David Newberry

This is an interview with David Newberry on July 13, 2006, at the Centers for Disease Control and Prevention in Atlanta, Georgia, about his role in the project to eradicate smallpox in West Africa in the 1960s. The interviewer is Melissa McSwegin-Diallo.

McSwegin-Diallo: You started out working at CDC in venereal disease. Could you talk a little bit about how your education before that and your upbringing led into a career in health?

Newberry: I have a Native American ancestry mixed with an upbringing by very humble parents who really prompted us to seek education. I was a high school dropout, joined the US Army, went to Korea assigned to the 3rd Infantry Division. After completing Basic Training, Ardyce Timmons and I were married January 29, 1953. I served 3 years in the army. Upon returning to Kansas, I tried various jobs but with little education and a GED Certificate, it was clear that there was no way I would be able to provide for my growing family. I went to the local university and applied for entrance armed with my GED. They tested me, and the Registrar reluctantly agreed to let me enter as a probationary student. I carried a double major (Pre-Med and Secondary Education) with a double minor (History and Chemistry) in my undergraduate work. With a growing family I needed to work full-time in a local 750-bed hospital laboratory, as a nonregistered medical technologist. We had 6 children, and that always made seeking higher education difficult. We suffered the death of a 6-month-old child, who was being watched by a babysitter who let a fan blow a plastic sheet over her face.

I was accepted as a student at the Kirkwood Missouri Osteopathic School of Medicine. We did not have the necessary $600 needed to reserve my place in the class.

I was employed by the Midwest Medical Research Foundation as a research assistant. We were working on mitochondria and some of the early, basic research on liver transplants. We were using dogs as study subjects for liver transplants. I assisted in surgical procedures, postoperative care of the animals, and enjoyed the work but I really missed the person-to-person contact of working in the hospital environment.

So when CDC advertised for Public Health Advisors (PHAs)

to serve as basic epidemiologists in identifying sources and spread of sexually transmitted venereal diseases, I was hooked. While serving in the military, one of my NCO assignments was to give lectures on venereal diseases. So I applied for the CDC job, and since I was a 15-point veteran, CDC really had to hire me. My application and personal status did not meet the usual CDC recruiting profile or employee pattern. Personnel (the organizational term used then) offered me and my family one assignment choice: New York City as a cooperative employee with CDC on a probationary basis assigned to the NYC VD [Venereal Diseases] Program.

We had 5 kids, no money, had never been to a really big city, and were totally ignorant of CDC's work climate, and so we immediately took the assignment.

My CDC clinic supervisor was a truly gifted professional who was committed to disease prevention and control. I was directly supervised by Joe Benkowski, who was the Senior Epidemiologist at Brooklyn's Fort Green Facility, which was located on Flatbush Avenue Extension. It was one of Brooklyn's Social Hygiene Clinics. The morbidity there was a huge volume of syphilis cases (all stages), gonorrhea, and other diseases spread by sexual contact. I probably interviewed about 2,000 homosexuals, serving as a Cooperative CDC assignee and later as the Senior Epidemiologist at Fort Green. During our 3 years in Brooklyn, we interviewed thousands of primary, secondary, and tertiary syphilis patients.

I really enjoyed that assignment. It was a little tough on the family, but the kids really adjusted. They attended St. Joseph's Catholic school around the corner from our apartment on Underhill Avenue between Bergen and Dean Streets. We sort of integrated that poor Brooklyn neighborhood in reverse, which had transited from a turn of the century Italian neighbor to a mostly black one. CDC only paid a little over $4,000 a year then. The Newberry family could have actually taken in more income by going on city welfare for 5 kids in New York City and being eligible for NY Medicaid than working for CDC.

But, anyhow, we had a lot of fun, a lot of laughs, met some great people, worked with some wonderful epidemiologists, and I learned a lot from those folks. There is a lot for a family to enjoy in New York City. We could walk to the Brooklyn Museum, Prospect Park, and take a train to the Hayden Planetarium in Manhattan.

