Evidence of intervention effectiveness in occupational therapy is available in our daily practice. Occupational therapists document functional changes and may report client satisfaction and goal achievement in clients’ clinical records. The question that occupational therapists and other health professionals face is how to collect and apply the available evidence in our practice (Chiu, 2001; Tickle-Degnen, 2000). A community rehabilitation agency in Toronto, Ontario, Canada, answered this question with two information systems: the Service Outcome System and the Client Feedback System. This article describes how the agency has set up the information systems, used the evidence of client outcomes and satisfaction, and learned from the experience.

The Agency

COTA Comprehensive Rehabilitation and Mental Health Services, a nonprofit agency in the Greater Toronto area, has more than 25 years of experience providing home- visiting occupational therapy services. COTA (formerly called Community Occupational Therapists and Associates) recently has restructured to expand services to include physical therapy, speech–language pathology, social work, dietetics, network therapy, and case management.

At present, more than 200 occupational therapists provide services to more than 13,000 clients annually in five specialty teams: physical medicine, mental health, psychogeriatrics, pediatrics (infants and toddlers), and school-based consultation. The primary referral sources are eight Community Care Access Centres (CCACs) in the Greater Toronto area. The CCACs, funded by the Ministry of Health and Long-Term Care of Ontario, coordinate access to homemaking, nursing, therapy, and other services for persons living at home. The CCACs contract rehabilitation services (mainly occupational therapy) with COTA. The contract involves CCACs sending referrals to COTA and reimbursing COTA after service delivery.

In 1997, COTA explored ways that would provide evidence for the agency to demonstrate service quality for all COTA rehabilitation and mental health services. We identified two sources of information: functional changes in clients after intervention and client perception of and satisfaction with service delivery processes. We formed working groups that pooled expertise from various stakeholders. Group members, representing various clinical teams, included occupational therapists, managers, clients, family members, and a researcher. The group members designed the information systems, and the agency implemented and evaluated the systems.

Service Outcome System

System Design

At COTA, the working group members designed the service outcome system to include a pretest and posttest. The outcomes working group defined outcome as “the impact, effect or consequences on users of COTA services.” All outcome measures are rated or administered by the occupational therapist who visits the client. We measure at least twice, once at admission and once at discharge (or reevaluations for longer-term clients) to calculate changes over time.

We selected outcome measures using predetermined criteria. The key criteria are that the measure (a) can capture anticipated changes, (b) is suitable to our client population, (c) is practical to use in daily practice, and (d) has demonstrated psychometric properties. The researcher, a member of the outcome working group, conducted the search and preliminary selection, and the entire working group made the final recommendations. We piloted potential measures to evaluate their suitability.

On the basis of these criteria, we have identified six measures for different clinical areas. We use the Le système de mesure de l’autonomie fonctionnelle (SMAF [Functional Autonomy Measuring System]; Hebert, Carrier, & Bilodeau, 1988) to measure for physical rehabilitation. The SMAF is based on the World Health Organization’s (1980) International Classification of Impairments, Disabilities, and Handicaps. It contains 58 items that measure a client’s level of disability and handicap in five domains: activities of daily living, mobility, communication, mental functions, and instrumental activities of daily living (see Figure 1).

We use the Canadian Occupational Performance Measure (COPM; Law et al., 1998) for pediatric and school-based services. The COPM is an individualized measure that detects changes in a client’s self-perception of occupational performance over time. The family caregivers’ or teachers’ perceptions of the clients are mea-
sured if the clients are too young to give a rating. The COPM contains nine items that form three domains: (a) self-care, (b) productivity, and (c) leisure. Each item has two ratings: performance and satisfaction. Performance is the ability to perform daily activities in the areas of self-care, productivity, and leisure, and satisfaction is the measure of the satisfaction with performance.

