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**Charles Prather:** We are privileged to have with us today Mr. Walter Livingstone of Miami, where he is presently the administrator of the office of emergency management. But we've not invited him to come today to talk about emergency management. He was long time associated with the environmental health program of the Miami-Dade County—City Health Department and has become over these years a leader in matters environment health for this state.

Indeed, he has received many prestigious awards because of his work, particularly in environmental health, but in public health at large. He tells me that one of his most cherished awards was the year he was selected by the department of health as the employee of the year awardee and, with that, was privileged to go to the governor's mansion with only a bare select few other outstanding employees of the year.

But he's been honored by many organizations on many occasions for many accomplishments. It is a privilege to have Mr. Livingstone with us today. Let me say, on behalf of the libraries of the University of South Florida and the College of Public Health, we are privileged to have you here.

And we say thank you sincerely for taking the time to come and share with us your delightful and accomplish-a-ful [sic] career. Let me ask you, Wally, what got you interested in public health?

**Walter Livingstone:** Well, first of all, I would like to thank you, doctor, for the very introduction that I hope was well deserved. But in any event, I was at the University of Miami working towards a Bachelor's of Science degree in zoology with a minor in chemistry, and I was activated from my reserve unit.

And in 1951 and '52 I was over in Korea, at which time I became involved in some of the environmental conditions, some of the living conditions, and when I returned to the University of Miami in 1953 and received my Bachelor's degree, I was looking around for that area, and at that time, I had an opportunity to work with Dr. T. E. Cato<sup>1</sup> in Miami, and I took a position with the Miami-Dade County Health Department.

CP: Yes, yes.

WL: And basically, my first assignment was I had to go to a three-month school with Dr. Hall<sup>2</sup> up in Alachua County. And then when I returned to Miami after those three months of very learned things such as how to build privies that I started as a Sanitarian-I with the Dade County Health Department.

CP: Speak to that school. That was in '53, '54, '52 that you were there.

WL: I was there in '53.

CP: Yes. Okay.

WL: Actually, it was a very—at that time, much of a Florida, including Miami, we had a lot of rural areas and sanitation and general environmental sanitation with water and sewage and things of that—and rodents, rats, and other vermin, and the mosquitos and things was a major problem.

And so, Dr. Hall was one of the directors of Alachua County Health Department that had a very good hook, tie in, with the University of Florida, and they put on some very excellent courses for general sanitarians, for starting out initially.

CP: Oh, and were you paid? Were you on the payroll in Dade?

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<sup>1</sup>Dr. Turner Elam Cato was the director of the Dade County Department of Public Health from 1942 until his death in 1967, serving the county's public health system for a total of 27 years.

<sup>2</sup>There is an interview between longtime Lake County health officer Dr. Hall and Dr. Prather in the USF College of Public Health Oral History Project collection.

WL: No. Well, no, we weren't. The state gave us a stipend for the three months, and then generally speaking, when the county health director—when you went there he knew you and selected you to go there. So, it was—

CP: So, you had a job, really.

WL: Basically, yes, right, but it was contingent upon successful completion of the school.

CP: Of course. (laughs) Was that a good experience overall?

WL: Actually, it was extremely good because I did things that you wouldn't think of it in today's world, but one of our major things we had to do was actually build and construct a privy<sup>3</sup>.

CP: Dade County didn't have many privies at that time.

WL: Well, we did at that time in some of our western and southern areas. We were quite rural.

CP: I thought you had cesspools.

WL: Well, you had those too. But one of my first assignments in the field as a sanitarian was an area in West Perrine, and one of the chores there, we had to—people had privies, and if they had electric power, we had to use our Florida statutes to enforce them to require them to hook up to sanitary sewers.

CP: Oh, all right. And you did?

WL: Yes, sir.

CP: And you had sanitary sewers wherever there was electric?

WL: Yes, well, that or they would have to go to a septic tank. But, again, you needed the sewers—the electric to get the water to pump the sewage and things of that nature.

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<sup>3</sup>Privy is another term for outhouse.

CP: So important in Miami. Your surface water is just a few inches down.

WL: Yes. Also, Miami-Dade County in parts of south Broward, we have what we call the Biscayne Aquifer, and that is our sole source aquifer, so we had pressure protection. And anything that would contaminate the aquifer is subject to restricted rules.

CP: Back to this training. Was it a good—looking at your career now, which began with that, was that a good foundation upon which you've built, or was it just the beginning?

WL: Well, it was both. It was a good foundation because, for many people, the career didn't advance as much, or they didn't go for higher additional schooling; it really allowed them to understand. It also allowed them to incorporate some of their science, some of the bacteriology, biology, etcetera, that they had at their schools because, at that time, they were looking for bachelor's degrees.

So, it sort of tied the two together. And then as you went to work and you saw others—I was fortunate that I was selected and received a state stipend to go to the Tulane Medical School to get my Master of Public Health.

CP: Oh, oh, oh. All right, all right. Good, good, good. Now, then, that was further education; was that practical or theoretic?

WL: It was practical because I sort of majored in epidemiology, and at Tulane they have a very good school of public health and tropical medicine and parasitology and those. And I was, at the time, I was very much interested in that, and it allowed me to do some of my college work and also have a better understanding of the relationship of the environment of the science to public health and how it effects the people.

CP: Yes, yes, yes. And then you immediately—you applied that once you were back in Dade County.

WL: Yes, I did. We started in various programs in sanitation. And also, we got involved, initially at the time, because Miami was rapidly developing with a lot of small industries, so we applied our environmental health protection, contamination, and ground water. One of the first projects I had was checking into all the plating shops because at that time—

CP: Plating? Like, in metal?

WL: Metal plating, right, where they would discharge acids and various types of cyanide and things into the ground. At that point in time, the water supply systems, many of them were on their own private wells, and it was not that uncommon to find wells that were contaminated with, say, cyanide or with acids or with heavy metals, and so it allowed us to tie it in that way.

CP: Really? What did you do about that?

WL: Well, first of all, we would work with them. They were all basically illegal because in Dade County they had a requirement that if you discharge any liquid waste to the ground, it has got to be protected or cleaned up so that it doesn't contaminate. And, again, they would have to go through various methods of cleaning it or hauling it off for disposal.

CP: Now this was, I'm trying to keep up chronologically, this was mid '50s?

WL: Late '50s because I graduated from Tulane in 1959, and when I returned to work that's when Louie Westbrook, our director then—I think you remember him.

CP: I remember Louie Westbrook, yes I do. Thank you for reminding me.

WL: Yes. Anyway, he was big on this environment and the contamination of groundwater, and he said, "Wally, you've come back, and now I've got a job for you."

CP: And he did.

WL: He sure did because, as I said, after we started the work on the plating shops and the International Airport at Miami was expanding. And that was another, so we just kind of encompassed that into that, and we moved into the airport because that was, we had—the major thing with the airport was that it was a public health service of where they certified for water and sewage and everything like that.

So we had to work closely with them with the disposal, as well as with the airlines who were located there because they had a lot of waste that were.

CP: Yes, that they brought in. A lot of airlines.

WL: And also, they had the quarantine station there. And any garbage and things like that had to be incinerated. From foreign flagged vessels, it had to be considered to burn.

CP: And you all co-supervised that.

WL: Yes, we did. We were the ones that were certified by the [US] Public Health Service<sup>4</sup> to actually approve the water sites as well as the sewage sites. This was also, at that time, we still had trains in Miami, and we had to certify the trains as well as the buses.

CP: How about ships? You were just getting—

WL: Oh, yes. Well, that, we—we—the [Dante B. Fascell] Port of Miami was just really expanding really big. And I used to go in the port there and certify the watering points. And that—and sometimes, see, a lot of these old ships still, some of them still do in some foreign ports, they drained their sewage by port and starboard.

Whatever side of the ship's lifted, they pumped it down and pumped it out. So, they put in big pumping stations now where the ships have to discharge their garbage. The sewage and liquid waste to the sewage system.

CP: And it goes into your treatment? In the Dade County treatment systems?

WL: Yes, sir. Yes it does. Which they've expanded those quite a bit, too because Miami after the war developed so rapidly that we just had to—

CP: Yes. That's the Second World War.

WL: Yes, yes, tremendous increase in population. And many of them, as they expanded west and south, they didn't have sewage, so they went into the septic tanks. So as I said, our water system was a major concern.

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<sup>4</sup>The United States Public Health Service is the primary division of the U.S. Department of Health and Human Services. Its purpose is to advance public health science, and deliver public health promotion programs across the United States.

CP: Yes. Looking back on your earliest days, what would you consider the major environmental public health problem?

WL: Although I spent a great deal of my time in the food industry and then foodborne diseases, what's a major concern? I think that probably water contamination and sewage disposal and rodents and vermin probably was the biggest because it would have the bigger impact.

Foodborne disease, you would eat it and that would be it. But with contaminated water and contaminated rodents, any disease they carry, they were contagious and could be spread onto other people. I think the number of people affected would be greater.

CP: Yes it would. Yes it would. Let me jump real far: today, what do you consider your major environmental problem?

