



# VA Research Currents

## Expert panels help set course for reorganizing VA research

Veterans Affairs research continues to move toward a new, more integrated organization with the completion of reports by blue-ribbon panels on clinical research, quality measurement, implementation of research findings in clinical care, and laboratory sciences. Nelda P. Wray, MD, MPH, chief research and development officer, will use the committees' recommendations to revamp the Office of Research and Development (ORD) as it expands its efforts in each of those areas.

"We are extremely fortunate that we have the advice of truly gifted experts

from within and outside VA to guide us," Wray said. "They are helping us determine where we want to take VA research and providing us with a navigation plan for achieving our ambitious goals."

Wray said ORD will move rapidly on the reports. She noted that requests for applications based on the recommendations will be released starting this summer. Submissions will be due in January, and funding will occur by next April.

Each of the four panels was charged with forming proposals on revising the

research portfolio, developing additional research capacity, and altering the organizational structure.

### Major recommendations by the clinical research group included:

- Funding clinical research centers of excellence
- Restructuring ORD into four major program areas: laboratory sciences, clinical sciences, population sciences and rehabilitation research
- Establishing national clinical research networks and national re-

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## Update from Rehabilitation Research and Development

### New initiative will revitalize VA's orthotics and prosthetics program

By Mindy Aisen, MD, deputy chief R&D officer

Each year VA provides prosthetic care to 10,000 former service men and women who have suffered traumatic injury, vascular disease or other disorders. Another 100,000 VA patients receive orthotics care. The American Academy of Orthotists and Prosthetists projects that by 2020 the demand for prosthetic care will increase by 47 percent and orthotic care by 25 percent.

To address this challenge, Rehabilitation Research and Development Service (RR&D) has launched an initiative to revitalize VA's research program in this area and to take the lead in the overall prosthetics and orthotics (O&P) industry. Over the next two years, RR&D will implement programs to revolutionize O&P care in VA. RR&D is convening a blue-ribbon panel to write standards of care for veterans with limb disease and pending limb loss that are evidence-based, comprehensive, and reflective of best practices. Large-scale clinical trials based on the most current information, practices and technology will be undertaken to meet veterans' prosthetic needs.

VA rehabilitation engineers will be challenged to incorporate 21<sup>st</sup>-century technology into the design and fabrication of O&P devices. The cornerstone of this initiative will be an Engineering Platform Technology Prosthetics Center, which will recruit top engineers to make platform technologies accessible to VA investigators. Through this approach, RR&D will take advantage of the latest technologies in robotics, nanotechnology, tissue engineering and other fields and merge them with advances in molecular biology and genetics to provide state-of-the-art prosthetics care.

A crucial component of RR&D's initiative is to train O&P professionals as clinician researchers, giving them the power to direct clinical practice. Since 1980, half of the O&P programs in the U.S. have closed. RR&D will develop VA-based professional training for O&P professionals, administrators, researchers, allied healthcare workers and physicians. These training programs will foster new collaborations that will stimulate ideas and promote the

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## Selected findings

### Internet's role in health care overestimated

Only 40 percent of Americans with access to the Internet use it as a source of health care information, according to a report in the May 14 *Journal of the American Medical Association* by a team at Stanford University and VA's Palo Alto-based Health Economics Resource Center. Other estimates had ranged as high as 80 percent.

The researchers surveyed a nationally representative sample of nearly 9,000 adults. Among their findings:

- About a third of respondents said the Internet influenced their health care decisions, though more than 90 percent said the Internet had no effect on the frequency of their doctor visits or other contact with health professionals.
- Only 6 percent used e-mail to contact their physician or other health care provider.
- Fewer than 5 percent used the Internet to obtain prescriptions or buy drugs.

According to the authors, “[We] should not presume that use of the Internet for health information is universal or that the Internet strongly influences health care utilization.” ■

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### Possible alternative to hormone therapy

Scientists in Arkansas have shed further light on the workings of “estren,” a synthetic estrogen-like compound shown previously by the team to reverse bone loss in male and female mice with no effects on the reproductive system. The new research, published June 2 in the *Journal of Clinical Investigation*, pinpoints estren's biochemical pathways and may provide the groundwork for safer alternatives to conventional hormone replacement therapy.

“We are developing a new class of pharmaceutical agents with the potential for bone-building, sex-neutral hormone replacement therapy,” said senior author Stavros C. Manolagas, MD, PhD, director of the Center for Osteoporosis and Metabolic Bone Diseases at the Central Arkansas Veterans Health Care System and the University of Arkansas for Medical Sciences.

