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Interviewer: Dr. Ruth Harris

This interview with Janet Brunelle of the National Institute of Dental Research, an epidemiologist who has worked for the Institute for several years and participated in some of the work on the AIDS surveys with Walter Reed Army Medical Center. The interview is being conducted as part of the NIH AIDS History Oral Interview Project and the National Institute of Dental Research History Program.

Harris:                    Could you please give us a little background on yourself, when you came to the National Institute of Dental Research (NIDR), and your training?

Brunelle:                I came to NIDR in 1963 and worked with the Epidemiology and Biometry Branch of the intramural program at that time. Then over the time worked with the National Caries Program, which was a special initiative from Congress for about 10 years where we specialized in research related to dental caries, and then the Epidemiology Branch since then, which has changed names, but we have an epidemiology program working on any number of different projects. Actually, I was classified as a statistician with the government. My background, actually, I have a couple of degrees in education. I was a teacher and then took a number of statistics courses and mathematics courses as well since I came here in 1963. At one point in time with the caries program, I was the chief of the Biometry Section, in charge of working with all the different projects, clinical studies on humans, and the animal studies and the laboratory studies also, and we were a department of about 50 people, with four statisticians, statistical assistants, and computer programmer specialist.

Harris:                    You did some special work involving the NIDR work on HIV, or some people call it AIDS. Can you please explain what you did, your role, and how it worked?

Brunelle:

In about 1986 or '87, NIDR started a natural history of oral manifestations of HIV with Walter Reed in a military population of mostly males who were in the service at the time. That was a longitudinal study. We also set up a dental clinical at Walter Reed and hired a dentist and a dental hygienist to help collect data. They organized data programs to collect information on most of the basic oral health characteristics of dental caries, periodontal disease, soft tissues in particular. When AIDS was first being learned about by the general public, one of the first ways people noticed that they might have a problem was the oral manifestation of AIDS, particularly in the soft tissue lesions in the oral cavity. Therefore, the dental community looked at the HIV problem early on. It still maintains a large presence in the group in San Francisco who have grants and contracts to work on HIV. The Walter Reed study was longitudinal. We saw everybody. Walter Reed's clinics see everybody once a year. This includes a complete medical workup--total blood work, medical histories, medicines, treatment program if they're getting treatment for HIV. And then they are sent to the oral component. There were about 700 of the people in the main study who volunteered to participate, who signed up to participate in the oral protocol. I mostly worked with them on, with any of the studies, but in particular this one also was helping them organize the data and collect the data. They did have a direct data-entry program that they had, and the data was entered into the direct data-entry program, and then eventually we were trying to collate all the information. One interesting thing there. Some of the periodontal components were new indices. We like to call some of our measurements indices or measurement. And there were a few that were started new at Walter Reed because they thought that this was particularly related manifestation related to HIV. That was the papillary assessment score, and we do--this is not a new index, but have not been done in this context before, the linear gingival erythema or gingival banding, we call it, was measured. And so my part

was mostly after the six or eight years, was to help start organizing the data. The papers, really, most of them have not been published yet or written up because it takes quite a while to organize the data. Our chief programmer, Mr. Oldakowski and his group are now handling the data for that study. Over time, I worked with the training. When we have dentists, we always have a training session where we train, we go over the indices with them and we bring in specialists for each of the different components to tell them how we think it should be measured, give them very specific standard criteria for measurement, and I usually help with all the training for the different clinical studies.

Harris: I would like you to elaborate a little bit on this. Did I understand you to say that you started a new kind of index because of your work with the people with HIV?

