



# STRONG HEART STUDY

*Cardiovascular Disease in American Indians*

NEWSLETTER

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## THE STRONG HEART STUDY CONTINUES FAST PACE

The Strong Heart Study completed its first year with an excellent performance. The examination phase began in June and by the end of October over 655 examinations had been completed. In addition, the final quarter of the year included a ten-day series of site visits that covered every clinic doing examinations in mid July, completion of the manual of operations, development of a study logo and introductory pamphlet, and a fiscal year end Steering Committee meeting. The final quarter also saw funding for the second year of the program secured for each of the centers.

Examination sites contributing to the 655 initial examinations include the clinics in Fort Totten, North Dakota; Eagle Butte and Pine Ridge, South Dakota (230 exams); the clinics at the Gila river and Salt River Indian Communities in Arizona (225 exams), and the Anadarko clinic and Lawton Hospital in Oklahoma (200 exams). Exams have been completed at Eagle Butte and Pine Ridge and the clinic staff has moved to Swift Bird and Kyle, respectively, to continue their work.

The site visits in July were a valuable and necessary part of a standardized epidemiologic study. Site visit teams included representatives from the program office at the National Heart Lung and Blood Institute (NHLBI) and principal investigators and staff members from other centers. Examinations were observed and the clinic staff were reviewed for strict

adherence to the written protocol and procedures and informed when discrepancies were observed. The clinic staff also had a chance to ask questions, as well as to suggest modifications that would make the process smoother and more error free. Site visit team members felt that the two way communication provided an excellent opportunity to fine tune the procedures and clear up ambiguities in the protocol.

Following the round of site visits, finishing touches were put on the manual of operations and a logo was developed to provide an easily identifiable symbol of the Strong Heart Study. Copies of the manual of operations and the introductory pamphlet were printed and distributed for use in each of the centers. The investigators were extremely pleased with these products as tangible proof of the hard work of all involved. They were also quite pleased at the support of the Indian Health Service (IHS) as evidenced by the letter on the second page of the introductory pamphlet from Dr. Everett Rhoades, IHS Director, expressing his encouragement to eligible individuals to fully support this effort.

The first year of the study has been satisfying to all involved. The more difficult tasks in year two will be maintaining the momentum we have created and continuing to press for the highest quality in all phases of the study.

## WANBLEE CLINIC HOSTS STRONG HEART STUDY

Wanblee, South Dakota, a small isolated Indian Community on the Pine Ridge Indian Reservation, participated in the Strong Heart Study from May to September, 1989. During that time all tribal members aged 45-74 who

resided in the community were invited to participate. As of October 1, 1989, 96 exams were completed. The community and clinic staff appreciated having the Strong Heart Study staff in the clinic because at the time of



Wanblee Clinic  
and Strong  
Heart Study  
staff :  
Left to Right -  
J.E. Red Willow  
D. Rand  
P. Red Willow  
C. Fire Thunder  
F. Red Willow  
E. Iron Cloud  
Front-  
Dr. T. Welty

the study there was a physician assistant vacancy and the nearest IHS Provider was at Pine Ridge Hospital 90 miles away or Rapid City IHS Hospital 100 miles away! The Strong Heart Study team members at Wanblee include:

Cecelia Fire Thunder, Project Coordinator, is employed by the Oglala Lakota College research department to work full-time on this study. Cecelia is a Licensed Practical Nurse, who had worked for many years in Urban Indian clinics in the Los Angeles area and recently returned to her home reservation. She is involved in many community based projects on the reservation including FAS prevention, a woman's political action committee and substance abuse prevention. On October 19-21, she appeared at the Smithsonian Museum in Washington, D.C. to lecture on Northern Plains culture. Cecelia is enthused about working on this project. She has explained the study in Lakota on KILI radio and speaks Lakota to many of the older participants who prefer to speak Lakota.

