Outcomes Research: The History, Debate, and Implications for the Field of Occupational Therapy

Dale B. Ellenberg

Key Words: outcome process and assessment (health care) • quality of life

The field of occupational therapy, as with all facets of health care, has been profoundly affected by the changing climate of health care delivery. The combination of cost-effectiveness and quality of care has become the benchmark for and consequent drive behind the rise of managed health care delivery systems. The spawning of outcomes research is in direct response to the need for comparative databases to provide results of effectiveness in health care treatment protocols, evaluations of health-related quality of life, and cost containment measures. Outcomes management is the application of outcomes research data by all levels of health care providers. The challenges facing occupational therapists include proving our value in an economic trend of downsizing, competing within the medical profession, developing and affiliating with new payer sources, and reengineering our careers to meet the needs of the new, nontraditional health care marketplace.

Dramatic changes in the delivery of health care are currently underfoot and will have a profound effect on the practice of occupational therapy. Such changes include the need to verify which medical interventions will be the most cost-effective and provide quality of care per diagnoses (outcomes research). Once these data are collected, guidelines will be established and applied to patient treatment plans (outcomes management). It will be essential for occupational therapists to become familiar with and begin to practice outcomes research and management.

The embracing emergence of managed care organizations has supported the need for outcomes management—the reliance on outcome measures to determine critical pathways and cost containment. Outcomes management applies to the full spectrum of health care delivery and is a process of ongoing and end-stage quality evaluation. Measures taken at various intervals of treatment indicate the success of a provider's care. The main components of outcomes management are the development of critical pathways and ongoing program evaluations. Critical pathways are actual treatment paths created for specific diagnoses. They can be developed by a multidisciplinary team, including an outcomes manager, nurse manager, physician, dietitian, allied health professional (i.e., occupational therapist, physical therapist, speech therapist, respiratory therapist), social worker, psychologist, utilization review manager, and finance manager. A multidisciplinary approach promotes increased collaboration among health care professionals as well as continuous improvement in quality of care as a result of constant program evaluation (Hurley, 1994). If a patient's recovery does not follow an expected course, team members document any complications causing a delay and explain what actions were taken to get the patient back on track (Weber, 1992). When certain variances occur more often than expected, the critical pathways are revised (Hurley, 1994).

An example of the application of outcomes management is hospitals' use of treatment template logic, which involves incorporating treatment protocols into computer systems that examine and judge claims. These protocols serve as guidelines to check for appropriateness and duration of care (Sunshine, 1992). Another example is large companies, such as General Motors and Proctor & Gamble, using the results of outcome data as a means to control both cost and quality health care. Such companies use these data to compile a selected list of designated providers of diagnostic and treatment services for their employees (Meier, 1994).

Dale B. Ellenberg, OTR/L, is a Private Practitioner working in early intervention, 711 Ashbourne Road, Elkins Park, Pennsylvania 19207-2518. At the time of this research, she was Graduate Student, Health Care Administration, Villanova University, Villanova, Pennsylvania.

This article was accepted for publication January 25, 1996.
The History
The impetus for outcomes research and management in the United States, in part, was the apparent and substantive variability in methods of medical care and delivery in different geographic areas (Wennenberg, 1990). Medical practice variability spurred public outcry that fostered federal initiatives to examine effectiveness (Rogers & Holm, 1994). Spiraling medical costs led to determinations of appropriate and cost-effective medical practices. The birth of managed health care systems is a direct outcropping of public and federal accommodation to the pressures of both variable medical practices and costs.

In late 1989, Congress created the Agency for Health Care Policy and Research (AHCPR) to determine the effectiveness and appropriateness of medical treatments for various medical conditions. This research became collectively known as outcomes research. Outcomes research in medicine is the study of pathways of treatment (inpatient and outpatient) administered by health professionals and the degrees of success for each intervention. The results of AHCPR's study led to the development and early application stages of clinical or critical care guidelines and standards (Anderson, 1994). Since 1994, AHCPR has spent $62 million on studies to determine the long-term benefits as well as side effects of various medical procedures. The studies relied particularly on scientific reports, insurance claims, and hospital records and included nonscientific elements, or soft outcomes, such as interviews with patients about their satisfaction with treatments received during their inpatient hospitalization (Meier, 1994).

