Hospital Studies

Receipt of certain major procedures by hospitalized adults varies by race and sex

If you are black or female, your chances of receiving a major diagnostic or therapeutic procedure while in the hospital is far less than if you are white or male, according to a study conducted while the authors were with the Agency for Health Care Policy and Research.

It shows that hospitalized black patients were less likely than their white counterparts to receive major therapeutic procedures for 37 of 77 conditions (48 percent). Females were less likely than males to receive major therapeutic procedures for 32 of 62 conditions (52 percent).

For example, blacks and women were significantly less apt than whites and men to receive therapeutic procedures for various types of fractures and a remarkable number of traumatic injuries ranging from traumatic spinal cord and head injuries to stab wounds. Black women had a significantly lower rate of therapeutic procedures than white women for nearly all female reproductive system diseases. Blacks had a significantly lower rate of therapeutic procedures than whites for several common cancers such as colon, bladder, cervical, and breast cancer. Females had lower rates of major therapeutic procedures than males for many infectious conditions ranging from bacterial pneumonia to urinary tract infection. Finally, blacks and females were less likely to receive a major diagnostic procedure for 21 percent and 26 percent of conditions, respectively.

These differences persisted even after controlling for patient severity of illness and other factors affecting decisions about use of procedures. This apparent variation by a patient's race and/or sex in the provision of medical treatment needs to be investigated, according to study authors D. Robert Harris, Ph.D., now with Westat, Inc., in Rockville, MD; Roxanne Andrews, Ph.D., now with the California Office of Statewide Health Planning and Development, Sacramento; and Anne Elixhauser, Ph.D., who is now with MEDTAP International, Bethesda, MD. Their findings are based on an analysis of 1.7 million hospitalizations using discharge abstract data from the 1986 Hospital Cost and Utilization Project (HCUP-2). This is the most current year of all-payer national data for analyses by race (more current national databases have high rates of missing data for race). Studies on racial differences in procedure use show similar findings for hospitalizations in the 1990s and mid-1980s.

For more details, see "Racial and gender differences in use of procedures for black and white hospitalized adults," by Drs. Harris, Andrews, and Elixhauser, in *Ethnicity & Disease* 7, pp. 91-105, 1997. Reprints (AHCPR Publication No. 98- R018) are available from the AHCPR Publications Clearinghouse.

Problems in communicating critical hospital lab results delay necessary treatment

Hospital laboratories are required to immediately report critical laboratory test results (CLRs), such as excessively high or low blood sugar. But even when critical results are promptly reported by the laboratory, delays in treatment to correct the problem are common, concludes a study supported in part by the Agency for Health Care Policy and Research (HS08297). The study, conducted by researchers at Brigham and Women's Hospital in Boston, found that difficulty communicating critical results directly to the responsible physician is the likely cause of some delays in treatment.

Many laboratories typically phone the information to a staff member on the patient's floor. The floor secretary must tell the nurse, who in turn must tell the responsible physician, who frequently must be paged several times. New communications methods, including computer-based technologies, should be explored to test their potential to reduce such treatment delays, suggest the researchers.

For this study, the researchers reviewed medical charts at one hospital in 1993 to find CLRs due to dangerously high or low sodium, potassium, and glucose and determine the time intervals until an appropriate treatment was ordered and the critical condition was resolved. According to the researchers, it took a median of 2.5 hours for physicians to order an appropriate treatment (5 or more hours for 27 percent of CLRs). This interval was 1.8 hours when the CLR met the laboratory's criteria (above or below a certain level) and a phone call was made by the laboratory technician to the floor. The interval was 2.8 hours when the CLR met more complex criteria not requiring a phone call, for example, rapid change in sequential laboratory results. The median time until the condition resolved was 14.3 hours: 12 hours for CLRs that met the hospital's criteria and 20.9 hours for CLRs that met the more complex criteria.

For more information, see "How promptly are inpatients treated for critical laboratory results?" by Gilad J. Kuperman, M.D., Ph.D., Debbie Boyle, Ashish Jha, and others, in the January 1998 *Journal of the American Medical Informatics Association* 5, pp. 112-119.