One night, about 3 years into the assignment, the liquor

store just below our apartment was robbed and a gunfight broke out between the thieves and police while our children watched from the fire escape. It was time to move on. I applied for a job with the CDC Tuberculosis Control Program and was selected for an assignment in Memphis, Tennessee. So the Newberry family moved to Memphis, Shelby County, Tennessee. My CDC predecessor was the Acting Tuberculosis Director for Memphis and Shelby County. I became the Acting TB Division Director there, supervising some 35 county employees. Our clinical activities were provided by the West Tennessee Tuberculosis Hospital located across the street from the health department. Within 18 months, we were recruited by Billy Griggs [Billy G. Griggs] for the CDC/USAID [US Agency for International Development] Smallpox Eradication and Measles Control Program. So we prepared mentally and physically to move to Ghana in West Africa.

McSwegin-Diallo: So what would you say motivated you to get into smallpox?

Newberry: Oh, I think probably the idea of eradicating any disease really appealed to me, and from what I'd learned while studying epidemiology, this prospect was a huge turn-on with me. The CDC staff talked about it; "Hey, let's eradicate this smallpox disease. Let's get rid of it forever." That really resonated with me, and I thought. "Hey, we will go to any lengths to do that."

Also, my culture, and my family's culture, has always been that you should make the world a better place because you're in it, and that you should do everything you can to help others. And, of course, I'm Catholic, too. The nuns beat service into in my head. The guilt for not doing a perfect job I was able to develop on my own!

McSwegin-Diallo: Okay. So then you applied to the program, you got accepted.
Newberry: Right.

McSwegin-Diallo: And you got your assignment in Ghana. Correct?

Newberry: Right. Billy Griggs recruited me, and again the Newberry family sort of broke the mold in terms of the usual kind of folks who went to Africa as CDC assignees. We had a huge family. And the guy that I was replacing, Jim Lewis [James O. Lewis], had no children. So he actually leased the former Japanese Ambassador's residence, with 6 bedrooms and bathrooms all over the place. The

backyard had a little Japanese garden with a pool in the back, and it to us it was awesome.

Accra was just starting the Lincoln Community School, which conducted classes through the eighth grade. CDC/USAID helped subsidize tuition so we able to pay for school for the kids. By the end of our CDC tour, I ended up being chairman of the school board. That was an adventure in itself. The complexity of eradicating smallpox was accomplished by the wonderful Medical Field Unit (MFU) of the Ministry of Health. Being chairman of the school board led me into experiences and lessons in politics, power struggles, and money that banded several strange coalition groups together to apply pressure on the school board chairman!

McSwegin-Diallo: So, you had a family with 5 children, you knew you were going to ship them all off to Africa. How did you prepare, and how did the CDC training help you prepare?

Newberry: Well, at CDC, we had an excellent orientation, but basically it was kind of a fear school. We were being prepared for all sorts of health and disease risks and adventures. I tried to not to freak all my family out. When you talk to your wife and children about Loa loa, a filoriasis of the eyes, and the timbu fly, which causes cutaneous infestation with furuncular lesions in sub-Saharan, it scares the pants off everyone! Later I did experience a cutaneous infestation, and it did freak me out a bit. But these were nothing compared to some of the horrendous diseases and illnesses that were out there. But then my work in a 750-bed hospital situation helped so I wasn't too intimidated by those kinds of health threats, and ignorance is bliss! Also I had served in Korea so I know what it's like being overseas. So I wasn't very intimidated myself, but for the family I was really fearful. Our children are the greatest-the kids looked upon it as an adventure. I mean, these kids are great. They're amazing. And my wife's an amazing lady. She never did like it over there, and she still doesn't treasure the experience, but she did it and did a really did a good job.

As soon as we arrived in Ghana we took a field trip to meet the Medical Field Units of the MOH and all the field staff. There were 315 field staff, with names like Quadgo, Kwame, and Cockaleeka. By the way, Cockaleeka is the Twi word for cockroach. One of our field staff insisted that he was to be Cockaleeka because that way wherever we went, he would already

be there. So that's what he wanted to call himself, a cockroach. During that first field trip I met all 315 people the first 2 weeks in Ghana. I couldn't even pronounce one name correctly. We went into this one village, and suddenly here is a red-haired American, and he says, "Hi, I'm Bob Carter. I'm working on an agriculture program," or some such program for USAID. We shook hands, and I didn't see him again for 2 years. Two years later, I saw him in downtown Accra, and I said, "Hey, Bob Carter, how are you doing?" He couldn't imagine how I could possibly remember his name but the secret was simple: after meeting 315 people with unpronounceable names, meeting Bob Carter will always be in my memory bank.

McSwegin-Diallo: That was the easy one.