WL: Well, probably again, water and sewage in Dade County.

CP: Really? I'm not hearing you say we haven't made much progress. That's not true.

WL: We've made tremendous—but don't forget, Dade County now has grown to over 2.2 million people. We have many, many refugees; we have many, many undocumented; we still have migrant camps; we still have rural areas that don't have proper sewage disposal. And we, unfortunately, we've had the introduction of a lot of parasites from South and Central America and other places.

CP: That you've never seen before.

WL: Well, that we knew about but we just hadn't seen them.

CP: Yeah. Wow, that's right. That does put onto you an extra load in the surveillance of all that and the containment against outbreaks.

WL: Right. In fact, we've tied—environmental health now works hand in hand with epi<sup>5</sup>. We have a large epidemiology section department. And, especially with the spreading of diseases among people that we—surveillance is the number one key in many of the problems associated

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<sup>5</sup>Epidemiology.



with environmental health. So we associate the two: epi-surveillance and environmental protection.

CP: And you probably employ your own in epidemiology?

WL: Oh, yes. Yes, we—

CP: Like, you were interested in epidemiology of infectious disease for your master's. Did you come back certified? Quote, unquote, certified in epidemiology?

WL: Yes, I did. That was sort of my major, but our epidemiology department is one of the largest in the state. We have—

CP: Well, you're the largest county in the state, too.

WL: Yeah, right. The best, too.

CP: (laughs) The best, too. Okay.

WL: But we had, like, a couple of fulltime medical epidemiologists.

CP: Good. Good, good, good. You've always had an active medical epidemiology program, during my knowledge. And that goes back longer than you, Wally, my medical knowledge, at that. You had always, because Dade County's kind of a thumb sticking down in the Caribbean, a finger sticking there, and you're liable for everything around the Caribbean Ocean.

WL: And especially with the Haitian (inaudible), South and Central America, we have a large, in fact, we're getting large groups from other parts. A lot of Vietnamese and different things of that nature there, coming around. It's just that, as the world grows and as the people are seeking better conditions, we're just getting a lot through the borders. They come up in the planes, and they just bring people here, and we just have a lot of people.

CP: How do you as a department kind of keep pace with that? Do you anticipate, or do you follow up? Are you identifying problems, identifying? How do you keep up with this population growth and with the enlarging number of problems related to it?

WL: We hope to be able to anticipate them; we're proactive. But often times, something will happen that you're not aware of, or it'll catch you. For example, hurricane Andrew might come up behind you. And then some of the, especially some of the newer things of when they have a disease outbreak, we'll have a meningitis outbreak or something like that.

And we could get a big foodborne or something that you don't suspect and get a lot of people involved. So, we have to get assist—we, not frequently, but when we do need, our state health office is very supportive in sending people down.

CP: Oh, good. Good, good. Has that always been so?

WL: Yeah. Basically, in my—we've had a good department of health, and we've had very good working relationships with the secretary and with the epi-people. And they've always been good to us, especially the environmental people; we've maintained a close relationship.

CP: Good. Good, good. And it should be cooperative, shouldn't it?

WL: Right. Some things, you can't do everything yourself. You don't have all the skills and all the expertise, and they were able to bring in the specialties that we may not have at the time.

CP: Yes. And that's useful to you.

WL: Yes. In fact, we would not be successful had it not been for the support you've seen from our state health office.

CP: Good, good. I'm sure they would like to hear that because I gather they don't get too many compliments.

WL: Well, sometimes we holler at them a few times. But all in all, we do appreciate the help, and they have been very good to us.

CP: But your size and the size of your staffing, you can almost stand independently.

WL: Yes. Well, again, we have like, a thousand employees at our health department. And as I've said, we have many special programs that some of the other counties don't have. And due to our size and due to our complexity—

CP: The complexity of your population base.

WL: Population base.

CP: I can't imagine how you can keep up with it all.

WL: Well, again, our Port of Miami is the largest cruise ship seaport in the world. And of course, that comes and goes and brings in. And then with our tourists, with our beaches and things. Well, some of the exciting things we've had, I recall one if I may.

CP: Please.

WL: When I was the environmental administrator at one time, we were coming up for the Fourth of July holidays. Which, many of the hotels on Key Biscayne to Miami beach, tourists come down and are planning their weekend. And then two days before, we had a major sewer break.

And, unfortunately, on the third of July our department—me as the administrator but with backup of our health director—we had to put “No Swimming” for certain sections of Miami beach and Key Biscayne, which is Crandon Park and those hotels. And man, they were screaming and hollering, but they agreed. They shut down, no swimming for that period of time.

Of course, we worked very closely with the water and sewer people as well as with every other agency in Dade County, the parks department, etcetera, trying to get two consecutive good samples. And we didn't make it to the fourth, but we made for the fifth. And so, that was a nice thing. But can you imagine, though, when you have a huge weekend planning? We had one happen near the Labor Day weekend, too.

And these are hundreds of thousands of dollars that the tourists spend. And when you come down for the wintertime to swim here, and then you can't swim because the water's contaminated with fecal coliform. I mean, that kind of makes—

CP: Oh, man. (laughs) I'm recalling, too, not with great flavor, your sewerage outfalls.

WL: Yes, one of the things that has happened. We used to—they would discharge off of Miami Beach in the area we call the Rose Bowl, which was not that far out, just raw sewage. But since the water and sewer company—the Miami-Dade Water and Sewer Company now—they're the major sewer—they have to go into there now, all of them.

We have three major treatment plants: one in north, one in central, and one in south. And all the sewage is treated there. And they've reached primary, secondary, and sometimes they have to go to tertiary treatment.

CP: Yes, yes, yes. I'm recalling that caused you some trouble, too, the sewerage outfall.

WL: Right. Well, that was because they're expensive and, again, the cost of doing business. The Miami River was another one where raw sewage, for years—

CP: It was an open, yeah.

WL: —was dumped into that. And we frequently have major sewer outbreaks there.

CP: But that was okay when Dade County was just 300 population in the old days, I reckon. I'm recalling, too, that you environmental people tell me that, back in the old days, dilution<sup>6</sup> was the solution.

WL: Dilution is the solution to pollution.

CP: Yes. It isn't so anymore.

WL: No it's certainly not. In fact, some of the things that were legal to discharge to the ground, at that time, you were in full compliance, but now no more.

CP: Yeah. Our knowledge changes over time. I like to remark that facts are not static. Facts change over time.

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<sup>6</sup>Dilution is the process of dumping waste, typically organic, into the water.

WL: They sure—yes they do, because it wasn't that long ago that the ships could pump their oily waste and pump their sewage out into the ocean but no longer.

CP: That's right, that's right, that's right, because it is impacting. And I think it's because of the concentration of us humans everywhere, isn't it?

WL: Yes it is.

CP: Well, I'm fascinated that you consider when you first started the major environmental, quote, problem demanding attention was water supply and sewerage disposal. And now in 2002, still, the major philosophic focus is sewage disposal and water supply. That's fascinating.

WL: I think that's basically the core of public health, to protect the public. And, of course, we all have to drink water, and we all have to use sewage everyday, so it's something that's with us all the time.

CP: And has such a grand potential of contamination of so many. Yeah. You mentioned in passing your relationship to food service. Let me mash your talk button. Talk a little about your experience in the, for lack of a better term, control of food-borne outbreaks.

WL: As I said, when I first started with the department, I was in road control for a short time, then as a food sanitarian, where we were assigned territories where we inspected restaurants, the hospitals, and the various nursing homes, etcetera, that served the food. And there, at that time, we were back to the old three-compartment sink with the sidearm, water heater to get the water up to 180 degrees in order to gauge, use the chlorine for the water.

And again, the refrigeration was also a problem because the growth of the bacteria when you didn't keep proper temperatures. And again, we would routinely inspect the restaurants on a quarterly basis. And we used to have major foodborne outbreaks, some of the big hotels, someone's Christmas party or an Easter party or a big event outside.

Like, one time we had the Orange Bowl<sup>7</sup>, and they had a big section there where they had major foodborne. Same thing with the Lipton tennis tournament<sup>8</sup> over on Key Biscayne there, where,

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<sup>7</sup>The Miami Orange Bowl was the home stadium for the Miami Hurricanes between 1937 and 2008, when it was demolished.

<sup>8</sup>Now known as the Miami Open, the Lipton International Players Championships is an annual tennis tournament for men and women.

again, readily perishable foods not kept under proper temperatures. The conditions, the workers' hands, they were not so much clean, and we had had several major hepatitis [outbreaks].

Poppies was an outstanding restaurant at Coconut Grove where all the tourists used to come, and the restaurant where the people making the sandwiches; the restroom there was out of order, so the toilet was still working, but the hand sink wouldn't work. So they'd go there, and then they would continue making sandwiches, and we had a major hepatitis outbreak where we had, I think, 87 people.

We found the source by—we went to several places and actually drew blood samples, looking for IgG<sup>9</sup> and IgM.<sup>10</sup> And as a result of that, through check and press of credit cards because they used to pay a lot through that, we found people down in South America and over in Tokyo and everything, that they had contracted our hepatitis A from the restaurant there, because it was such a tourist attraction.

