



STRONG HEART STUDY

Cardiovascular Disease in American Indians

NEWSLETTER

April 1990

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FLEXIBILITY AND RESOURCEFULNESS REQUIRED OF STRONG HEART STUDY STAFF

Conditions for the Strong Heart Study vary from center to center but are always a challenge. While the Dakota center suffers from the cold weather that makes recruitment difficult, the Arizona center appears to have picked up the momentum as the weather is most accommodating. The Dakota center waits for the summer when conditions are good enough to reopen the Fort Totten clinic (scheduled for late-May) and boost recruitment and response rates while the Arizona center recognizes the heat of summer will slow progress. In Oklahoma, the weather is not as extreme as in the Dakotas or in Arizona, so more uniform examination rates are expected. However, weather is not the only challenge.

In Arizona, merging the exam with the NIDDK study at Gila River continues to provide an avenue for resourcefulness. When Strong Heart Study staff found that the existing flow was exceeding their ability to respond, two IHS master's degree students volunteered to help. Daryl Allis and Gregory Wood have joined the effort and provided the helping hands that have greatly smoothed the exam process and allowed the stepped up recruitment to continue. Welcome aboard to Daryl and Gregory.

In Oklahoma, each center has one nurse to do the clinical exam. This worked well until the nurse at Anadarko, Gail Tackett, resigned to pursue an opportunity in Alaska. We thank her for her contribution to the study and wish her the best.

The Dakotas have also suffered with personnel changes when Arliss Keckler resigned from the Eagle Butte clinic to pursue other interests. We appreciate the contribution of Arliss during the early stages of this study. Dr. Welty has hired Mary Clown to replace Arliss. We welcome Mary to the Strong Heart Study staff.

Along with the personnel adjustments and weather conditions, two other hurdles confront the Strong Heart Study: where is my check? and where are my results? In response to these concerns, all centers have tried to develop ways of providing payments immediately after the exam, and a review of the process for returning results of the exam to participants in a timely manner will be undertaken. We are pleased to announce that starting this month every center will be handing out cash after the exam. With respect to results, staff should stress that central laboratories around the United States are providing the highest quality measurements available at the most reasonable costs and this effort requires time.

Even with these obstacles, the exam process continued and 1322 exams had been completed by mid-March. This included 451 in Arizona, 399 in the Dakotas and 472 in Oklahoma. By the time you read this newsletter the Strong Heart Study will be over the 30 percent mark of projected total exams. The flexibility and resourcefulness of the Strong Heart Study staff will be tested and found up to the test as the study continues. Keep up the good work!

QUALITY CONTROL OF RECORD ABSTRACTING BEGINS

As part of the procedures used to ensure the best possible data for the Strong Heart Study, assessment of the reliability of abstracting information from medical records of mortality

and morbidity events began in November, 1989. Quality control abstracts for each type of form used in the mortality and morbidity surveys will be done on a quarterly basis each

year. The Dakotas Center was the first to provide copies of a death certificate, medical records from a fatal event, a non-fatal MI and a stroke for abstraction by every member of the Strong Heart Study staff involved in data collection from medical records (Thanks to Beverly Blake!). The second set (for the January-March quarter), from the Oklahoma Center, should have been recently received by all of you.

Once a set of Quality Control (QC) records is assembled, copies are sent to each of the centers and to Linda Cowan at the Oklahoma Center. As QC abstracts are completed and forwarded to Dr. Cowan, she checks them with the abstracts she has done. Discrepancies are noted on the QC abstracts, and after the set has been completely checked, it is returned to the abstracter for review. A file is kept of the results of each QC abstract. The file contains the abstracter's code number, the date the QC abstract was completed, form type, total

number of discrepancies, and the specific items on each form for which there was disagreement. This file will be used to identify specific abstract items that are consistently completed incorrectly so that we can improve the forms or provide additional clarification in the procedures for abstracting. The file also serves as a record of improvement for each abstracter. Abstracting information from medical records is a difficult and time-consuming process, although it becomes easier with practice and experience. The efforts of all staff members to accurately and completely abstract medical records is greatly appreciated.

The first QC set provided useful experience for all of us, and a number of changes in procedures were made to make the abstracting more uniform and sensible. These changes were described in a memo recently sent to all of the centers. Hopefully, the abstracting will now proceed more smoothly, but suggestions for improving the process are always welcome.