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Managed Care

HMO coverage may alter treatment choices and hospital stays for women with breast cancer

Chances of survival from early-stage breast cancer are similar whether a woman undergoes breast-conserving surgery (BCS) followed by radiation therapy (currently recommended for most women) or modified radical mastectomy (MRM). However, an analysis of data from 1988 and 1991 showed that if a woman belonged to a health maintenance organization (HMO) in these years, she was less likely to have BCS instead of mastectomy. In addition, if she had a mastectomy, and especially if she belonged to a California HMO, she was apt to stay in the hospital 1 or 2 days less than a woman with other private insurance.

The overall cost of BCS may be considerably higher than MRM due to the high cost of the radiation therapy that follows surgery. This cost difference may provide HMOs with an incentive to recommend mastectomy over BCS for otherwise similar patient and clinical factors, suggests Jack

Hadley, Ph.D., the principal investigator. Dr. Hadley and Jean M. Mitchell, Ph.D., of Georgetown University Medical Center analyzed hospital discharge abstract data on nonelderly women with breast cancer from five States (Massachusetts, New York, New Jersey, Maryland, and California) for 1988 and 1991. Their research was supported in part by the Agency for Health Care Policy and Research (HS08395).

Across all five States, women with HMO coverage were estimated to be 93 percent as likely to receive BCS as women covered by other private insurance. Average length of stay for women who had a mastectomy was 4.34 days for the entire sample, ranging from 2.98 days in California to 5.78 days in New York. Nearly 12 percent of mastectomy patients in California were discharged within 1 day. Among women who had a mastectomy, HMO enrollment was associated with a 4.5 percent shorter average length of hospital stay and a greater likelihood of a short stay. One limitation of this study is that disease stage, a key determinant of treatment choice, was not available from the discharge data.

More details are in "Breast cancer treatment choice and mastectomy length of stay: A comparison of HMO and other privately insured women," by Drs. Hadley and Mitchell, in the Winter 1997/98 *Inquiry* 34, pp. 288-301.

Managed care patients with chronic diseases are hospitalized less often than those with traditional insurance

Patients with chronic diseases who are insured by prepaid managed care systems (PPD) have 15 percent fewer hospitalizations than expected for people with their medical conditions. In contrast, chronically ill patients insured by fee-for-service (FFS) plans have 9 percent more hospitalizations than expected, according to a study supported in part by the Agency for Health Care Policy and Research (HS06665).

A disturbing finding is that sicker PPD patients have 12 percent fewer hospitalizations than similar FFS patients. But at the well end of physical functioning, PPD patients have 4 percent more hospitalizations than similar FFS patients, notes Eugene C. Nelson, Sc.D., of Dartmouth-Hitchcock Medical Center. Half of this difference in hospitalization rates was due to intrinsic characteristics of the payment system itself. But it was difficult to discern which specific elements of the prepaid systems studied (rigorous precertification requirements, utilization inhibitors, physician specialty, and physician incentives) were responsible for reduced hospitalizations. This is the first study to assess use of health services by prepaid versus FFS patients with diverse chronic medical diseases. It is based on longitudinal data for 1986 to 1990 from the Medical Outcomes Study (MOS) of older patients with chronic medical conditions conducted in three cities. The researchers compared hospitalizations, office visits, and insurance payment systems for 1,681 patients under treatment for hypertension, diabetes, heart attack, or congestive heart failure in the practices of 367 clinicians. They conclude that it remains to be seen whether these lower hospitalization rates for prepaid patients with chronic health problems can be balanced with good clinical outcomes, general health status, and satisfaction with care.

More details are in "A longitudinal study of hospitalization rates for patients with chronic disease: Results from the Medical Outcomes Study," by Dr. Nelson, Colleen A. McHorney, Ph.D., Willard G.

Manning Jr., Ph.D., and others, in the February 1998 *Health Services Research* 32(6), pp. 750-758.

Priorities identified for managed care research agenda

As health care markets evolve, new ways to finance, organize, and deliver care are emerging. Some of these changes have been controversial, raising fears that cost containment will occur at the expense of access to needed services and quality of care. Yet some of these same market pressures and responses also have the potential to improve quality through enhanced coordination, more systematic quality measurement and monitoring, and active management of clinical care. As this market experimentation continues, policymakers—as well as purchasers, providers, and consumers of care—need empirical evidence of what is working and what is not.

