HEALTH POLICY

Clinical Practice Guidelines for Post-Stroke Rehabilitation and Occupational Therapy Practice

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Guideline Development

The Omnibus Budget Reconciliation Act of 1990 established the AHCPR, which is located organizationally within the U.S. Department of Health and Human Services' Agency for Health Care Policy and Research (AHCPR). All health care professionals who treat patients who have had stroke are expected to base intervention on the recommendations listed in these guidelines. Quality review boards are expected to use these guidelines as a basis for case review. This article describes the guideline development process, states some of the recommendations from the guidelines that address aspects of occupational therapy services, and invites clinicians to become involved in establishing the scientific basis for occupational therapy practice on which future revisions of the guidelines will be based.

The practice of occupational therapy with patients who have had stroke is expected to be affected by the recently released Post-Stroke Rehabilitation Clinical Practice Guideline, No. 16 (Gresham et al., 1995) published by the U.S. Department of Health and Human Services' Agency for Health Care Policy and Research (AHCPR). All health care professionals who treat patients who have had stroke are expected to base intervention on the recommendations listed in these guidelines. Quality review boards are expected to use these guidelines as a basis for case review. This article describes the guideline development process, states some of the recommendations from the guidelines that address aspects of occupational therapy services, and invites clinicians to become involved in establishing the scientific basis for occupational therapy practice on which future revisions of the guidelines will be based.

Guideline Development

The Omnibus Budget Reconciliation Act of 1990 established the AHCPR, which is located organizationally within the U.S. Department of Health and Human Services (DHHS) (1994) under the Public Health Service. AHCPR's mission is to improve the quality, appropriateness, and effectiveness of health care and to improve access to that care. It accomplishes this mission through research and guideline development.

Guidelines are statements that assist practitioners and patients to make decisions about appropriate health care for specific clinical conditions. Guidelines are based on the best available research and professional judgment (DHHS, 1994). Because occupational therapists are recognized as key personnel involved in the rehabilitation of persons who have had stroke, the American Occupational Therapy Association (AOTA) was invited to participate in developing the guidelines by nominating a person to serve on the expert panel and by reviewing early drafts of the guidelines.

Stroke rehabilitation was chosen as a topic for guideline development by AHCPR because it met the agency's six criteria for topic selection, as follows: First, variations in practice exist. For example, according to 1991 Medicare claims data (AHCPR, 1994), 55% of patients who have had a stroke in Wyoming versus 8.9% in Vermont receive neither institutional care nor ambulatory rehabilitation. Second, the condition is prevalent and severely debilitating. According to the Medicare database, 5,715,000 persons were diagnosed with a first stroke in 1991 (AHCPR, 1994). These data do not include persons younger than 65 years of age who have had a stroke. Third, adequate scientific evidence exists on which to base the recommended practices. This criterion was deceptive relative to the guidelines for persons who have had stroke. Literature on stroke is extensive and therefore it was assumed that scientific evidence existed. However, when the literature was carefully examined, there were actually very few controlled studies on the effectiveness of treatments. Fourth, the condition is amenable to prevention. Fifth, the condition represents high costs for Medicare and Medicaid. The Medicare database for 1991 indicated that patients are in a rehabilitation hospital for an average of 27 days, with a range from 22 days to 43 days (AHCPR, 1994). Sixth, the condition presents an economic burden.

The process used by AHCPR to develop guidelines is as follows: First, a panel of experts that represents personnel, who are responsible for the care of the particular condition, and consumers is assembled. An intensive literature search is conducted and pertinent articles are retrieved. The articles are read and the research is analyzed for validity by the panel and by consultants to the panel. An open forum is held to obtain public opinion concerning aspects of care to be included.

Recommendations are drafted, reviewed, and revised. The review occurs in stages: First, experts, defined as published researchers and persons recommended by members of the panel review and comment. Then the guidelines are revised on the basis of this feedback. Professional associations are then offered the opportunity to review and comment.

