Interest Among Occupational Therapy Managers in Measuring Workload for Case Costing

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Objectives. Interest in costing health care delivery on an individual case basis has increased in recent years as concern with overall health care costs has heightened. Costing exercises have been largely oriented around medical classification systems. Measures to incorporate the contributions of allied health activities such as occupational therapy are relatively recent. The objective of this study was to examine the attitudes and opinions of senior occupational therapy managers toward workload measurement on the basis of case mix.

Method. A survey was sent to all 198 senior occupational therapy managers in accredited Canadian facilities, which was completed by 182 respondents for a response rate of 92%. The questionnaire asked about workload measurement system(s) currently used, satisfaction with the system(s), and needs and expectations of workload systems in general.

Results. The majority of respondents were using a time recording workload measurement system and expressed relatively low levels of satisfaction with it. Current systems were unable to provide costing data, which respondents ranked as very important for themselves as managers. The majority of respondents believed that it would be useful or very useful to be able to cost occupational therapy services by a diagnostic grouping system and to establish standard protocols per diagnosis, standard times per procedure per institution, and standard times per procedure for the profession.

Conclusion. There is support for developing or expanding current methods of measuring workload. Senior occupational therapy managers would like to be able to predict their workload prospectively, a step that will accommodate the move toward case costing and program management.

Case costing has captured the imagination of many health care managers because it promises to improve the efficiency and effectiveness of the health care system. The ability to determine case-specific costs allows managers to estimate resource utilization patterns and costs on the basis of case mix groups. This information should help improve planning, budgeting, monitoring, and allocating resources. Standard patient groups and costs also offer a means to compare hospital and provider performance as well as determine the impact of a changing case mix profile of patients.

The United States health care system uses diagnosis-related groups (DRGs) as a means of classifying patients for case costing and reimbursement (Wiley, 1992). In Canada, Case Mix Groups (CMGs) and Resource Intensity Weights are systems being introduced in a number of provincial jurisdictions as part of a move toward reim-
As members of the health care team, occupational therapy reimbursement by case mix (Botz, 1991; Illinois Coates, 1992; Miller, Barton, & Cuddeback, 1990). Other methods for determining relative case costs are also being explored as funding formulas are changed to incorporate reimbursement by case mix (Boz, 1991; Illinois Health Cost Containment Council, 1991; Jacobs, Hall, Lave, & Glendining, 1992; McCready & Rahn, 1986). As members of the health care team, occupational therapy managers are being asked to examine the way in which they traditionally measure workload and to explore new methods that will further the goals of case mix reimbursement.

**Patient Classification Systems**

Patient classification is a generic term used to denote a method for grouping patients on the basis of explicit criteria. Medical classification systems use relatively homogeneous groupings with respect to patients' overall use of hospital resources on the basis of medical diagnosis, procedure, age, and the presence of comorbid conditions or complications. Several approaches to medical case mix classification systems exist, with DRGs in the United States and CMGs in Canada being used most frequently.

DRGs were developed as a utilization management tool that uses the International Classification of Disease Ninth Revision Clinical Modification (ICD-9-CM) (World Health Organization [WHO], 1978) and permits acute care inpatients with similar clinical and resource utilization characteristics to be grouped. Patients falling within the same DRG, a category based on principal diagnosis or the diagnosis most responsible for the patient's hospital admission, would be expected to consume similar amounts of health care resources. Hospital discharge abstract data are used to code a patient's DRG; tables that determine whether an additional ICD-9-CM diagnosis is a complication or comorbid condition are also used (WHO, 1978). DRGs are widely used by many private insurers to monitor treatment patterns and resource usage according to standardized patient groups and have been used since 1983 to determine hospital reimbursement for Medicare cases.

CMGs, which were introduced in 1983, are the Canadian version of DRGs. Modeled on DRGs, CMGs are constructed with ICD-9 (without the clinical modification) codes and are based on the most responsible diagnosis or the diagnosis that is responsible for the greatest portion of the patient's hospital length of stay. Although there are basic similarities between DRGs and CMGs, the CMG categorization system is becoming increasingly different from its parent DRG system (Canadian Institute for Health Information, 1995).

**Incorporating the Costs of Other Health Services**

As medical diagnosis classification systems, both DRGs and CMGs do not incorporate a measure of intensity of allied health services, such as nursing, social work, and rehabilitation, that are commonly delivered to patients. These systems treat costs for these services as per diem rates. However, several studies have demonstrated that allied health care costs cannot be treated as fixed per diems within medical diagnostic groups (Bargagliotti & Smith, 1985; Halloran, 1985; McKibben, Brimmer, Clinton, & Galliker, 1985; Sovie, Tarcaule, Vanpuntee, & Sund, 1985). These costs, as measured in hours of care, vary within as well as between diagnostic categories.