As highlighted in the January 1998 issue of *Research Activities*, articles based on the initial wave of AHCPR-funded market forces studies provided the first rigorous evidence of the impact of market changes on quality, access, and cost. These issues remain a major area of funding interest for AHCPR, as noted in the Agency's recently published Program Announcement.

To inform and spur the next wave of research on markets and managed care, AHCPR held an invitational meeting on "Health Care Markets and Managed Care: A Discussion of Emerging Research Priorities" in January 1998. The goal of the meeting was to identify central questions for research in four priority areas: health care markets, managed care and access, chronic illness, and long-term care. Four commissioned papers and an introductory article by Irene Fraser, Ph.D., Director of AHCPR's Center for Organization and Delivery Studies, are summarized here.

Fraser, I. (1997, December). "Research on health care organizations and markets: The best and worst of times." ***Health Services Research*** **32(5), pp. 669-678.**

Major experimentation in social programs such as Medicare and Medicaid, coupled with unprecedented levels of change in health care markets, has created a situation that cries out for research about what works (or does not work) and why, according to Dr. Fraser. She outlines four challenges that face health service researchers.

First, past research has focused on hospitals and managed care plans but not on purchasers, who have been the principal drivers of change. Other emerging players also need to be studied, for example, provider-based integrated delivery systems, community care networks, and new large physician group practice arrangements.

Second, researchers should move their focus beyond examining the differences between managed care and indemnity plans in incentives, performance, and outcomes to study the impact of particular managed care features and arrangements.

Third, investigators need to broaden their research on incentives to include studies on the impact of nonfinancial factors such as organizational culture and leadership. For instance, are motivations and ethics different in for-profit versus not-for-profit systems? What happens after two organizations with very different organizational cultures merge or become partners?

Fourth, investigators should give greater attention to impact studies, relating events and trends in public and private financing and delivery of health care to outcomes such as health care access, costs, and quality. For instance, do cost-sharing requirements prompt consumers to be more selective about use of health services or to delay obtaining necessary care? What is the impact of market changes and alternative financing and delivery arrangements on people who have chronic care needs?

Reprints of Dr. Fraser's article (AHCPR Publication No. 98-R019) are available from the AHCPR Publications Clearinghouse.

Hurley, R.E. (1997, December). "Managed care research: Moving beyond incremental thinking." *Health Services Research* 32(5), pp. 679-690.

This author outlines four areas of research needed to understand the impact of managed care on the health care system: the buyer/provider interface, evolving relationships among delivery system components, care management/delivery reengineering, and workforce and manpower shifts. Research should examine how the buyer/provider interface will evolve. For instance, will large purchasers actively pursue alternative buying approaches to bypass managed care organizations (MCOs) and deal directly with provider-based entities? Second, MCOs are evolving into mixed, hybrid models of care delivery. How does the layering of risk and responsibility among MCOs and providers affect care delivery, provider compensation, and provider and member satisfaction?

Third, delivery system redesign and reengineering are likely to grow in importance and innovation. Intensified efforts will be needed to promote contractual and compensation arrangements that permit the purchase of medical services and goods in a more standardized, product-like fashion. Accountability will reside with the organization rather than the individual physician, and there probably will be increasing economic insecurity for physicians, or at least substantially downsized economic opportunities. Finally, managed care in the future will be driven to suppress or divert demand for conventional medical care by reducing the scope of activities requiring contact with medical clinicians and through ambitious dissemination of consumer information to foster self-care and the use of alternative, nonconventional practitioners and therapies. As this author points out, researchers need to do more than focus on the long-range implications of the managed care revolution; they also must investigate the near and mid-term changes associated with this transformation of the health services sector.

Lurie, N. (1997, December). "Studying access to care in managed care environments." *Health Services Research* 32(5), pp. 691-701.

Large-scale enrollment of the U.S. population in managed care systems, combined with mounting public and media anti-managed care sentiment, has put concerns about access and quality of care at the forefront of public debate. This author discusses the following concerns relevant to access to care: continuity of care within the system, visit length, choice of provider, and the cultural competence of the provider (a provider's ability to care for specific populations). Dr. Lurie calls for research to identify ways to improve access to care for four special populations with traditional access problems: low-income and Medicaid enrollees, individuals needing mental health care, adolescents, and children with special needs.