Wennenberg's (1990) landmark study that compared both cost and effectiveness of different invasive procedures for prostate surgery triggered questions about the costs and quality of health care. The author found that the less invasive techniques were just as successful and less costly than the more invasive techniques of surgery on the basis of outcomes research and cost-containment data. Why were these shorter and less costly procedures not being used uniformly in the larger medical community?

Widespread public concern generated from these studies eventually fostered the emergence of managed care systems (Rogers & Holm, 1994). Managed care refers to a system of health care provisions that addresses the needs of a specific population by controlling the cost of, access to, and quality of health care (Todd, 1993). Controlling the cost of health care refers to the management of dollars charged per treatment or condition via critical pathways. Managed care structures are either internally housed or are contracted through various third-party payers, such as insurers and reimbursers. Third-party payers have discovered that if they pay claims only for patients whose providers follow consistent treatment patterns that result in successful outcomes, they are better able to predict costs and reduce the number of cases with expensive complications (Sunshine, 1992). Access to health care implies membership in a managed care system to receive health care services. Managed care has a spectrum of alliances from the controlled model of the health maintenance organizations (HMOs) to loose networks of providers such as preferred provider organizations (PPOs) (Kongsvold, 1993). Quality of health care refers to consumer satisfaction with the success of treatment interventions, which is determined by ongoing program evaluation.

In contrast to managed health care, traditional rehabilitation services have been based on a fee-for-service formula. Such cost-based mechanisms for reimbursement offer patients the opportunity to maximize their functional abilities regardless of the breadth and intensity of services provided and the length of time required to yield those results. With a fee-for-service formula, a provider is not burdened by application of critical care guidelines or paths, length of time for administering those services, or costs of treatment. Purchase of fee-for-service health care or indemnity policies continues as an option for consumers and offers a veritable menu of health care delivery systems at a considerably greater cost to the purchaser. Fee-for-service payment structures allow for maximal use of services without penalty to the provider, resulting in virtually unlimited rehabilitation services. However, one can argue that the fee-for-service reimbursement system has assisted in the profound escalation of health care costs in the United States. Without the checks and balances of outcomes and quality of life measurement and reporting, the true value of the services provided cannot be accurately evaluated (Mayhan, 1994).

The formation and burgeoning growth of creative health care alliances (e.g., HMOs, PPOs) is the direct result of rising health care costs; HMO and PPO promises of cost containment; hope of a continuum of comprehensive, seamless delivery of care by quality health care professionals; and high premiums with indemnity carriers (Mayhan, 1994). In addition, employers offering health care coverage as a benefit are turning to managed health care insurers because they often provide services such as health care management and outcome data, stability in yearly premiums, and assurance of quality of care (Mayhan, 1994). Consequently, outcomes research and management have blossomed and become a key means for saving health care dollars.
The Debate

The outcomes movement is sparking debate. Advocates see it as a populist effort to empower patients and as a means to control costs. Critics see it as ultimately limiting patients' choices by producing a cookbook style of health care that addresses the needs of an average patient without taking the individual patient's needs into account (Meier, 1994).

Outcomes research pioneers like Wennenberg question whether it will actually save insurers money. It could turn out that some extremely expensive procedures will prove to be most effective (Meier, 1994). The notion of a provider report card based on items such as customer satisfaction, quality of care, and financial stability could enable a purchaser to compare competing plans. The flip side, however, is that payers can also use such report cards to aid in their selection of providers with whom they will do business (Guadagnoli & McNeil, 1994).

Critics dismiss outcomes research as soft science because it relies heavily on patient satisfaction (Meier, 1994). Advocates see patient interview as a potentially cheaper and faster evaluation technique than clinical trials and as a means of providing data on treatments that would otherwise never be evaluated. Critics believe that soft science or research is fatally flawed because it is based on retrospective analysis of routine clinical care records where there are inherent hidden biases (Anderson, 1994). Despite their differences, advocates and critics agree on one useful aspect of outcomes research—it clarifies what physicians and health care providers are actually doing in clinical practice (Anderson, 1994).

Though it will be years before health care providers and policymakers have enough outcomes data to change the way medicine and allied health care are practiced, there is considerable debate on how influential the information can and should be. The American Medical Association (AMA Council in Medical Service, 1994) supports the concept of government guidelines based on outcomes studies; however, it argues that guidelines should be used only to educate health care providers and not to determine what techniques they use (Meier, 1994). It is important to note that regardless of the multitudes of payment systems and management organizations that will be emerging, no regulatory standards are in place; managed care organizations are pioneers in uncharted territory. Health care professionals will see providers and insurers concerned first with the cost of services and second with quality, while federal health care reform becomes better focused and organized. Unfortunately, consumers will be the most affected by this posturing and positioning.