CP: Oh man. What was the upshot? You were starting speaking of this restaurant in the past tense.

WL: Yeah. Again, the lawsuits and the conditions, well, quote-quote, wasn't 100-percent their fault, the fact that they didn't have proper sanitation. Again, water and sewage, and it ended up with so many—

CP: Did you manage to get much training statewide or countywide out of that incident?

WL: Oh, that? Well, that was, like, we used that frequently as an example. I mean, we brought different people in for it and showed them how. And we'd look back, we did various traces, we did the epidemiologic investigation; we did the cycles and things like incubation periods and the index case<sup>11</sup> and things of that nature. We think we did find the index case, one of the employees that first had it.

CP: That's very good epidemiology. But that makes an excellent training tool for other restaurateurs.

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<sup>9</sup>Immunoglobulin G is the most abundant type of antibody. IgG is found in all body fluids and protects against bacterial and viral infections.

<sup>10</sup>Immunoglobulin M performs a similar function to IgG but it exists mainly in the blood and lymph fluid and is the first antibody to fight a new infection.

<sup>11</sup>The index case is the first patient that indicates the existence of an outbreak.

WL: Oh, yes it does.

CP: Minor little things can cost you your business.

WL: Yes. We also had a major, another foodborne outbreak. It was at a golf course on a Christmas party where it was quite fancy. They had fillets, but they had the béarnaise sauce. And again, that, you know, with eggs in there and all that. And they don't normally—they have it but not at lunch. And so, they took—

CP: And they had this outside?

WL: Yes. And they prepared it well in advance. And you know, with béarnaise sauce, you never bring it to a boil; you always keep it at tepid temperature. And with the eggs, we got a lot of real good salmonella. And of course, the interesting part about that was we did a tact rate at who ate what food and all that.

And the ones that didn't have the béarnaise sauce, they weren't sick; the ones that did, other foods too, but it was quite interesting. And for example, one of the men that was the sickest, he loved béarnaise sauce so he took a double helping of it, and so he—

CP: And he was doubly sick.

WL: Right. (laughs) So, but, I mean, actually, we were able to collect from the stools. Often times in foodborne investigations, you're never able to reclaim the organism, so it's kind of hard. In this case—

CP: Tie it all up.

WL: Right, we were able to tie it all up. So, again, we used it as a classic training example. And again, it's really—we, for some times—you'll understand this when I say shoe leather epidemiology.

CP: Yes.

WL: Where it just keeps going. Interviewing, tracking down, finding out, trying to collect samples for your lab and things like that. It was really one of the better cases because I thought it was really a complete picture. We had the initial person sick, we followed the outbreak, we found the source. So, it was really good.

CP: And in the food, and in the patients.

WL: Right.

CP: Fascinating.

WL: Especially when you can tie them up to the same species, so you know it.

CP: Oh yes. You had that tied up.

WL: Right.

CP: The chain of evidence was locked.

WL: It surely was. And again, fortunately it was from one big—

CP: Was this a caterer or—

WL: No. It was a regular golf course kind of thing, but they had a special party; closed down only for them, about 200 people. It was very prominent company. So they were all their employees, which made it a little better from the standpoint of liability, etcetera.

CP: And for your epidemiologists.

WL: Oh, yes. Right.

CP: It was a little bit simpler. Rather than patients in Japan and South America.



WL: Right. Now, that was quite a thing though. As I said, the thing that allowed us there was the fact that many people paid by credit cards. So, the first thing we asked for was—and I've also, by going—drawing blood from different employees in different restaurants, when you get the IgG and the IgM together, that kind of, that's where it came from.

CP: Yes. Yes. You can pin it down. Fascinating. Okay, foodborne. Foodborne, though, as I suspect, is still a focus because you can make a lot of people sick real quick.

WL: You sure can, even today. But one of the, I don't want to call it highlights, but one of the major events in my career happened in 1980 when we had the massive influx of the Cubans from the Mariel boatlift<sup>12</sup> and things like that.

CP: Oh, yes. Speak to that.

WL: Right, okay. I was down at Key West at Merriott when they came with Louis Benavidez. And then we came back to Miami, and they had set up a number of tent cities all around. And so, the health department, we were doing twice a day inspections. This was supporting the government because President Kennedy invited them in.

And they would come in on boats, and we'd meet them with the Public Health Service; meet them with the thing as they would come ashore and things of that nature. This was before the Krome camps were established, and there were camps set up all over the city and Opa-locka and Miami Beach and things. And we would, again, there were all portable toilets and they were all—sanitation wasn't good. The food, they were coming in and cooking in the open and things of that nature.

And we finally ended up, along with Governor Graham, that he filed suit—well, this was a little later, we finally were closing these camps down; for example, they had about 4,600 of the refugees in the Orange Bowl. Now, we couldn't do anything to get them out, but again, the national league football was to start in August. So, suddenly around July the legal authorities, Let's move them out of there. (CP laughs)

Forget about anything else, we've got to get that football season to start. And then we would periodically close them down, and then the federal government did open the Krome<sup>13</sup> with the

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<sup>12</sup>The Mariel boatlift was a mass emigration of Cuban refugees from Cuba's Mariel Harbor to the United States between April and October of 1980.

<sup>13</sup>Originally a Nike missile launch site during the Cuban Missile Crisis, Krome Camp was converted in 1980 to temporarily house illegal Haitian immigrants. One year later the camp was converted into a permanent detention

INS [Immigration and Naturalization Service]; they opened the Krome camps out, Krome North and Krome South. And again, we inspected those.

There, the conditions, they had five [thousand], six thousand there, and they were living in tents, portable toilets, and the water supply wasn't sufficient. So finally, Governor Graham filed suit against the United States Government. And he said, "Close it or clean it." And over the years were the battles; our department, myself included, I was the main leader of that.

We testified, and we were able to get support. The governor won, and now the camp is still open but with modern sewage, with modern facilities and everything like that. And it lasted for about two and a half years, the whole legal battle. It was quite a major thing. And I think that was one of my crowning things.

And that's one of the things that I enjoyed because that tied in everything: the camps were out in the Everglade; we had mosquito problems; we had malaria; we had other things; we had the right type of mosquito, some of them coming in infected with some of the other parasitic diseases that we got.

CP: Did you ever have any malaria transmission?

WL: No, we didn't. We would find some evidence, one time, at the migrant camps. You know, we would be concerned but—

CP: I remember there were cases. There were active cases of malaria that came in.

WL: Right. Correct. Right, but—

CP: And we got the right mosquitoes.

WL: Right. The anopheles<sup>14</sup> and aedes aegypti<sup>15</sup> for the yellow fever. Breakbone fever<sup>16</sup>, we were concerned with that. But another one I recall that was kind of exciting, and I got a nice award from the archbishop, from the pope. Pope John Paul came to Miami in 1987. We had a massive place out at the Tamiami Park. We were expecting about 300,000 people out there for the pope.

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center for illegal immigrants now known as the INS Facility.

<sup>14</sup>Anopheles is a genus of marsh mosquitoes, many of which can transmit malaria.

<sup>15</sup>Aedes aegypti is a species of mosquito that is known to transmit yellow fever.

<sup>16</sup>Dengue fever.

And so, I was involved with the archbishop and with preparing things in advance, and I was in charge of food and sanitation. So we had to—at that point in time, we had the largest number of portable toilets ever gotten for a single event. And of course, people were catering in food and drinks and things like that.

And it was a confined area, but we were fortunate that as a result of preplanning and, of course, everybody was interested in doing the right thing. As far as we know, we had no additional outbreak foods associated with that. So that was always a—

CP: Now that's worth an award.

WL: Right, and I got a nice one from Pope John Paul II. I got a nice little citation for that hanging up in my office.

CP: And as I saw it he signed it.

WL: Yes, he did.

CP: He personally signed that citation. And we'll—I think that's so praiseworthy, and we'll see to it that your tape shows a picture of that.

WL: Also, one of the things that allowed me to win the award and be selected by the department of health as the outstanding employee for that year was the work I did with hurricane Andrew immediately following.

CP: Oh yes. Right. You were right in the middle of all that. Speak to that.

WL: Well, as I said, although I was the environmental administrator at the time, I was still in charge of emergency management station at the EOC. And I was at the EOC the night the hurricane came through. And then the—

CP: EOC for our audience.

WL: Emergency Operations Center. The Miami-Dade County Emergency Operations [Center]. Our health department has one or two people assigned to the Miami-Dade Operations Center all the time, in events of hurricanes and other events. And then when that went by, immediately I was assigned over to district.

And then I was out for the South Dade Government Center, where the military came in, and I ended up being deputy director for the Public Health Service preventive medicine group. So, there we had about, we had no electric, we had about 300,000 people with no electric, no sewage, no water, and things like that and living in tents. We had four tent cities that the military set up.