Brunelle: That the project had a new way of looking at measures, yes: the Papillary Assessment Index, which is looking at the papilla between the teeth to see necrosis, cratering, other things. And Dr. Swango came up with a coding scheme, and we usually have a set of rules. We call them the criteria for how you measure anything, and that was used in this study. I think the linear gingival erythema is known in dentistry, and the periodontists may look at this, but it's the first time it was applied a little differently. We tried to make it into very concise, specific way of measuring so that more than one dentist would see the same thing in the same way and give it the same coding so that we can then relate this to the other measures of periodontal disease that we did at the time. Soft-tissue lesions are probably, of course, the most important thing that we're looking at there. Then, from the medical histories that are collected by the medical researchers, we can learn about smoking, which is always related to periodontal disease, and other health habits.

Harris: Now, the men who participated in the study, were all of these people who were in the study people who had HIV, or were these people, in general, some who had HIV and some who did not?

Brunelle: They're all, I think, HIV positive, but at different levels of detection as far as like their CD4 counts. So some were in early stages, and they're HIV positive, but they may not have converted. Very few of them had converted to AIDS, actually, though, which is a later standard, though a number of them did die during the longitudinal study.

Harris: And these were all military men?

Brunelle: They were military originally. I'm not sure, but I believe the military, once they were diagnosed with AIDS, that they were probably retired or put out of the military or whatever.

Harris: Discharged.

Brunelle: But they were still coming for their, to Walter Reed once a year. They were brought in for this study. I'm not positive about that, but I guess I'm under the impression that once they were classified, that they may have been removed. Now, I don't know when they started blood testing for HIV positivity in the military.

Harris: Was there any control group that, as a group, that did not have HIV?

Brunelle: Yes. There are some people that—they have some of the spouses and there are some control... We have a few controls that were, I believe, people who were working in the hospital. So they did end up with a group of controls, which was made up of spouses so that your, say, your living conditions might be somewhat similar, and your nutrition and so forth. And they were HIV negative, at least when the study started. So they have a small group of controls from that, and I believe the rest are volunteers from the medical center at Walter Reed, are the controls.

Harris: Is this study still going on?

Brunelle: The oral study? The Walter Reed study I believe is still continuing.

Harris: In 1998, it is still going on. It started around 1986 or so.

Brunelle: Yes. But the dental part closed. We stopped two years ago.

Harris: The dental part is over.

Brunelle: Yes, the dental part is over as of probably '96.

Harris: Is anyone in the National Institute of Dental Research writing up the dental aspect of this?

Brunelle: Well, hopefully someone will. Ruth Nowjack-Raymer, who's at the moment in London working on her Ph.D., is, probably will be the main person to write up a lot of this in the future. And Debbie [Deborah] Winn, Dr. Winn will probably also be involved.

Harris: Can you name the other people besides Debbie Winn and Ruth Nowjack-Raymer?

Brunelle: Dr. Swango, Phil Swango, who's retired in New Mexico now, is still doing the background paper on the different indices, and I'm helping him with that. Dr. Dushanka Kleinman was one of the project leaders when the project first started and worked to get it set up.

Harris: Is there any other epidemiological study that you've been associated with that has touched on HIV?

Brunelle: The other big one is the collaborative grants—that's not the word—that Maryann Redford is running, and we have five centers across the country which were part of a larger study from the other institute, looking at women and HIV or HIV in women. That's a very interesting study, and NIDR has five centers collecting data for the last four years on women. There is a control group there that they acquired from the same area that got women with HIV. They have approximately—they were looking for about 125 people at each site plus 25 or 50 controls, and so they have about 700 people baseline exams. Then they were getting a second and third and fourth exam. About every six months, they were reexamined. And that's a very interesting study, and there are so many medical things being done also to them, and the questionnaire data, that there should be lots of good information. In fact, this year's IDR, there were presentations on salivary gland enlargement, another paper on saliva related to the people's stage of HIV infection. And

they're writing up the periodontal aspects related, periodontal, HIV appears... A number of people with HIV positive appear to have more periodontal problems of various kinds, so that's being examined. And they're just getting their first set of papers out on the baseline people. So we are writing the baseline up. Hopefully, it's been renewed at four centers for the next four years, that they will continue to collect data. But that's a very exciting study because there are so many more things. And they're collecting a few more indices than we collected at Walter Reed.