For instance, some studies suggest major access problems in managed care plans for mental health patients who are not acutely psychotic or suicidal. Also, the need of adolescents for confidential services for mental health/substance abuse or reproductive care is at odds with managed care efforts to document medical encounters. Children with special needs require direct access to medical care provided by physicians, but they also need other services that require linkages between MCOs and overlapping systems of public health, social service agencies, and school systems.

Dr. Lurie also discusses the need for studies on access to care for communities. For example, what effect will increased managed care penetration in a community have on physicians' willingness to provide care for uninsured and underinsured patients or to find resources for referral and diagnostic services? Will access to emergency medical services be affected? Research on mechanisms for increasing access to care and refinements in research methods and design choices are also needed.

Wagner, E.H. (1997, December). "Managed care and chronic illness: Health services research needs." *Health Services Research* 32(5), pp. 702-714.

The chronically ill may have the most to gain or lose from the changes now occurring in the organization of medical care, according to Dr. Wagner. He recommends that health services researchers address this issue by examining three areas: the barriers to meeting the needs of chronically ill patients in the organization and financing of medical care; what works and what doesn't among the many approaches to improving care for chronic illness now being tried by organized health systems (e.g., are "disease management programs" marketing gimmicks or substantial steps forward?); and the effects of newer managed care structures and strategies on patients with chronic illness. Are more vigorous efforts to find less expensive providers or curtail utilization depriving ill patients of a supportive relationship with their provider or of access to needed services?

Dr. Wagner concludes by discussing the need for agreement on a standardized set of structure, process, and outcome measures with which to describe and evaluate managed care organization and tactics and chronic disease management interventions.

Binstock, R.H., and Spector, W.D. (1997, December). "Five priority areas for research on long-term care." *Health Services Research* 32(5), pp. 715-730.

The growth of managed care portends many changes in the financing, organization, and delivery of long-term care. These changes also may affect quality, especially as policymakers strive to curtail the growth of public subsidies for long-term care and as marketplace incentives change, explains William D. Spector, Ph.D., of AHCPR's Center for Organization and Delivery Studies. Dr. Spector and colleague Robert H. Binstock, Ph.D., of Case Western Reserve University outline five priority areas for research on long-term care. The first is quality measurement, especially measures of quality of life that are not well developed. Second is the relationship between cost and quality of care.

A third priority is developing criteria for selecting the most appropriate care settings for elderly people. A fourth priority is developing innovation within a cost-constrained environment. Such innovations may be low-technology changes in the organization of care, for example, improved shower and lavatory devices and motorized wheelchairs. They also may involve breakthroughs in higher technology, such as "smart houses" that can actively respond to, accommodate, and compensate for deficits in physical and cognitive functioning. A final priority is examination of the quality-of-care implications of organizational changes brought about by risk-based managed care arrangements.

Article reprints (AHCPR Publication No. 98-R020) are available from the AHCPR Publications Clearinghouse.

Attention AHCPR-funded researchers

Keep those cards and letters coming (we take phone calls and E-mail, too). We want to get the word out about your research. Don't forget to contact your project officer as soon as you are notified that an AHCPR-supported article has been accepted for publication. We appreciate your help.

Managed care plans develop research capabilities and partnerships

The rapid growth of managed care organizations (MCOs) in the late 1980s and 1990s has provided MCOs with unique research opportunities. These include large, defined patient and provider populations; internal access to changing systems of care; research infrastructure; and information systems with a wealth of demographic, clinical, utilization, and cost data.

Two recent articles, summarized here, discuss the current and future potential for research within managed care plans. Earlier versions of these papers were presented at the "Building Bridges III" conference, held in April 1997, in New Orleans, which was cosponsored by the Agency for Health Care Policy and Research and the American Association of Health Plans. The research for these papers was supported in part by AHCPR (contracts 290-95-2000 and 96R40079201D).

Nelson, A.F., Quiter, E.S., and Solberg, L.I. "The state of research within managed care plans: 1997 survey," (1998, January). *Health Affairs* 17(1), pp. 128-138.