And we worked very closely with the Public Health Service and preventive medicine group in aerial spraying mosquitoes and things of that nature. And as a result of that, we think that it was a very confined effort for about three solid months. We had no, what we felt was significant increases of disease. And we felt that was contributive

But one of the big things that we liked so much at the time, Dr. O'Connor, he was the head of the environmental group at that time in Tallahassee. And we needed to do so many surveys and so much work that we were able, through his efforts, we tapped in environmental health specialists from all the counties in the state.

And they would send groups. We had groups of ten and 15. They would send them five at a time for a week period, a ten day period and we were able to rotate them all through there. And they really got a real first hand with that. And we also worked with the military that was set up, the medical bases there. And so it—

CP: It was strategic. You used strategic details, and that would overwhelm the average guy.

WL: Well, again, it was overwhelming, but the good thing about that, we did have so many things in our hands. For example, who could have brought in a C-130<sup>17</sup> to spray the air. I mean—right—that was a—

CP: Right. That had to be nice.

WL: Yeah, right. I mean, the military, they had so much thing. And this was the most disastrous hurricane to ever hit the United States, over \$30 billion in damages.

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<sup>17</sup>The Lockheed C-130 Hercules is a military transport aircraft.

CP: It's still so.

WL: Yes. And it was, as I said, it was because of the government and because of the supplies they brought in. Like, in fact, Ellery Gray, who was ESF 8<sup>18</sup> commander at the time in the Public Health Service. When he retired from there, he's now working at our State of Florida DOH [Department of Health] as the chief of emergency operations. So he kind of carried it on. But we've learned a lot.

We've learned, again, we're not an island to ourselves. We have to work with other groups, we have to be able to plan and to recognize that we can't do everything ourselves and to call upon the people that we can. I think this brings up your earlier question where you asked about anticipation. That's one of the things that we try to look ahead.

So we all of a sudden don't get hit in the back and find that, Oops, we should have done that. Sometimes we have to respond to, you know; rather than anticipate, we have to respond. But as technology improves, it brings us additional problems, but it also makes us more capable if you've got a well-attuned, trained team. And that's what we talk about, teamwork.

CP: Oh, yes. Hurricane Andrew really shook the boots of the United States from a natural disaster planning scheme, and I know that Florida was shook worse to its boots. But going out of that disaster, I think Florida now is probably ahead of most states in being ready.

WL: I think so, but one of the also things that we—you know, the way we do business changed as a result of hurricane Andrew. If you used to remember, we had our county health department clinics, so people would come there, but now we're more mobile.

We go out into the areas; we have our mobile chat team; we have our mobile units that go out to where the people are, where we can catch something right at the very beginning, the basic environmental health and public health, and immunization, nursing and all that.

CP: I like that. So you go out. That's one of the lessons we learned?

WL: Yes. Lessons learned. Hurricane Andrew has a whole slew of lessons learned.

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<sup>18</sup>Emergency Support Function #8 of FEMA provides the mechanism which provides supplemental assistance to State, tribal, and local governments for public health and medical services in response to a public health and medical disaster.

CP: As a matter of fact there's a book full of them.

WL: Right, there is. We had an arrangement with Florida International University where they published a nice real thick book as you said on hurricane Andrew, lessons learned.<sup>19</sup> And we applied many of that. I was up to Opal [Beach] if you recall. I went up to the north part of the state and we camped out there and with the various islands.

There were the resort islands off the west coast panhandle up there. And it helped a lot. And again with the rapid impact teams, the surveillance teams we had that worked out of the state; pulling together with all the other departments, we were able to make a real impact.

CP: And you were out in the middle of all that.

WL: Again, it was one of the things of being in the right place at the right time.

CP: Or at the wrong time and the wrong place.

WL: Well that could be a thing of—

CP: I think your prior experience, your experience of getting you up and ready for that was terribly valuable to you.

WL: Right, as I said, I think I had a very broad picture because of training and education. Also, later, in 1965, the Florida Power and Light Company putting in the first nuclear power plant in the State of Florida.

And there, I had an opportunity to the Public Health Service. I was a fellow at the University of Miami, where I earned a Master of Science degree in radiological physics. And I did a lot of the initial environmental impact work around Turkey Point<sup>20</sup>.

CP: That's good experience.

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<sup>19</sup>The book is *Lessons Learned from Hurricane Andrew: A Conference Sponsored by Florida International University* by Philip H. Mann.

<sup>20</sup>Turkey Point Nuclear Generating Station is a nuclear power station located in Florida, next to Biscayne National Park.

WL: Oh, yes.

CP: Man, I didn't know about that piece of your history.

WL: Yeah, right. As I said, one of those fellowships was really nice.

CP: Good. I'm recalling a lot, lot, lot of published congressional, US Congress hearing, Florida legislative hearings over a typhoid outbreak in a migrant labor camp.

WL: Yes.

CP: Now speak to that.

WL: Okay, we had a situation where we had a major, as you said, typhoid outbreak. And they had an old, a big old water tower there. And as it turned out, some of the younger kids would go to the top and come in the hole and they would swim in the—

CP: The water tank?

WL: And I think one of the—a couple of kids, they defecated in the water, and of course they had the typhoid organism. And they didn't have proper chlorination or anything, so we did have a major—and then again, the preparation of food and other things of that nature, it wasn't good. They were getting food prepared by people that didn't wash their hands properly. They didn't have proper sanitation toilets and things like that. So it was fecal, oral, hand to mouth.

CP: The whole thing was?

WL: Yes, basically.

CP: Why—I'm trying to remember. I remember I was before some of the legislative committees that were investigating this, and they wanted somebody to hang!

WL: Oh, that. They were looking for a guilty party. Unfortunately, there were many guilty parties, and you can't hang a whole bunch.

CP: And also, the US Congress sent the House of Representatives committee on health, committee on public health, came here for hearings. Came to Miami, Florida for hearings.

WL: Oh, yes. At that point in time, not only for that one particular migrant camp, but we were in the throes of a—you know, South Florida at that time, South Dade, there, they were tremendous as winter growing because of the crops. The migrants would move down, and the sanitation conditions in general, both from water sewage and personal hygiene, they were just nonexistent [sic].

And it was a big political—because what would happen, and for example, generally speaking, they would, say, start up north. We had the major—we had the eastern flow, and then we had the Mississippi flow, where the migrants would start at upstate New York, and as the weather got colder, they would move south.

Well, if they suddenly got a cold spell, say, in the Carolinas and the crops were wiped out, they would bypass that, and they would all head to Miami or South Dade. And therefore, we would get two or three times—they were sleeping in cars. And in fact, that was one of the things, buses and things like that, that brought them down right outside the Everglades migrant camp, which was our main camp. And the media had a feast in that.

They were seeing these families living in cars and trucks and things like that with no sanitation, not even portable toilets and things like that. So that just kind of stirred the whole pot up. And then, of course, in wintertime, it's nice to come to Miami to do investigations when you're coming out of the north where it's so cold. So, that kind of added to it, too. So, we became the center of it and we—

CP: Yes you did. That whole thing was a mess for the wrong reasons, wasn't it?

WL: The one good thing—what did come out—because our sanitary code was modified; our state health department got additional authority and rules and regulations. They modified 386 and 381.<sup>21</sup>

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<sup>21</sup>Florida Statutes Chapter 381 and 386 establish the general provisions and particular conditions for the management of Florida's public health, respectively.



They gave us additional powers to allow us to really—when they set up the code for it, they required the migrant camps to be licensed in advance; you had to apply. Our field environmental would inspect it first to make sure. Even at their best, the minimum standards weren't there greatest.

CP: I know.

WL: But again, it did go a long ways to preventing the spread of disease and outbreak and things of that nature.

CP: Oh good. So, there was a positive result from that.

WL: Right. Sometimes it takes a bad event to do something positive.

CP: Yes. That one and hurricane Andrew. And I'm associating those two. The outcomes, oftenly [sic] for the welfare of the peoples, were sharply improved, but a few had to suffer miserably. But it benefits the rest of us.

WL: Right. Well, again we have to unfortunately continue to have that.

CP: Yes. Even today. Well, these are some exciting things. I could suspect you could sit here for hours telling me exciting stories, individual ones. You got another one on top of your tongue?

WL: Not at the moment. I will before we go to—

CP: Okay. But you will think of it?

WL: Yes. I think I will, probably before I finish. Well, we did have a couple of good ones. Like, in the Miami International Airport. I don't know, before they had the modern septic tanks and sewage disposal system, they had what they called the old Imhoff tanks.

CP: I know the Imhoff. And that's what was at Miami International?

WL: Yes. And again, it discharged into a body of water that flowed into the Miami River. And in addition to they weren't that sophisticated, and they pumped greases, oils and other chemicals, as well as sewage together, and it got into the groundwater and got into the Miami River.

And we had some major, major water pollution problems. Of course, water pollution in Miami is a big problem because, as I referenced, the whole Dade County, south Broward County and those were under the Biscayne aquifer. Which is a sole-source aquifer and is protected quite a bit by the federal government. Special rules were by EPA [Environmental Protection Agency]<sup>22</sup> regarding sole source aquifers.

