Health care organizations in the public and private sectors alike face significant workforce challenges. More than 5 million new and replacement health care workers will be needed over the next seven years. Among U.S. hospitals, 89 percent of CEOs report significant workforce shortages. Meanwhile, the number of graduates from health care professional educational programs is not projected to increase sufficiently to meet future demands. As the baby boom generation ages into retirement, a crisis clearly looms.

The health care workforce crisis is hitting VA too, and on several fronts. Rapidly increasing levels of retirement eligibility threaten to create numerous vacancies in many of VA's managerial occupations. Most significantly, 98 percent of VA's senior executives can retire by 2005. In addition, 69 percent of VA's housekeeping officers, 63 percent of its supply managers, and 64 percent of financial managers are eligible to retire at any time. VA is already struggling to fill vacancies for physicians and nurses across the system, despite its efforts to offer competitive salaries.

Some of our workforce challenges are dictated by demographic factors, such as an aging workforce. Others are driven primarily by budget constraints caused by rising health care costs. For instance, in many parts of the country, VA salaries are not competitive for certain technical and professional occupations.

VA has tried to meet these workforce challenges head-on in a number of ways:

- Expanding and continuing to support programs for improving workforce recruitment, efficiency, and leadership, as well as employee satisfaction;
- Investing in employee training programs;
- Developing and testing new models of care to identify optimum staffing levels and make the most of the staff we have;
- Using research to explore new technologies, such as telemedicine, to better leverage our human resources and answer questions about employee satisfaction, burnout, and staff turnover.

Investing in Future Leaders and Staff

Projecting into the future, VA has created several programs designed to help meet staffing needs down the road. These include the Nurse Scholarship programs, the Executive Career Field Candidate Development Program, and eight career field internship opportunities for journeymen and managers in technical and administrative career fields. In addition, VA has created programs to develop future VA system leaders, including the Senior Executive Leadership Institute, the Executive Career Field, the Healthcare Leadership Institute and the soon-to-be implemented VISN/Facility Leadership Development Program (LEAD).

To better recruit and retain employees, VA has also developed a library of human resource
**Director’s Letter**

“Today’s VA research leading tomorrow’s health care” is the VA Office of Research and Development’s (ORD) vision statement under its new Chief, Nelda Wray, M.D., M.P.H. Dr. Wray has put forward three goals: 1) expand clinical research to generate the scientific evidence upon which medicine should be practiced; 2) expand translational research to ensure that treatments proven to be efficacious are rapidly translated into clinical practice; and 3) measure the value of research and interventions. ORD initiated Blue Ribbon Advisory Panels to achieve these and other goals vital to improving veterans’ health care.

The Clinical Research Advisory Panel is advising ORD on developing a clinical research program that will produce better diagnoses and treatments for conditions prevalent among veterans. The Translation Research Advisory Panel is working with ORD on how best to identify and remove barriers to rapid translation of research results into clinical practice. The Advisory Panel on Measuring Quality is advising ORD on using electronic databases to monitor and improve health care quality.

In addition, Dr. Wray has established a Laboratory Research Advisory Panel, as well as panels on building scientific career paths for underrepresented minorities in VA research, and on research ethics. Findings from these panels will undoubtedly result in opportunities, challenges, and new directions for research.

Meanwhile, I am pleased to report that HSR&D received 75 proposals in the May funding cycle, its largest number ever. We look forward to funding many new innovative HSR&D projects.

John G. Demakis, M.D.  
Director, HSR&D

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tools, which are available on the web. More than 60 policy and legislative initiatives to address workforce issues have been identified and are in various stages of development or implementation.

At the same time, VA is attending to the needs of its current employees through training and development initiatives such as the High Performance Development Model (HPDM), which trains VA employees in eight core competencies, and through the creation of the National Center for Organization Development (NCOD), which offers assessment and consultation services.

“NCOD is combating workplace burnout by conducting comprehensive workplace assessments to monitor the quality of the work environment and tracking employee burnout.”

NCOD assessment activities include the administration and analysis of results from the VA All Employee Survey, which measures VA staff satisfaction and 14 major areas of work life. These results are discussed at interpretation sessions with all levels of VA leadership. The survey was last administered in 2001 and will be administered again in 2004. NCOD, in collaboration with HSR&D’s Management Decision and Research Center, will add a section to the 2004 survey that will assess organizational culture.

