're a little bit lost right now." And so we were lost over the Sahara Desert. But, finally, they did find the airfield and landed.

**Drew:** And Tony was already pretty pale. He probably got paler after that.

**Moore:** He didn't like that flight at all. I don't know whether he recalls it or not. On the return flight the French pilot permitted his student to land the plane-which was a very rough landing and the plane almost skidded off the runway. I quietly asked the French pilot how many landings his student had made; he replied, "That was the first one".

But, anyway, then we went out with the teams. They had already proceeded to that area by road.

**Drew:** This was the au fin du monde.

**Moore:** Yes. This was N'guigmi, near Lake Chad. We were vaccinating up there and just observing how teams were working.

And I remember a harmaton came up there and blew our tent down. We were camping out.

**Drew:** What came up?

**Moore:** A Harmattan.

**Drew:** Is that a weather phenomenon?

**Moore:** It's a big wind that comes in Africa. It's like a hurricane on the sand, a huge wind that comes up with a big sandstorm. It's a sandstorm, basically. And it comes up suddenly. You can see it coming for miles away because it forms a huge wall of sand in the air.

**Drew:** And it's moving toward you?

**Moore:** And it's moving towards you.

**Drew:** So you know to make preparations.

**Moore:** That's why camels have these great eyes and eyelashes, which can close and keep the sand out.

So we had that to deal with this sandstorm. I remember we were making some rice, in the same camp area, and a plague of small grasshoppers or small locusts came, just clouds of them came. There was no way to keep them out of the tent or an open-air area. We lifted the lid on the rice to see if it was done, and several of these grasshoppers flew in. And that boiled rice was the only thing we had to eat. So either Tony or I said, "Well, open the lid and quickly get the grasshoppers out." But when we opened the lid, before we could get the grasshoppers out, more flew in. So then we decided, well, we'll just eat the grasshoppers. And so that's what we did.

**Drew:** It would be a little like having water chestnuts in your rice.

**Moore:** One time I went out to look at teams, somewhere east of Niamey.

It may have been around Zambia. I traveled out there and I visited these Peace Corpsmen, and they invited me to stay in their house, and so I did. They had an outhouse. So I went to use it. It was all dark inside the outhouse because it was all enclosed, no light really. I sat down, and I heard some strange

scratching on the wood planks around there. I was wondering what it was.

**Drew:** Is this daylight?

**Moore:** It's daylight, but the outhouse is dark. So I finished and I opened the door, and the light came in then, and I started looking around, and there were these big scorpions everywhere-on the corners, underneath where the planks were, where the toilets were. They didn't seem to bother the people using the outhouse. They just were scary. It upset me. I said, "If one of those bites you on the rear end, or stings you, it can be pretty painful." It also seemed a little bit unaccommodating, unfriendly, to the people trying to use the outhouse. So I said to the woman from the Peace Corps, "Why don't you take some spray, Raid, and spray that outhouse out there and get rid of those scorpions?" and she said, "Well, we did that, and the scorpions didn't die, they just came into our house here, so we don't do that anymore." But you live and you learn.

I remember a lot of cultural things too. Usually the village chef invited us to eat. Once they were passing around this bowl of camel's milk and millet mixed together. It was a common bowl. So we were sitting there, and the bowl came around. The entire rim of the bowl was covered with flies. I was a little concerned because it was a pretty communal thing; we were drinking with about 10 Africans at a time. To drink it, you had to clear a space to put your mouth and clear out the flies to drink the camel's milk, but you couldn't refuse. So, of course, I drank it. Things like that went on-you had to make accommodations to the culture.

**Drew:** And hope for the best.

**Moore:** And hope for the best.

**Drew:** How long were you in Niger?

**Moore:** I was there 18 months. I was an active commissioned officer for 2 years, but I was there for 18 months in Niger. But in that 18 months' time, we did get the initial vaccination done. When I left, another Medical Officer came; I think Dr. Logan Root was his name. Tony Masso, my Operations Officer, a really excellent facilitator, stayed there another year or maybe a year and a

half.