We don't have any surface water. All our water comes from the ground and is pumped up. And contamination is a major concern. Well, we had a real—I do have one exciting one that happened right after hurricane Andrew. As a result of hurricane Andrew, of course, the garbage pickups were bad, they sewage and everything. But we had a tremendous increase in the rodent population.

CP: But you were a rodent expert because you got started in rodent—oh, go ahead.

WL: Right. But what later developed, which became quite interesting, we had a gentleman in south Dade that developed the Hantavirus<sup>23</sup>. So, the federal government, our state health office of epidemiology, we came down. And they were trying to determine where it came from, so, with CDC [Centers for Disease Control]<sup>24</sup> money, we were able to set up a rodent trapping program.

We did a ten square mile area of where the gentleman caught it, and we trapped over 1,600 rodents. A majority of them were called sigmodon hispidus; that was a special type called the cotton rat. And we would catch them alive; we would anesthetize them and bleed them. And then send the blood off and would also kill them with a special injection.

Humanely, we killed them. And we sent their blood and the bodies up to CDC, to Jacksonville first, then to CDC. And in their work they found out that we had discovered, or isolated a brand new Hantavirus that had never been known before.

CP: Really?

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<sup>22</sup>The Environmental Protection Agency (EPA) is an agency of the U.S. federal government whose purpose is to protect human health and the environment by writing and enforcing environmental laws passed by Congress.

<sup>23</sup>Hantaviruses are RNA viruses that are potentially deadly to humans; they normally infect rodents without causing disease in them.

<sup>24</sup>The Centers for Disease Control (CDC) is the leading national public health institute of the United States. The CDC focuses national attention on developing and applying disease control and prevention.

WL: Right. Oh, yes. And they called it the Black Creek Canal virus because—

CP: That's where you found it. Next to Black Creek.

WL: Close to, near, right. And but there we had Public Health Service people coming down. We had state of Florida people coming down. We just had a major impact, but it was really a very well defined program because we did what we set out to do. We had John Hopkins University; their best expert on rodents came down. He had worked on some Hantaviruses out in the Midwest.

And so, he came down, and we designed a plan in advance to catch the rats alive, to determine what kind of food they liked the best and all that. And then we would anesthetize them, and then we would draw blood from them, and then we would send the bodies and the carcasses up to Jacksonville and then to CDC. And by sorting them out, it turned out that 13% of the cotton rats that we caught were positive for Hantavirus.

CP: Really?

WL: We were fortunate that this particular one, the infectivity rate wasn't high and the virulence wasn't high because the man did survive. Although, it was very nip and tuck. He was under ventilators and everything like that for a long time.

CP: Did he have the Black Creek virus?

WL: Yes. Oh, yes. It was later identified for sure.

CP: Okay.

WL: And at first of all, they didn't think we had it here because they tried to find out where did he go? Where was he at? It finally turned out to be—

CP: Yeah. No, that would be the last thing I would think of; that you have endemic Hantavirus.

WL: Right. And it became quite a, as I said, it was—we since then, have had not had another one, speaking of a separate case.

CP: No human cases.

WL: Speaking of its infectivity rate as well as its virulence rate. So, from that standpoint—but this was I think, a major success because of what we were able to do and find, and got several write-ups in virology, *Journal of Virology*<sup>25</sup> and things like that. And so, I was sort of the leader of the pack on that one, working with the public.

CP: That's marvelous. We started with the upset of the rat population. The Hantavirus, as I recall, is related to disruption of the rat normal system, is when you get an outbreak of Hantavirus.

WL: Well, in this case and others, like these we've had some bad ones in Mexico and then they've had some recent bad ones up down in Central America, Brazil, and all that. But apparently, it's natural to the environment. But, as you say, sometimes things happen where the population—but we've also had some outbreaks of leptospirosis because a lot of times we had some of the grain shipping, where they'd get them with the rice and with the things.

And the lepto [sic], you wouldn't know it, you wouldn't see it or anything like that. So we would have to be very careful with the rodent control, with the pesticide company, especially on the wholesale fact, where we inspect them and all that.

CP: You do? You do?

WL: Yes.

CP: You still have an active rodent control program?

WL: Yes we do. We got it through the neighborhood program, the neighborhood improvement program. We got—the federal dollars and the state dollars dried up. But because of Miami, the tourist area and the problems with the rodents, we were able to get our county commission to give us considerable dollars, CDG grant. Right.

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<sup>25</sup>*Journal of Virology* is a peer-reviewed scientific journal that compiles research concerning viruses; it is published by the American Society for Microbiology.

CP: So needed. So needed.

WL: Community Development Grants that we'd get.

CP: Yes, for rodent control.

WL: Yes.

CP: And you'd go out and inspect for it, and you provide rodenticides?

WL: Well, no. Not anymore because the recent requirements the federal government has got now in the handling of rodenticides and pesticides, we provide the test work. We provide all the evidence. We show them how the individual homeowner can prevent through rat proofing, through proper sanitation. Like, for example a lot of people say, I don't know what happened.

But you find out, Well, I give my dog food outside at night. Of course, what the dogs don't eat at night, the rodents come out. And first to come, we had this one beautiful home in of the better cities in Miami, and the woman couldn't understand it, We're so spotless here; we have rodent control people come, companies come, exterminators come.

But what we found out was that she had a number of avocado and mango trees, and they'd fall to the ground, and they wouldn't pick them up. And then you'd see them gnawed with rats and things at night. The roof rat was a particular one in there. And they had a nest in the roof of the house or the garage that they didn't know about and things like that.

So, when you show the people these things, again, it's education. And that's one of our big things, education. You know, trapping and killing is—it kills those, but then the minute the conditions don't change, they come right back again and everything.

***Tape 1 Ends; Tape 2 Begins***

CP: All these new things. I'm remembering that you, too, were involved with the discovery of, or the documentation of, other viruses. Besides the [Hantavirus], I think of the encephalitis viruses, and some names I think of are the Venezuelan [equine encephalitis] virus.

WL: The Venezuelan virus and the Tamiami virus. The Everglades, we had a fairly large mosquito program in Dade County, not through the health department but our epidemiology people up in Tallahassee; they would come down, do quite a bit of work with that. We also, I recall a couple of times, for a while, we had the aedes aegypti with the dengue fever. There were various types of—

CP: Dengue. There's another name for that.

WL: Breakbone.

CP: Breakbone.

WL: Right. It affects bones. It doesn't kill you, but you wished it did. (CP laughs) And we had some of the problems in Miami because a lot of the people—they had it over in Cuba, and then when some of the Cuban folks went over—Castro sent some of his soldiers over to Angola, they brought back the types one, two, three, and four. So we had it all. They stopped by, and anyway —

CP: They stopped by to give you something.

WL: Yes. And I recall it wasn't a—the aedes aegypti mosquito would carry it, and it's known, as I said, it's known as the tin can mosquito or the backyard mosquito because it breeds in small containers of water and quantities of that. And it's sort of with the population. Kind of a city mosquito.

CP: A city dweller. It likes people.

WL: Yes, right. And so, we would have to go in a lot of the poorer areas. Especially in sections that were frequent. When the refugees came in, Haiti—in Little Haiti, down in the northeast section of Dade County there, they were large populations where the Haitian refugees moved in. And we would go there and go do an environmental survey in each of the homes, making sure they dumped the thing.

And I recall that at times the concern with the aedes became so severe that the health department and other agencies, they tried to discourage people from going out at night or evening time, when they would be most thing. We had a couple of situations where we had a major football game at a Tamiami park, which was out sort of in the west, and there was a lot of mosquitoes.

And it was an important game. And so, the health department, we were issuing directives or requests for people to curtail the activities. And rather than cancel the game, because it was important, we were able to work with our mosquito control folks. So a couple hours before the game they fogged the whole stadium.

And I did some of the work, had to encourage the people to wear mosquito repellant, wear long sleeves, and things of that nature. But again, it had an impact on the mosquito, and we were able to get rid of that. We've been successful, I believe. We haven't had any—although we had a lot of people that contracted the fever, we couldn't show that they acquired it here in Dade County. They picked it up in the islands or somewhere coming in.

CP: Yes. Yes, yes, yes. Those are good experiences. Tell me how you came about the, uh, Tamiami virus, you say?

WL: Right. That was just a—with Dr. Bill Bigler,<sup>26</sup> who was up at your state office there, he did some research. He did a lot of his doctorate on mosquitoes and entrapping various mosquitoes in the outlying parts of Dade County and things like that. We discovered it. It was noninfectious though, or it didn't hurt humans so it wasn't given—

CP: As far as we know.

WL: As far as we know, that's correct. So, it wasn't given that much concern because it wasn't causing harm but as—there's quite a few of—they're later on finding that some of the things that they thought weren't bad turns out to be bad.

CP: Yes, yes, yes. That's right. As we said, facts change over time.

WL: And the V.E.E. the Venezuelan eastern—now, we've had some bad outbreaks of the equine encephalitis, which we have been concerned with. And I think the latest thing we had was the West Nile virus.