Addressing Workplace Burnout and Stress

Increasingly, budget constraints are forcing VA employees to “do more with less.” Although increasing organizational efficiency is a necessary priority, it often incurs costs of its own. Workers who are under pressure to “do more with less” frequently experience feelings of burnout and depersonalization. As a result, they may increase their use of sick leave, while the level of service they provide to customers in and outside VA falls off. NCOD is combating workplace burnout by conducting comprehen- sive workplace assessments to monitor the quality of the work environment and tracking employee burnout.

Meanwhile, research is exploring new technologies that might reduce the amount of staff time required for specific tasks or services and at the same time improve access to care. For example, as another article in this issue discusses in greater detail, VA is beginning to explore the potential of telemedicine for making more efficient use of VA staff resources while improving patient care and expanding access to VA services. We believe that home telemedicine may have a profound impact on how VA health care staff provide clinical services.

Focus on Staffing Standards

VA continues to work to develop staffing standards for nursing, primary care, and specialty medical care. Physician productivity standards for primary care are expected to be recommended by July. In addition, VA has embarked on the Capital Asset for the Realignment of Enhanced Services (CARES) program, which projects 20 years into the future to predict changes in VA’s customer base, and formulates appropriate responses for VA to make.

VA is also establishing a Care Coordination Office. The mission is to improve access, coordination, continuity, and outcomes of health care for veterans, through the use of electronic information and communication technologies to provide and support health care when distance separates the participants.

VA leadership will need to look to research for innovative approaches to ease the workforce challenges of the future. There is a need for better measures of work, projections of future workforce requirements, benefits of different models of care, and innovative mechanisms and work redesigns to meet the needs of a changing health care environment.

Across all these activities, VA is working to ensure that we can be an employer of choice in a competitive environment, and that we will have the expertise needed to lead in the future.
Response to Commentary

HSR&D Working to Help Managers Address Workforce Challenges

By Martin P. Charns, D.B.A., HSR&D Management Decision and Research Center

Without question, VA's workforce is its most important asset. Yet, as Ms. Miller makes clear in her Commentary article, VA faces major challenges to maintaining an appropriately experienced workforce, particularly in view of growing demand for VA's health care services. HSR&D is working with partners in and outside VA to develop research-based information that will help VA deal with workforce challenges such as stress, retention, and development.

HSR&D began measuring employees' perceptions of organizational culture and their workday lives nationwide in VA in 1997 through the National Quality Improvement Survey (NQIS). The original purpose of the NQIS was to collect information related to the adoption of total quality improvement practices in VA facilities, as part of a national research project. The survey results, especially employee reports of their facility's culture and emphasis on the Baldrige dimensions of quality improvement, had been recognized in the management literature as important organizational characteristics. The NQIS was repeated in 1998 and 2000. These data have been made widely available throughout VA for use by both managers and investigators.

Separately, VA administered the All Employee Survey in 1997 and 2001 to assess employee satisfaction and perceptions of the organization. As Ms. Miller noted, these survey results were disseminated to VA network and facility leadership.

Data from both surveys have provided important findings. For example, they show that patient satisfaction correlates strongly and positively with employee reports of workplace diversity acceptance, staff cooperation, and the employee's ability to balance work and family responsibilities. Other findings show the link between staff cooperation and per-patient costs, employees' use of sick leave, and staff complaints concerning equal employment opportunity enforcement.

To avoid duplication of effort and to improve the data available to address workforce concerns, HSR&D in 2002 teamed up with the National Center for Organization Development (NCOD), Human Resources, and Occupational Health to continue analysis of the data from both surveys and to develop an improved, short, validated new instrument. The team sought to develop a more efficient data collection instrument and process for measuring those factors most critical to patient outcomes and workforce issues, and to maintain as much comparability as possible with previous surveys. As a result, the new All Employee Survey instrument provides reliable, valid measures that managers and researchers can use with confidence.

The new All Employee Survey process offers managers both Network and facility-specific data that can be compared across VA. These data will provide useful information about organizational culture, employee satisfaction, and other organizational factors. These data will also allow researchers to investigate how organizational and management practices may be related to workforce factors.