The Impact of Outcome Measures on Occupational Therapy

Outcomes research and management have influenced the practice of occupational therapy in three main ways: (a) they have fostered the development of and reliance on functional status measures and health-related quality of life (HRQL) evaluations to determine treatment effectiveness; (b) they have forced the participation of occupational therapy in cultivating outcomes research to remain viable and competitive in the marketplace; and (c) their impact has dramatically altered the settings in which occupational therapy is delivered. Functional status measures rather than diagnosis-related groups (DRGs) will serve as more appropriate indicators for rehabilitation with prospective payment systems. In contrast to DRGs, functional measures appear to be more consistent with the goals of inpatient rehabilitation and to be good indicators for rehabilitation upon discharge (Hosek et al., 1986; McGinnis et al., 1987; National Association of Rehabilitation Facilities, 1995; Wilkerson, Batavia, & DeLong, 1992).

According to Velozo (1994), three popular global functional status measures exist: (a) the Functional Independence Measure (Guide for Use of the Uniform Data Set, 1990), (b) the Level of Rehabilitation Scale (LORS-III Reference Manual, 1994), and the Patient Evaluation Conference System (Rehabilitation Outcome Reporting System PECS™, 1992). Functional status outcomes are being used to judge the success of a rehabilitation program. Achievement toward independence in activities of daily living (i.e., feeding, dressing, bathing, mobility) will reflect a patient's potential for successful discharge to home, continued home care, or other community programs. Even long-term rehabilitation programs, such as subacute settings, are developing mechanisms that measure functional status outcomes (Strickland, 1994).

Another trend in occupational therapy outcomes research is the use of HRQL evaluations as a component of legitimate rehabilitation outcomes. According to Jette (1993), studies are now emerging that demonstrate the use of evaluating HRQL for specific rheumatologic, pharmaceutical, and pulmonary rehabilitation intervention. Engle (1982) developed a biophysical model that provides a useful framework for relating various dimensions of HRQL, including physical, psychological, and social components. Posthospitalization outcome studies report persons experiencing emotional well-being, overall life satisfaction, energy, and vitality despite the presence of chronic disease activity (Jette, 1993). Various HRQL instruments exist that are designed specifically for outcomes research, including the Medical Outcome Study 36-Item Short Form.
Form Health Survey (SF-36) (Ware & Sherbourne, 1992), the Functional Status Questionnaire (FSQ) (Jette, Davies, & Cleary, 1986), and the Nottingham Health Profile (McEwen, 1988). The SF-36 and FSQ have computer algorithms for ease of scoring, interpretation, and recovery of serial HRQL information (see Jette, 1993).

Several different parts of the occupational therapy profession are jointly cultivating outcomes research, including the American Occupational Therapy Association practice and government relations departments; the American Occupational Therapy Foundation; and a number of hospitals and rehabilitation facilities (Sunshine, 1992). Occupational therapists are becoming involved in product development to measure outcomes. Specifically, occupational therapists involved with the American Society of Hand Therapists (ASHT) have joined forces with hand surgeons to create the Upper Extremity Network (UE NET) (Hand Rehabilitation Foundation, 1995), which is a national outcomes database. ASHT and the American Society of Surgery of the Hand developed their own national database network to meet their scrupulous specifications and to avoid being forced to use outcome measures and management tools designed outside their field with perhaps less scrutiny, sensitivity, and knowledge of the critical issues (Hand Rehabilitation Foundation, 1995).

Two relatively new items on the market have been specifically designed, with input from occupational therapists, to simplify treatment practices, provide cost-effective application, increase practice income, and take advantage of important outcomes studies. The Dexter System and Treatment Outcome Program\(^1\) and the ORCA\(^2\) both have specific application to the hand and upper extremity (Hand Rehabilitation Foundation, 1995). The Dexter software program tracks evaluations, therapy, and effectiveness of treatment. In addition to the hand and upper extremity, this system incorporates the spine and lower extremity. Capabilities include range of motion measurements, skeletal examinations, calculations of impairment for the whole body, and an HRQL assessment (SF-36). The manufacturer is presently developing networking capability to connect Dexter with UE NET for further ease of clinical application and national outcomes research.