Newberry: That was the easy one. Anyhow, in order to implement the Smallpox Eradication and Measles Control Program, we traveled a lot. I put in about 240,000 miles on our Dodge twin-cab pickup. All this travel was in Ghana; it was all in the country itself. I went to every major village, market, and cultural place of geographic importance. I took the children on some of the trips, and they amazed the Africans. They would touch the skin and hair of the children and ask questions like, "How can you tell the boys from the girls because none have pierced ears"? I had then, and will always carry, the highest respect for my African colleagues for what they do, where they do it and the hardships they experience doing it. We at CDC, World Health Organization (WHO), and others may put our arms out of joint patting ourselves on the back for the eradication of smallpox, but the real people, the real heroes, the real staff, the real soldiers who eradicated that smallpox as a disease were those who lived in the countries who did the nitty-gritty work. These folks got to the communities; they got to the households and administered the vaccine while conducting wonderful surveillance systems in place. And I have nothing but absolute respect and awe for what they did, and where they did it, and how they did it.

McSwegin-Diallo: Could you talk a little bit more about that, about establishing working relationships with your African counterparts?

Newberry: The Director of the program was Dr. Frank Grant-God bless his soul, he died not too long ago-and he was one of the most

amazing men that you've ever met. His father was a minister, and Frank was a true gentleman, an excellent epidemiologist, and a wonderful, patient human being. Frank was educated partly in the U.K. and partly in Accra, Ghana. I can't say it well enough: he was just a wonderful human being and a highly intelligent person. He was a well-trained Medical Officer and one of the hardest working professional persons I've had the pleasure of knowing. I traveled to some of the most remote locations in Ghana. I was housed in old huts seldom used because professionals rarely actually went to these locations and worked. I never traveled to any desolate corner or stayed in any hut that didn't bear evidence that Dr. Frank Grant had been there sometime before me!

I quit smoking cigarettes in his home, in 1971, because his wife, Mary Grant, who was also a physician, said to me, "Why do you smoke? Have you read the US Surgeon General's advisory on smoking?" "Yeah," I answered, "I read it back in '57, right after Luther Terry published it as part of his findings. I found it very convincing." Mary Grant said, "Well, why are you still smoking?" and I said, "You're right. I won't." So I quit. February 9, 1971, I smoked my last cigarette. I hasten to add that my children made sure that every piece of tobacco disappeared from the house. Later I did take up the pipe but gave it up when I overheard the children trying to justify Dad doing it because it was less of a health risk.

Frank Grant was one of the fairest people that I have ever been blessed to work with, in part because of what has already been stated. In addition to those comments, I feel the need to add additional attributes he possessed. Frank Grant was honest to a fault and loved his family and his country. In return he had the love of his staff and his family and the people of Ghana. There was no question about his devotion to Ghana and the health of Ghana; it was incredible. You could not be around him and not be inspired and touched by him. And the intellectual process that he exercised was inclusive and resonated with individual "ownership." He loved the MFU staff, and even we expatriates; he always maintained our equality in a relationship. I didn't know more than him, and he didn't know more than me. I respected his authority and never questioned it. We learned together and walked a path together. And later, Mary became advisor to the head of state on health matters, Jerry Rollins. And so I continued to have a lot of input over the years because of that relationship with the Grant family and

with those wonderful people.

The Brits trained the MFU staff, which was an organization that the Brits put together because the infrastructure hadn't existed. The capacity to provide outreach health services was extremely limited. So the Brits brought this program for training in treatment and outreach infrastructure together to serve the rural people by training national medical auxiliaries in treatment and public health. They were sent out to the people in what they called MFU teams. These teams actually rotated out to every part of Ghana. Health Inspectors were also trained, and the MFU was charged with a simple task of mapping the entire country.

The way they trained those folks was amazing. They had medical auxiliaries. Now Ghana has 2 medical schools, but then they were just setting up the one in Accra. And so they trained these medical auxiliaries; they had a 4-year program and a 2-year program. And the sophistication of the training and the clinical practice of a 4-year graduate of that paramedical school was awesome. So they were our team members. They were the ones who really went in the trenches to eradicate smallpox.

We developed surveillance systems. My predecessor, Jim Lewis, and the Medical Officer were exceptionally good people. They were great to follow. Their talents and the legacy they left were real easy to pick up, and we just carried it to the next stage.