In a complementary effort, HSR&D’s Management Decision and Research Center together with its academic affiliate, Boston University, is collecting employee survey data in 13 private-sector health care systems that are recognized leaders in quality improvement. Seven of them are recipients of grants from The Robert Wood Johnson Foundation to pursue perfect patient care, measured in terms of the six aims identified by the Institute of Medicine — safety, effectiveness, efficiency, equity, patient-centeredness, and timeliness. The resulting database will have many elements in common with the VA All Employee Survey and will be available to compare VA results against those of leading health care organizations in the private sector.

HSR&D encourages collaborations between researchers and VA managers to identify specific organizational and managerial factors that may either positively or negatively affect the VA workforce. By working together, HSR&D and VA managers can contribute to making VA the employer of choice, and providing the highest quality health care to the nation's veterans.

Special Modules to Tailor VA All Employee Survey

A new aspect to the All Employee Survey is the addition of a series of optional modules. These modules allow network or facility managers to tailor the survey to target areas of special need or concern. There are currently six modules that each have a short measurement instrument managers may elect to use in their network, facility, or even within a workgroup within a facility. Managers can be confident that each of the modules contains a validated instrument and that resulting data can be compared with others in VA who have used the same module. Examples of modules currently available are:

- Six Institute of Medicine quality aims
- Nursing Magnet Factors
- Burnout
- Baldrige Dimensions
- Nurse Manager Survey
- Work Environment Survey

The New Employee Survey with optional modules will be piloted in Fall 2003 and will first be administered VA-wide in 2004.
Research Highlight

Home Telemedicine and the VA Workforce: Potential and Challenges

By Faith P. Hopp, Ph.D., and Julie Lowery, Ph.D., Ann Arbor HSR&D Center of Excellence, and Peter Woodbridge, M.D., M.B.A., Richard L. Roudebush VAMC

As VA contemplates significant workforce challenges, tele-home health care, a technology involving the use of video-based home telemedicine applications to provide home care services, may offer important answers. With these systems, clinicians can not only communicate in “real time” with distant patients, but also observe their patients’ behavior and movement, monitor medication compliance, and provide emotional support.

This technology holds the potential to profoundly influence the way in which VA health care staff members deliver clinical services, and it should receive careful consideration as a tool for addressing home care staffing issues within VA.

The Ann Arbor HSR&D Center of Excellence and the Home Based Primary Care Program (HBPC) at the Indianapolis VAMC are collaborating in a randomized trial evaluating the effectiveness of a video-based telemedicine system, and we expect to complete enrollment in September. Patients are randomized to receive either home telemedicine services or usual home care services.

Under the study design, we will compare the two study groups in terms of changes in health-related quality of life and patient satisfaction between baseline and at six months, as well as their use of inpatient and outpatient services during the study period. All study participants continue to receive in-person home care services when required for the delivery of clinical care. In addition, we recently surveyed the five HBPC nurses at the Indianapolis VAMC on their perceptions and experience with tele-home health care.

**Telemedicine and VA Staffing**

There are two important ways in which tele-home health care may factor into VA staffing issues. First, if home care nurses can substitute telemedicine visits for in-person home care, travel time and expenses required to visit patient homes could fall substantially. Our experience with the Indianapolis HBPC program, which is supported by non-VA research, suggests that telemedicine visits typically are shorter and more focused and structured than traditional in-person visits. This suggests that tele-home health care is likely to be associated with more nursing time spent in video communication with patients and less time traveling and conducting lengthy in-person visits — potentially improving access to care, particularly for patients in rural areas.

Second, tele-home health services may reduce the need for other VA health services, including hospital, nursing home, and emergency room care. The resulting cost savings may more than offset the increased staffing costs associated with introducing tele-home care. Although some telemedicine programs have reported that introducing telemedicine is in fact associated with reductions in emergency room visits, hospital and nursing home admissions, and hospital and nursing home days of care, few randomized trials have rigorously evaluated the effectiveness of tele-home health care services. Our study, when completed, will help address the potential impact of tele-home care on the use of other VA health care resources.