The researchers found that estren interacts with estrogen or androgen receptors outside the cell nucleus, in the cell membrane, to activate enzymes called kinases, which in turn help make certain proteins. Natural estrogen and hormone replacement therapy use this pathway but also act on sex-hormone receptors inside the cell nucleus. Both pathways are needed for the hormone to affect reproductive tissue, but only the extranuclear pathway is needed to protect bone. Estren uses this pathway exclusively and thus helps bone with no effect on the reproductive organs.

Earlier work by Manolagas' team showed that estren was more effective than estrogen for protecting bone in female mice, and just as effective as testosterone in male mice. In fact, while estrogen only prevented bone loss, estren actually increased bone density and strength. ■

### Low-carbohydrate diet outperforms low-fat diet

Obese patients on a low-carbohydrate diet for six months lost more weight and fared better on certain cardiovascular and diabetes measures than patients on a low-fat, calorie-restricted diet in a VA study published in the May 22 *New England Journal of Medicine*. The study is one of several in recent years to suggest that low-carbohydrate diets may offer some advantages over the low-fat regimen advocated by doctors and nutritionists since the 1970s.

Lead author Frederick F. Samaha, MD, chief of cardiology at the Philadelphia VA Medical Center and assistant professor at the University of Pennsylvania Medical Center, cautioned against discarding the low-fat approach, which he said has been shown to cut the risk of heart attack, but said more attention needs to be paid to the harmful effects on body chemistry of carbohydrate-rich diets.

In the study, 132 men and women were randomly put on either a low-fat or low-carbohydrate diet for six months. On average, the low-carbohydrate group lost about 13 pounds, compared to 4 pounds for the low-fat group. The low-carbohydrate dieters reduced their triglycerides by 20 percent, versus 4 percent for the low-fat group. Seven diabetic patients in the low-carbohydrate group were able to reduce their dose of insulin or other medication to control blood sugar, versus only one patient in the low-fat group. There were no significant changes in cholesterol or blood pressure levels in either group. ■

National Hotline Conference Call schedule:  
[http://vaww.va.gov/resdev/fr/call\\_calendar.cfm](http://vaww.va.gov/resdev/fr/call_calendar.cfm)

## *Strep vaccine researcher elected to AAP*

James B. Dale, MD, associate chief of staff for education at the Memphis Veterans Affairs Medical Center and chief of infectious diseases at the University of Tennessee, Memphis, was one of 55 leading academic physicians elected in 2003 to the Association of American Physicians. Dale is the inventor of a promising vaccine for group A streptococcus that is now being tested in humans. The vaccine is believed to be the only group A streptococcal vaccine cleared for clinical trials by the U.S. Food and Drug Administration in more than two decades.

**INITIATIVE** (cont. from pg. 1) evaluation and integration of recent advances.

By embracing a comprehensive view of O&P research, RR&D will develop a portfolio that includes investigations into best practices; clinical studies of limb preservation; technology using creative approaches to manage limb loss; and training programs that transform health care policies.

## **PANELS** (cont. from pg. 1)

source centers, such as biorepositories and centralized data warehouses

- Expanding clinical research fellowship, training and career development opportunities

### **Among recommendations from the quality measurement panel were:**

- Building understanding of the usefulness of quality and performance data
- Assessing quality measurement models from other industries for usefulness in health care
- Developing a framework for patient-doctor discussion of care preferences and values
- Establishing new field-based programs in quality measurement
- Creating an Office of Quality Measurement and Improvement Research in ORD

### **Recommendations by the implementation panel included:**

- Establishing centers for the study of organizational and leadership issues

- Developing relationships between existing research centers and academic institutions

- Creating a new unit in ORD explicitly responsible for implementation of research findings

- Supporting collaborations between researchers and VHA leaders

### **Key recommendations from the laboratory science panel included:**

- Consolidating small, independent activities to create “state of the art” programs in specific scientific areas

- Defining scientific content areas where VA research should be a leader and encouraging proposals in those areas

- Creating core research facilities

- Facilitating equipment sharing

“These groups looked at VA research in new and creative ways,” Wray said. “Their input will be invaluable as we work toward our vision of today’s VA research leading tomorrow’s health care.” ■

## Osseointegration workshop introduces new prosthetics technology to veterans

More than two dozen veterans with amputations attended a workshop on osseointegration sponsored by VA’s Rehabilitation Research and Development Service at the recent National Disabled Veterans Winter Sports Clinic.

