Meeting the cardiovascular challenge

On June 13, 2008, broadcast journalist Tim Russert of NBC News died from a heart attack. He was 58. Russert had coronary artery disease (CAD), a condition in which cholesterol, fat, and other gunk build up in the blood vessels and reduce the flow of blood to the heart. But the symptoms of his disease were well-controlled with medication and exercise.

What happened to Russert isn’t unusual. Like him, there are patients with CAD who have heart attacks even though they exercise, follow healthy diets, and receive proper treatment. On the other hand, there are people who remain untreated who do just fine. Furthermore, not everyone with risk factors for heart attacks (e.g. high cholesterol) suffer from them, while some people without any risk factors do.

Heart disease is the leading cause of death in North Carolina and the United States for men and women of every race. It accounted for approximately 21.3 percent of deaths in North Carolina in 2006, according to statistics from the Centers for Disease Control and Prevention. Unfortunately, the most widely used model to measure a person’s risk for a heart attack—the Framingham Risk Score—does not always do what it was designed to do. This score, which takes into account characteristics such as age, gender, blood pressure, cholesterol, and tobacco use, has a limited risk assessment ability of 0.69 for men and 0.72 for women.

MURDOCK Study community registry marks its first year

The MURDOCK Study Community Registry and Biorepository celebrated an exciting milestone on February 16, 2010 with its one-year anniversary of operations. Marked by two special events—enrolling four generations of the Pethelf family from Kannapolis, and hosting its first mass enrollment event to recruit Hispanics at St. James the Greater Catholic Church of Concord, the study has achieved much in the last 12 months and could not claim success without the support of its volunteer participants and local community collaborations.

If you know someone who is interested in enrolling, please have him/her fill out the card and include your name on the “referred by” line at the top.

If your referral JOINs the MURDOCK Study, you will be entered into a raffle drawing to win a prize!!

If you did not receive this card and are interested in referring others to the Study, please call our Study office (704-250-5861) or stop by our office (147 West Avenue, Kannapolis, NC 28081) and pick up some referral cards to use with your family and friends.

To all MURDOCK Study participants: Many of you received a referral card in your goodie bag thanking you for your participation on the day you joined the study.
massive speed at which technology is being used to witness, however, Pethel is most amazed at the Cannon Mills for 48. Among the many changes she’s lived in the area for 90 years and worked at technologically-advanced research campuses today. She buggy town into the site of one of the world’s most enormously over time, transforming from a horse-and- At 104, Pethel has seen Kannapolis grow and develop and overcome diseases that affect many people in North Carolina. The Kannapolis-based research study is planning to use new newspaper to her, and it featured a story about how before the Murdock Study community registry was about to celebrate its first year anniversary. Pethel, Correll, Pethel’s grandson Shane Pethel, 46, and her granddaughter Megan Pethel, 18—four generations of Pethels—met with Murdock Study staff. The staff reviewed the participation consent information with them and collected their blood and urine samples, thus officially enrolling the family in this large-scale initiative. The ambitious goals of the Murdock Study include discovering and improving treatments for hepatitis, heart disease, diabetes, osteoarthritis, and other diseases so that future generations will no longer suffer from them. Correll’s niece would have volunteered too had she been a resident of Kannapolis. “Mother found the study very interesting once the details were explained and she understood what volunteering required of her,” said Correll. “She especially liked it that her contribution would help many people long after she’s gone. That meant a lot to her. That meant a lot to all of us.”

Josie Kathleen Pethel initially heard about the Murdock Study in early February 2010. Her daughter Lou Jean Correll was reading the local newspaper and mentioned that she had a 104-year-old grandmother,” said Correll. “So the coordinator came to visit and told my mom about the study. I happened to be there at the time. Soon after, the information was passed on and there were four of us willing to sign up.”

On a blustery winter day in February 2010, shortly before the Murdock Study community registry was about to celebrate its first year anniversary, Pethel, Correll, Pethel’s grandson Shane Pethel, 46, and her granddaughter Megan Pethel, 18—four generations of Pethels—met with Murdock Study staff. The staff reviewed the participation consent information with them and collected their blood and urine samples, thus officially enrolling the family in this large-scale initiative. The ambitious goals of the Murdock Study include discovering and improving treatments for hepatitis, heart disease, diabetes, osteoarthritis, and other diseases so that future generations will no longer suffer from them. Correll’s niece would have volunteered too had she been a resident of Kannapolis. “Mother found the study very interesting once the details were explained and she understood what volunteering required of her,” said Correll. “She especially liked it that her contribution would help many people long after she’s gone. That meant a lot to her. That meant a lot to all of us.”

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If a risk score has an assessment ability of 0.50, the odds that it will accurately predict someone’s risk of a heart attack are just as high as the odds that it won’t. In contrast, if a score has a risk assessment ability of 1.0, the odds that it will accurately predict that risk is 100 percent. The closer a score’s assessment ability is to 1.0, the more useful it will be.

Through the Murdock Study, Duke researchers, led by cardiologists L. Kristin Newby and Svati Shah, are working to develop a risk score with a much higher assessment ability than the Framingham tool. They will derive this score from a risk model that combines 1) factors already known to increase the risk for heart attacks, including demographic characteristics such as age and gender; and conditions such as diabetes and obesity; and 2) other biological markers found in DNA and certain types of proteins and hormones that may also be associated with heart attacks.

The research team is using blood samples collected at Duke’s CATHGEN Biorepository to do their analysis. CATHGEN links blood samples with clinical, procedural, and routine laboratory data from nearly 8,000 unique patients who went to Duke for coronary angiography, a procedure that uses x-rays to examine the heart’s chambers and blood vessels. Following this analysis, the researchers will validate their findings by recruiting study participants from Cabarrus County and Kannapolis who have joined the Murdock Study.

“Ideally, a clinician should be able to tailor treatment and prevention strategies to one patient or to a group of patients with a specific set of characteristics,” said Dr. Newby. “By using a risk score that greatly improves our ability to correctly identify at-risk patients and predict how they will respond to various treatments, we hope to be able to implement more effective ‘personalized’ treatments and prevent more heart attacks.”