And everywhere I went, the Medical Officers were good. There were some expatriates from India and other places that were probably a little more interested and focused on the money they were making, but I made lifelong friends with most of the African people who I worked with. I go back to Ghana, even now, and I still occasionally see a person or 2 who I know real well.

McSwegin-Diallo: You mentioned a little bit about that British legacy they left behind as far as infrastructure and so on. Would you talk a little bit more about that?

Newberry: Yes. The Brits trained medical and paramedical, and set up a system that was really quite comprehensive. You could probably criticize colonialism, but that aspect you could not because they provided and developed a service and accessibility to health services that didn't exist before they were there. They actually had the good conscience and did develop those systems and those structures. They built the hospitals, and they formed

the labs. It was complementary to what the missionaries did. I mean, you'd find a Baptist hospital in one place and you'd find a Catholic hospital run by the white fathers in another place, and they were all coordinated with the government hospitals, the missionary hospitals, as well. So they worked together and shared resources occasionally when there was a need.
Father Kelly, was one of the first White Father missionaries who first came to Ghana in 1918. They arrived when Ghana had only "Long Boat " off loading from ships as no harbors were built yet. These amazing priests pulled all of their possessions off a ship in Accra (then the Gold Coast). Then loaded them on "long Boats", and then landed on the beach at Labadi at the foot of Accra City. These missionaries then hired porters and carried all their belongings, up-country 500 miles, on their heads. Father Kelly found the poorest tribe living in/under the most wretched conditions imaginable in the northeast of Ghana. He made a whole new life for the people that he grew to love. Where does one get that kind of dedication?
When I became acquainted with him after he had developed a written language for 'his' tribe and built any number of maternity hospitals. Father Kelly had a particular love for women and their childbirth sufferings. Whenever you went to see Father Kelly, you had to work basic construction with him as you talked. He wouldn't take a fridge for vaccine storage because he was afraid he'd be "tempted" to use it for himself. We were able to set up a mechanism whereby we could store vaccines and he couldn't be "tempted". So they set the structure up.
And the British trained folks who were incredible. When you said, "We'll leave at 6:30 AM for village A, B, C, and D," at 6:30 they were there.

McSwegin-Diallo: That's amazing.

Newberry: And they knew they were going to stay all day. And no one was late. I mean, that's the legacy. They were very precise, very dependable, very comfortable to work with. I mean, they were so dedicated and committed.

McSwegin-Diallo: Wow. That's good, that's really good.
Can you talk a little bit about some of the problems of living in the villages and adapting to life in a new country?

Newberry: Well, I'm left-handed, and you go up north and you can't hand

anything to anybody left-handed. And you're not supposed to eat with your left hand, and so it's sort of like sitting on your hand and trying to work with your right hand. Understanding the culture and the taboos I think is really important. Of course, I was raised in sort of a primitive society as well, so I think I had an advantage over some of my colleagues.

I learned over time what protocol really demanded. If I went to a village and it was very poor, hospitality has to be extended to you. But you know that if you ate, you're eating somebody else's food because somebody had to give up their food for you to eat. So I found out that no one could eat until I took 3 bites, and, of course, you ate with your hand. And I found out that if I took 5 bites total, then I didn't have to take any more food. My obligation is finished. So I take 3 bites, everybody can eat; I take 2 more, and I'm finished.

So I think little practices like that you had to be tuned in to what was going on. You really had to look for these cultural nuances in order to be more effective.

I think a lot of us in the West, we tend to look at Africans as primitive. Let me tell you, I sat in villages when a chief was presiding over a court. And it was the most remarkably precise, fair, and balanced proceeding I've ever witnessed. I could quote you several cases. I'm just telling you, believe it, it's a fact. And it was kind of a funny thing because there are mores attached to ordinary human conditions and problems that we don't even think about.

For instance, we were in this village, and a chief was hearing an important case about someone violating fishing rights on a river. The water, food, and all the rest of this is very important, and owners' rights are very important. And so he was hearing witnesses. And then a madman, a Mahakachee, came in and approached the group. And no one paid attention to him until he crossed some invisible line-and I didn't know what it was-but when he crossed that line, everything stopped. And he came around, and he saw my skin and he touched it. I was used to that, so I didn't react at all. And then somebody had given him some food, so he was carrying that food because they couldn't let anybody starve. After all, this is a brother. He's not a social pariah just because he's mad. And so he wandered around and then, again, he crossed over this sort of invisible line, and the witness immediately started testifying and the whole proceeding picked up again. It was so remarkable to me. We tend to look down on folks who don't have the same culture and the

same processes that we have, but it was absolutely remarkable, that experience.