Dianne Rand, RN, FNP, PA, an experienced Physician Assistant/Nurse Practitioner, served as one of the first physician assistants in South Dakota in the early 1970's. She has continued to serve in that capacity in many rural communities throughout South Dakota but this is her first experience in doing an in-depth

research study. Dianne does all the physical exams for the Strong Heart Study and also does cancer screening for an ancillary cancer study being conducted in the Aberdeen area and supported by the National Cancer Institute. Indian women are especially happy to have a female provider do their pelvic and breast exams.

Pauletta Red Willow, a second year Pre-medical student at the Oglala Lakota College, has taken the responsibility to coordinate the laboratory portion of the exam. Pauletta adheres to a rigid protocol that specifies how to prepare the blood and urine specimens for shipment to the core lab in Washington, D.C. She has been supported by the IHS 437 Scholarship Program and feels that this experience has been valuable for her career goals in medicine.

Eileen Iron Cloud, Research Director at Oglala Lakota College, is a co-investigator, and has helped to promote the study throughout the Pine Ridge Reservation.

Several Oglala Lakota students worked on the Project last summer and 2 medical students from the University of Pittsburgh helped with medical chart reviews (see page 4).

The staff at the Wanblee Clinic was very supportive of the Strong Heart Study and

appreciated the services provided. Feedback from most participants was very positive. In fact six out of 96 participants returned the payment they received to the study. Several participants mentioned that they had never had such a thorough medical evaluation in their entire lives.

Beginning October 1, 1989, the Pine Ridge Strong Heart Study staff moved to the newly

opened IHS Kyle Clinic in Kyle, where they will continue performing exams for several months until all residents aged 45-74 have been examined. Then the staff will move to Allen, Manderson and Porcupine communities until 900 exams are completed.

Future issues of the newsletter will have stories of the staff and services provided in other Strong Heart Study locations.

## QUIET HEROES - THE CORE LAB STAFF

The staff at each exam center of the Strong Heart Study breathes a collective sigh of relief as the various blood and urine samples leave its premises for shipment to the core lab. What happens to the samples once they arrive at the laboratories of the Medlantic Research Foundation?

The unfrozen samples, which are shipped on blue ice, will arrive at the Penn Med Labs, the clinical laboratory facility of the Research foundation. The shipments are immediately opened, checked for completeness and recorded by Mrs. Edna Ross, the laboratory supervisor. Mrs. Ross has had many years of experience working in clinical laboratories and has made a large contribution to developing a system at the Penn Med Labs to assure timely and accurate handling of specimens as they arrive. As soon as she receives them, Mrs. Ross divides the plasma samples; small amounts are used for the apoprotein B and AI analyses, and the rest are prepared for the main centrifugation procedure which allows the determination of plasma cholesterol and triglycerides and in lipoprotein fractions. She also arranges for the tubes containing red cells to be sent to the Hyman Building, for isolation of DNA. The apoprotein samples are processed by Joe Lee. Joe comes from Beijing, China (his real name is Li Xianzhou). Joe received a doctoral degree in Beijing in protein biochemistry and has set up and standardized the assays for apolipoprotein B and AI. He measures apoB and AI by a procedure called ELISA; he has special instruments which automatically dilute the sample, wash the plates and read the plates after the color is developed.

The frozen samples are received by Michael Paidi at the Hyman Building. Michael, a

Ph.D. in biochemistry is originally from Indonesia. Assisted by Shinkuro Kataoka (see below), he sorts the frozen samples and distributes the many frozen vials into separate boxes, one for each test and the rest into storage boxes. Samples saved for future use are stored in freezers at  $-70^{\circ}\text{C}$ . Once a month, Michael Paidi gathers the boxes containing tubes for fibrinogen assays, glycated LDL assays and urinary protein assays and ships them to other laboratories in the country for these measurements. Urinary protein measurements are made by the laboratory in Phoenix, headed by Linda Phillips. Michael is also responsible for isolating the DNA from the red cells. Once the DNA is isolated, it is also stored in the deep freezer for future assays.