ORCA is a new patient management software program for the treatment of the hands and upper extremity. Its platform accommodates the Newton Personal Digital Assistant\(^3\) (a hand-held, pocket-sized computer for ease of use in the clinic) and was developed through a collaboration with a membership group of occupational and physical therapists of the ASHT and Rehab Technology Works (a rehabilitation and therapy practice in California that specializes in managed care). ORCA was created with managed care needs in mind and is specifically designed as an input device for clinics participating in the UE NET.

Altered, nontraditional treatment settings are becoming the future for occupational therapy application, including subacute settings, worksites, homes, schools, and long-term-care centers. Treatment approaches used in subacute settings are focused on functional gains and outcomes management (Strickland, 1994). Payers may be more willing to reimburse for occupational therapy services from these less costly step-down facilities than for services from more costly, acute settings.

Industrial rehabilitation is moving from the clinic to the worksite, with on-the-job therapy to modify the actual work setting to the individual worker's needs for speedy rehabilitation. Such intervention has been successful in preventing lost work days and worker alienation. Prevention of injuries is coming to the forefront of industrial rehabilitation as employers begin to identify risks early as a way to reduce their workers' compensation indemnity costs. Occupational therapists are learning to function as educators, consultants, case managers, therapists, and job coaches who interface with injured workers, line foremen, managers (i.e., nursing, safety, human resources, production), executive officers or owners, medical professionals, and payers. They can become integral team members who work with progressive companies that use total quality management principles.

Home care is fast becoming a nontraditional way to practice traditional occupational therapy. Patients are being discharged rapidly from acute care settings to home as a result of outcomes management, but they still need rehabilitation team services. Occupational therapists in home care are practicing as independent contractors who are self-employed or agency employed. In the home, therapists can apply all the contents from their bag of skills as they treat persons of all ages (and their family members) who are recovering from a multitude of physical dysfunctions at varying stages of acuteness.

Early intervention and school-based therapies are

---

1The Dexter System and Treatment Outcome Program is manufactured by Cedaron Medical Inc., PO Box 2106, Davis, California 95617.

2ORCA is manufactured by Greenleaf Medical Systems, 2248 Park Boulevard, Palo Alto, California 94306.

3The Newton Personal Digital Assistant is included in the ORCA System and distributed by Greenleaf Medical Systems, 2248 Park Boulevard, Palo Alto, California 94306.
providing career opportunities and challenges for occupational therapists as the population of children at risk grows. Pervasive developmental delays, sensory regulating disorders, attention deficit disorder, and physical disabilities resulting from brain abnormalities, birth defects, or trauma are prevalent. Occupational therapists see children from birth to 3 years of age in the home; after the age of 3 years, occupational therapy intervention is usually center or school based.

Long-term-care facilities are another type of setting in which occupational therapy services will become more commonplace. In these facilities, occupational therapists are hired as consultants to supervise certified occupational therapy assistants and cross-trained aides. It is not unusual for an occupational therapist to consult to several facilities while being employed by one agency.

The key to successfully meeting the challenges posed by changes in traditional treatment settings will require that occupational therapists be able to adapt quickly. The changing marketplace will demand that occupational therapists reengineer their career objectives and goals to include new skills to enhance therapeutic application and theoretical principles and to learn administrative skills, business skills, and business ethics. They may also need additional education in the form of training workshops, seminars, mentoring, and even graduate school.

Challenges Facing Occupational Therapy

Market forces are reacting in anticipation of change, as seen by the explosion of managed care in private practice and by publicly traded companies entering the health care arena (Aaron, 1994). It has become necessary for occupational therapy practitioners to demonstrate objective, persuasive evidence of the effectiveness of interventions for the various populations served. We are being challenged to design, implement, and conduct outcomes research within our rehabilitation facilities. Compounding this challenge are the economical forces of downsizing. Occupational therapists act as administrators, supervisors, and treating therapists; our clinical settings have little staffing to accommodate corporate cost-containment measures; volume dictates high profitability with consequent full daily treatment caseloads; and morale is likely to be low because of job insecurity and insubility. The ability to see clearly through this haze will require the use of nontraditional practices.

Occupational therapists who work in environments that hire certified occupational therapy assistants or use cross-trained allied health professions aides have several options. In such work environments, therapists could function as evaluators, design treatment plans, and supervise day-to-day services while removing themselves from hands-on therapy. These shifts in responsibility would justify the value of their position while providing staffing that demonstrates conscientious costing patterns. If the time freed up from hands-on therapy is ample enough to conduct outcomes research, such efforts would reinforce the value of occupational therapy intervention, and the by-product of the outcome data would provide definitive treatment protocols, demonstrating clinical efficacy and satisfying the payer market.