McSwegin-Diallo: How did your family like Africa?

Newberry: Oh, the kids loved it. And I'd give them a task. I'd say, "Okay, the task is that I'm giving each of you 50 cents, and you have to buy your own food for the whole week." And everybody did it-everybody except my oldest son; he liked Coca-Cola or soft drinks too much, so he went over his limit because he bought soft drinks.

McSwegin-Diallo: How old were they all then?

Newberry: Well, the youngest, Phillip, was just getting ready for second grade.

And then, the oldest was one third of the eighth-grade class. (We had 3 eighth-grade students at Lincoln Community High School then.) So our children ranged from first to eighth grade. And they loved it. They'd go to the field with me, and all the Africans loved it.

I actually put my children to work when we'd go out to help mobilize a community. People would come to see the kids, and then we'd immunize the people when they came out, that sort of thing. And I actually put my oldest son in the field working with a team during summer vacation.

McSwegin-Diallo: I bet they have great memories of that.

Newberry: They did love Ghana.

And then, we went back later for guinea worm eradication, and my youngest daughter sent her son with us so he could have that experience. So I took my grandson to Ghana later.

McSwegin-Diallo: Wow, that's neat, that's really neat.

How did participating in smallpox change your life and the course of your career?

Newberry: I think it would be easier to phrase that question the other way, Melissa: how didn't it?

McSwegin-Diallo: Okay.

Newberry: It changed my life in every way that it could: professionally, personally, ethically, from a moral standpoint. I can't think of any part of my life that hasn't been touched by my initial African experience.

And have I had some sad experiences? Yes. We experienced the death of people that we know and love both in our own family and outside. But the Africans, the people we lost in Africa, I think were real special, each in their own unique way. Their appreciation for life and death was just amazing.

I once asked Frank Grant how Africans accept death. And he said, "Well, let me tell you. We have so many proverbs that cover everything that are our way of life, and our trust in God, is really much like that of the American Indian." And he told this story. "A man was in the forest one day, and he saw 2 snakes. One snake was consuming the other, and he took a stick and broke up the fight and stopped it. That night there was a knock on his hut, and he opened the door, and there's a man. He said, 'I am death, and I was being consumed today in this form of a snake that you saw. So, because you saved me, I will grant you any wish that you want.' The guy says, 'Well, I want to be warned before I'm going to die so I can live the way I want, but I can die the way I should.' So he went through life with no regard for other people. He was selfish and sought pleasure. And then one night, there's a knock on the door, and he opened it, and there's death, and he says, 'I've come to get you.' And the man says, 'Wait a minute. Our agreement was, because I'd saved your life, you were going to warn me.' And death said, 'I warned you with the death of your brothers, with the deaths of your mother and your father and your friends. Now I've come to get you.'"

And that's such a poignant way to look at death, and every aspect of life itself. But I think the things that are more important to me were the hospitality and the acceptance that the Africans have.

Some Westerners will say, "Well, basically they give you hospitality and greeting because they're going to get something back." That's not true; that's not true. They do it from the genuine openness of their heart. They'll give you their last bite of food. And is it because of protocol? No, it's not because of protocol. It's because that's the way they are. That is their standard. That is their upbringing..

And they taught me how little I know. The first African phrase I learned was to-ba-see-bro-nee, which means, "Take your

time, white man." So they taught me there's a pace and a rhythm to life. They taught me what little I know, and the fact is that I need to know more. They taught me a sensitivity for culture and language. I did learn to speak Hausa subsequently in Nigeria.

They taught me what family is all about. And I don't mean your immediate family, but global family. They taught me that when one person suffers, everyone accepts you can suffer. They taught me justice in terms of the courts and in terms of being tolerant about people; that you can't draw lines. Because somebody's bad doesn't mean that you ignore them.

Some of the customs are so quaint, like if a husband and wife have a disagreement, they can hire an arbitrator. An arbitrator has a little stool, and they come to the house and they sit down on the stool, and while they're seated on that stool, they are arbitrators, they are marriage counselors, and they hear both sides of the disagreement.