I was very happy with the program.

We had trouble sometimes with the trucks. Initially, there was a problem because our trucks were supposed to be taken care of by the Vinel Corporation, a contract corporation that took care of government vehicles running overseas. However, in Niger, we found that these people just were not the kind of people we wanted to work with because they didn't take care of the trucks and they used our parts for other vehicles.

And so Tony said, "This isn't working." And he said, "I would opt to take our trucks back, keep them here in the Service des Grandes Endemies yard, and take care of them ourselves. We can take our parts back and put them in a garage."

And I said, "Well, go ahead and do it."

We went to the Ambassador and said, "We just have to have control over our equipment."

And so he said, "Yes, go ahead," and we did.

I think that, if we had not done that, the program would have had a lot more trouble.

**Drew:** It sounds like a lot of other programs, either officially or by default, may have taken care of their own vehicles, too, because I keep hearing a common thread among a lot of folks in the program that they learned how to do maintenance.

**Moore:** Well, some were blessed with excellent mechanics. The Operations Officer in Mali was Jay Friedman [Jay S. Friedman], who was a very competent mechanic before he came into the program.

**Drew:** Yes, I interviewed Jay yesterday, and he was telling me that he can't deal with modern cars, but he knows old-fashioned cars, and I guess he got so he really knew how to deal with the trucks.

**Moore:** So I think that was a real plus in the program.

And we were actually blessed with having mechanics among the drivers. You know, they were very good mechanics and could take care of the trucks just fine if they had access to the parts, which we obtained. So that helped the program a lot.

I remember coming back from Agadez-Tony was driving-and this horse ran in front of us. It was sundown, dusk. Tony swerved to miss the horse. I still remember the horse; it was big and brown. The truck rolled completely over, and the top of

the truck got smashed and the windshield broke completely out. And we were upside-down in the truck.

**Drew:** This was before seatbelts and everything, wasn't it?

**Moore:** You know, I believe it was. I don't think we had seatbelts, no, because I actually sprained my neck a little bit.

Actually, we had been told previously that if an animal runs across in front of you, don't swerve off the roads because there are no shoulders in Africa, and you will hit sand and you can roll a truck. But it just happened so suddenly. And, of course, he was trying to not strike this horse.

**Drew:** Well, and I'm sure hitting a horse is a little more formidable than hitting, say, a chicken or a pig or something.

**Moore:** So maybe that was justified, swerving at that time.

But I knew one thing. I knew that if we didn't get the truck turned back over quickly, the oil would drain out, and then we wouldn't be able to drive the truck, and if driven, the engine would be ruined. So we quickly assembled the villagers there, who were happy to turn the truck back upright for us, and we drove back to Niamey without a windshield. At that time, it was cold there. It was a pretty cool trip back, but we did make it. That was the only serious accident that we had there.

Lots of times we would have to send money or get money sent because the teams would be out of gas.

But all in all, it was really a good time. It was fun working there because we connected, we had social interactions, with the Nigerians, the French. And there were people of other nationalities traveling through all the time, Europeans. Niamey was sort of a hub in Africa for people who were traveling from the southern part of Africa up to North Africa and on to Europe. I met many people in the Peace Corps.

The Peace Corps doctor stationed there was interested in psychology-psychiatry; he was a psychiatrist, basically. And I was more of a clinician. So I took care of lot of Peace Corpsmen clinically there. Once I had to make a decision about whether this woman in the Peace Corps had appendicitis or not, and decide whether to evacuate her from the country, which would have cost about \$20,000. Finally I decided she didn't, and we didn't evacuate her, and she survived.