Harris: Are there any new indices being developed or have been developed for the women's HIV study?

Brunelle: No, most of the stuff that we've done, that we did in Walter Reed, we may have changed a little bit of it or tweaked it. But basically it's the same principles, except the saliva collection—there is some plaque and... Actually, Walter Reed also had sub-gingival plaque collection and some saliva collection, and then in both studies, the medical part will have blood factors. So you have all of the relationships with any medical problems or their immune system type of thing, their CD4 counts, their viral load, etc.

Harris: Now, in the women's study, what has been your role in that?

Brunelle: I helped set up the training for the dentists. We brought everybody from all the sites in and trained, with the help of the contractor that actually designed the data form. I helped them design the data forms for all the indices, and then we brought in the trainers. I organized the training and materials for them to do the training. Usually we try to do a little calibration. In this study, there were so many examiners that we mostly just practiced, after our training. We usually practiced with a few volunteers from the area, on our indices, after we trained the dentists just to see how it's going and also how close they are. I also worked with them a little bit on quality control. We have a dentist we call our standard examiner, and he goes out and does exams at the different sites with the

examiners there. And I've been working with him over time, and he helps us with the training. He is involved in training and materials, and training materials type of thing, and so I work on that mostly. I'm writing the background paper on methods and materials for them.

Harris: In other words, all of the examiners from the various centers come to NIDR in Bethesda and get their training here.

Brunelle: Right, most of them. Quite often we do it here because we're not central, obviously, to California, but we're central enough for that. And it's just easier, quite often, to get our trainers. The trainers used to be from here. Right now most of our trainers probably come outside of NIDR because there aren't too many of our dental examiners internally left who've done the big human studies, the large studies, as opposed to a small clinic study. And I help them why I help with the training is organizing for data collection, you have to train the examiners and the people who record the data, to collect it so that it's useful when you get it back. So I work usually on the data editing with the contractor to on how the indices behave, how to edit some errors out and so forth.

Harris: Now, what enabled you to know how to go about all of this for the HIV studies? Obviously, you had done epidemiological work in the past that prepared you for this. Can you please give us a brief explanation?

Brunelle: Well, since I came here, I worked with probably what we used to call the shoe-leather epidemiologists. So we went out in the field and collected data from humans on many, many studies in the '60s and '70s, and there was a statistician here at that point in time, and some of the dentists who had a lot of training, usually a master's in public health, where they received some training in how to collect data usefully, and then just working with all these people. I also went out in the field and collected data or recorded data for them. You learn a lot about what's the best way to get the cleanest data, and eventually,

of course, moved into the computer field and do direct data entry. We were early into constructing direct data-entry programs for field studies in the mid-'70s and have been involved in that ever since, which we share with people all over the United States, the state dental directors and so forth, any of our materials that we worked on. So it's a case of kind of learning on the job in the '60s, working with some very good people, and then just, some training, but mostly just my own devising things with my staff for what works best, and working sometimes with people from NCHS, of course. They've always been involved. We've always worked with them on their national surveys that have oral components so we get a feeling for principles of survey management and data collection.

Harris: Well, I understand you were involved in the first international study by NIDR after World War II. Is that correct?

Brunelle: Well, by the time I came, did a little analysis of some data from India and Burma, I believe, but there was a, there were a number of large epidemiology studies after World War II that NIH did related to nutrition, and NIDR appeared to have a lot of epidemiologists at that time who went to the foreign countries, at the request of the foreign countries, to look at their status, their oral health status, along with nutrition and medical status. By the time I came, they were probably on the last few of those, and I mostly worked on analyzing the data. And in those days, of course, we didn't have the quick computer systems that we have now, so there was a lot of handwork in the old days, and, actually, at NIH I believe DCRT was starting in the late '50s. But Dr. Russell was an epidemiologist here, chief of the epidemiology group, was very forward-thinking, and he had one of the first stand-alone small, best computers with a core memory drum, and it took paper tape or typewriter input and it printed the information out. But it's a big change from today as far as how you do your work and how you do your data collection. And we also have many statistical assistants who actually worked with numbers all day



long from the studies, separated the data into piles and literally, using... They were rigged like cash register machines, NCR machines, and literally had to collect the numbers for every paper that was published. It was done by hand and done by two people, double-checked, and so forth. And then they had to type all the numbers up. Nowadays, the computer, you can, one, two, three, get it done quickly. You can get it out fairly quickly.