On sort of a macabre note, in one instance there was a couple who had the arbitrator in, and the wife became so angry at what the arbitrator said that she grabbed the stool and hit her and killed her with it.

McSwegin-Diallo: Oh!

Newberry: I mean, like I said, it's sort of a macabre thing.

But the society and the culture are so rich in Africa that I think we Westerners have missed a lot of it even by being there, even by working with them, even by living with them, and in some instances even by learning the language. Because you can be bilingual, but you can't be bicultural. And certainly the richness of culture also changed my life.

I also think road safety and common sense is a major factor. When I used to teach students, I'd say, "You're learning all these things about preserving your health and about avoiding disease organisms," and so on. "Will you get out of a car, will you stop a vehicle, if you're a passenger, and get out?"

"Well, why?"

"Well, if someone's driving unsafe or at a great speed, your life is in greater danger then than it is from these little organisms. Stop the vehicle and get the heck out."

I know I'm rambling, but I'm just trying to look at your question in a holistic way.

My oldest daughter married a second-generation missionary

in Cameroon, and they went back and lived there, so their household language is Falani. They speak Falani at the household, and they're back here now.

McSwegin-Diallo: Oh, and they still speak Falani?

Newberry: Yes, they still speak Falani. So in all the ways that you can be affected by living and residing and learning about another culture, Africa had its impact on us.

McSwegin-Diallo: What would you say was the biggest problem or challenge that you faced when you look back, specifically at smallpox and how the eradication program went?

Newberry: That's a really good question. I think the biggest challenge was developing surveillance and response because we went out with the idea that we immunize people, protect against smallpox, and we would eliminate disease.

But the strange thing was that we immunized 25 million, had a big celebration, and we still had smallpox. We gave out 50 million doses, we have even a bigger celebration, and we still have smallpox. Foege [William H. Foege] had figured out that we had to deal with the disease itself, so we needed to get our surveillance system moving, identify those exposed, and protect those individuals. And my colleagues and I, I don't think any of us could ever remember anyone who had been immunized, either early or late, even after onset of the disease, who had died.

The biggest challenge, I think, was getting surveillance-and-response systems organized so that they really functioned where smallpox was being spread. I didn't get my surveillance reports, and so that's one thing we really kind of plugged into, getting surveillance workers. If you don't have surveillance, you can't respond. So I used the police telegraph because we didn't have any communication up to Gushiagu, which was well over 500 miles away on the Togo side of Ghana. And I hadn't received reports from the guys for about 6 months, and we were kind of concerned because that was an area where smallpox could occur, and we'd occasionally have smallpox on the other side of the border. So I sent up a Telex saying, "Give us your report." Well, I got back a report within a very short period that said they had 50 cases of smallpox.

So I sent 2 teams, 2 vehicles in, and we trudged up there, and one bridge was out. We had to drive across the stream, and

all this stuff.

We got there about 4 o'clock in the afternoon, to this village called Gushiagu, and I said, "Okay, let's get in the field." Well, there was a lot of palaver, talk, talk, talk, talk. And I'm all anxious to go, and they're going talk, talk, talk, talk. And then, 'Let's go, let's go!" Talk, talk, talk. Finally they said, "We don't know how to tell you this, but when you sent the Telex requesting a surveillance report, he decided just to go and put anything down, so he thought, well, smallpox, about 50 cases would be a reasonable number.

So we responded. And, of course, they were totally blown away by having 2 full vehicles with teams driving up there to help them with this outbreak.

McSwegin-Diallo: They didn't think you'd come.

Newberry: They didn't have a clue we would come.

I think we didn't understand the traditional African culture, and we didn't appreciate it or use it very much. Everything looked to us like it had to be done a certain way. You couldn't hire your cousin or your brother because of nepotism; we tried to keep people honest according to our standards. And then we often had trouble with understanding their basic needs, how the African worked. So, like our payout teams would go out, and they always got a kickback. And so when we found out about that, it drove us crazy trying to stop it.

But the real enemy was smallpox, and so it was real hard not to focus on smallpox. It was difficult not to get entangled in the personal and cultural and traditional kind of situation and instead really focus on the fact that everybody realized that the real enemy was smallpox. Let's keep that in our focus, our sights, and that's what we're going to fight.

McSwegin-Diallo: In retrospect, since hindsight is 20/20, if you were the one who had been running the program overall, is there anything that you would have changed?

