# INTRODUCTION

Outcome evaluation is becoming a critical topic among rehabilitation staff and administrators, who find themselves increasingly challenged to prove that their program or treatment is sufficiently beneficial to the consumer to justify the escalating costs of such care. Faced with the decision of how to best capture the observed benefits of their work, professionals are not sure where to turn or how to evaluate progress of their population. The articles in this issue of *NeuroRehabilitation* are aimed at providing the information necessary to make informed decisions, whether for research, clinical evaluation, prediction of outcome, or program evaluation. The topic of outcome evaluation is very broad, and the articles in this issue can only hit on a few aspects of the subject matter. Nevertheless, the information provided should adequately instruct the clinician and administrator in how to measure outcomes within their own facility. Articles address three diagnostic groups, traumatic brain injury (TBI), spinal cord injury (SCI), and cerebrovascular accident (CVA), although much of the information could appropriately be applied to other groups as well. They generally discuss the adult population in the rehabilitation inpatient and outpatient settings.

There is increasing concern for more accurate reporting of real gains and outcomes of consumers. In his article on statistical considerations in the interpretation of functional outcome scales, Mr. Jerry Wright emphasizes the inherent problems of using gain/change scores and averaging scores across subjects. He proposes several ways of avoiding these inaccurate interpretations of ordinal scale information. His approach clearly describes the statistical properties of the vast majority of functional assessment scales for the statistically inexperienced reader and illustrates the differences of applying parametric versus nonparametric statistics to scaled data.

Dr. Brenda Adamovich discusses the cautions of assuming that different disciplines rate an individual similarly on a given item. She and colleagues conducted a study relating Functional Independence Measure (FIM) communication items to language ability. She reports the discrepancies in FIM ratings between disciplines as an example of the differing perspectives on patient performance. She cautions that as assessments of change

are increasingly used to determine clinical course, reimbursement, and comparisons across facilities, reliable and valid data are critical.

Dr. Karyl Hall reviews the questions clinicians and administrators need to ask themselves to make a decision regarding what assessment scale will meet their individual research or program needs. The criteria for determining whether a scale is adequate are defined. A list of functional assessment measures and their properties are outlined for the reader. If the area of concern is specifically SCI, then the article by Gale Whiteneck will equip the reader with the perspective to make an informed decision. Dr. Gale Whiteneck discusses six primary outcomes from SCI: impairment, disability, and handicap (WHO model of disablement), and health, satisfaction, and cost. He reviews selected assessment techniques and identifies the most promising instruments for each of the six outcomes. He also discusses six predictors of these outcomes and the need to consider each in the big picture, over the lifetime of the individual, not just at discharge or a designated point after injury. The constructs expressed apply not only to SCI but to rehabilitation outcomes in general.

Drs. Mitch Rosenthal and Scott Millis discuss three types of outcome in relation to neuropsychological predictors in TBI: vocational outcome, social adjustment, and independent functioning in the community. They summarize results to date on best predictors. Neuropsychological assessment alone cannot provide adequate prediction of these outcomes. For maximizing prediction of psychosocial outcome, several types of information need to be factored into the equation, e.g., metabolic and biochemical, injury characteristics, patient and family behavior, and environmental factors. Additionally neuropsychological assessment can be enhanced if psychometric issues are better addressed.

Drs. Mary Hibbard and Wayne Gordon address the issue of neuropsychological assessment of individuals with stroke. They make the point that professionals in the field have missed critical deficits to be rehabilitated by simplistically approaching individuals as left or right brain damaged with coinciding deficits. They share convincing evidence that deficits are shared across the

board, no matter what the locus of injury. They outline what a comprehensive assessment entails and how to obtain reliable information.

Predictors of outcome in CVA are covered by Dr. Mark Johnson and coworkers. They review the literature of the past 12 years on predictive factors in mortality and functional outcome and discuss the difficulties in identifying the best predictors and the best outcomes. Suggestions are offered for clarifying findings and maximizing the likelihood of clinical applications of research findings.

Mr. Steve Forer describes a step-by-step methodology for setting up a program evaluation system within a facility. This thorough treatise covers uses of outcome evaluation and how to integrate the data with other management information systems and provides examples of program evalua-

tion models. The article describes how to analyze and report results, interpret findings, develop action plans and follow-up recommendations, how to overcome staff resistance, and other factors.

Taken together, the articles in this issue of *NeuroRehabilitation* represent an excellent compilation of information to date on (1) prediction of outcome in TBI, CVA, and SCI, (2) techniques and methods for avoiding misinterpretations of findings common in previous studies and clinical evaluations, (3) identification of scales relevant for meeting clinical and program evaluation and outcome needs, and (4) how to set up program evaluation at your facility.

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