Harris: Well, the HIV work that you've done, obviously, was done in the age of computers and not this old-fashioned way.

Brunelle: Yes, yes. So we did use direct data entry at Walter Reed, and I'm afraid the WIHS study does not use direct data entry. They're actually using paper forms, which makes it a bigger problem for processing and analyzing the information, which is why we had to spend quite a bit of time with editing data.

Harris: Now, the WIHS study...

Brunelle: That's the Women's Interagency HIV Study.

Harris: Oh, okay.

Brunelle: Wise, I guess they call it.

Harris: Now, there was an international study in which there was a book for each country, after World War II. Could you please say a little bit about that, because that also prepared you, I gather, for the work.

Brunelle: That's the—what did we say the name was?

Harris: ICNNDNA.

Brunelle: Interagency Committee Nutrition for National Defense, with another part of NIH. That's when we sent the oral epidemiologists around the world to collect information on dental caries and periodontal disease type of thing. And that went on for, what, '58 to '63, probably about six years. And they went to Vietnam and Colombia, Venezuela, India,

Burma... Well, Burma, South Vietnam sort of before the war, but when we were still thinking about it there in '58 and '59, and it was very interesting. Actually, a big epi study that was interesting back then was with WHO out of Geneva. Dr. David Barnes, who's here at the Institute, went, they set up a study and they went to Papua, New Guinea, where the people there are at that point in time in the early '70s, 1970, '71, '72, where they were still headhunters way up in the mountains. Okay? And the people were still fairly natural as far as their living. And they were doing a study on caries. That was when we were starting the caries program. And they looked at people in the villages near the mouth of the Sepick River and worked their way up to the mountain people, who were still quite what we used to call primitive. That's not politically correct anymore, but it's... And they looked at the total, they looked at the dental picture, but they also looked at the total, what's in the soils, what's in the water, the fish, the minerals, everything that these people ate or anything, to see if, because of the natural condition, if they could determine the differences in why people had caries or not. And, of course, from these international studies, they had actually noticed that in countries that were less Westernized as far as civilization went on, there was less dental caries. In fact, they had very little dental caries, but they would have periodontal disease, some of them, whereas in Westernized countries, we had a high level of dental caries. So studying these native people in New Guinea, they have discovered that near the seaport, the villagers near the ocean, of course, that the sugar and your soft foods and your more different foodstuffs were coming in to those people, and they had dental caries. And by the time you get farther up the river into the highlands there—I think it's highlands—that there's less, there was very little dental caries because of the, what they ate and how they ate it and so forth and what was available to them as far as processed foods. But that was a rather large study. It was very interesting, that big epi study that they did there.

Harris: Now, to get back to the HIV, my question is, are you aware of any international type studies that will go to some of these same groups that the NIDR and other scientists studied before the age of AIDS? Is there anything now that's starting up that would involve studying these people?

Brunelle: Well, I think the WHO people would know a little more about, have been involved in training the dentists in the different countries of Africa to look for soft-tissue lesions, among other things, which, as I said, may be an early indication and may be more prevalent in people with HIV. And, of course, Africa, one part of it is where I guess HIV either started or it has been around for a long time and known there as a very serious condition and quite different manifestations than what we have in this country. And I believe Ruth Nowjack-Raymer and Dr. Barmes and some other people have been involved looking at the lesions, soft-tissue lesions in particular, in some of the African countries where HIV, of course, is prevalent.