Newberry: Yes. I think probably the Griggs and Jim Hicks [James W. Hicks] and Bill Foege, Mike Lane [J. Michael Lane], and Don Millar [J. Donald Millar], they all did a great job, there's no question about it. I think probably what I would have done differently, I would have assigned people long-term at strategic state-level assignments in-country. We did a little bit of that in Nigeria.

Most recently, when eradicating polio from Nigeria, WHO, UNICEF [United Nations Children's Fund], and all these other high-flying groups would send somebody out for 2 or 3 weeks as an expert, tell you you're doing it wrong. During smallpox days, we didn't do that. We had key CDC personnel assigned to the epi units in northern states of Nigeria. And I lived up there, and that's how I learned the language.

And what we did, is we used a holistic approach. We went to the emirs. Each emir has his own chancellor for health, his own government, his own courts, his own religious leaders, and so we went up as an extra pair of hands. And I always made a point to go, Melissa. You tell me where the toughest place to go to and get to is, and that's where I would go. I wouldn't care how tough it would be because that was the challenge. If I'm going to be there, then I want to show everybody that there's no place I won't go, there's nothing I won't do to get rid of this disease.

So 6 years ago I wrote a plan for polio eradication, based on the institutional memory that I have from smallpox, and I gave it to some folks, and they said, "Oh, it's too expensive. We can't do that." And now we still have problems with polio in Nigeria.

So that's what I would have done. I would have put more people in strategic places, living with, learning, and being a part of the local government, working with traditional leaders, whatever the structure is there, rather than to come fly in and then fly out again. That's probably the only change I would make, if it's a remarkably good, well-planned, and well-executed program with some superior people at all levels.

McSwegin-Diallo: So, with everything that you learned from the smallpox campaign, you came back to the States and went on to work with guinea worm and polio. Were there any particular lessons that you learned from smallpox that you were then able to apply to those other 2 diseases?

Newberry: Oh, many, many. I couldn't even begin to describe to you how valuable having that experience in smallpox was and being able to look at the logistics of the epidemiology, the use of information and data, that we applied in these other diseases.

But for guinea worm, the major problem is trying to modify human behavior. With smallpox, that wasn't really the issue because if the chief says you'll be immunized and your family

will be immunized, it happened. Well, in guinea worm, what I learned from my lessons with that, was that we got a little too fancy because all you need to eradicate guinea worm is a piece of cotton cloth, 120 batt, which is produced in every country in Africa. All the people have to do is pour their water through that before they drink it. Right? Simple. No.

McSwegin-Diallo: Right.

Newberry: You give me a glass of water and I pour it through my handkerchief before I drink it; it can't be done. So I did in a little experiment. I did training way up in the north, in Ghana. Well, you know the Housa tradition, their welcome is to ask, "How are you?" "How was your rest?" "How's your wife?" and "How are your children?" and so on like that. And so as part of my training, I used to add to "How are you?" "How was your rest?" "How's your wife?" "How are your children?" "Have you filtered your water today?" And I didn't tell anybody that we had done this; it was an experiment. And about a month, 6 weeks later, I sent a guy up just to see how the post-training reaction was, and he came back and he was blown away. He said, "They asked me how my wife was, how my children were, and they asked if I had filtered my water today." So, again, that's just one application that I found very useful.

I think the other application I learned from smallpox is to look at the use of data. It's so important. With polio, we have an incredible ability to locate cases, and just collect specimens, determine whether this is polio or whether it's acute flaccid paralysis, and we can use that information because it tells where transmission of the virus is not being interrupted, and that's where we go. Again, the enemy is the poliovirus. We're going to eradicate it. We're going to kill that enemy. So I learned that through my smallpox experience.

And I think one of the things that really, really distressed me then, and continues to distress me, was that we didn't leave a legacy. In every country that we went to work in for smallpox eradication, if they had a little, we took everything out. We didn't leave anything but an interest in immunization. And with the guinea worm program, we don't leave anything, maybe a few wells that'll last for a week or 10 days or whatever. You know, a year later, nobody uses it. So there's no legacy.

But now, with polio, we've improved the global capacity

and technical expertise of laboratories by 1,000%. It's unbelievable, the legacy we'll leave with those laboratories. The use of data then feeds into that because epidemiology is about learning the facts, it's about getting your lab confirmation so that you know what to do, when to do it, and where to do it.