The Quality of Life Interview (QOLI; Lehman, 1988) and Life Skills Profile (LSP; Rosen, Hadzi-Pavlovic, & Parker, 1989) are the outcome measures for mental health. The QOLI measures a client’s life situation on the basis of the client’s ratings. It consists of 52 items that form nine subjective scales and eight objective scales. The subjective scales measure the client’s feelings about various life circumstances. The objective scales measure what the client actually does or experiences in various life circumstances. The LSP evaluates a client’s life skills from the occupational therapist’s observations. It consists of 39 items that form five subscales: (a) self-care, (b) nonturbulence, (c) social contact, (d) communication, and (e) responsibility.

We use the Burden Scale for Family Caregivers (BSFC; Grasel, 1995) for psychogeriatric services. The BSFC measures the perceived burden experienced by caregivers of family members who have health problems, especially cognitive impairment. It consists of 28 items for the caregivers to complete. At present, the psychogeriatric team is conducting a pilot study to validate the Safety Assessment of Function and the Environment for Rehabilitation–Health Outcome Measurement and Evaluation (SAFER-HOME; Chiu, Oliver, Tamaki, Faibish, & Sisson, 2001). The SAFER-HOME is an outcome measure for home safety evaluation and intervention. It contains 97 items that cover living situation, mobility, kitchen, fire hazards, eating, household, dressing, grooming, bathroom, medication, communication, wandering, and memory aids.

Evidence of Change After Services
We have collected more than 4,000 pretest–postest data sets in the five specialty teams since we started collecting outcome data. The results have been positive in all community occupational therapy practices. For example, physical rehabilitation clients show positive changes in disability and handicap scores. Mental health clients have improved their quality of life and life skills. Pediatric and school-care clients have demonstrated positive changes in functional mobility, school activities, and play. The caregivers of psychogeriatric clients have fewer burdens and have become more competent. The safety concerns of elderly clients have decreased after occupational therapy services.

Our results provide evidence of change after services. We have used this evidence to demonstrate our service quality to funders, referral sources, and accreditation bodies. As we build the body of knowledge of outcome measurement, we learn what needs to be studied further. We have begun the development of the SAFER-HOME, which will be validated further with a series of reliability and validity studies. We have realized that the pretest–postest design is a practical way to collect evidence in clinical practice. However, it demonstrates only our clients’ functional changes over the course of therapy and does not control for other factors, such as the natural course of the disease, maturation, and concurrent treatments. When stronger evidence is needed,
we conduct additional studies with more rigorous research designs. We have obtained grant funding to conduct a more rigorous evaluation of functional changes after school-based consultation services to confirm the service effectiveness and to develop new strategies that will benefit more children with fine motor difficulties.

The process of outcome measurement has influenced clinical practice. Some occupational therapists have used the outcome measures to guide treatment. For example, some occupational therapists and school teachers use the COPM to develop jointly goals and evaluate progress. With the BSFC, occupational therapists learn what aspects of care a caregiver may see as a problem. What one person can cope with may strain someone else. The BSFC facilitates further discussion, which can be helpful in planning appropriate education, support, and practical help.

**Implementation Challenges**

We have experienced various challenges when establishing the outcome system. The most frustrating experience is that very few outcome measures are available that fit all our criteria for use in home-based occupational therapy practice. The outcome measures available were designed for either institutional use or research application. Implementation becomes difficult when outcome measures have low clinical use. Occupational therapists may perceive the use of such measures with every client in their daily practice as a burden. For example, we selected two potential physical rehabilitation outcome measures, the SMAF and the Outcome and Assessment Information Set, 2nd edition (OASIS-B; Center for Health Services and Policy Research, 1997). When we tested the two measures, the pretest–posttest data sets (approximately 1,000) demonstrated that both measures reflected positive changes after occupational therapy services. Practicing occupational therapists participated in an evaluation of the measures, using a 25-item questionnaire (60 completed) and focus groups (13 participants). The evaluation results indicated that the time taken to complete the OASIS-B was too long to fit into tight visiting schedules. Although the occupational therapists preferred the SMAF, they still believed that it could not capture all changes and was inappropriate for some clients. Before we can find a better measure, we have alleviated the occupational therapists’ burden by measuring an annual sample of clients instead of every physical rehabilitation client. The challenge remains for striking a balance between obtaining evidence and negatively affecting clinical practice.