Guidelines are published in four different formats: (a) a report that contains the process used in development of the guidelines, the literature review, a detailed explanation of the rationale for the recommendations, a discussion of policy issues, and recommendations for a research agenda; (b) a clinical practice guideline, which is an abbreviated version of the report and emphasizes guidance for practitioners; (c) a pocket guide for practitioners; and (d) a...
patient and family member guide.

Guidelines for Rehabilitation After Stroke

Post-Stroke Rehabilitation Clinical Practice Guideline, No. 16 (Gresham et al., 1995) was based on 400 articles (of 1600 reviewed): analysis of 10% of the 1991 Mediciare claims data; discussion of policy issues by the panel; 34 written and oral testimonies given at the open forum held in Washington, D.C., in June, 1993; and expert opinion of the panel consultants, and 43 expert reviewers, including three occupational therapists. The panel for the guidelines was representative of all professionals concerned with rehabilitation of patients who have had stroke (AHCPR, 1994).

The breadth of the guidelines extends from the decision of whether a person is a candidate for rehabilitation and where the person should be treated through community reintegration. The depth of this first edition of the guidelines is limited because of the dearth of solid research on which to base the recommendations. The guidelines will be reviewed within a few years and updated on the basis of outcomes research.

Each recommendation has been rated according to the strength of its support in terms of scientific evidence and opinion. Research support is rated A, B, C, or NA (not available; recommendation is not supported by experimental studies). "A" is defined as supported by the results of two or more randomized controlled trials (RCTs) that have good internal validity and also specifically address the question of interest in a group of patients comparable to the one to which the recommendation applies (i.e., external validity) (AHCPR, 1994, p. 12).

"B" is defined as supported by a single RCT, as above, by RCTs that only indirectly address the question of interest; or by two or more nonrandomized clinical trials (case-control or cohort studies) in which the experimental and control groups are demonstrably similar or multivariate analyses have effectively controlled for group differences (AHCPR, 1994, p. 12).

"C" is defined as "supported by a single non-RCT as above; by studies using historical controls; or by studies using quasi-experimental designs such as pre-post treatment comparisons" (AHCPR, 1994, p. 12). Expert opinion is classified as strong consensus, defined as agreement among 90% or more of the panel members and expert reviewers, or simply consensus, defined as agreement among 75% to 90% of panel members and expert reviewers (AHCPR, 1994).

Selected Recommendations Pertaining to Occupational Therapy Practice

In general, the recommendations in the guidelines support current occupational therapy practice. The recommendations listed here were selected as representative of the aspects of rehabilitation addressed by the guidelines and most pertinent to occupational therapy. To obtain a full copy of Post-Stroke Rehabilitation Clinical Practice Guideline, No. 16 (Gresham et al., 1995), Post-Stroke Rehabilitation: Assessment, Referral and Patient Management (AHCPR, 1995), and Recovering After a Stroke (AHCPR, 1995), contact AHCPR (1-800-358-9295).

Recommendation

Baseline evaluation of motor function should include thorough assessment of motor control and muscle strength, mobility, balance, and coordination, with the use of standardized instruments. Evaluation should be performed by professionals who are expert in rehabilitation and skilled in the evaluation of neurological impairments and the completion of these instruments (Support: research evidence — C; expert opinion — strong consensus) (AHCPR, 1994).

Only assessments that are standardized, valid, and reliable are considered appropriate for documentation. Standardized means that there is a manual that describes administration and that the evaluation is administered according to those directions. Valid means that the test actually measures what it is supposed to measure. Reliable means that any changes seen in retest are due to actual change in the patient and not due to external factors.

The currently available standardized instruments recommended in the assessment of motor function are the Fugl-Meyer Motor Function Test (Fugl-Meyer, Jäätäiska, Olsson, & Steglin, 1975), the Motor Assessment Scale (Carr, Shepherd, Nordholm, & Lynne, 1985), and the Motricity Index (Demers, Denol, & Robaye, 1980).

Before the guidelines are revised, occupational therapists need to develop standardized instruments that relate motor function to occupational performance, as does, for example, the Assessment of Motor and Process Skills (AMPS: Fisher, 1993), and to demonstrate the validity and reliability of the instruments to document improved functioning after occupational therapy by patients who have had stroke.