Already, however, our experience with this research project has brought to light several challenges. Some patients, including those with perception difficulties and those who require daily hands-on care, may not be appropriate for tele-home health care. Because of the effort required for equipment setup and training, this technology may also not be appropriate for patients who will be seen in home care for less than a month. Medical centers should consider developing tele-home care programs that are geared to long-term users of home care, for whom the cost and effort required for equipment setup are more easily justified. Most tele-home care patients will also continue to require some in-person visits, and programs will need to continue providing this care.

From our survey of home care nurses, we learned that nurses do not always see the benefit of tele-home care and sometimes find the technology difficult to use. Nurses also reported difficulty scheduling tele-home care visits while meeting their in-person care obligations for other patients. Thus, they frequently felt that the new technology actually increased their workload. To the extent that many telemedicine programs are designed to increase access to care, this perception is realistic. These findings suggest that VA may need to hire or re-train workers with the necessary skill base and interest in telemedicine, and provide ongoing training and support.

VA is still in the early stages of exploring the potential of telemedicine for improving patient care, expanding access to VA services, and making more efficient use of VA staff resources. We are optimistic that careful consideration will lead to the development of effective programs that will help VA meet these goals and that patients and staff will accept.

VA’s workforce is not growing sufficiently to keep pace with its rapidly expanding workload. Between fiscal year 1995 (FY95) and fiscal year 2001 (FY01), the number of veterans seeking medical services from VA increased a dramatic 43 percent, from 2.96 million to 4.23 million. Meanwhile, the total number of VA full-time equivalent employees rose by less than 1 percent, from 175,531 to 177,143.

This disparity in growth between workload and staffing poses a serious resource problem. Constraints on service delivery are likely to be revisited annually, since VA is required by law to decide each year which Priority Groups will be eligible to enroll in the VA health care system. To develop information to support decision-making the VA health care system. To develop information to support decision-making around VA enrollment and service capacity, HSR&D and VISN 2 launched a collaborative project to examine:

- the effect of low Priority Groups (defined for this study as Priority Groups 7 and 8 or Category C veterans) on workload,
- factors that affect veterans’ eligibility status changes,
- geographic patterns in eligibility status conversions,
- mechanisms for optimizing staffing levels, and
- areas of inefficiency.

Following enactment of the Veterans’ Health Care Eligibility Act of 1996, VA established Priority Groups for eligibility status. Previously, Categories were used to describe eligibility status. Our study overlaps those two time periods, so that we describe our findings in terms of both Categories and Priority Groups. Category A correlates with Priority Groups 1 through 6, and Category C correlates with Priority Groups 7 and 8.

Category A includes veterans with high-priority status, such as those with service-connected disabilities. Category C includes non-service-connected veterans whose incomes exceed annually revised income thresholds.

In FY95, 137,521 Category C veterans accounted for 4.6 percent of VA’s workload. By FY01, VA served 912,342 Category C veterans — 21.6 percent of its workload, representing a 563 percent increase. Meanwhile, the higher-priority or Category A veteran patient population increased only 17 percent. This disproportionate growth may spur VA to re-evaluate constraints on service delivery to lower priority veterans, in order to avoid undesired effects on service delivery to Category A veterans.

We found that eligibility status, particularly for Category C veterans, is dynamic over time. The results for the FY97 cohort of Category C veterans show how much change can occur in a cohort over a single or multiple years. Among the 230,377 VA service users assigned to Category C in FY97, we found that 31.6 percent did not use VA services in FY98; among those who did use VA in FY98, 31 percent had changed to Category A.

Looking across FY97 to FY01, we found that 44.5 percent of 230,377 Category C veterans eventually left the VA system. Among the 55.5 percent who continued using VA services, 52 percent changed to Category A status. Similar patterns were found for other cohorts of Category C patients we studied.

In addition to income, other factors we found that affected changes from Category C to Category A included variables such as age, number of dependents, race, and period of military service. Further analysis showed that Category C veterans in VISNs 1 through 4 and 12 through 14 were less likely to convert to Category A status than Category C veterans in VISNs 6, 7, 10, 16, 18, 20, and 22. Put another way, Category C veterans in the “Sun Belt” were more likely to convert to Category A than Category C veterans living in the “Snow Belt.”

“. . . dissimilar staffing across VAMCs could compromise the principle of equal access.”

