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MENTAL ILLNESS

VA research in mental illness focuses on cognitive conditions, from anxiety disorders and depression to advanced schizophrenia. Investigators have made great strides toward identifying the underlying causes of these disorders and are currently working to identify improved treatment methods and better health service systems to care for those with mental illness. Following are brief descriptions of important studies that illustrate VA's research in this important area.

Team management improves depression care

Depression is the second most prevalent medical condition in the VA and has an impact on function and quality of life that is worse than many other chronic physical conditions. Most depression treatment takes place in primary care where it continues to be under-detected and under-treated. This study of depression treatment adapted the collaborative care model for managing chronic illness to the VA primary care setting and compared the team care approach with traditional consult-liaison treatment. In the team model, psychiatrists, psychologists and social workers were assigned to a team that developed a treatment plan based on the initial assessment and provided the plan to the primary care provider. Primary care provider efforts were reinforced by patient education materials and brief social work phone calls to support patient adherence, address treatment barriers and monitor symptomatology.

Team care resulted in significantly greater improvement in depressive symptomatology and psychosocial function than the more traditional consult-liaison treatment without increasing outpatient visits. As more chronic conditions are treated in the primary care setting, using this model may improve patient outcomes at a reasonable cost. Its potential impact on care and

outcomes for depression and other chronic conditions could be great. *Health Services Research and Development*

Hedrick SC, Chaney EF, Liu CF, Felker BL, Bagala R, Paden GR. Process of care in innovative and traditional treatments for depression in VA primary care: reallocating resources. Presented at VA Health Services Research and Development Service Annual Meeting, Washington, DC, February 15, 2001.

Chaney EF, Hedrick SC, Felker BL, Liu CF, Paden GR, Hasenberg NM. Improving treatment for depression in primary care: alternate strategies. Presented at Society of Behavioral Medicine Annual Scientific Sessions, Seattle, WA. March 23, 2001.

Screening tool helps to identify depression

Major depression can have serious consequences, yet it often goes undiagnosed and untreated. VA physicians now have an effective two-question screening tool they can use in outpatient settings to help identify veterans with major depression. They also have a new awareness of the scope of the problem. Recent research shows that depression is prevalent among 14 percent of VA outpatients (excluding those with substance abuse problems, mania and/or psychosis). These findings have been widely disseminated to increase screening. *Health Services Research and Development*

Whooley MA, Avins AI, Miranda J, et al. Case-finding instruments for depression: two questions are as good as many. Journal of General Internal Medicine, 12(7):439-45, July 1997.

Award winning sleep studies may help mentally ill

Eminent sleep researcher Robert McCarley, M.D., Deputy Chief of Staff for Mental Health Services at the Brockton/West Roxbury VA Medical Center, won the 1998 William S. Middleton Award, one of VA's highest scientific honors. Recognized as an authority on REM (rapid eye movement) sleep, Dr. McCarley was honored for his important contributions to our understanding of sleep and dreaming. For example, he was the first to systematically develop quantitative methods for testing

hypotheses on cellular control of sleep states. He and his colleagues have identified control mechanisms for non-REM sleep and demonstrated that certain brain stem cells that use the neurotransmitter (chemical messenger between nerve cells) acetylcholine are critical for promoting REM sleep. In contrast, they found that other brain cells using the neurotransmitters serotonin and norepinephrine act to inhibit REM sleep. McCarley's work has helped set the stage for new approaches to sleep abnormalities, including sleep disruptions in psychiatric disorders. *Medical Research Service*

Porkka-Heiskanen T, Strecker RE, Thakkar M, Bjorkkumm AA, Greene RW, McCarley RW. Adenosine: a mediator of the sleep-inducing effects of prolonged wakefulness. Science, 276(5316):1265-8, May 23, 1997.