But it was pretty primitive. On the other hand, there were

parties. There wasn't any television, so people had each other. So, for entertainment, they had many parties. Sometimes there'd only be a sack of peanuts and some beer. Sometimes the parties were fancier. It was relatively inexpensive to give a party there. The food wasn't that expensive, and, of course, there was plenty of inexpensive help. And the Peace Corpsmen, coming out of the bush, were always happy to come to a party and do some dancing and meet other Peace Corpsmen.

**Drew:** Were they living in more austere circumstances?

**Moore:** They were living in very austere circumstances. They had to because they had to identify with the people very closely in order to do their work.

But it was a time of heavy idealism. They were really motivated, idealistic young people, and the Nigerians loved them. The programs were fantastic there. They had well-digging programs and all these different things that they were doing. And it was a time, of course, of Bobby Kennedy; it was John Kennedy's program, and so these were all idealistic, liberal kids, and we loved working with them too.

The Nigerians that we worked with were wonderful people, too. Many of the team leaders, although not educated, were highly intelligent so it was easy to teach them these different methods of vaccination and organization of supplies and equipment and recording of data. They did pretty much everything we asked them, but sometimes it was a little cruder than we wanted. Some of the data that we collected were not exactly as accurate as we wanted. But all in all, I think that they did a wonderful job.

**Drew:** My sense is, too, that a really key part of a person's working in that kind of program would be knowing how to compromise and when to compromise. You had to know where you had to maintain some standards and where you could be more adaptive.

**Moore:** That's true. We had to work with the government officials pretty closely, especially the village chiefs. The chef de village is kind of like a mayor here. And I learned early on that if you were going to make a trip to their village, the chiefs needed to be notified in advance because part of the respect of the people and their role as chief was to make a visible welcoming of any important visitors. They needed to be

notified so they could prepare a welcome that was appropriate for their office.

**Drew:** So, if you were to show up without them knowing ahead of time, it would almost be viewed as an insult or disrespect.

**Moore:** That would be viewed as gauche. And if it wasn't done, they were very nice, of course, and they wouldn't say anything. But this is something that one always had to be cognizant of, notifying them so they could make the appropriate and respectful preparations for visiting dignitaries or persons that were official. So we tried to do that.

As I recall, we had the only active cases of smallpox in West Africa at that time, except in northern Nigeria, where they had a few. But ours was a major place that smallpox was still extant in Africa. So we felt that we could play an important role in eradicating smallpox in that we were vaccinating in a place where it was still active. And I've always felt good about that.

**Drew:** Did you come back to Atlanta afterwards?

**Moore:** I came back through Atlanta briefly.

**Drew:** Did you do any additional tours in Africa?

**Moore:** No. I did 2 additional tours with the Ready Reserve of the Public Health Service. One tour was for 2 weeks in Fort Indian Gap, taking care of Cuban or Haitian political refugees fleeing Papa Doc Duvalier. And I did another 2-week tour in the Yakima Valley, Washington, taking care of farm workers.

But I love the Public Health Service. I have great respect for the organization. I very nearly chucked my plans to go into a surgical subspecialty and almost decided to stay in the Public Health Service, to go back and get a Ph.D. in epidemiology, and work in that area for the Public Health Service. It would have been a very interesting and viable alternative. So I have great fondness for the Public Health Service. Through the years, I've followed what they do, read about CDC in the paper or in articles, and I still go back to them for information on infectious diseases and different problems.

**Drew:** So when you finished your tour in Niger, you came back to CDC or...

**Moore:** I came back and started a residency.

**Drew:** Here in Atlanta?

**Moore:** At Los Angeles General Hospital.

**Drew:** General surgery?

**Moore:** I did the general surgery year of the neurosurgery program and started the second year, but then I decided to change to obstetrics and gynecology. In fact, when I came back, I was accepted in the program of ob-gyn at the University of Washington and neurosurgery at USC. But I started the neurosurgery program at USC and then changed to obstetrics and gynecology just because I liked it better.