Harris: So the epidemiological people in NIDR may eventually be connected with some studies internationally.

Brunelle: Right. And, actually, the person, Dr. Pindborg from Denmark, who died two years ago, is an international expert in soft-tissue lesions, and in particular the ones related to HIV, and he was the expert that helped start our study at Walter Reed. And most of these other lesion studies he has been involved with materials, particularly slides, from all over the world illustrating the various problems that he's observed. And, of course, he's just well known as *the* soft-tissue person.

Harris: Was he a consultant at NIDR?

Brunelle: Yes, he has been a consultant up till he died. He was a consultant. And he came in every year as one of our outside review groups for our Walter Reed study. He did come in, and

every year they had like an annual review of the project, and he was the person, a consultant that came every year to see how we were doing with our Walter Reed study.

Harris: How many people were in the review group? Do you recall? Were they international?

Brunelle: He's international. The rest of the people I think were mostly from the U.S. How many? It was different, well, I guess, different numbers, different years, came in as invited consultants. But he was actually, I think, a consultant all the time on the project.

Harris: Now, the project with Walter Reed, was this what you would call an intramural type of activity?

Brunelle: I'm afraid our... That's hard to say. It was interagency, of course, with the military. Was it an intramural program? For a few years. Not currently, not right now. Anyway, up to a year ago, the epidemiology department was sort of a hybrid between extramural and intramural, and we did some of both, which was always very interesting, a little different. I had been in intramural early on, and then with the caries program, we were intramural. Then in '85 or '86, Dr. [Charles] Lowe started the epidemiology program, and we actually continued on sort of from the caries program. We did, we do both studies that we design and run from here, which is like an intramural study, except when you're doing people studies, you can't do them inside of NIH too well. You have to find your population. So we went out to do studies. And then we also had some studies under contracts type of thing, and then this Women's Interagency HIV Study is actually a collaborative grant where the Institute has input. At that time when it started, though, the person, those of us working on it were part of the epi program. So we were always sort of a hybrid type of thing. Now we've been neither in intramural or extramural. But the human studies have always been a problem because it takes a lot of time and money to examine large numbers of people, especially longitudinal, and get the data processed and

analyzed. It's not quite as—timewise, it's not as simple as the laboratory studies that you can do in a shorter period of time all in one space.

Harris: Well, in the Walter Reed study, for instance, did NIDR dentists and/or scientists do the actual examinations, oral examinations? Or did military people do the oral examinations?

Brunelle: Actually, we hired a dentist to work there that we trained, and so he was not in the military at that point in time. However, there were also a couple of the Walter Reed military dentists who were the back-ups and were trained and did do some exams on other days when the regular examiner couldn't be there. So, no. Our people mostly are just trainers. And then we also—the person that we use as a standard person that we bring in usually for these reviews, he is at the University of Minnesota. He is not one of our people. At the moment, in the last 10 years, we really don't have, for the last five years, dental examiners in-house that spend all their time doing exams on people. At one time we did. I mean, the epidemiology. As I said, in the '60s, '70s, actually, they went out and the dental examiners from NIDR looked at a thousand people and did the exams. Now we contract that out.

Harris: Now, the Clinical Branch, in the Clinical Center, did—I guess you would call it an epidemiological study, in the late 1980s, of patients, HIV patients at the Clinical Center. Did you have anything to do with that study?

Brunelle: No.

Harris: That was strictly the Clinical Center.

Brunelle: Clinical.

Harris: Okay.

Brunelle: No. We were not involved with that type of thing.

Harris: Have you ever been involved with the Clinical Center's patients on a big scale?

Brunelle: Not with Clinical Center patients. Earlier, when we were an intramural epi group, '60s and '70s, we worked with the dentists that were running the clinic. Some of them are now residents that work there. And we did some studies, some of our studies that we planned, with them. They did the exams, but they weren't done physically in Building 10 very often because we usually were after more people quicker. But they did work with us back then. Dr. Takahashi [sp?] went out and saw 600 firemen in 1965 in Washington, D.C., at the firehouses and did a large perio study. And so the dentists from there went with us or worked with us on that and did exams, but we didn't do them in the clinic. Our studies are usually too big to do in the clinic, though that may change in the future with how we organize the clinic studies.