Schizophrenia gene discovery

In a major breakthrough for understanding and treating schizophrenia, VA researchers have discovered a gene that plays a major role in schizophrenia and is linked to two physiological defects found in schizophrenics and their family members. In studies of nine families with multiple cases of schizophrenia, scientists learned that an inability to screen out irrelevant background noise, a common defect in schizophrenics, is linked to a specific gene that codes for a brain receptor activated by nicotine. This discovery may help explain why schizophrenics tend to be heavy smokers. Although well documented, the high incidence of smoking among schizophrenics had been overlooked as a possible link to the root of schizophrenia.

VA researchers tested subjects for the defect by subjecting them to repeated sounds while recording brain waves. Results showed that the defect is hereditary and is present in non-schizophrenic as well as schizophrenic family members. Using a variety of genetic techniques, the researchers traced the chromosomal location of the defective gene to the site of a specific nicotine receptor.

More recently, these investigators found that

a defect in eye movement tracking is linked to the same receptor. These findings of sensory defects linked to a specific neurotransmitter receptor could have major ramifications for schizophrenia treatment. Although inhaling nicotine activates the receptor and provides short-term relief for schizophrenics, the effect is too short-lived to be of treatment value. Researchers are now investigating the cause of the genetic malfunction and are collaborating with drug companies to identify potential drugs to bind the receptors. *Medical Research Service*

Freedman R, Coon H, Myles-Worsley M, Orr-Urtreger A, Olincy A, Davis A, Polymeropoulos M, Holik J, Hopkins J, Hoff M, Rosenthal J, Waldo MC, Reimherr F, Wender P, Yaw J, Young DA, Breese CR, Adams C, Patterson D, Adler LE, Kruglyak L, Leonard S, Byerley W. Linkage of a neurophysiological deficit in schizophrenia to a chromosome 15 locus. Proceedings of the National Academy of Sciences, USA, 94(2):587-92, 1997.

Study contributes to medication guidelines for schizophrenia management

Antipsychotic medication is an essential component of treatment for schizophrenia, the second most common discharge diagnosis in VA. Researchers studied the relationship between patient outcomes and the management of medication for schizophrenia. Results showed that 49 percent of patients receiving care through a VAMC or state psychiatric hospital were prescribed doses outside the range recommended by practice guidelines for schizophrenia. This study also showed that patients who were prescribed medication within practice guidelines had significantly less severe symptoms. Findings from this study have contributed to the selection of national performance measures for the VA that will improve the quality of medication management and better patient outcomes.

Health Services Research and Development

Kirchner JE, Owen RR, Nordquist C, Fischer EP. Diagnosis and management of substance use disorders among inpatients with schizophrenia. Psychiatric Services, 49(1):82-5, January 1998.



SUBSTANCE ABUSE

Research on substance abuse encompasses all types of addiction, including alcohol, nicotine, and other drugs. VA scientists are working to identify the underlying causes of abuse and addiction, and the subsequent treatment and rehabilitation methods that prove most effective. Research also includes efforts to understand the ramifications of substance abuse throughout the body, such as the liver disease resulting from alcohol abuse. Below are examples of progress in this critical area.

Probing the genetics of alcoholism

VA researchers are among leaders in research devoted to teasing out the complex interplay between heredity and alcoholism. For example, one VA team recently reported that genetically engineered mice without a certain cell receptor consumed less alcohol than unaltered mice. Mice without the dopamine D2 receptor, a cellular docking site for the brain chemical dopamine, consumed half as much alcohol as “wild type” mice. The study illustrates a technique in which particular genes influence substance abuse. Researchers use molecular methods to delete, or “knock out”, a suspect gene and then study the effect in the “knock out” mice. In an earlier study, the VA researchers discovered that mice without a gene containing the receptor for serotonin, consumed twice as much alcohol as unaltered mice.