Different approaches have been developed to respond to these concerns. Nursing workload measurement systems, which measure patient requirements for nursing care (nursing intensity) and estimate the number of nursing care hours (workload) required to meet those needs, are currently being used across the United States and Canada to measure nurse resource use within medical case mix classification systems. The rationale is that by providing nursing intensity weights to medical case mix groups, the ability to determine accurate patient-specific costs will improve (Halloran, 1985).

Current methods of measuring workload have slowed development of similar systems that could be used to provide intensity weights for other health professions, such as occupational therapy. Although nursing workload measurement systems provide an estimate of direct nursing care (e.g., hands-on care such as bathing and treatments) and indirect nursing care (e.g., maintenance of the unit, preparation of equipment) that can be used for case costing, other health professions have not developed such systems; instead, they use systems based on records of the actual time health professionals spend with individual patients. Most commonly, one unit is equal to 5 min of personnel time spent in direct care activities. Time adjustments may be made to reflect indirect care (i.e., activities that are not conducted in the presence of the patient) and personal time (i.e., education, training). This method is used by the current national workload measurement systems for occupational and physical therapy in Canada and the United States (American Occupational Therapy Association, 1992; Department of Health and Welfare Canada, 1988).

The advantages of an actual time recording system are that it is relatively easy to implement and easy for
were diploma trained (i.e., Canadian occupational therapists to understand and complete. The major disadvantage is that it lacks a time standard, either a national standard per procedure or a standard linked to a medical case mix. Because time units cannot be related in a meaningful way to standards, it is difficult to develop intensity weights or cost estimates either by occupational therapy procedure or by medical case mix. Attempts to develop more sophisticated systems, such as that described by Wright, Scott, and Cockerill (1993), are in their infancy, and the interest and skills of occupational therapists to undertake these activities remains unknown.

The objective of this study was to examine the attitudes and opinions of senior occupational therapy managers toward workload measurement. Specifically, current practices in measuring workload, satisfaction with these practices, and support for alternative methods were explored.

Method

All 198 senior occupational therapy managers in Canadian Association of Occupational Therapists-accredited facilities were mailed a self-administered, 30-item questionnaire about workload measurement system(s) currently used, satisfaction with the system(s), and needs and expectations of workload systems in general. For the purposes of the survey, workload measurement systems were defined as systems that use an open-ended scale to determine the time units of occupational therapy care per patient. The majority of the questionnaire items were in Likert format. To ensure the opportunity to express views not explicitly addressed by the questions, closed-ended items were followed by open-ended options to provide other responses or opinions. The questionnaire was designed and pretested by representatives from a variety of health care and academic settings.

Each manager received up to four mail contacts requesting participation in the survey. The first and third mailings consisted of a cover letter, the questionnaire, and a prepaid, self-addressed return envelope. The second and fourth mailings were reminder cards stressing the importance of the research, a request for cooperation, and the provision of a name and number to call if there were questions about the content or aims of the research. Postcards that allowed respondents to opt out of the research were provided in each mailing.

Results

Completed questionnaires were received from 182 of the 198 managers for a response rate of 92%. Sixty-six percent of the respondents had baccalaureate training; 22% were diploma trained (i.e., Canadian occupational therapists who graduated before 1976), and 11% held a master’s degree. Respondents reported being in their current positions an average of 6 years, and 82% held budget responsibility for their department.

Fifty-seven percent were managers of occupational therapy departments in teaching or public general hospitals with or without long-term-care beds; 14% worked in long-term-care settings; and 11% worked in psychiatric settings. The remaining 18% worked in other settings such as rehabilitation centers or private clinics. The average size of facility in which respondents worked was 251 acute beds and 139 long-term-care beds. The average department employed 11 full-time equivalent (FTE) occupational therapists, with a range of 1 to 60 employees; 80% of the respondents were employed full time. In Canada, there are relatively few occupational therapy assistants and no certified occupational therapy assistants; hence, information on these occupational groups was not collected. In terms of work setting, respondents reported that 66% of their FTEs worked in inpatient settings and 34% in outpatient settings.

Workload measurement systems were an integral part of the management of the occupational therapy departments, with 93% of respondents reporting using some measurement system. The systems used were overwhelmingly (98%) time recording in nature; that is, respondents reported that occupational therapists in their departments were capturing actual time spent in patient care. Less than 5% of managers reported having access to a workload measurement system that could measure patients’ requirements for occupational therapy (intensity) and estimate the number of hours or units (workload) required to meet the needs.