Recommendation

Rehabilitation should follow well-supported principles of effective learning (Support: research evidence — C; expert opinion — strong consensus) (AHCPR, 1994).

Rehabilitation is predominantly a learning process; therefore, treatment should adhere to basic principles of learning, including that the skills being taught be meaningful to the patient, level of difficulty be graded, appropriate feedback be provided, and practice be structured to promote learning and encourage transfer among environments and contexts used by the patient.

Recommendation

Patients who have functional deficits and at least some voluntary control over movements of the impaired arm or leg should be encouraged to use the limb in functional tasks and offered exercise and functional training directed at improving strength and motor control, relearning sensorimotor relationships, and improving functional performance (Support: research evidence — C; expert opinion — strong consensus) (AHCPR, 1994).

The guidelines reported that "neither research evidence nor expert consensus adequately supports the superiority of one type of exercise regimen over another" (AHCPR, 1994, p. 20). Further, the guidelines offered this opinion: "There is no evidence supporting the superiority of neuromuscular facilitation over traditional physical therapy. Since the former is more labor intensive and more expensive, objective proof of greater effectiveness is needed to justify the greater costs" (AHCPR, 1994, p. 20). Physical therapy was singled out because the only studies that

712    July/August 1995, Volume 49, Number 7
examined the effectiveness of these treatments compared them to traditional physical therapy. However, many occupational therapists also use Bobath's Neurodevelopmental Therapy (Levit, 1995), Proprioceptive Neuromuscular Facilitation (PNF) (Myers, 1995), and some aspects of Rood's therapy (Trombly, 1995).

Third-party payers may use this statement as a reason to refuse to pay for expensive courses of untested neurophysiologically based treatment. It is particularly important that outcomes for a particular patient be documented functionally and that these outcomes be compiled for many patients into publishable data.

**Recommendation**

Patients with persistent functional deficits should be taught compensatory methods for performing important tasks and activities with the affected limb when possible or, when not possible, with the unaffected limb (Support: research evidence—NA; expert opinion—strong consensus) (AHCPR, 1994).

Compensatory treatments teach the patient adapted methods to accomplish the tasks and activities that constitute meaningful roles for the patient and include basic and instrumental activities of daily living as well as tasks associated with social, recreational, spiritual, and work roles.

**Recommendation**

The prevention of shoulder injuries should emphasize proper positioning and support and avoidance of overly vigorous range-of-motion exercises. (Support: research evidence—C; expert opinion—strong consensus) (AHCPR, 1994).

The shoulder should not be passively moved beyond 90° of flexion and abduction unless the scapula is upwardly rotated and the humerus is externally rotated. Use of overhead pulleys appears to contribute to shoulder tissue injury (Kumar, Metter, Mchut, & Chow, 1990). The use of slings or arm supports is controversial because their benefit is unproven and because immobilization is potentially harmful.

**Recommendation**

Cognitive deficits that preclude effective learning are contraindications to rehabilitation. Cognitive and perceptual problems not severe enough to preclude rehabilitation require goal-directed treatment plans (Support: research evidence—NA; expert opinion—strong consensus) (AHCPR, 1994).

Treatments for cognitive and perceptual impairments emphasize retraining, substitution of intact abilities, and compensatory approaches. Short-term effectiveness of these techniques has been demonstrated, but the studies only used outcome measures that were similar to the intervention (Gartner, Caruso, Languirand, & Berard, 1980; Gordon et al., 1985; Soderback, 1988). A panel assigned to revise the guidelines in the future will be looking for scientific evidence that these remedial treatments are effective in improving functional performance.

**Recommendation**

Valued leisure activities should be identified, encouraged, and enabled (Support: research evidence—C; expert opinion—strong consensus) (AHCPR, 1994).

Use of leisure activities as treatment media for remediation of impairments or disabilities is motivating, and participation in leisure activities is associated with better health status and quality of life (Drummond, 1990; Jongbloed & Morgan, 1991; Krefting & Krefting, 1991; Sieglen, 1982). Occupational therapists may be able to use this recommendation to justify inclusion of treatment to improve performance of tasks associated with leisure roles in the patient's treatment program.