A 1997 survey of MCOs shows that at least 20 private MCOs have an infrastructure for internal research and a portfolio of publications in the public domain. The MCOs studied have a collective research budget of $93 million, more than 158 career researchers, and an extensive research infrastructure. They collectively operate more than 100 of the 1,315 State-licensed managed care plans in the United States and serve more than 29 million members. These MCOs represent 19 percent of total MCO enrollment of nearly 152 million people reported in 1995, with half of them establishing their research organizations after 1991. A total of 1,273 full-time equivalent (FTE) staff were dedicated to research among these MCOs, with a mean FTE staff level of 64.

The mean research budget for MCOs was $4.9 million, with a range of $145,000 to $28,769,000. The MCOs used an average of 24 percent of this income primarily for research infrastructure. The Federal Government provided two-thirds of their external funding through grants for specific research projects. Industry or foundations provided most of the balance. Applied research topics of greatest interest were: epidemiology, chronic disease management, disease prevention, women's health, use/cost issues, mental health, and guideline implementation. Most MCO research organizations reported close collaborative ties with academic medical centers.

Durham, M.L. (1998, January). "Partnerships for research among managed care organizations." ***Health Affairs*** **17(1), pp. 111-122.**

Managed care plans that once competed aggressively for market share now find themselves sharing key research findings with their competitors—to the benefit of consumers. The author of this article argues that it is important for managed care researchers to accelerate this trend toward collaborative research. Such research will yield high-quality information for improving care, and it will ensure that findings regarding improvements in patients' health outcomes and the delivery of health care obtained by private organizations can be brought into the public domain.

The author discusses the need for multisite studies and points out that commitment, collaboration, communication, and trust—as well as logistics—will be required to make such studies a reality. She also cites the need for computerized databases to facilitate comparisons across delivery systems—a step some MCOs have been reluctant to take.

Multisite studies require that researchers at the different locations approach each other as partners in the development and implementation of the research protocol and the publication of results. Collaborators should develop a mutually agreeable communication plan that sets forth the frequency and content of their scientific exchange, individual responsibilities, project logistics, schedules, and milestones.

The HMO Research Network provides one mechanism for this collaboration. It is located within 12 integrated health care organizations to enhance the research capabilities of individual MCOs, foster collaborative research, and influence the national research agenda. The most common form of research conducted by network members is still the single-site project with traditional funding by Government agencies.

A changing health care environment presents both challenges and opportunities for health services researchers

The field of health services research plays a critical role in monitoring the effects of changes in the organization, financing, and delivery of health services that are driven by demands for cost containment and quality improvement. In particular, the growth of managed care and consolidation and integration among health care organizations mean that health services researchers must modify their traditional approaches to financing, designing, and implementing studies, according to William L. Roper, M.D., M.P.H., Dean of the School of Public Health, University of North Carolina at Chapel Hill. Dr. Roper addressed attendees at the first annual meeting of members of the Agency for Health Care Policy and Research's study sections held in November 1997.

Dr. Roper noted that one of the greatest challenges to health services research created by health system changes involves the condition of academic health centers. Managed care has limited the ability of academic health centers to charge higher prices to subsidize the costs of medical education, training, and research. Some managed care plans exclude coverage for "experimental" treatments or discourage use of services by non-member providers. This poses barriers to researchers who need to rapidly enroll large numbers of patients in health care studies. Finally, the flurry of mergers and acquisitions spurred by managed care growth complicates the conduct of research.

On the other hand, managed care systems provide clinical and administrative systems and a defined population that can facilitate health care studies. They also provide a vehicle for disseminating research findings and encouraging adoption of evidence-based practices.

Dr. Roper outlined several imperatives for researchers. They need to produce information that is useful and relevant for new and emerging organizational forms of health care delivery. Research designs must follow timeframes that are in step with pressing policy, managerial, and clinical decisions.

Research needs to be applicable to the widest possible array of health care settings and responsible to multiple stakeholders, including health care consumers, purchasers, providers, payers, and regulators. Finally, the Nation's mechanisms for financing health services research need to be adjusted so that the costs of clinical research are more equitably shared among organizations and individuals who benefit from its advances. Dr. Roper concluded his talk with a description of seven pressing health services issues. These ranged from the effects of alternative physician compensation arrangements on health care quality to examination of alternative arrangements for extending health care coverage to the uninsured.

The full text of Dr. Roper's presentation, "Outcomes and quality-related research in a changing health care environment," (AHCPR Publication No. 98-R054) is available from the AHCPR Publications Clearinghouse.

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