Although they are just beginning to understand the role played by receptor subtypes in alcohol consumption, VA researchers indicate these studies may ultimately lead to new pharmacological treatments or gene therapies. The researchers caution scientists who study how genes affect behavior that genetically identical mice behave differently in seemingly identical tests at three separate laboratories. They emphasize that genetic manipulation and effects should be replicated cautiously before drawing conclusions, especially when there are slight results in behavioral differences.

Medical Research Service

Crabbe JC, Wahlsten D, Dudek BC. Genetics of mouse behavior: interactions with laboratory environment. Science, 284(5420):1670-2, 1999, June 4, 1999.

Phillips TJ, Brown KJ, Burkhart-Kasch S, Wenger CD, Kelly MA, Rubinstein M, Grandy DK, Low MJ. Alcohol preference and sensitivity are markedly reduced in mice lacking dopamine D2 receptors. Nature Neuroscience, 1(7):610-5, November 1998.

Youthful drinking linked to alcoholism in later years

Marc A. Schuckit, M.D., a world leader in the study of alcoholism, won the 1997 Middleton Award for more than 20 years of pioneering research on the importance of genetic influence in alcohol dependence. His innovative population studies have set the stage for exciting progress in efforts to identify genes that play a role in alcoholism.

In a landmark investigation, Dr. Schuckit and his colleagues tracked 453 men, starting when they were college students, for 10 years to determine the relationship between the initial effect of alcohol on a person and later alcoholism. The research team found that men who showed little reaction to alcohol as students were far more likely to become alcoholics 10 years later. Thus, being able to “hold one’s liquor” at age 20 was a warning sign for risk that clearly raises the possibility that genes controlling a person’s initial reaction to alcohol may contribute to later alcoholism.

These findings were instrumental in a decision by the National Institute on Alcohol Abuse and Alcoholism to invest almost \$5 million a year over 10 years in the six-center Collaborative Study on the Genetics of Alcoholism. Dr. Schuckit is among the principal investigators for this project, which is yielding important advances in the search for genes related to alcohol dependence.

Medical Research Service

Schuckit MA, Smith TL. An 8-year follow-up of 450 sons of alcoholic and control subjects. Archives of General Psychiatry, 53(3):202-10, March 1996.

Marc A. Schuckit, M.D., VA San Diego Health Care System and National Institute on Alcohol Abuse and Alcoholism.

Combination treatment helps smokers kick the habit

Smoking is a major problem among veterans, contributing to a variety of health problems, including arterial disease, heart disease, chronic lung disease, lung cancer, and other disorders. VA researchers have found that smokers who took mecamylamine orally and used a nicotine patch were more successful at quitting than smokers who used only a patch. In one study, participants who used the combination approach had a 40 percent smoking-abstinence rate after six months, compared with 15 percent among those who used a patch alone. In another study, 40 percent of subjects who used the combination before trying to quit were successful, compared with success rates of 10 to 20 percent among those who used a patch only, mecamylamine only, or a placebo.

When used with a nicotine patch, mecamylamine destroys the taste of tobacco and blocks brain receptors that help nicotine produce its pleasurable and addictive effects. The approach offers a new strategy against smoking addiction and its related health impacts. *Medical Research Service*

Rose JE, Behm FM, Westman EC. Nicotine-mecamylamine treatment for smoking cessation: the role of pre-cessation therapy. Experimental and Clinical Psychopharmacology, 6(3):331-43, August 1998.

Jed E. Rose, Ph.D., VAMC Durham, NC American Cancer Society

New pharmaceuticals to treat addictive disorders

The VA Cooperative Studies Program and the National Institute on Drug Abuse (NIDA) are working together to clinically test medications for substance abuse, alcohol abuse, and mental illness. The goal of this program is to support the development and subsequent marketing of new pharmaceutical entities to treat addictive disorders and certain mental illnesses. These are areas of research that have been under-represented in the pharmaceutical development and for which a high national priority has been set by the Congress.