The phenomenon of osseointegration was discovered in the 1950s by Swedish bioengineer Per-Ingvar Branemark, who had implanted titanium cylinders in the femurs of rabbits and then realized he could not extract the titanium without destroying the bone around it. He thus learned that bone

integrates with titanium components, and does not reject the element as it does other materials. The discovery led to the development of procedures to implant titanium bolts in the femur cavity of above-knee amputees. The bolt, with an extension attached, is used to attach a prosthetic leg via an Allen screw. The technique has been advanced in recent years by Branemark’s son, Rickard Branemark, MD, PhD, who led the VA workshop along with San Diego-based VA investigator Robert Meyers, PhD.

The technique, which is not yet approved by the U.S. Food and Drug Administration, is reported to improve range of motion and flexibility compared to traditional socket prostheses. It is also said to eliminate many of the complications experienced by users of traditional socket systems, such as skin sores, poor fit, sweating and pain.

VA is fostering a relationship with Branemark to develop osseointegration research and training in this country, with the aim of eventually providing the technology to veterans. ■

## Recent publications and presentations

Below is a representative sampling of recent publications and presentations. Due to space constraints, only VA authors and affiliations are noted.

“Clade B HIV-1 SuperInfection with Wild-Type Virus After Primary Infection with Drug-Resistant Clade B Virus.” Susan J. Little, MD; Douglas D. Richman, MD; Joseph K. Wong, MD. **San Diego.** *AIDS*, May 2, 2003.

“Core Self Evaluations as a Dispositional Basis for Job Burnout.” Richard G. Best, PhD. **San Antonio.** Society for Industrial and Organizational Psychology annual meeting, April 2003.

“Depression Treatment in a Sample of 1,801 Depressed Older Adults in Primary Care.” John W. Williams Jr., MD, MHS; Linda Harpole, MD, MPH; Polly Hitchcock Noel, PhD. **Durham** (JWW, LH) and **San Antonio.** *Journal of the American Geriatric Society*, April 2003.

“Guide to Conducting Tinnitus Retraining Therapy Initial and Follow-up Interviews.” James A. Henry, PhD; Martin A. Schechter, PhD; Stephen A. Fausti, PhD. **Portland.** VA’s *Journal of Rehabilitation Research and Development*, March/April 2003.

“Metformin: A Retrospective Review of Use in a VA Medical Center.” Cameron C. Lindsey, PharmD; Nicole M. Allcock, PharmD. **Kansas City.** *Federal Practitioner*, April 2003.

“The Organization and Delivery of Women’s Health Care in Department of Veterans Affairs Medical Centers.” Elizabeth M. Yano, PhD; Donna L. Washington, MD, MPH; Caroline Goldzweig, MD, MSHS; Cynthia Caffrey, MD; Carole Turner, RN, MN. **Greater Los Angeles** (EMY, DLW, CG, CC) and **Washington, DC.** *Women’s Health Issues*, March-April 2003.

“Pressure and Perfusion Imaging as Predictors of Diabetic Plantar Ulceration Risk.” Karen L. Perell, PhD, RKT; Oscar U. Scremin, MD, PhD; Dante Chialvo, MD. **Greater Los Angeles.** American Physiological Society annual meeting, April 2003.

“A Randomized and Blinded Multicenter Trial of High-Dose Fluconazole Plus Placebo Versus Fluconazole Plus Amphotericin B as Therapy for Candidemia and Its Consequences in Nonneutropenic Subjects.” Ronald G. Washburn, MD. **Shreveport** (La.) *Clinical Infectious Diseases* (online), May 8, 2003.

“Regionalization and the Underuse of Angiography in the Veterans Affairs Health Care System as Compared with a Fee-for-Service System.” Laura A. Petersen, MD, MPH. **Houston.** *New England Journal of Medicine*, May 29, 2003. ■

### On the VA R&D website...

- The recently updated policy directive detailing the roles of research administrators and individual investigators in ensuring biomedical lab security can be found at [www.va.gov/resdev/directive/HAZMAT-Directive-revised1.doc](http://www.va.gov/resdev/directive/HAZMAT-Directive-revised1.doc).
- For VA’s newest solicitation for studies on the health effects of military deployment, see [www.va.gov/resdev/fit/ProgramAnnouncementDeploymentHealthIssues.pdf](http://www.va.gov/resdev/fit/ProgramAnnouncementDeploymentHealthIssues.pdf).

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- Research Week roundup
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