THE ELECTROCARDIOGRAPHY CENTER-ELECTRIFYING

Fitzsimons Army Medical Center is the site of the ECG Center for the Strong Heart Study. Direct computer connection is made by modem with all field MAC-PC units directly to a large "mainframe" central processing unit located on the hospital grounds. From the "mainframe" there is a direct connection with the Cardiology Service in the hospital. Although represented on the Steering Committee by Dr. Oopik, there is extensive involvement by most members of the cardiology staff at Fitzsimons to ensure the success of the ECG analysis. Both active-duty and civilian technical personnel assist with data processing and with technical advice when calls come in from the field centers.

Before an electrocardiogram arrives in the cardiology clinic, it has already been "digitized" prior to reaching the MAC-PC, it has been stored in the electronic memory of the MAC-PC, interpreted locally and transmitted digitally without any loss of resolution several hundred miles to the Marquette CAPOC unit at Fitzsimons. Electronic storage to hard disk takes place with remote processing carried out from the cardiology clinic. At Fitzsimons, each ECG is further archived in a personal computer database for continual tracking as well as secondary data analysis.

Each cardiogram is then copied and read blindly by 3 Staff Cardiologists. The panel of readers is composed of Maj. William Highfill, M.D., Maj. Steven Atchley, D.O., and Maj. John Van Deren III, M.D. Col. Richard Davis, M.D., Ph.D. is chief of the Cardiology Service and serves as the adjudicator of any disagreements among the panel of readers concerning the possibility of myocardial infarction. Arvo Oopik, MD. adjudicates other differences in readings among the panel.

Following this process, a single reading is entered as the "confirmed" reading, is returned by modem to the field site and is entered in the database. The mainframe transmits all confirmed copies in the middle of the night to minimize phoneline costs.

All cardiograms read as "abnormal" by the MAC-PC will be transmitted to the University of Minnesota, where they will be "Minnesota-coded".

The technical staff at Fitzsimons, who actually enter data into the computer, sort arriving ECGs, as well as respond to phone inquiries, is made up of a tireless crew of people who have multiple other duties in addition to the Strong



ECG Center
and Strong
Heart Study
Staff:

Left to Right -
Dr. Van Deren
Dr. S. Atchley
Dr. R. Davis
Dr. W. Highfill
Dr. A. Oopik

Heart Study. SPC John McCulley and SPC Donna Walker are the military personnel who have assisted tremendously to date.

The civilian component of the ECG center crew has been composed of Ms. Esther "Heidy" Heidenreich, Ms. Vicki Duran, Ms. Anne Elliott, and Ms. Rachel Motakhaveri. Jack Weber has provided the technical assistance in modifying computer partitions and other operational matters necessary to successfully accomplish this study. Jack has recently retired

from day-to-day operations because of multiplesclerosis and will be missed tremendously. Future assistance will be provided by Mr. Al Johnson.

In addition to the Strong Heart ECGs, electrocardiograms from all military facilities in a 15-state region are processed at Fitzsimons. The Fitzsimons staff is also well-known for its work in invasive and interventional cardiology and for the strength of its fellowship training program.