The most commonly mentioned uses of workload data were compliance with internal and external reporting requirements (91% reported using the system for this purpose), productivity analysis (80%), and supervision of staff in time use and management (76%). Information from the systems was not generally being used for costing per patient (28%) or costing per specific (11%) or general (11%) occupational therapy procedure.

Respondents expressed relatively low levels of satisfaction with their time recording systems. The ability of the respondents’ current systems to provide data for internal and external reporting (61%) and for productivity analyses (57%) were ranked as excellent or good. Satisfaction with all other applications fell below 50%. Few respondents were satisfied with the system’s ability to provide data for costing general (25% ranked as good or excellent) or specific (27%) occupational therapy procedures. Data for case costing were ranked as good or
excellent by only 36% of respondents.

Table 1 shows a ranking of respondent concerns with the workload measurement systems currently being used. Respondents were least satisfied with the system's ability to provide data for costing general (44%) or specific (49%) occupational therapy procedures, and 31% rated support for case costing as poor or very poor. Sixty-two percent of respondents did not agree with the statement that their current time recording system adequately met the needs of occupational therapy managers.

In addition to evaluating the information from their current workload systems, respondents were asked what they believed was important in ideal systems. Almost all wanted systems that would provide data that could be linked with overall hospital quality assurance and utilization management activities (96% ranked this as very important or important); 98% wanted a system that would be sensitive to the impact of changes in patient care practices and technology; and 97% wanted a system that would provide reliable data for budgeting. There was also strong support for a workload system that would address therapist variables (84%), patient variables (93%), and the physical and psychosocial aspects of patient care (90%).

Information was also sought about the usefulness of developing workload systems with new features. Respondents were most interested in being able to cost occupational therapy services by a diagnostic grouping system (i.e., DRG, CMG [84% rated this feature as useful or very useful]) and in establishing standard occupational therapy protocols per diagnosis (67%). There was less support, although still a majority (59%), for establishing standard times per occupational therapy procedure per institution and standard times per procedure for the occupational therapy profession (53%).

When asked whether currently available workload systems for occupational therapy could be improved if standard times were used as a comparison with actual times, 41% of respondents agreed or strongly agreed; 32% were undecided, and 27% disagreed or strongly disagreed. Forty-eight percent disagreed or strongly disagreed that occupational therapy practice would be improved if standard times per procedure were established for the profession; 21% were unsure; and 31% agreed or strongly agreed.

In terms of patterns of support, attitudes about possible features of new workload systems—establishing standard times per procedure per institution, standard protocols per diagnosis, and standard times per procedure for the profession—were examined by a number of background variables. It was hypothesized that differences in levels of support on various factors could help both to explain current patterns of behavior and to predict support for possible changes. In fact, none of these background factors had any influence on patterns of support for possible new features of workload measurement. Patterns of support did not vary by length of time in position, educational level, responsibility for budget preparation, employment setting and size, or number of occupational therapists employed.

### Discussion

The results indicate interest among senior occupational therapy managers in measuring workload by techniques conducive to case costing. Health care managers were predominantly using workload measurement systems developed to capture actual time spent in direct and indirect care and indicated dissatisfaction with the limitations of these systems. Although such systems could be used to meet current reporting requirements and productivity analyses, they were unable to assist managers to prospectively predict and control resource requests made of their departments.

There are two major methods of conceptualizing how workload should be measured to accommodate the objectives of case costing (Botz, 1991; Scott, Cockerill, Wright, & O'Brien Pallas, 1993). One method is to link estimates of occupational therapy workload to diagnostic subgroups, which would involve developing standard protocols for occupational therapy service delivery by diagnosis, a step supported by a majority of the occupational therapy managers in this study. The alternative method is to develop standard times per occupational

### Table 1

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<th>Data Provided</th>
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*Question was asked only of those respondents who used the system for the listed purpose.
therapy procedure, which is the basis of most nursing workload measurement systems (O’Brien-Pallas, Cockerill, & Leatt, 1992). The occupational therapy managers in this study were less supportive of this approach, although they still indicated majority support. If new workload measurement systems were to be developed on the basis of standard times, the results indicate that there would be greater support for them on an institution-specific basis rather than for the profession as a whole.

**Conclusion**

Conceptualizing how workload should be measured to accommodate the objectives of case costing is a major undertaking. In moving in this direction, occupational therapy managers need to exchange information on developments within their own facilities and learn from other professional groups, such as nursing and pharmacy, who have made progress in these areas. There also needs to be encouragement and support for research into workload measurement for occupational therapy to ensure that there is a sufficient body of knowledge and expertise when new workload systems are developed.

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**References**


