



# VA Research Currents

## Update from Health Services Research and Development

### Refocusing priorities to ensure maximum benefit for veterans

By Shirley Meehan, MBA, PhD, Acting Director

**H**SR&D's years of fostering capacity-building while the Research budget grew are paying off in increasing numbers of high-quality HSR&D proposals. Based on the notifications of intent to submit, we expect to receive nearly 200 project proposals for our December review. This is a four-percent increase over the last review cycle! That is the good news. The bad news is that the fruits of our labor come at a time when budgets are very constrained.

We are working with several senior VA scientific advisory groups and individual project managers to identify potential opportunities for cost-savings.

#### Toward an agenda for women's health research

Women are the fastest-growing segment of potential VA health-care users. They now make up 14 percent of the armed forces and 20 percent of new military recruits.

On Nov. 8 and 9 in Alexandria, Va., VA and non-VA experts in women's health took part in a meeting titled "Toward a VA Women's Health Research Agenda: Setting Evidence-Based Research Priorities for Improving the Health

see **WOMEN** on next page

We also are striving to identify sustainable capacity levels to ensure that we can continue to support important investigator-initiated research projects. We are hopeful that a combination of HSR&D and ORD efforts will help us move above the initial 14-percent funding level for projects reviewed in September. We believe we will be able finally to support approximately 17 percent. We also believe that, because of projects terminating in fiscal year 2006, we will be able to sustain at least that level in future rounds.

Given our current budget constraints, we must be especially diligent to emphasize areas of research that meet the special needs of veterans and targets areas where VHA has opportunities to make unique contributions. Accordingly, we are reevaluating our program priorities and plan to have a new umbrella solicitation for project proposals in late February that will replace most of the current HSR&D solicitations. Check the HSR&D web for the most up-to-date solicitation information: [www.hsrdr.research.va.gov/for\\_researchers/funding/](http://www.hsrdr.research.va.gov/for_researchers/funding/).

With recognition of the importance and value of bringing together multidisciplinary researchers, clinicians, and policymakers to explore ways to improve health care for veterans, planning is moving ahead for the

HSR&D National Meeting scheduled for Feb. 16-18, 2005. The meeting will be held in Baltimore, Md., and the theme will be "Improving Care for Veterans with Chronic Illnesses." This is a very important topic, as 29 common chronic diseases have been identified as prevalent among veterans. Among the top five are hypertension, substance abuse, and ischemic heart disease. The national meeting will include scientific workshops, papers and poster presentations, as well as the presentation of the Under Secretary's Award for Outstanding Achievement in Health Services Research. For the meeting agenda, abstracts and registration information, please visit the web at [http://www.hsrdr.research.va.gov/about/national\\_meeting/](http://www.hsrdr.research.va.gov/about/national_meeting/).

HSR&D investigators continue to contribute to the health services literature through publication of their study findings. For the most recent publications check the web at [www.va.hsrdr.research](http://www.va.hsrdr.research). Of special note, the November issue of *The American Journal of Managed Care* presents a number of articles by VA health services researchers that showcase the breadth of VA research and its applicability to non-VA settings.

On behalf of all of the HSR&D Central Office staff, best wishes for the holiday season and happy New Year! ■

## Magnetic pulses improve language ability in some stroke patients

**V**eterans Affairs researchers and colleagues in Boston have shown that applying magnetic pulses to a precise spot on the brain can help improve speech ability in some stroke patients with aphasia. Aphasia is a loss of the ability to use language, resulting from damage to the language centers in the left half of the brain, due to a stroke, tumor or head injury.

### Magnetic field affects neurons

The method, known as Transcranial Magnetic Stimulation (TMS), relies on a figure-8-shaped electromagnetic coil, about the size of a telephone receiver, that is held against the patient's scalp. As it is powered on and off, the coil generates a fluctuating magnetic field. The field penetrates the skull and creates an electric current in a half-inch square of the cortex, or surface region, of the brain. It is unknown exactly how TMS works, says lead investigator Margaret Naeser, PhD, but she and her colleagues presume that repeated treatments improve existing neural networks for language or help create new ones.

"The neurons in the affected area will depolarize, and then connect with other neurons," she said. "We believe it's affecting the whole language network."

Naeser, a linguist and speech pathologist with the VA Boston Healthcare System and professor of neurology with Boston University Medical School, has conducted neuroimaging research for 30 years. She says TMS is already in limited clinical use in Europe and the United States for depression and post-stroke paralysis, and may prove to be a valuable adjunct treatment, along with speech therapy, for aphasia. The National Institute on Deafness and

Other Communication Disorders and VA are funding her work on the topic. A key collaborator is Alvaro Pascual-Leone, MD, PhD, a TMS expert at Beth Israel Deaconess Medical Center and Harvard Medical School.

During treatments, the team uses magnetic resonance imaging (MRI) to track the positioning of the coil and make sure it is over the correct spot on the brain. Naeser's and Pascual-Leone's prior experiments have shown that even one or two centimeters off can temporarily impair language instead of helping it. They have pinpointed a small area in the right side of the brain that corresponds to the left "Broca's area," a language center named after the 19<sup>th</sup>-century French doctor who identified it. The researchers have found that only when the coil is centered over the front part of the right-hemisphere Broca's area is the desired effect achieved.

### Brain tries to compensate for damage to language sites

Earlier this year, the team published findings from a study on four stroke patients with nonfluent aphasia—a form of aphasia in which patients' speech is slow, poorly articulated and ungrammatical. The patients had suffered their strokes from 5 to 11 years earlier. They had plateaued in their language recovery and were thus no longer receiving individual speech therapy.

In nonfluent aphasia, the brain tries to compensate for damage to Broca's area and other left-hemisphere areas by forging new neural pathways for language on the right side. But the process is full of kinks and results in slow, broken speech. Naeser's team believes this may be because the

cortex in this area becomes *overactivated*, as shown in functional MRI scans. The slowly pulsating magnetic field generated with TMS calms the cortex. The researchers say this may help the neurons to abandon flawed pathways and seek out more viable ones.

### Patients in study improve scores on 'naming' test after TMS

After receiving TMS treatments for 20 minutes, five days a week, for two weeks, the patients in the study scored higher on tests in which they were shown pictures of everyday objects and asked to name them. The researchers expected the patients to show improvements only at two months post-treatment, but the gains continued through eight months. For example, one patient was able to name 4 of 20 pictures before the TMS treatments; 7 of 20 pictures at two months post-treatment; and 12 of 20 at eight months later. She was also able to name the pictures in less time after the 10 treatments.

On another test, in which the patients were shown a picture of children stealing cookies from a cookie jar and asked to describe what they saw, two of the four patients increased their longest phrase length by two words.

"For chronic aphasia patients who are 10 and 11 years post-stroke, that's really something," said Naeser. "Usually you don't see that—they're quite stable."

She added: "Obviously we need more research, but we're very encouraged with our findings, because the patients improved significantly, and they seem to *keep* improving." ■