STRONG HEART STUDY CONTINUES TRADITION AT LAWTON INDIAN HOSPITAL

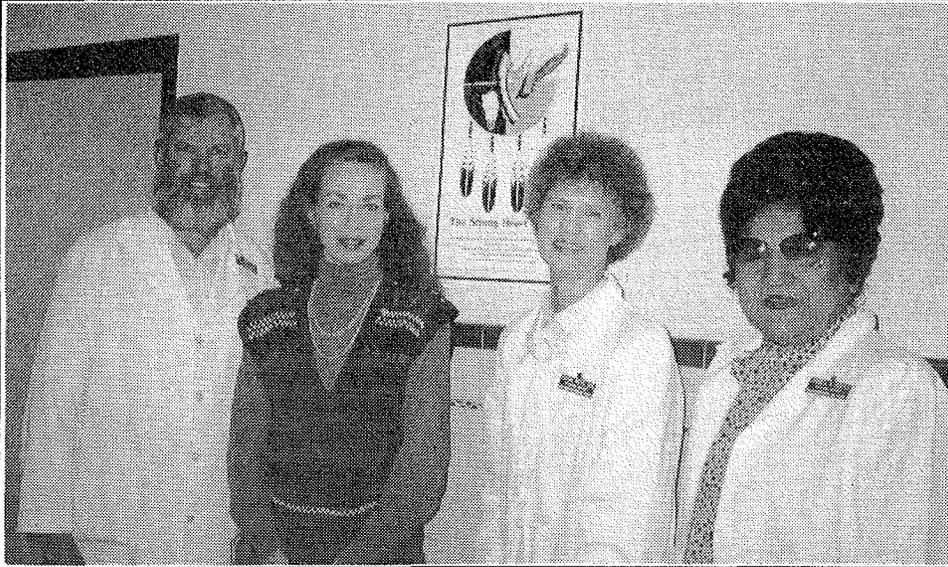
The Lawton Indian Hospital is the location of one of the two Oklahoma exam sites of the Strong Heart Study. Located about 85 miles southwest of Oklahoma City, Lawton is Oklahoma's third largest city, with a population of 88,000. The hospital has a history dating back to 1914, when the first section was constructed to take over medical care of the many Indians who were relocated to Oklahoma in the early 1900's. It is a 42-bed hospital with 14 physicians and 1 dentist. The hospital has hosted research projects since the early 1970's. This tradition continues with the Strong Heart Study.

Hospital facilities available for the Strong Heart Study, which examines participants three

days a week, include a first-floor conference room for the informed consent and excellent laboratory facilities. On the third floor, the Study occupies three rooms for the personal interview, physical examination and chart review.

The Strong Heart Study has an excellent staff: Martha Stoddart, in Oklahoma City, and Jary Mayes, Carol Mote and Juanita Cortez in Lawton.

Martha Stoddart, Project Coordinator, has a B.S. degree in computer science and mathematics and an M.S. degree in biostatistics. Immediately before joining the Study, she taught college-level computer



Lawton Indian
Hospital Strong
Heart Study
Staff:
Left to Right -
Dr. J. Mayes
M. Stoddart
C. Mote
J. Cortez

science for four years. Her research background includes work at the Oklahoma State Department of Health on a project to determine the effectiveness of an incentive program on the use of seat belts and at the Federal Aviation Administration on a study of the effects of tobacco on aviation safety. She also participated in two large studies at the University of Oklahoma Health Sciences Center (OUHSC): a study of sports-related injuries among secondary school participants throughout Oklahoma in 13 different sports and a study of thermography in the detection of breast cancer, from which her M.S. thesis was written.

Jary Mayes, Ph.D. in biochemistry, has been with the study since April of 1989. In addition to his duties as data abstractor, Jary processes laboratory specimens and, on busy days, assists the project nurse by conducting the medical history interview. His work history includes a postdoctoral fellowship in biochemical genetics, being a biochemistry professor at the OUHSC, and working as the associate director of the biochemical laboratories at the Chapman Institute of Medical Genetics at Children's Medical Center in Tulsa, Oklahoma. Jary lives on a farm near Lawton, where he raises cattle that produce low-fat and low-cholesterol meat.

Carol Mote, Project Nurse, received her R.N. degree from the University of Wisconsin School of Nursing at Eau Claire. Her previous

research experience involved working on a follow-up study of diabetes in Oklahoma Indians. Other related work experience includes operating room nurse and surgical floor nursing.

Juanita Cortez is our interviewer and tribal liaison. Prior to joining the study, she was employed by the Lawton Public Schools for 19 years and was also affiliated with the Collection Bureau for 4 years before that. Juanita, who is half Hispanic, is a member of the Kiowa Tribe of Oklahoma. She is very active in tribal elections.

The study is also assisted by Faith Jacob, a graduate student in public health (see Newsletter October 1989). She helps in scheduling exams and updating computer files.

Many staff members at the Lawton Indian Hospital have contributed to the Study. Special thanks go to Mr. Dennis James, Service Unit Director; Dr. Alberto Angles, Clinical Director; Dr. Edwin Chappabitty, Jr., Chief of Medical Staff; Dr. Maria Elmo, Chief of Internal Medicine; Mr. Grady Douglas, Laboratory Director, and his excellent staff: Allen Spencer, Carroll Bolding, Patricia Stonerod, Georgeanne Brown, Susan Mentzer, and Sue Burgess; Ms. Daisy Quoetone, Director of Health Records; Mr. Dan Hausman, Chief Pharmacist; and Ms. Marie Whiteman, Director of Nursing Services.