This collaboration will consist of several projects, including seven current or completed studies. Three of the seven studies involve the

drug buprenorphine for the treatment of opiate-dependent patients. One of these studies tested the efficacy of a liquid formulation, while another studied the safety and efficacy of the combination drug buprenorphine/naloxone. Successful results of these studies are now being reviewed by the FDA. If the buprenorphine/naloxone combination is approved, it would allow a formulation that could be given in a take-home dosing form by physicians experienced in the treatment of opiate dependence, thus resulting in a third study in this area. There are currently 583 patients in their last year of follow-up at 38 test sites in New York, Florida, Illinois, Texas, California, and Washington.

Cooperative Studies Program

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SPECIAL POPULATIONS

Demographic, socioeconomic, and health risk factors distinguish some groups of veterans from the general population. The VA Office of Research and Development is ensuring that these groups are fairly represented in the research program. Veteran populations identified for special attention include veterans with permanent disabilities, veteran cohorts defined by shared military experience, minority veterans, and homeless, institutionalized or homebound veterans. Examples of VA's research in this area follow.

Tele dermatology benefits veterans with limited access to health-care delivery

Digital images of visual information can be transmitted within telemedicine networks. This study compared the reliability for the diagnoses and management plans given by clinic-based examiners to those of consultants using digital imagery. Preliminary results show that dermatologists agree on their diagnoses of skin lesions equally well whether evaluating the patient in person or reviewing the digital image. In addition, investigators found diagnostic accuracy to be comparable among clinic-based and digital image examiners. This study suggests that the clinical use of digital imaging is an appropriate alternative for patients with limited access to adequate clinical care. *Health Services Research and Development*

Whited JD, Hall RP, Simel DL, Foy ME, Stechuchak KM, Drugge RJ, et al. Reliability and accuracy of dermatologists' clinic-based and digital image consultations. Journal of the American Academy of Dermatology, 41(5 Pt 1):693-702, November 1999.

Services needed for women veterans differ from those of men

Findings from an HSR&D study on the health status of women veterans who use VA ambulatory care services is helping VA plan

more comprehensive and appropriate services for this growing service population. Study results strongly suggest that resources needed to care for women veterans differ greatly from those needed to care for male veterans. As the number of women veterans seeking VA care continues to increase, this information is critically important for providing high quality care for this special population of VA users. *Health Services Research and Development*

Skinner KM, Furey J. The focus on women veterans who use Veterans Administration health care: the Veterans Administration women's health project. Military Medicine, 163(11):761-6, November 1998.

Case management expands access to services for homeless veterans

Case managed residential care for homeless veterans with substance abuse tended to shift service delivery from inpatient settings to less expensive outpatient settings, this HSR&D study found. This approach improved patients' access to care. It also improved short-term outcomes that were measured in terms of health care, employment, and housing, although these gains tended to diminish during the year following treatment. This information will inform VA administrators and clinicians about the need for ongoing community care to maintain gains achieved in the residential setting. *Health Services Research and Development*

Conrad KJ, Hultman CI, Pope AR, et al. Case managed residential care for homeless addicted veterans: results of a true experiment. Medical Care, 36:40-53, January 1998.

Functional electrical stimulation may assist patients with paraplegia

Functional Electrical Stimulation (FES) uses surgically implanted electrodes to activate paralyzed muscles. A consortium including the Cleveland VA Medical Center, Case Western Reserve University and MetroHealth Medical Center is producing promising results that have led to new applications and many advances in restoring function to paralyzed individuals.

Advances by VA in the implantation and

control of functional electrical stimulation (FES) walking systems hold great promise for patients with paraplegia. A research participant with paraplegia is now testing a new 16-channel system that allows him to exercise and walk in a limited area around his wheelchair. An implanted neuroprosthesis is helping individuals with high chest or low neck injuries to exercise their legs, stand, and perform standing transfers. Another FES device offers promise for improved bladder and bowel control for individuals with spinal cord injuries, giving them greater freedom and reducing the costs and inconvenience of bladder and bowel care.