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<sup>26</sup>William J. Bigler, Ph.D., was Deputy State Epidemiologist for the HRS State Health Office, Disease Control and AIDS Prevention program, Research Coordinator, Epidemiology Program Supervisor, and Senior Epidemiologist with the Department of Health, Bureau of Epidemiology. There is an interview between Dr. E. Charlton Prather and Dr. Bigler in the USF College of Public Health Oral History Project Collection.

CP: Oh, you've got that too.

WL: Yes. And in fact, we've had a couple of major programs. Our office, the environmental office and the neighborhood improvement office, which I was directing at the time, we would take calls in on dead birds. We would pick up the dead birds and put them on ice and fly them up to the Tampa lab, did the work. And we had a number of positive birds. Initially, they thought it was just in the crows and a few of the jays and things like that.

CP: That's right.

WL: But later on, we found that it was in other birds, mocking birds and other birds that we didn't think initially. And again, that was a major problem because it was—especially, it affected horses. But we've had a number. It started, I guess, in the northwest of Florida, where they did the Horse Country and all that.

And a number of people were sick. I don't know if any died or not, but I know they became quite sick. And we did have a few sick people in Dade County from it, one of them down in the Keys. And so, again it was strictly West Nile virus. The birds come in over winter and the mosquitoes come with the birds, and then they multiply.

It's probably, some of the people will know better this winter or next summer because the winter time is key; the population drops down because of the cold weather. But some people believe that, probably, it's endemic in the area now. And of course, next year will tell. Trapping birds, bleeding them to see what it shows.

CP: Did you do that this early part of the summer? You have an ongoing surveillance program?

WL: Yes. Right. Absolutely. In fact, we've collected probably the largest number of birds of any, because we're the biggest and we had enough people to do it. We had some special funding that allowed us. See, one of the problems that a lot of the health departments have, is that with special projects, they would like to assign one or two people to do it, but there's just no funding.

And if you take someone from doing one job that's mandated or required and you pull him off, that job doesn't get done. And with the new accounting with the health department now, their categorical funding, dollars for that person is for that job, and you can't rob Peter to pay Paul. And so, we're fortunate that we were able to get special funding through our county for that because anything that effects the tourists is a big concern of Dade County. You know it.



CP: Oh, yes. I would hope so. But for my curiosity, is the mosquito vector for West Nile known? Is it different in Dade than it is for somewhere else?

WL: There's a couple. There's two or three mosquitos. The Culex is one of them. There's two or three that they say could do it, and I'm not that knowledgeable. I do know that the Culex has been identified along with a couple of other mosquitoes.

CP: Okay. And that's true everywhere we have the virus?

WL: I think, as far as I know. It started out in New York, and then we followed it down and it jumped a few areas. But it was followed because it had a big outbreak in New York.

CP: That's right. Our original outbreak, original knowledge. Well, your experience sure spread some. You've got a broad experience.

WL: Well, I guess that's a result of living in a community that has a lot of things that happen.

CP: (laughs) But your career is not limited to environmental health, and this experience and background you've had I know has brought you into other areas. And indeed, presently, among your title is not environmental health.

WL: No.

CP: You are only tangentially related to environmental health. (inaudible)

WL: Well, as we've progress along—one of the things that we're doing now as a result of 9/11 because terrorism now is part of our everyday job, especially in Florida, South Florida, beginning with the anthrax. Prior to the anthrax we had a number of scares of white powder incidents, anthrax scares and things.

For example, in Miami Beach, back in November of '98, there was an active newspaper, weekly newspaper on the beach that's pro-abortion. And of course, we've had some bombing of abortion clinics in Miami. We have a lot of pro-life problems with the abortion clinics. And they got a letter at the abortion clinic—or at the newspaper, and they opened it up, and it had white powder in it.

They got people exposed, so they hauled a number of people up to Mt. Sinai Hospital, and I was called in with them because—to see what we could do. That's when they (inaudible). It turned out it was a fake and we had a number of copycats. And so, we developed a response to that, fairly act with the health department. Working with the—

CP: All ready?

WL: EOC and working with the FBI and working with the HAZMAT and our lab. We're very fortunate, with Dr. Pillai we have a molecular microbiologist there. And we have some PCR equipment that we have to identify. And then with the anthrax that we had in Palm Beach, we have a level 3C lab, which is the first level 3C lab in the state certified by CDC.

And so, a lot of the samples were brought from AMI [sic] building, and we clearly showed it was the anthrax. And with some nasal cultures of the people there, we identified the anthrax. And then of course, we started expanding to all the white powder threats and everything like that. And so it's just a part of life now.

Like, for example, in Miami, I don't know if we have it other places, but around our big federal buildings, we have these big orange markers that keep cars, so you can't park close, as a result from the Oklahoma Bombing now. And so, I guess the whole United States has been affected by 9/11, and I think we just see regular change in life. And as we know, any of us fly nowadays we know what security we have to go to.

CP: Yes, yes, yes. That's frightful. How do you describe your current job?

WL: Exciting. But it's very real because, all over the world, we're seeing things happening; we're seeing how it can be relayed. We're concerned—the biggest emphasis now is with the smallpox. And Dr. Ogenobi [sic] and the CDC, they're going to major efforts. In fact, through the governor and the Florida Department of Law Enforcement, they've set up seven regions throughout the state, where each region—region seven is the region I'm in.

And I'm working with that. That's for Monroe County, which is on the Keys, Miami Dade County, Broward County, and Palm Beach County. In our four counties, we make up 35% of the state population. And we have some of the highest at-risk sites, like major event seaports and massive populations, and we're working very closely.

Smallpox now is the big thing that the department of health has working with the University of South Florida. They're developing a template for all the seven regions because different regions are different than other regions in size and population—

CP: And their risk foresight.

WL: Right. And again, they figured that smallpox is the worst scenario that can happen. So, if you can prepare for smallpox, you can prepare for everything else. And that's actively going now because CDC has released a lot of dollars for the various states and for the response. And so, we're working toward that, now, trying to hire some additional people through the CDC dollars that were sent down to us.

CP: What are you going to do with this new staff?

WL: Well, prepare. It's not some—preparation is the key. As long as you can get a stab—and again, it's not a single county. Although, the health departments are really still stove piped. Each county health director still reports directly to the state health officer or the secretary.

Although, FDLE [Florida Department of Law Enforcement] has the legal boundary for region, although we are working in regions, so we're all working together. But for example, a smallpox outbreak in any Palm Beach, Broward, Dade, or Miami, that'll affect everybody. It's not—

CP: Yes siree, bobby.

WL: We're really not like we used to be. You don't have it in a single community because of the transportation and the infectivity. Again, you can be contagious before you show. So it's very difficult. And we're working on setting up various facilities, like the X facility, the C facility, the R facility.

Again, monitoring the people that may develop fevers. Again, I know the CDC has a whole cover—government—in fact, the whole country, they're battling back and forth. Should we immunize or vaccinate for smallpox or not? Because when I was a kid growing up, I'm sure it was with you, this was automatic. When you went to school at a certain grade you got smallpox [vaccine].

CP: Yes we did.

WL: Right. And so, but now it would be a massive thing. And because of the immunosuppressed, not just for AIDS or HIV, but so many people now have other things, like under chemo or different therapies—

CP: It could cause a lot of trouble.

WL: A lot of trouble. So, I think the current policy is to wait for the first one. Although CDC now is doing some investigative work on groups that they're trying to immunize—vaccinate and then pull the blood serum for the VIG<sup>27</sup>. So—

CP: Good, good, good. Stock up some VIG. That'll be valuable. These are frightful things, Wally.

WL: Yeah, but it's just the world we live in now. Though, I mean, back when, it used to be other things. Remember we had the polio? That was a frightful thing. Activities were closed down. You didn't gather together in the summer and things like that. So each new threat we just have to work with to prevent again, I guess.

CP: We use our best knowledge.

WL: The best we can. I think we've learned from the past, and I think that's what we're doing now.

CP: I hope we are learning from the past.

WL: And I think that, hopefully, people behind, coming after you and I, will learn a little bit from what we did. And we've learned from our predecessors and hopefully it'll all be that way.

CP: Yes. Goodness. Well, you're—I'm just so excited about your career.

WL: Well again, as I said, I've been very fortunate that God has been good to me and that everything, you know, more people have been good to me than bad to me. I think there's always the good and the bad, but I've been very lucky.

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<sup>27</sup>VIG, or Vaccine Immune Globulin, is the smallpox vaccine.

Well, again, one thing that I've found out with the health department people, regardless whether they're state or local, and again, as you know, as well as we all know, at the beginning the health department didn't pay the best salaries. But we really got a good dedicated people that—

CP: Yes, you were one of them.

WL: Yes. But again, sometimes though, it's very valuable. Public health is hard because it's hard to prove, how did you prevent Bob from getting sick or Mary from getting sick? Where if you break your bone, you go to the doctor, and he fixes it.

CP: That's right. And it's that stone or that bicycle that did it.