Harris: Now, what is your connection with these large national studies that are done within Health and Human Services, but they're not done by the National Institutes of Health. For instance, there was going to be, in the 1990s, a national epidemiological oral health study, and it was dropped because, as I understand it, because the agency that specializes in doing health surveys was doing something similar.

Brunelle: Oh, right. NIDR was going to do a third children's survey, national survey of oral health of children, and that was dropped, because at the moment we've been busily involved with the National Center for Health Statistics, and basically that is their mandate for existence, is to do national studies of health of all kinds, which they have done over time, since the late '50s, during the '60s, 1971, '74. They did a Hispanic health and nutrition in the 1980s. And they did, we just—we're still working on data right now, analyzing data from the National Health and Nutrition Examination Survey, which was conducted between '88 and '94. And right now we're busy planning their fourth National Health and Nutrition Examination Survey. So NCHS is actually totally dedicated to that, to all kinds of surveys. But they do have a whole group dedicated to the health ones. And they

actually are going back out, and they will go across the country for... Well, three years is going to be definitive like it used to be, and then it may become a continual survey. They're changing things within our whole department, as you may know, the division, HHS. And so it will probably become a continuing survey, just like they have the health interview surveys that they do on the phones every year, with specific components that are repeated every year. The health survey will probably be that way. So we work with them. We put in a proposal, actually, three and a half, four years ago. They called for proposals for a component in their survey. And, actually, they are funded from Congress at a certain amount of their money, and they put in about 51 percent of the national survey. The rest comes from the rest of us, mostly parts of NIH, maybe FDA, the Department of Agriculture. And what we do is we put in a proposal for material that we're interested in, and we also pay the money. So NIDR, at the moment, is involved with the oral health component for the HANES [Health and Nutrition Examination Survey] Four, which will start hopefully in December or January this year. And so we've been working with them. We've always worked with them, even in the '70s, when it came to the oral health component. There were dentists that actually worked at NCHS at that point in time. But they met with staff from our epi program in particular to discuss what indices to do, what measures to take, and so forth, and then the data was always available. And we paid—I think the NIDR has always been the principal payer for the oral health material that was collected, even though it's collected by NCHS, with a contractor, that we actually have always paid for the dental parts and the data comes to us. And then, for analysis, it also goes out to as public health, data tapes in the past, and right now CD-ROMs from this HANES Three that just finished. And so it's available to any of the researchers around the country, or anybody who's interested, to look at all the data from that. So we've been heavily involved always with the oral component, and NIDR

has always paid for, I believe, the oral component, even though the other agency is running it.

Harris: Have you had any connection with the CDC and/or the Food and Drug Administration?

Brunelle: Well, actually, for the last few years, for this new HANES Four, NCHS is under CDC somewhere with the reorg within our agency. They're under CDC, so they're actually part of CDC. I still call them NCHS because of their single function. And right now on HANES Four, we are working very closely. Actually, we're working with our whole agency, the oral health part, and there is, within the PHS organization, there's an Oral Health Coordinating Committee. And officially on paper, they are the people who have put in that they wanted an oral health component. CDC's dental group, which has just been reconstituted as a division, I believe, of oral health, they are involved and they, with Dr. [Deborah] Winn, are co-chairmen of the subgroups to see that it gets accomplished from the Oral Health Coordinating Committee. So I think there's HRSA, HCFA—all those people are on the Oral Health Coordinating Committee from our agency. So it's really an interagency agreement. And the chief dental officer is involved, type of thing, and is on some of our subcommittees for what we should be doing and what we should change and what we should do new. In that sense, we do work with CDC. We've also worked with CDC over time, of course, with the fluoridation mandates.