According to Todd (as cited in Aaron, 1994), there are several aspects of a changing environment to recognize and understand before attempting to navigate it. First, incentives are changing. Occupational therapists now receive payments by varying reimbursement methods—capitation, fee-for-services, and packaged pricing. Secondly, metrics are changing. Value now means quality in relation to cost, and quality must be demonstrated by outcome. Lastly, structures are changing. Health care is moving toward formations, alliances, and integrated provision systems.

Rogers & Holm (1994) suggested a comprehensive agenda for outcomes research in occupational therapy that encompasses

- directions for research of efficacy in programs
- outcomes as therapists relate to variability in practice
- examination of the link between diagnostic taxonomies and intervention taxonomies, thereby relating patient outcomes to functional problems and specific occupational therapy interventions
- development of practice-based research networks to investigate efficacy in targeted populations
- development of occupational therapy scientists in the research of methods and designs appropriate for studying effectiveness of practice
- increased participation of occupational therapy scientists on federal grant review panels
- inclusion of essential occupational performance variables in national health databases.

Munro (as cited in Mayhan, 1994) listed 10 things to consider when developing functional outcomes measures:

1. The best way to figure out which type of information to track is to find out what your managed-care entities, payers, and patients want to see.
2. Seek out the questions, measurement instruments, and professional researchers that already exist to help you.
3. In the beginning, keep it simple.
4. Regional or national databases will give you an edge when negotiating with health maintenance organizations and insurers.
5. Functional assessment and cost data are important, but do not
There is growing realization that medical care has been provided without regard for overall quality, consistency, and cost. Regardless of the pros and cons of outcomes research, we can expect over the next few years guidelines for physicians, nurses, and other health care providers on how to treat a multitude of conditions. In time, such research will serve clinicians well in preparing for managed health care in their settings:

(a) interdisciplinary treatment guidelines or critical pathways that reflect best practices and demonstrate clearly how to work efficiently and effectively within a team of professionals; (b) training and development of assistants and personnel other than occupational therapy practitioners who assist in the delivery of occupational therapy services (e.g., rehabilitation aides and nursing, activities, and therapeutic recreation personnel); (c) development of group treatment guidelines that maximize efficiency without compromising outcomes; and (d) a system for measuring functional outcomes. (p. 3)

As managed care becomes more prevalent, occupational therapists who practice privately will want to become networked or affiliated with the various organizations in managed care, including PPOs, exclusive provider organizations, HMOs, independent practice associations, clinic without walls and group practice without walls, and physician hospital organizations (Todd, 1993). Without such affiliations, occupational therapists will be closed out of such capitated reimbursement loops. However, one must become familiar with state and federal laws governing these alliances as well as procure good financial and legal counsel before signing a contract with any organization (Aaron, 1994).

Conclusion

There is growing realization that medical care has been provided without regard for overall quality, consistency, and cost. Regardless of the pros and cons of outcomes research, we can expect over the next few years guidelines for physicians, nurses, and other health care providers on how to treat a multitude of conditions. In time, such guidelines may influence which procedures both the government and private insurers choose to reimburse (Meier, 1994).

Occupational therapy practitioners must familiarize themselves with outcomes research and management and with emerging health care systems. They must also become acquainted with the roles of various alliances and educate the alliances about the role of occupational therapy. At the same time, therapists must advocate for the inclusion and value of occupational therapy in all levels of the new managed care continuum (Aaron, 1994).

Acknowledgments

I thank Jasen Walker, EdD, for his confidence and support and Margie Patlak, MS, for her kind and patient editorial assistance.

References


Sunshine, D. (1992, October 8). When treating the patient... don’t forget the payor. *OT Week, 6*(34), 16-17.


**Coming in July/August:**

- Education and Training of Occupational Therapists for Neonatal Intensive Care Units
- Right-Hemispheric Activation Approaches to Neglect Rehabilitation Poststroke
- The Experience of Head Injury on the Impairment of Gender Identity and Gender Role
- Art: An Occupation With Promise for Developing Empathy

Turn to *AJOT* for the latest information on occupational therapy treatment modalities, aids and equipment, legal and social issues, education, and research.