FES is also helping patients with tetraplegia due to spinal cord injury to grasp and release objects with paralyzed hands. Researchers are developing and testing new hand-grasp systems that offer finer control and extend function to the elbow and forearm. Another type of implant stimulates the triceps muscle so that individuals with tetraplegia can reach overhead and grasp objects. These and other advances in FES may allow persons with paraplegia and tetraplegia to expand employment opportunities and work more independently. *Rehabilitation Research and Development*

Kobeti R, Triolo RJ, Uhlir J, Bier C, Wibowo M, Polando G, Marsolais EB, Davis JA, Ferguson Y, Sharma M. Implanted functional electrical stimulation system for mobility in paraplegia: a follow-up case report. IEEE Transactions on Rehabilitation Engineering (in press).

Triolo RJ, Bogie K. Lower extremity applications of functional neuromuscular stimulation after spinal cord injury. Topics in SCI Rehabilitation 5(1):44-65, 1999.

Wuolle KS, Van Doren CL, Bryden AM, Peckham PH, Keith MW, Kilgore KL. Satisfaction and usage of a hand neuroprosthesis. Archives of Physical Medicine and Rehabilitation, 80:206-13, 1999.

Peckham PH, Keith MW, Kilgore KL. Restoration of upper extremity function in tetraplegia. Topics in SCI Rehabilitation, 5(1):33-43, 1999.

Early treatment with corticosteroids reduces damage from SCI

More than one million Americans live with disabilities resulting from spinal cord injury. Crushing injuries of the spinal cord trigger a cascade of biochemical events that may cause more damage than the initial trauma. To counter this destructive cascade, VA investigators tested two corticosteroids, methylprednisolone and trilizad, in animals with spinal cord injuries. The results: animals that received either drug within eight hours following injury could regain up to 25 percent of their lost neurological function. Subsequent clinical trials in patients with acute spinal cord injury established that this early intervention can help reduce permanent damage, setting the standard for treatment of acute compression spinal cord injury. Further research by VA is underway on newer compounds that may further reduce the disability and medical care costs of these injuries. *Medical Research Service*

Giovanini MA, Reier PJ, Eskin TA, Wirth E, Anderson DK. Characteristics of human fetal spinal cord grafts in the adult rat spinal cord: influences of lesion and grafting conditions. Experimental Neurology, 148(2):523-43, 1997.

Tissue engineering to replace lost nerves

Tissue engineering (combining living cells with synthetic materials) holds promise for repair and regeneration of skin, bone, cartilage, nerve and essential organs. Researchers at the VA Palo Alto Rehabilitation R&D Center are recruiting patients who require grafting of nerves in the hand, arm or leg. Rather than performing a whole-nerve autograft, the investigators will repair the damage with an artificial graft seeded with the patient's own cells from the sheath surrounding the nerve fibers. New biomaterials and techniques now being tested for reconstructing peripheral nerves may be applied to the more difficult problem of regeneration of the central nervous system after stroke or spinal cord injury. *Rehabilitation Research and Development*

Sabelman EE, Hu M. 3-Dimensional collagen strands promote Schwann cell proliferation & orientation. *Proceedings of the Biomedical Engineering Society 1998 Annual Fall Meeting, Cleveland, OH, Oct 10-13, 1998, paper no. TE. 14, Annals of Biomedical Engineering v. 26, Suppl. 1, p. S-137, Sept/Oct, 1998.*

Transplantation of myelin-forming cells to the injured CNS

Researchers in West Haven are studying the transplantation of Schwann cells as a treatment method for injury to the central nervous system (CNS). Using magnetic resonance imaging, the investigators hope to establish whether cells transplanted into the primate CNS can produce myelin, a complex protein that makes up the sheath. Myelinated nerves have found to conduct impulses more rapidly than those without myelin.