After employing a range of analyses, we found that VA improved its operational efficiency, as represented by a 14 percent reduction in cost, from FY95 to FY02. Additional efficiency gains may be achieved in areas such as administrative personnel. Although it seems no VA medical center has too many nurses or other key clinical staff, dissimilar staffing across VAMCs could compromise the principle of equal access.

To support equal access, this study used a number of statistical techniques to develop an analytic framework that can estimate optimal staffing levels for VAMCs and identify situations of overstaffing and understaffing.

We are now completing the optimal staffing level analyses and preparing the final report for HSR&D review. The methods employed in the staffing analyses can provide VA with additional tools for addressing its workforce challenges.

For more information about this study, please contact Dr. Engelhardt at 518/626-7336, or joe.engelhardt@med.va.gov.
Database analysis might explore the relationship between staffing variables and pressure ulcers or between staffing variables and patient falls.”

The VA Nursing Outcomes Database Project: Leveraging Nursing Data to Improve Quality

By Marti Buffum, D.N.Sc., A.P.R.N., B.C., C.S., Anne Sales, M.S.N., Ph.D., R.N., and Sandra K. Janzen, M.S., R.N., C.N.A.A.

Nurse staffing has become increasingly important in evaluating and ensuring health care quality and patient safety and in managing resources. The American Nurses Association’s Safety and Quality Initiative demonstrated that aspects of nurse staffing variables, such as skill mix and the number of hours of care provided by nursing staff, are related to patient outcomes considered sensitive to nursing care, such as pressure ulcers, falls, infections, and patient satisfaction with nursing care.

To expand VA’s understanding of the relationship between nurse staffing and patient outcomes, VA’s National Nursing Executive Council has launched a 16-month national pilot project to create a nursing outcomes database. Specifically, the project has three objectives:

- establish feasible, consistent, and reliable data collection methods for obtaining nursing-sensitive quality indicators and staffing at the patient care unit level;
- build the pilot VA nursing database; and
- develop prototype reporting processes and formats that will help sites benchmark and compare patient quality outcome indicators at the local, network, and national levels.

The database will have multiple uses. It will allow for testing of practices, provide an evidence base for assessment and interventions, and determine relationships between the structure and processes of nursing care. The database will be designed to generate reports at unit and hospital levels that will enable benchmarking within and among VA facilities, and it will be available for research studies related to structure, process, and outcomes across VA. Although the current pilot project begins with acute care settings in 12 randomly selected sites, the long-range plan will extend to all VA health care facilities and to other settings, such as psychiatry, long-term care, and ambulatory care.

The pilot sites for the project include 12 randomly selected VA hospitals with at least two acute care units each. Both primary data from each facility and extracted elements from existing VA electronic data sources will be collected. All analyses will be at the unit level. The first phase of data collection will focus on indicators that address staffing, skill mix, falls, and pressure ulcers. This first step will validate information extracted from data sources and will be done through various means. For example, staffing data might be extracted from existing VA electronic sources. Site coordinators will validate the data by cross-checking with electronic or paper staffing reports.

By tapping data sources at the level of the patient care unit, the nursing database will offer VA researchers and managers an important new tool. Nursing is at the crux of health care. With this new database in place, VA will be well positioned to expand its efforts to improve patient care and manage resources more efficiently.
Health disparities, defined as differences in the incidence, prevalence, mortality, and burden of diseases and other health conditions among specific populations, represent a critical health care issue for the nation. While measures of overall health within the United States have improved over the last two decades, health disparities among certain groups remain, and in some instances, grow wider. In response, federal programs such as Healthy People 2010 and the Department of Health and Human Services’ Initiative to Eliminate Racial and Ethnic Disparities in Health have been implemented to address these health inequities.

With a similar commitment to achieving equity in health and health care, the VA has recently designated the Center for Health Equity Research and Promotion (CHERP) as a national HSR&D Center of Excellence in Health Services Research. CHERP brings together the considerable resources of the VA Pittsburgh Healthcare System, Philadelphia VA Medical Center, the University of Pittsburgh, and the University of Pennsylvania to respond to the national initiative to reduce health disparities in the United States.