Harris: What about AIDS?

Brunelle: No. I don't think we've—to my knowledge, we've not had any interaction with CDC related to AIDS that I know of.

Harris: And the Food and Drug Administration?

Brunelle: I don't know much about that. I do know, over time, that various of our supervisors were on some of the FDA committees that review things related to fluoride and foodstuffs.



Some of our PHS core persons, have been involved with FDA and CDC on fluoride and fluorosis comments, and the fluoridation controversy. Not a good word, but anyway...

Harris: In the Division of Dentists, I don't know what exists anymore since the reorganization of the Public Health Service.

Brunelle: Right, I know.

Harris: But there was a Division of Dentistry in the Public Health Service.

Brunelle: Division of Dental Health, yes.

Brunelle: The Division of Dental Health was in the PHS in the '60s and '70s. We worked with them on different studies. And then in the early '70s, they had a large dental research center out in California, which was to be closed up. And a number of their people who were doing epidemiology studies came here—Dr. Horowitz and Dr. Driscoll and Dr. Heifetz—and brought some of their studies that were already started. And they were doing a number of studies on topical fluorides, mouth rinses, toothpastes, gels, and school mouth rinses, and so forth—school fluoride, rather, in the school water systems. So they joined our caries program in the early '70s and were here through the '80s doing various clinical studies, intramural type, in the sense that they did them from in-house. And they did do their own exams; those people went out in the field. So that was our—we did work with them before that, and then they came to be part of us.

Harris: Is there anything else that you can think of that you think might be useful for the history of AIDS, for the Dental Institute history and for the AIDS history?

Brunelle: For the Institute history, only currently is that we did the large national surveys of oral health, which I think historically, you have quite a bit of that. We did those under contract, but strictly organized and run by staff here at NIDR. And the first one we did was of oral health of children in '79-'80, and then in 1985-'86, when Dr. Lowe came, we did one of adults. And this, for NIH, is probably quite unique. For us to be doing a

survey of health whereby we actually sent dentists that we had trained, and data recorders actually went in mobile exam vehicles around the country and examined 15,000 employed persons between age of 18 and 70. We went to senior centers on that and looked at people over 65 to 100, whatever, at senior centers. And we saw about 6,000 seniors. I think this was quite a unique undertaking at NIH to do something and we did the adult survey. It was done in approximately one year and a couple months, one-and-a-third years, which is—that's the actual examination part. The planning for it took quite a bit of time before and after. And I think this was quite a unique undertaking at NIH. Then we had the second children's survey in '86-'87, which, again, was a national survey whereby we trained dentists and recorders, and they actually go in vans around the country, and they saw 40,000 schoolchildren, and that data all came in here for processing and analysis from both those, all three of those surveys. That data was a hundred percent into NIDR's system, in here, within the epi program by then, before that, the caries program, for data processing, data analysis, and publication. Now, interesting, since the early '90s, this data was all additionally cleaned up, let's say, and put out on public-use data files, and they are available, just as is the data from the National Center for Health Statistics. All the studies are available on public-use files. They're currently into CD-ROMs, which is very convenient nowadays. I believe ours are still on data tapes available from the National—it's actually part of the archives system, and people can send for them. So this was a change, too, that we are sharing all the data from all our surveys with anyone who would like to purchase it for analysis or to use, and it's been utilized quite a bit. And also, we're utilizing it to do the trends information with the national HANES study that just finished, HANES Three. We are using the data from our earlier surveys, the earlier HANES surveys, to do a trends analysis, which will give us

some good information about changes in behavior and in disease manifestations in the last 20 to 24 years. So I think that's a very interesting part of the epi.

Harris: Is there anything else that you can think of?

Brunelle: At the moment? No. There were...

Harris: Well, thank you very much.

Brunelle: Oh, you're welcome.

Harris: This has been very illuminating.

Brunelle: You're welcome.

*End of Interview*