These studies serve as a necessary prelude to human studies that may lead to successful cell transplantation as a treatment for injury to the CNS. Investigators have also successfully developed cell harvesting and preservation techniques that will further research on transplantation of myelin-forming cells. *Rehabilitation Research and Development*

Kato T, Honmou O, Uede T, Hashi Y, Kocsis JD. Transplantation of human olfactory ensheathing cells elicits remyelination of demyelinated rat spinal cord. GLIA (in press).

Imaizumi T, Lankford AL, Kocsis JD. Transplantation of olfactory ensheathing cells or Schwann cells restores rapid and secure conduction across the transected spinal cord. Brain Research, 854(1-2):70-8, January 31, 2000.

Waxman SG, Kocsis JD. Experimental approaches to restoration of function of ascending and descending axons in spinal cord injury; the neurobiology of spinal cord injury. Kalb RG, Strittmatter SM, eds. Humana Press, 2000.



HEALTH SERVICES AND SYSTEMS

Health Services and Systems is a research effort focused on improving the health care provided to our nation's veterans, whether it be for a specific disease or a broad category of care, such as primary or mental health care. Research in Health Services and Systems addresses supply and organization of resources and services, evaluation of treatment methods, health and safety of research participants, application of research findings to standard practice, and outcomes of care. The studies described below are part of our effort to ensure that our veterans receive the best possible care.

VA home health care increases satisfaction for patients, caregivers

An innovative model of home health care used by Department of Veterans Affairs (VA) hospitals—featuring a greater hands-on role for doctors and close cooperation among nurses, social workers and other team members—was found to yield more satisfaction for patients and family caregivers than private-sector home care.

In a study of nearly 2,000 home-care patients, most of them severely disabled or terminally ill, researchers from VA, the University of Illinois at Chicago, and Northwestern University tested VA's "Team-Managed Home-Based Primary Care" model against non-VA home-care at 16 sites. While death rate and physical functioning did not differ between the two groups of patients, VA patients and their caregivers overall expressed more satisfaction with their care. Terminally ill patients in the VA sample gave higher marks to their care in six of eight quality-of-life measures, including emotional functioning, bodily pain and mental health. Caregivers in the VA group reported less "burden," translating into reduced caregiver stress and burnout.

The study is among the first large-scale evaluations of home care to consider the burden

on family members and their emotional well-being. Previous research has shown that informal home-based family caregiving costs the nation nearly \$200 billion per year, compared to around \$30 billion for formal home health care. *Cooperative Studies Program*

Hughes SL, Weaver FM, Giobbie-Hurder A, Manheim L, Henderson W, Kubal JD, Ulasevich A, Cummings J. Effectiveness of team-managed home-based primary care. Journal of the American Medical Association, 284(22):2877-85, December 13, 2000.

Enhancing the quality of informed consent (EQUIC)

Informed consent is the keystone of the protection of human rights in medical research, along with careful review of proposed projects. EQUIC is a Cooperative Studies program-wide project aimed at systematically improving the quality of informed consent, by testing and measuring the results of innovative approaches to informed consent. Practitioners of clinical trials must ensure that patients' participation in research is informed and voluntary. This responsibility suggests that researchers should strive continuously to improve the effectiveness of methods for informing prospective research volunteers about experimental studies, thereby enhancing the protection of their interests.

EQUIC will test a method to assess the capacity of a research volunteer to understand and consent to a study; a method for "tailoring" an informed consent encounter to the vulnerabilities uncovered by that assessment; and a direct assessment of the success of an informed consent process at producing a good result, defined in terms of the successful protection of the patient's rights. Once these are fielded and tested, it will be possible to study a wide range of innovations in informed consent in the full variety of patients studied in the Cooperative Studies Program. An important side benefit will be the ability to assess the true results of current practice in the VA CSP, and, potentially, other systems. *Cooperative Studies Program*

Enhancing the Quality of Informed Consent (EQUIC) CSP # 476, Palo Alto.