We also learned that, as far as the legacy, it should be complimentary. For instance, in India, we hold health fairs, so we're de-worming kids as well as addressing adult needs. We're looking at anemia, and we have these little health camps when we do immunization programs. And, again, it's kind of a holistic thing. I'd like to see this continue.

So I think the idea of leaving a legacy is one of the things that we've been able to apply.

McSwegin-Diallo: Oh, that's great; that's a good example.

I know you're at CARE now and have worked with different organizations since this particular program with CDC. How do you see the differences in administration and so on?

Newberry: Well, you know, Dave Sencer was a remarkable chief. I couldn't say enough good things about Dave Sencer. So if I were to look at some of the inherent difficulties with other organizations that I have and continue to work with, it's really a lack of leadership. Let me rephrase that. It's the difference in dynamic leadership. And we took some shortcuts at CDC. Our focus was on the eradication effort, and we didn't put a time line on it.

When you put a time line-and in India we had a time line-then people look at missing it as a failure. It's not a failure. You missed a time line. So don't put a time line, like, you know, the time line from when the last person develops polio and passes the virus through his or her system.

So I think that's probably one of the most important things that we can look at, the leadership we had, the support we had. I never made a request of headquarters that wasn't fulfilled immediately. I almost got jailed in Nigeria for stealing a boat because we had to immunize all the people living on the banks of the Volta Lake, and we didn't have a boat.

So leadership and strong support, knowing that what we ask for that we could get. The organization, I think, with logistic focus, was tremendous and outstanding. I didn't see a lot of ego and turf problems; in fact, a lot of the normal barriers that are evident in a common effort, I didn't experience.

McSwegin-Diallo: Dr. Sencer said I should ask you about negotiating your cook from Ghana to Nigeria. Is there a story behind that?

Newberry: Well, we had the Ibos, and getting the Ibos in Nigeria to work for us in Ghana was a tremendous challenge. The Ghanaians thought people coming from Nigeria were taking jobs, and they were to a certain extent. But it took considerable intervention and effort going out to the highest levels of government to get that the Nigerian Ibos to come to Ghana with us. Then, when I went to Nigeria on a follow-up assignment, to close out the smallpox regional office, I took a Ghanaian, my driver-mechanic. I recruited him from Ghana, and I also had to go to the highest levels of government to get him approved.

McSwegin-Diallo: You must have had good faith in your staff to go to those efforts.

Newberry: I'd say it was allegiance, it was trust. We became like a family.

McSwegin-Diallo: Well, that's good.

Well, that's all the questions I have for you. But if there's anything else that you would like to add to go into posterity . . .

Newberry: Well, we could talk all day about anecdotes. Like one time I had a Housa working for me who had been married 39 times.

McSwegin-Diallo: Wow!

Newberry: Thirty-nine times. And I would say, "Wow, this is really remarkable." I said, "How, answer me one thing. Have you married the same woman more than once?" And he said, "Oh, yeah." He was married to one woman, he said, 4 times, but not very many. There were about 3 or 4 women he'd been married to more than once. But this one woman, he was married to her about 4 times, and he couldn't live with her, couldn't live without her, couldn't live with her, couldn't live without her. Finally he learned to live without her.

Many of the people we kept our relationship with long after. When I went back to Ghana for the guinea worm program, I recruited some of the same staff and the same superintendent,

and they probably tell more anecdotes about me than I do about them.

But, no. I think the lessons are humility on our part as we work in a program. I think the major task is teamwork and the recognition of who does the real work. It's the house-to-house work. It's getting in the communities, working with the community.

And, unfortunately, CDC and most multilateral agencies are not connected at the household level. Take polio. That's one of the big problems. They're not connected at the household level. They come in with the experts at the upper, rarified air of the stratosphere, and that's not where it happens. It's got to be at the household level.

And then you have to recognize that the enemy is the organism you're fighting; it's not people. When people tell me they're working in Nigeria and they're going to try to keep the Nigerians honest, well that's not our job. I mean, I love Nigeria; I really loved Nigeria. But I don't try to make them honest; I don't try to interfere with their culture, their tradition, and their practices. I always figured that you were successful in Nigeria when you only lose about 25% of your assets to theft and pilferage.

McSwegin-Diallo: Wow, that's funny.

Newberry: So, anyhow, Melissa, thank you so much.

McSwegin-Diallo: Thank you very much.