**Client Feedback System**

**System Design**

The client feedback system uses a cross-sectional survey. Client feedback is defined as clients’ perception of, satisfaction with, and expectation of service delivery processes. We surveyed both active and discharged clients and grouped them into different strata by specialty team.

To collect client feedback data, we developed the Client Feedback Questionnaire (CFQ), which includes items from a standardized questionnaire and agency-developed questions (COTA Comprehensive Rehabilitation and Mental Health Services, 1999) (see Figure 2). We designed the questionnaire to have a reading level of sixth to seventh grade to help COTA’s diverse client population better understand the questions. We pilot tested the CFQ and confirmed that it was practical to use, acceptable to our clients, and adequate for assessing client satisfaction.

We surveyed most clients directly and, when appropriate, asked their family members or school teachers to respond; that is, we contacted the parents and school teachers instead of the children, and we asked the caregivers of clients with cognitive impairments instead of the clients themselves. We considered the experience of clients, family members, and occupational therapists to determine the best way to complete the survey. For example, occupational therapists expected that family members would appreciate an interviewer’s help to complete the questionnaire. However, our family member representative of the client feedback working group told us that most family members were busy giving care and would not have time for a phone interview. If they received mailed questionnaires instead, they could find a convenient time to complete them.

**Evidence of High Satisfaction**

In 2000, we collected feedback from 893 clients. Clients were highly satisfied with COTA services. They were mostly satisfied with the occupational therapists’ professional skills and interpersonal qualities. For example, 92% indicated that they and their therapist agreed on goals, and 95% indicated that their therapist listened to them closely. The clients were pleased with the services because their occupational therapists were sensitive to their needs and gave useful advice. Family members appreciated the occupational therapists’ knowledge and suggestions. School teachers indicated that the occupational therapists provided practical suggestions and good strategies to help their students.

We identified opportunities for change in some of the access and service delivery processes. The respondents pointed out that they wanted more visits, longer visits, and shorter waiting time. The satisfaction ratings varied among clients of the five specialty teams. The differences reflected the

![Figure 2. Selected questions of the Client Feedback Questionnaire (or CFQ). Note. Reprinted with author's permission.](https://example.com/figure2.png)
unique features of the services and client characteristics. The variations supported the need to collect feedback of different clinical groups separately so that specific strategies could be implemented to improve quality of each service.

Occupational therapists and the managers studied the survey results and developed action plans to address areas that could be improved. For example, most client respondents indicated that they wanted more visits. We established guidelines for the occupational therapists so that they could communicate effectively to clients the frequency of visits and length of services predetermined by the CCACs (the funders and referrers). We changed our intake procedures to shorten the response time to referrals. The new procedures have already reduced the wait time effectively.

We plan to repeat the survey in 2002 and will use the 2000 survey results as the reference point to evaluate the impact of our improvement efforts. We anticipate that our quality improvement efforts will further increase our clients’ satisfaction levels. Continuous validation and improvement of the CFQ will be done. We also plan to expand our survey target in the next survey. We will use professional services to translate the CFQ into six different languages (Chinese, French, Italian, Polish, Portuguese, Punjabi) to reach our diverse population. We will pilot the use of an “e-survey” (accessible through the World Wide Web) to allow our clients to respond through an additional channel.

Conclusion
Our two complementary systems—the Service Outcome System and the Client Feedback System—have enabled us to blend evidence and practice. The blending process has provided useful information for use in clinical practice, quality management, and outcome research. Evidence-based practice has become an integral part of our organization. In fact, we are more confident with our practice and better equipped to explore innovative practices because of these established systems. ▲

Acknowledgments
The two systems would not be possible without the vision of COTA’s Board of Directors and our former Executive Director, Barbara Quinn, BSc(OT), MHSc. I especially thank the management team, occupational therapists, research assistants, administrative support staff, computer consultant, and COTA’s volunteers as well as the clients, family members, and school teachers for their participation. I also thank Linda Marshall for her valuable feedback on a draft of this article.

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