**Recommendation**

Patients who worked before their strokes should, if their condition permits, be encouraged to be evaluated for the potential to return to work. Vocational counseling should be offered when appropriate (Support: research evidence—NA; expert opinion—consensus) (AHCPR, 1994).

**Development of Scientific Evidence for the Effectiveness of Occupational Therapy**

Revisions of the guidelines, expected after several years of trial use (DHHS, 1994), will rely less on opinion and more on scientific evidence. These recommendations supported now only by opinion will need to be supported by at least C-rated scientific evidence to continue to be recommended.

Two important questions that occupational therapy needs to address are: (a) Which treatments used in occupational therapy are effective for particular goals and which are not? and (b) Who benefits from occupational therapy and who does not? Answers to these questions are located in clinical documentation. For example, to help answer the first question, cumulative case reports based on careful, systematic documentation can be gathered by individual therapists as well as by occupational therapy departments. This approach is being used by occupational therapists in mental health to support their practice, under the direction of Neda Gillette of the Office of Research Services of the American Occupational Therapy Foundation (AOTF) as part of the Outcomes Initiative of the AOTA and AOTF. After attending a training conference, each occupational therapist who joins the project agrees to submit five cases—a feasible task that will make a major impact when all the cases are accumulated.

Goal attainment scaling is another way to document the outcome of therapy as well as to contribute to good treatment planning (Ottenbacher & Gusick, 1990; Rintala, 1987). To use goal attainment scaling, for example, the therapist and patient define what outcomes (goals) should be expected for the patient in order for the treatment to be considered effective. The therapist then develops a scale of behaviorally defined subgoals at, below, and above the target level of accomplishment for each goal (see Ottenbacher & Gusick, 1990). At discharge, on the basis of objective measurement, a judgment is made as to whether the patient reached or surpassed the goal. The treatment used should also be carefully documented. This descriptive research would be repeated with many patients to develop an association between occupational therapy and achievement of desired occupational performance goals. Although this research could not establish a causal relationship between occupational therapy and outcome, it would offer stronger support for use by the panel who will revise the guidelines and the
panels that may be convened to write guidelines for other conditions for which occupational therapy offers major services. This method is currently being used in an outcomes study of outpatient occupational therapy for patients with traumatic brain injury, also part of the Outcomes Initiative of AOTA and AOTF.

As a more advanced step in documenting the effectiveness of occupational therapy practices, clinical and academic occupational therapists can collaborate on organizing and seeking funding for RCTs to determine experimentally that a particular occupational therapy treatment found to be associated with favorable outcomes is in fact the cause of the observed outcome. RCTs are the most acceptable evidence in support of an intervention. It is important to remember that determining what treatment was not effective is as important as determining what was effective.

To help answer the second question (i.e., Who benefits from occupational therapy and who does not?), occupational therapists or departments can keep a record concerning variables that could affect patient outcome, such as age, type and location of stroke, and functional status at the time of admission. After the same data are gathered from many patients, both those who improved significantly (according to what the researchers define as improved) and those who did not, statistical procedures can be used to indicate the combinations of variables associated with successful and unsuccessful outcomes and which variables discriminate between those persons who achieved successful outcomes and those who did not. Academic occupational therapists could collaborate with clinical occupational therapists to analyze these data.

Conclusion

Health care is being reformed to become more cost effective. As part of that effort, the guidelines developed by the Agency for Health Care Policy and Research are expected to be used to guide the choice of procedures and help select the types of patients for whom those procedures are most appropriate. In the current edition of the guidelines, those treatments without research evidence or strong support by the experts charged with developing and reviewing the guidelines were not recommended (e.g., neurophysiologically based treatments). Recommendations were made that are not universally part of practice now (e.g., use of standardized measurement instruments). How the guidelines will affect practice in the immediate future remains to be seen. It is very clear, however, that continued lack of scientific evidence will diminish the likelihood that particular practices will be recommended in future guidelines and will relegate the profession to a lesser status than those professions that do produce scientific evidence on the effects of their practice. Clinicians, who have access to the data, need to take responsibility for publishing this evidence.

References


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