**Drew:** Neurosurgery can be pretty grim. As a nurse, I have worked for neurosurgeons; it's a different field.

**Moore:** Well, you know, it's technical, and you have to be happy with partial results. But at L.A. County, I had done quite a bit of OB as a student, and I just liked the action and the idea of taking care of 2 persons. It's always exciting and vital. You're dealing more in the young end of life. So it was something that attracted me.

But I could have done either neurosurgery or general surgery as well, and, alternatively, I always liked epidemiology too. At the time I made the decision, I wanted to do more clinical training. I'd always imagined myself as a clinician when I was a doctor, and so I did do that. But, as I say, retrospectively, I don't know whether it may have been better to stay with the Public Health Service and go into epidemiology. I think I could have been happy, but I may have always regretted not doing the clinical work.

**Drew:** Don't you think there are always those kinds of junctures in life where you think, well, what if I had done this instead of that?

**Moore:** They're difficult decisions to make, true. I'm training residents now at the Navy Hospital, in ob-gyn. We have rotating through our service some internal medicine residents from private hospitals who just want to get some experience in gyn.

And if they talk to me about their careers or they're undecided about what to do, I never fail to mention the Public Health Service and epidemiology as a career, and how it isn't what you might think it is, that the science of epidemiology can be applied to so many different problems. I just try to give people who are coming through our service an idea that there's more to medicine than just being a clinician.

Dave Sencer [David J. Sencer] asked us to list 3 things that we got out of the program in West Africa. I don't know about 3 things, but I can tell you one thing that I got for sure, and that is that one man, or a team of a couple of men, with the backing of a strong government, like the United States, with the Public Health Service behind them, can make a fantastic impact on a large population of people. A country can make a major world health impact. And that's something that you can't really do as a clinician working one-on-one. You can, but you do it singly, and you have to have lots of clinicians doing similar things, if you're trying to make an impact. It isn't quite the same as if you're organizing a broad program to affect world health. So I think that if somebody wants the satisfaction of doing something that will really impact people's well-being, there could be few better choices than working in epidemiology and the public health sector.

**Drew:** Not too many careers, either, where people can really truly say that they have that firsthand experience of having a positive impact on a large number of people in terms of things like longevity and quality of life.

**Moore:** There aren't. And this Public Health Service facility has made a great impact on the well-being of people throughout the world. I think, overall, if you look at the 2 areas of clinical medicine and public health service, it's really public health service that makes the maximal positive change, for the most people.

It drifts down. You know, their recommendations and their advice on what should be done to improve health do come down to the clinician, who does it on a more limited basis. But the initiative comes really from broad programs, at least in terms of a major improvement in people's life.

**Drew:** We're kind of at a point where we probably should think about wrapping up, so I want to be sure and give you a chance, if

there's other things you'd like to talk about...

**Moore:** Well, I was trying to think of any little incidents there. I know my daughter-

**Drew:** Are your children French speakers? Did they pick up French?

**Moore:** My son speaks some French. My daughter was too young. My son also speaks Indonesian, Dutch, and some Spanish. But he works a lot overseas now. Talking about getting involved with a culture, I can remember my daughter, when she was just 2 or 3 years old, going out to where the guardians sat in the morning. They would have this really sweet tea. They offered her a cup of tea, and so she copied them, sitting cross-legged right down on their rug on the sand, drinking this tea that they were giving her. And I thought, how neat that she could have that experience. There were a lot of cultural interactions like that that I really enjoyed.

**Drew:** Those things enrich a person's life so much.

**Moore:** They do. It was really an enriching program in terms of my life and, looking back, really an important part of my life.

**Drew:** Well, I really appreciate everything you've had to say. Is there anything you want to add?

**Moore:** Only that I really appreciate what everyone in this smallpox program has done to preserve the memories of it, the archives and all the things done by the people working with CDC to be sure that the program is remembered, because I think that's important.

**Drew:** Well, it's a pretty unique program and really had a pretty amazing effect, I think, on a global level.

**Moore:** I think so.

**Drew:** Thank you. Thanks for your work and thanks for the interview.