WL: Yes. Right. Right. So, again, some things you work with, though. You can look at the past year. In one year, we had this number of cases, and now it's down to this, now we don't see it anymore. Well, smallpox and public health; worldwide eradication, when was it? In '74, in the seventies, The World Health [Organization] said there's no more smallpox, and now we're looking at that again. So, it seems to go around in a big circle.

CP: Yeah it does. We've changed the names.

WL: Yes.

CP: Fascinating. Over your whole career, what's the highlight?

WL: I would have to say hurricane Andrew because I grew up in Miami. We went through some major hurricanes that I recall back in '35, '36, and '47, the '50s and things like that. In fact, a highlight was, I remember when we were growing up, as a kid we were in a two-story house and the roof blew off. And I can remember my dad—we had wood floors—with a big hand drill, drilling holes in the floor to let the water run out.

CP: (laughs) Really?

WL: Yes. And then, as I said, because of my job assignment down there. And when I saw the devastation in south Dade, because I had inspected migrant camps before; I had inspected south

Dade; I knew the area. But the total devastation—you know, I had seen some bad conditions when I was in the service and things like that, but it was just an amazing thing.

Here, one day we're this and the next day—like, Everglades migrant camp, they had 500 trailers there. It was a lot of people, fortunately evacuated. But a couple of days after the hurricane, when I was there—I was there, I think, three days after the hurricane—there wasn't a trailer standing. It was flatly leveled.

There were whole blocks of houses that were flat. And it was just almost a third world for a while. And so, again, the work that we had to do and things like that, I think because it was long lasting, something happened real quick; boom, boom, boom, and it's over and all that. But this, and again, also I think—

CP: It drew out and drew out and drew out.

WL: Right. And also, I think the success, if you want to call it, as a result of a disaster, a calamity, that, through the combined work, the health department played a key role, a major role along with other agencies, the state health office, the CDC and those military. But the fact that there wasn't major outbreaks of disease, I think, when you look at that, I guess I'll always—I'll tell one little story if I may.

CP: Please.

WL: I was assigned as emergency manager at the time; I was at the EOC, Emergency Operations Center, when the hurricane went through, and we had trouble with one of the major hospitals on Miami Beach that wouldn't evacuate. It was in a flood zone right off the water there. So, they finally reached the governor's office and tried to get them to move.

And so, I got a call, and it was rather noisy down there, and I said, "Who is this?" And I couldn't hear him too well. And I said, "Would you spell that for me?" And he says, "C-H-I-L-E-S." And Jim Touey was there, and he never let me forget that. I said, "Yes, sir, governor. Anything you want, governor." (CP laughs)

CP: Yes. But I hope he understood. He subsequently got to meet you.

WL: Oh, yes. In fact, as I said, maybe that was one of the highlights, too, because I think one of the highlights of my health department career was when I was selected. Buddy McCay at the

time was our acting secretary, the lieutenant governor. And they invited me up to the governor's mansion, and they presented me with the award, and it was nice. So, I think—

CP: We're going to show the award.

WL: Okay. So, I think, as I've said, something that started out and you worked all the way through and had a good outcome in spite of a bad initial starting at the hurricane and worked up and then you saw the success of it. And then you, of course, you get recognized by the governor; that's not too often you get that done.

CP: No it is not.

WL: So anyway, I think, probably, that was a highlight. And also, sometimes we get good things and other things. Sometimes we say, Well, we were lucky. But this was one I think that I earned. And so it—

CP: (laughs) Good.

WL: And so, it's always better when that happens.

CP: Yes. Great. Great, great, great. I'm aware that in your career, too, you have done a fair amount of travel into the Caribbean Islands for an organization called FAVACA. First, what's FAVACA?

WL: That's the Florida Association for Volunteer Agencies for Caribbean Action.

CP: All right. And now what do they do and what did you do?

WL: Okay. Basically, this was sort of founded by Governor Chiles and—

CP: Graham.

WL: Graham. Excuse me, Governor Graham was the first one; I'm sorry about that. Governor Graham and then Governor Chiles carried it on. But Governor Graham, at that time and around

the '80s and things when we were having these massive influxes of refugees, not only from Cuba, from Haiti and the other Caribbean countries, that some of the recent environmental conditions and economic conditions were so bad.

So, the State of Florida, under the direction of Governor Graham, they would send people to train and work with the people on various issues that would, perhaps, make them more economically stable and improve their environmental conditions. Our first trip was with our secretary, Dr. Howell<sup>28</sup>, when we went to Haiti. In the first trip I was on, drinking water was a major problem over there, sanitation. So we worked on that.

Then we had a major rodent control problem in the islands. They would pick the grain, put it in those storage silos things, but then the rats would eat half of it and things like that. So, we went there twice. Four times, actually, all in total to Haiti. And then that went real well, So FAVACA expanded, and I went down to Belize three times.

Again, Belize had a problem, they had a major river, and they had outdoor privies that dumped into the river, and they didn't have a good water system or sewage system or garbage pickup. They had those types of problems, so we worked with them. We went down there one day and we trained—one of the things that we did that's good, we just didn't go down there, we went down there, not in a coat and tie, but to—

CP: To do something.

WL: Yes. We worked with the people. We gave them training courses, and then we would come back six months later and follow up to see how they did. And that was it. And then, again, I made courses, training. I went down to Barbados. They had some other problems down there and then I went to the Bahamas a couple of times, where they had environmental problems in the Bahamas.

And so, it was just traveling around with the Florida Association of Volunteer Agencies trying to improve the living conditions, the environmental conditions, the economic conditions of the area, and it has been quite successful because the association continually gets refunded, and they're expanding quite a bit.

And again, for those trips I was selected as a volunteer of the year in Tallahassee; I got a nice award. But again, this is things like in your own backyard. You're doing things you're familiar with. I mean, catching a rat in Miami is no different than catching a rat in Haiti, or the protection

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<sup>28</sup>There is an interview between prominent Florida public health figure James T. Howell and Dr. Prather in the USF College of Public Health Oral History Project collection.



of it or something like that. So, from that standpoint, I just had an opportunity of utilizing my training that I had got through both education—

CP: And your experience.

WL: Yes, sir.

CP: Yes. That's marvelous. Those are highlights. Is it fair to ask you your lowlight of your total career? And if you can't speak to that say, I can't speak to that.

WL: No, I can't speak to that. I'm sure there was a little minor thing, but never to the extent that you felt poorly or something like that. I think a couple of times I might have gotten in trouble or something when I—

CP: Oh, I'm not talking about those. Just an example, probably in my own career, the low point of my career was the—it was July the first, 1969. The day that the state board of health, or as I like to say, organized public health in Florida was abolished. That was the low point of my career.

WL: Again, I don't know if I want to call it a low point, but I think we were the state board of health, then with the division of health, and then with the formation—

CP: Yeah, program office.

WL: Yes. Program office. And then with the formation of HRS, which is nothing really against HRS. But then we became so big and large that the agency in itself was not—no longer able to focus in on public health. And I think probably—

CP: It had other real problems. Public health was not a problem—

WL: No. Right.

CP: —because you were functioning well.

WL: Right. And then, as I said, it became more bureaucratic in throughout the state, and I think that, probably, a highlight was when we back up and we became our own department again: the department of health.

CP: In '98.

WL: Yes. I think that was—

CP: Now, that's a highlight.

WL: Yes. Right. Yes, right. No, but again as I said, I've been very fortunate with the department in things like that. So, I can't really think any low periods in time. There was a certain thing that you maybe wished the outcome had been a little better or you got a promotion or something like that or more money.

CP: Yes. Oh, yeah.

WL: Right, but—but—

CP: But that's not what I asked.

WL: No, I know. But there were really no truly low points if you want to say.

CP: Ah, marvelous. Marvelous. Now, a few students and others that are interested, students who will be interested in environmental health of here, of the college of public health and of the university will watch your tape. But also, I envision historians, Florida historians, will be watching your tape.

What advice would have, say, for a college of public health student just now beginning and is trying to decide, What am I going to do with all of this education. Do you have some advice for the students? College level and early graduate students?

WL: Well, I don't know if I'm the one to give advice but—

CP: Yes you are.

WL: One of the things that I think is important, not only in public health but in any career: it's got to be something that you're interested in, something you're willing to pay the price. Success in any career doesn't come unless you pay the price. In today's world, you've got to have education. You've got to be in sciences, you've got to have graduate studies. It's no longer satisfactory just having a Bachelor of Science degree or something.

And again, you've got to dedicate yourself because even in today's world, while the salaries are much better, we're never going to be millionaires. We're never going to be the head of a corporation. We're never going to live in three and four hundred thousand dollar mansions and things like that.

So, you've got to be willing to enjoy or take pleasure when you do something that you know has benefitted other people, when you can see the success of your efforts. And I think that's one of the things. You've got to have a special feeling; you've got to be able to relate well to people. You've got to—not that you have to be extroverted, but I think you've got to take satisfaction in small things.

CP: You've got to be able to do that.