CHERP’s mission is to reduce disparities and promote equity in health and health care among vulnerable groups of veterans. Based on its mission, CHERP has five interrelated goals:

- To create a critical mass of core investigators and staff, organizational structure, core programs in research infrastructure, and physical and intellectual environment that promote the mission and goals of CHERP.
- To increase the knowledge base by which health disparities are detected and understood, including identification of associated individual or patient, health care provider, health care system, social, and environmental factors.
- To define aspects of the VA health care system that can reduce inappropriate health disparities by improving medical practice, by improving patient interaction with the health care system, or by mitigating the effects of social or environmental factors.
- To support academic research training, multidisciplinary collaboration, and community partnerships that build capacity within VA to reduce health disparities.
- To advance the understanding and elimination of health disparities through effective interactions with relevant community stakeholders and dissemination of research results to targeted audiences of health professionals, patients, health policy makers, and the public.

CHERP will become a national resource for VA and other investigators pursuing research in the area of health disparities and will help VA meet its national goal of reducing these disparities among vulnerable populations.”

CHERP expands the VA health services research portfolio and complements the research capacity of existing HSR&D Centers of Excellence. Over the next five years, CHERP will become a national resource for VA and other investigators pursuing research in the area of health disparities and will help VA meet its national goal of reducing these disparities among vulnerable populations.

CHERP will meet its goals through an organizational structure that promotes and leverages synergism between two robust VA medical centers and their academic affiliates. Together, Michael Fine, M.D., M.Sc., of the VA Pittsburgh Healthcare System and the University of Pittsburgh, and David Asch, M.D., M.B.A., of the Philadelphia VA Medical Center and the University of Pennsylvania, direct the center. This partnership enables CHERP to tap into the wealth of epidemiologic, biostatistic, psychometric, and qualitative expertise in health services research from two key centers within the Veteran’s Integrated Service Network Four (VISN 4).
This cross-VISN cooperation has resulted in an innovative organizational structure designed to unify two geographic sites and meet specific research needs. An executive committee of representatives from the VA Pittsburgh Healthcare System and the Philadelphia VA Medical Center leads CHERP. This committee includes the directors, the chair of the Intramural Research Subcommittee, two core faculty members, and the co-chiefs of three specialized “cores.”

The Measurement Core provides consultation and technical support to investigators on a range of measurement issues, from item scale construction to qualitative data analysis, to instrument development for economic analysis. The Data Management, Programming, and Statistical Core is the central point of contact for access to and analysis of the broad range of administrative and clinical data from VA and non-VA sources. The Dissemination and Communication Core supports all CHERP investigators in disseminating research results, developing policy recommendations, delivering information to target audiences, and developing liaisons with the community.

Addressing Multiple Issues

Within the field of health disparities, CHERP focuses its research on issues of particular relevance to the VA, which serves a racially diverse, disproportionally poor, and chronically ill population. Racial and ethnic health disparities are well documented within and beyond the VA and racial and ethnic minorities are one of CHERP’s designated focus areas. Another focus, often related to race but also distinct from it, is socioeconomic status, which may play a role in determining health status, even in the presence of an accessible health care system. CHERP also focuses on comorbid disease that may result in health disparities, especially substance abuse and serious mental illness, which are prevalent in VA populations.

Off to a rapid start, CHERP has already begun to fulfill its mission through the funding of 11 local projects in its first year. These projects seek to answer a wide range of important and specific health disparity questions. Among them: Are there racial differences in oral antibiotic use at the VA Pittsburgh Healthcare System? How can end-of-life services be made more ethnically appropriate? What are the racial and ethnic variations in joint replacement utilization within the VA? To what extent are there racial differences in depression management? Do provider-patient communications about prostate cancer risk differ depending on race? How does preventative care vary among VISNs? How does substance abuse affect the offering and completion of coronary revascularization procedures?

Other projects focus on broader health disparity research issues, such as adjusting for selection bias, improving a symptom assessment scale for patients with end-stage renal disease, examining the interplay between social environment and diabetes management, and the generalizability of health disparities research conducted within the VA. These and other research projects will answer key questions about the factors that lead to health disparities, the elements of the health care system that can reduce inappropriate disparities, and the design and evaluation of interventions to improve health and health care within the VA and elsewhere.