VA utilization and survival rates

An observational study focusing on nine medical conditions examined patient utilization and survival rates during a three-year period that included a major VA organizational shift from inpatient care to ambulatory care. Results of the study indicate improved access to outpatient services. While inpatient care dramatically declined and utilization of outpatient care increased (except urgent care), survival rates improved or remained the same. Thus, the major reorganization of the VA health care system during the 1990s does not appear to be associated with any deterioration in patient survival rates. Study findings also showed an unexplained geographic variation in both utilization and outcome rates across all 22 VA health care networks that warrants further research to ensure equal care and accessibility for veteran patients across the country. *Health Services Research and Development*

Ashton C, Petersen N, Soucek J, Menke T, Collins T, Wray N. Changes in mortality, utilization, and quality in the Veterans Health Administration 1995-97, HCQCUS Technical Report 00-01. January 2000.

Community-based outpatient clinics provide equal care

Between 1995 and 2000 VA opened 242 new Community Based Outpatient Clinics (CBOCs) to allow more convenient access to care for veteran patients. A CBOC may be a VA operated clinic or VA-funded/reimbursed health care facility that is separate from the main VA medical facility. A study evaluated the performance of CBOCs including the provision of preventive and other health care, as well as patient access to care, utilization, cost and satisfaction.

Findings showed that on most measures CBOCs' performance was equivalent to their affiliated VA medical center, while on average, the total cost of health care was considerably lower for CBOC patients. Study results also indicate a few areas that warrant attention, such as CBOCs having fewer eye examinations for patients with diabetes and higher cost per primary visit, fewer specialty visits, and fewer

hospitalizations on average for all patients. This study will help VA continue to develop more effective, inclusive and accessible health care at the many CBOCs located across the country.

Health Services Research and Development

Chapko MK, Hedeem A, Maciejewski M, Fortney J, Borowsky SJ (Management Decision and Research Center, HSR&D, Dept. of Veterans Affairs). *CBOC Performance Evaluation: Program Implications and Future Performance Measures. Report No.1. March 1, 2000.*

Maciejewski M, Hedeem A, Chapko MK, Fortney J, Borowsky SJ. (Management Decision and Research Center, HSR&D, Dept. of Veterans Affairs). *CBOC Performance Evaluation: Performance Report 2: Cost and Access Measures. Report No.2. March 1, 2000.*

Clinical guidelines reduce pressure ulcer rates in nursing homes

Pressure ulcers are a common medical problem associated with considerable morbidity, particularly for patients with long-term care needs such as those in nursing homes. Practice guidelines on the prevention of pressure ulcers have been widely disseminated, and these guidelines have been successfully implemented in some VA nursing homes. Investigators studied 36 VA nursing homes to identify how these facilities accomplished successful implementation so that pressure ulcer care may be improved system-wide. Findings show that organizational features that promote the implementation of clinical guidelines include a culture that promotes innovation and teamwork. A trend toward lower rates of pressure ulcer development was associated with quality improvement implementation. Information from this report assists VA in taking the appropriate actions to increase the adoption of clinical guidelines that result in improved patient care. *Health Services Research and Development*

Berlowitz DR, Bezerra HQ, Brandeis GH, Kader B, Anderson JJ. *Are we improving the quality of nursing home care? the case of pressure ulcers. Journal of the American Geriatrics Society, 48(1):59-62, January 2000.*

Berlowitz DR, Hickey EC, Young G, et al. *Improving nursing home care: importance of organizational culture and continuous quality improvement implementation.*

Abstract presented at the HSR&D Service 18th Annual Meeting, March, 2000. Washington, D.C.

Computerized reminders improve compliance with standards of care

VA researchers have found that computer prompts improve physician compliance with outpatient care standards. This large-scale study is the first to examine the effects of prompting physicians to follow a specified standard of care. Records were examined from 275 resident physicians at 12 VA Medical Centers with a total of 12,989 patients. Overall, doctors who received computerized reminders (CRs) had higher rates of compliance for all standards of care.