WL: Yes. And also, you've got to be able to—sometimes, public health is not always being nice. Sometimes you've got to take enforcement action. Sometimes you have to because one of the things is that our chapter's 386 and 381, we have tremendous authorities now. The legislature's just given us more.

And with our 386 we bring people in; we fine them; we take to court. And these are the things that are necessary to accomplish. I mean, if you have no teeth or if you have no enforcement and Bob does what you tell him to and Mary doesn't—and if you don't, then Bob's going to say, Why should I do it?

So again, it takes a mixture of everything. And that's why you can't be all things in yourself. Like, we have a nice legal department; we have this department. And you've got to be correct, too. I mean, you don't want to haul someone in and find out you didn't have the authority, or you did wrong.

CP: You didn't have the evidence. (laughs)

WL: Right. And so, it's just an overall picture, but these are the things that a lot of people—which is good—a lot of people come into public health and six months later, they get out because they realize, This is not for me. And probably, public health is better off without them because it's something that you've got to enjoy, you've got to want to do, you've got to be knowledgeable.

You've got to have the temperament for it, because a lot of times, you've got to do a lot of talking; you've got to do a lot of convincing and things like that. And that's all I would say. But if they don't like it they shouldn't get in it is what I'm saying.

CP: Yes. And they can experience—the students can experience its true character.

WL: But one of the good things I think also, though, and I've noticed this in many of the people, I always encourage my people to go on. It doesn't necessarily mean with the health department. Any time you can get upward mobility and improve your own self as well as the others.

And that's what I encourage them for, to better yourself. And I've never wanted to hold anyone back because he's too valuable to me, and I can't afford to lose him. If you can do a better job, better yourself, you go.

CP: He won't continue to service you once you recognize that he's keeping you for your selfish, personal reasons.

WL: No, no. And I think sometimes in the past we've had too many people that had wanted to move on; I know that so-and-so will be gone in two years or so, and I'll get his job or something like that. And that's not the person you want because, he's a short timer, just sitting there waiting and all that, so.

CP: Yes, in essence. What have we left out, Wally?

WL: I don't—except, I had a couple of times that, like, from '70 to '75 I left the health department. I was assistant administrator of Hialeah Hospital in the education department, and I thought I could be advanced there. And then as it went on and things changed, I thought the health department was pretty good and I came back.

And then I also left them again when—that was when the officer licensure and certification was sort of separate and big in Jacksonville, and they were planning to moving an office to Miami. And then I got a nice advancement from there, so I went with them. But then three months later, I was going back to Jacksonville, driving back every third week. And they said, Nope, we're not moving, and so I said, Well, that's not for me.

And so then I, fortunately, I was lucky that I was able to come back to the health department. One of the things that I did mention also, that I didn't mention earlier but I'll mention now, is that as part of my training when I was a fellow at the University of Miami for radiological health, I operated a radiation fallout station of the Public Health Service for a number of years.

And we would—I remember one time in the height of the testing, I think it was '66 or something like that, we had fresh iodine because both the Russians and the Americans were bombing, and we'd get the fresh iodine. Of course, that would fall in the milk, and we would monitor the milk, and at certain times we would have to store the milk or something because of the level was too high.

But then, a big one, I got a nice recognition by the Environmental Protection Agency because, right after Chernobyl, I monitored the daily fallout station, and at that time we had stopped testing for a long, long time. So there was no more fresh iodine. Iodine-131 has an eight-day half-life, so you wouldn't see it.

So we started picking up fresh iodine, so we knew that we were getting the effects of Chernobyl. So that was a nice thing that, for years, you're operating a station since the stop of the—you don't find anything. And then Chernobyl come, then you get that big peak. And so that was nice.

And then one time, speaking of infectious diseases, I worked quite a bit with indoor air and ventilation and industrial hygiene. And we had, in Miami in the federal building, and in that we had a lot of the people, the guards and things, they were converting because of the prisoners and because of the people.

And tuberculosis I knew would come in PPD<sup>29</sup> positive, so we went in there with the US Marshall's Office, and we did studies. And we did some changes. And I got recognized for them—for the support we gave them and [being] able to change the ventilation around. So, I was happy with that.

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<sup>29</sup>The PPD (purified protein derivative) skin test, also known as the tuberculin test, is a method used to diagnose latent tuberculosis.

CP: You know, that's too bad that their ventilation system needed repair to prevent the widespread—

WL: Well, actually, it didn't need repairing; it just needed a complete redoing. It had been so old that at the time when they put in, they really didn't have the air flow studies. So they didn't recognize how the transmission was, or that just short time contact, inhalation of a of drop of nuclei infection, you can get an infection.

So you'd think—but these are little squids that, I mean, you take in a spiking event, how come in all the various agencies, the marshal's office, how come Miami spikes up with a number of converts compared to the other offices who are doing the same thing?

CP: Yes, yes, yes. That's just good epidemiology.

WL: Right. That's what I said it was.

CP: I'll bet you've got 10 million of those, quote, little stories, unquote, that have been so important to the forward progress of public health in Dade County. You have these little incidences, it's hard to tie the them together into a big picture, and that's the beauty of public health, as far as I'm concerned.

WL: Well, yes. As I've said, public health is a living thing.

CP: Oh, yes it is.

WL: It grows and doesn't stop, and it doesn't know borders, and it doesn't know streets or anything like that. And so, what we do here affects the people in Broward County or possibly even, now with air travel, anywhere in the world.

CP: That's correct.

WL: When I mentioned the Poppy thing, if you recall that tourist from Japan, Tokyo, that ate here in the Poppy; he went back to Tokyo, and he became infectious in Tokyo. The incubation periods and things like, of course, we battle the oysters. You know yourself about the battle of the oysters that we used to have with the sewage and the things up in the Apalachicola.

I used to check on all oysters and things because they had to be certified. They couldn't—you had to single dip. You couldn't dip in all that. So, for a while, people were very concerned with eating oysters because of the hepatitis.

CP: Yes, yes, yes. And they still need to be concerned.

WL: Right. Especially around the panhandle up there with Apalachicola Bay because we have tremendous oyster growth up there and tremendous industries.

CP: Yes. And the risk now is the new enterovirus. One of the enteroviruses that they state law now requires everybody that serves oysters to say that if you're old, if you're young, if you have an embarrassed immune system, you should not eat raw oysters. A little senior moment, I can't remember the name of the virus. But it's always there and oysters are—oysters, oh, man. And you were in the middle of all that?

WL: Yes. Well, again, as I said—in fact, as I mentioned earlier that I got my MP in Tulane, and one of our fellow students used to certify the oysters up in the panhandle there. And so, we knew all the oyster people in New Orleans, so on weekends or Saturdays we would go get a couple croker sacks of oysters, shuck them ourselves and go down the Lake Pontchartrain and suck up the beer with the oysters.

CP: (laughs) You jokers. But here you are. You're not sick, as far as I know. That may be the reason you've been so successful since your MPH—you ate those oysters.

WL: That very well could be. I'd say we had loads of those.

CP: Well, this is exciting. What else have we left out that we need to record?

WL: I don't know if we need to record anything else because I think we've been talking for a while. But, again, it's—I want to be careful how I phrase this, but this is the true way I feel. Except for my God, my country, and my family, the health department has been the most important thing in my life.

CP: I appreciate you saying that. My God, my country, and my wife?

WL: Family.

CP: Family.

WL: Wife and family, the same thing.

CP: Wife and family, and then health department, the most important things in your life. I appreciate your saying that. Yes I do.

WL: I just—

CP: And it's a fact.

WL: Yes. Because of the number of years that I had, I mean, times I left and times I came back and the number of other jobs that I turned down and things like that. You know, it just—

CP: Yeah, and by choice, you stayed there. I like to say that I'm in Florida public health by choice and hard knocks.

WL: Right. Well, that's—We're—

CP: Yes. And I still am.

WL: I guess back in my day and your day we were still at hard knocks at that time.

CP: Yes, we were. Well, let me formally thank you.

WL: Well, let me thank you because, the funny thing, is in telling this, I don't see the smile on my face or the glow or something. But in saying so many good things and so much I've done, perhaps that I haven't thought for a while, and even things that I wrote down when I gave you my CD, then in talking it brought up other things and it really—I've had a good life.

CP: It's fun to remember, too, isn't it? It's fun to remember.



WL: Yes, it is. Right. And I feel blessed and successful and thankful and everything like that.

CP: We're blessed. And your presence here makes us successful because your chapter in the history of Florida public health is just so valuable. Particularly for future public health workers, need to hear you talk, and that's what this tape's all about, and the excitement of it. So, on behalf of the university and the library systems and the college of public health and my own segment, Mr. Livingstone, I just thank you so much—

WL: Well, again—and again it—

CP: —for coming by and sharing with us.

WL: I've got to say, it's been an equal pleasure on my part, and certainly it's always also good when you hear people say good things about you.

CP: Oh, yes. We all like that. And let me say a lot of good things about you for our audience, right. And I really do, I really do thank you for taking the time to share with us. And our videographer today is Jane Duncan. Today is July the 24<sup>th</sup>, 2002, and I am Skeeter Prather.

***End of Interview***