After the VLDL (the main lipoprotein that carries triglycerides) are isolated by Edna Ross who sends part of the VLDL to Dr. Shinkuro Kataoka, a post doctoral fellow. Dr. Kataoka received his MD in Hiroshima, Japan. He has developed a method for apoE phenotyping, which is performed on VLDL fractions using a large gel electrophoresis apparatus. Dr. Kazumi Oka, who also works in the Hyman Building, is responsible for the insulin assays, which are performed on frozen specimens from each patient. Dr. Oka, originally from Tokyo, Japan, is now settled in the United States with her husband, a molecular biologist.

The small vials with yellow and red caps for glucose go back to Edna Ross, who performs the assays of plasma glucose and creatinine. For these measurements, as well as for the cholesterol and triglyceride, she uses a Hitachi automated chemistry analyzer which is able to measure as many as 100 samples per hour and can make multiple measurements from one

plasma sample.

After all assays are completed, individual results are sent back to the Penn Medical Lab, where Fahimeh Mokri is responsible for calculating individual samples, entering the results into the computer and producing report sheets for each center. Fahimeh is originally from Iran, but she and her husband now live in

the Washington D.C. area. Fahimeh is enjoying their new baby girl, which explains why the data reports have been somewhat retarded during the time she has been on leave. All the members of the Core Laboratory would welcome calls from other Strong Heart Study staff at any time if they have further questions concerning the samples and their analyses.

## STUDENTS ASSIST THE STRONG HEART STUDY

Fifteen college students are working on the Strong Heart Study, 10 in Dakotas, 3 in Oklahoma and 2 in Arizona.

The ten students who worked at the Dakota clinics were supported by the Indian Health Service extern program for students pursuing health careers which is funded by the PL 93-437, the Indian Health Care Improvement Act. They are: at Ft. Totten, Vernoica Williams, a Turtle Mountain Chippewa, and Georgetown University Medical student; Shirley Butts, a Turtle Mountain Chippewa and University of North Dakota Nursing student; and Geogory Shuford, also a Georgetown University Medical student; at Eagle Butte, Georgia McIntosh and Corbin LeBeau, both Cheyenne River Sioux and Cheyenne River Community College Nursing students; and at Pine Ridge, Gregory Coat and Lidia Comini, both University of Pittsburgh Medical students; Christine Nichols-O'Donnell, Oglala Lakota College nursing student; and Pauletta Red Willow, a Oglala Lakota Sioux and Oglala Lakota College pre-med student. These students had a positive experience this summer. Two of them will continue to work on the project during the school year. National Institutes of Health funding is being applied to continue their involvement in the study. Dr. Welty plans to use 6 more intern students next summer.

The student assistants in Arizona and Oklahoma are supported by a two-year grant from the NHLBI. The grants were awarded through a research supplement program for minority undergraduate and graduate students. The program is designed to provide some experience in biomedical research to minority students who are presently pursuing a college or graduate degree.

The two students who are working part-time with the staff of the Strong Heart Study in Phoenix are Roberta Seepie and Rosinna Stewart, both members of the Salt River Indian Community and students at the Scottsdale Community College. Ms. Seepie plans to enter the field of medical administration and Ms. Stewart intends to pursue a career in nursing. Both are learning techniques for performing the physical examinations and record reviews and the procedures and methods used in the study of diseases among communities.

In Oklahoma, three graduate students from the College of Public Health, University of Oklahoma Health Sciences Center are assisting the project: Faith Jacob, a Choctaw of Oklahoma and major in Social Sciences and Health Behavior (SSHB); LaRose Lucero, a Navajo from New Mexico and major in SSHB; and Ronald Tso, a Navajo from Arizona and major in Health Administration. Ms. Jacob is interested in health promotion and education among the Indian people, Ms. Lucero intends to be a health educator for the adolescent and Mr. Tso is planning a career in the field of health care management, planning, research and evaluation within the Indian health care sector. The three students share the responsibilities of recruitment, scheduling, and computer database update. They will also learn techniques for interview and medical chart review.

The Strong Heart Study welcomes the students' participation and contribution. It is hoped that through this experience they will develop the knowledge and interest in biomedical research which will help to further their careers and promote health education in the Indian communities.