Researchers selected 13 standards of care that would be widely accepted and could be implemented using the existing hospital database. Standards of care focused on patient conditions, such as coronary artery disease, hypertension, diabetes, atrial fibrillation, myocardial infarction, and gastrointestinal bleeding. A computerized software program was developed to download the information obtained from patients' visits during this study and compared to the hospitals' prescribed treatments and prescriptions. The program then determined whether the participants received proper care.

Although the study indicates the computer reminders improve compliance with multiple standards of care, enthusiasm and use of the CRs declined during the study. The authors noted that one possible explanation for this decrease may be that competing demands on the residents' time in busy clinics lead to neglect of CRs over time. Further research is needed to study causes of the physicians' decrease in use of the computerized reminders and ways to keep compliance at a high level. *Health Services Research and Development*

Demakis JG, Beauchamp C, Cull WL, Denwood R, Eisen SA, Lofgren R, Nichol K, Woolliscroft J, Henderson WG. *Improving residents' compliance with standards of ambulatory care: results from the VA Cooperative Study on Computerized Reminders. Journal of the American Medical Association, 283(11):1411-6, September 20, 2000.*

Surgical quality at VA improves since implementation of NSQIP

The quality of surgical care at VA hospitals has improved significantly since the inception of the National VA Surgical Quality Improvement Program (NSQIP), a collaborative effort of HSR&D and VA's Office of Quality Management. The 30-day mortality rate after major surgery was found to decline by nearly 10 percent. The rate of postoperative complications decreased by 30 percent.

Better surgical and anesthesia techniques, improved supervision of residents in surgical training, and improvements in technology and equipment have contributed to VA's progress in surgical care. The NSQIP has been instrumental in identifying ways to improve surgical care. The project researchers gathered data from 123 VA medical centers on patient-specific factors that affected post-surgical mortality and morbidity. These data enable the researchers to differentiate high-quality from low-quality facilities and to identify best practices to improve care. NSQIP researchers also studied functional outcomes of veterans who undergo major surgery in urology and orthopedics in 14 VA medical centers. They also collaborated with four affiliated academic health centers to implement the NSQIP at non-VA hospitals. *Health Services Research and Development*

Daley J, Forbes M, Young G. et al. Validating risk-adjusted surgical outcomes: site visit assessments of process and structure. Journal of the American College of Surgeons, 185(4):341-51, October 1997.

Khuri SF, Daley J, Henderson W, et al. The National Veterans Surgical Risk Study: a risk adjustment for the comparative assessment of the quality of surgical care. Journal of the American College of Surgeons, 180(5):519-31, May 1995.

Study shows black patients admitted to VA hospitals have lower mortality rates

Study results indicate that black patients admitted to VA hospitals with common medical diagnoses have lower mortality rates than white patients. This study, using data provided by VA's Health Services Research and Development Service Center for Quality of Care and

Utilization Studies in Houston, examined racial differences in mortality among more than 35,000 patients admitted to 147 VA hospitals. Thirty-day mortality rates for patients who were admitted with one of six common medical diagnoses (pneumonia, angina, congestive heart failure, chronic obstructive pulmonary disease, diabetes, and chronic renal failure) were compared. Study findings show that 30-day mortality was lower among blacks than whites for each of the six medical diagnoses, and that black patients also had lower in-hospital and 6-month mortality rates. This survival advantage is not readily explained, however it may reflect the benefits of equal access to health care and the quality of inpatient treatment at VA medical centers. *Health Services Research and Development*

Jha AK, Shlipak MG, Hosmer W, Frances CD, Browner MS. Racial differences in mortality among men hospitalized in the Veterans Affairs Health Care System. Journal of the American Medical Association, 285(3):297-303, January 17, 2001.