A number of critical elements have been identified in assistive technology assessment and planning to optimise its integration into the educational environments of children and hence address their functional goals. These elements are as follows: adopting a collaborative think-tank team approach to which all educational team members contribute equally and where technology experts are consulted once the need for specific technical support or training is identified; involving the family by establishing mutual expectations and using effective communication strategies; and conducting in-depth assessment that identifies clear goals, includes task analysis within daily environments, examines the child-device interaction closely and investigates the resources available to implement assistive technology use.

With this backdrop, this paper reviews existing assessments and proposes that the Lifespace Access Profile (LAP) (Williams et al 1993) and Lifespace Access Profile (Upper Extension) (LAPUE) (Williams et al 1994) satisfy many of the criteria for effective assessment and planning advocated in the literature.

Occupational Therapy with Children

Assistive Technology Assessment and Planning for Children with Multiple Disabilities in Educational Settings

Jodie Copley and Jenny Ziviani

Introduction

For children with multiple disabilities, assistive technology (that is, microswitches, electronic communication devices, powered mobility and environmental controls) has enabled participation in educational environments (Inge and Shepherd 1995, Derer et al 1996, Hutinger et al 1996, Margolis and Goodman 1999). However, a review of the literature (Copley and Ziviani 2004) established that the potential benefits of assistive technology can be limited by inadequate training of educational staff in technology applications and negative staff attitudes (Carey and Sale 1994, Derer et al 1996, Hutinger et al 1996), insufficient funding and difficulties in operating and maintaining equipment (McGregor and Pachuski 1996, Margolis and Goodman 1999, Todis 2001).

Perhaps the most fundamental barrier to successful assistive technology use by children with multiple disabilities is inadequate assessment and planning. Research suggests that less than comprehensive assessment of individual needs and lack of team involvement in the process commonly results in assistive technology implementation that is neither goal directed nor integrated into the child's educational environment (Carey and Sale 1994, Derer et al 1996, Hutinger et al 1996, Margolis and Goodman 1999, Todis 2001).

Only two major long-term studies have directly investigated assistive technology assessment and implementation for children with multiple disabilities (Todis and Walker 1993, Hutinger et al 1996). Owing to the complexity of factors seen to have an impact on the process of assistive technology use by these children, both studies used multiple case study methodology (13 and 15 cases respectively) and followed children over a 2-year period. Qualitative, naturalistic inquiry was used to investigate the issues surrounding assistive technology use and outcomes, with data sources including interviews with parents and school staff, weekly or fortnightly participant observation over 12-20 months and a review of documentation.

Apart from direct investigation of assistive technology assessment and outcomes using multiple case study research, surveys of teachers, technology coordinators and parents of children with disabilities have been undertaken either to identify problems in the application of assistive technology or to determine current practice in assistive technology assessment (Cary and Sale 1994, Angelo et al 1995, Derer et al 1996, Parette and Hourcade 1997, Scott 1997). The findings from these surveys have provided a basis for the recommendation of specific key features for assistive technology assessment and implementation, which echo those arising from the multiple case study research.

Theoretical papers have also contributed to the debate (Enders and Hall 1990, Holder-Brown and Parette 1992, Luborsky 1993, Parette et al 1993, Schuster 1993, Swinth and Case Smith 1993, Beaver and Mann 1994, Inge and Shepherd 1995, Mann and Beaver 1995, Kroth and Bolson 1996, Parette and Brotherson 1996, Hourcade et al 1997, Parette 1997, Judge and Parette 1998, Tamburello and Peuler 1998, Margolis and Goodman 1999, Nochajski et al 1999), reiterating many of the key features of assessment

and planning suggested in other studies. The purpose of this paper is, therefore, to identify from the literature the key features that make for sound assistive technology assessment and planning for children with multiple disabilities. A second aim is to review the available assessments to determine to what extent they reflect these recommended features.

Three common themes emerge from the literature with respect to assistive technology assessment and planning for children with disabilities: the need for a team approach, the inclusion of the family in the process and the specific components of assessment that should be undertaken.

Key elements

Team approach

The inclusion of all people involved in the child's daily life and educational instruction is considered essential when examining assistive technology needs (Parette et al 1993, Shuster 1993). Furthermore, assessment should take place in the environments within which the child is expected to use the technology. Difficulties arise if staff are unskilled or lack confidence in the prescription and operation of assistive technology, relying on the judgement of technology specialists or off-site therapists who are unfamiliar with the child in context (Holder-Brown and Parette 1992, Parette et al 1993). Decisions made on the basis of isolated technology use without reference to functional applications can result in limited benefit (Todis and Walker 1993, Behrmann and Schepis 1994).

A complex array of personal and environmental factors influences decisions regarding assistive technology device and system selection. It is therefore important to draw upon the knowledge and experience of each team member to determine the child's overall needs (Holder-Brown and Parette 1992, Swinth and Case-Smith 1993, Beaver and Mann 1994, Cowen 1994, Parette 1997, Rainforth and York-Barr 1997, Scott 1997, Judge and Parette 1998, Tamburello and Peuler 1998). Team members' commitment is maximised when they have shared goals, develop the intervention plan jointly and take equal responsibility for implementation (Rainforth and York-Barr 1997). Although it is recommended that educational teams seek advice from equipment suppliers and technology specialists regarding the available devices that may meet the child's needs (Holder-Brown and Parette 1992), it is essential that these consultants also function as team members and provide their input within the school environment rather than assessing the child at an external location (Inge and Shepherd 1995).

Effective team assessment of assistive technology needs relies on good communication as well as team composition and location. Team members must be skilled and committed and must respect each other's knowledge and expertise (Orelove and Sobsey 1996). The use of a think-tank approach, with all team members attending assessment meetings and maintaining close communication and feedback throughout the assessment and implementation process, is recommended (Luborsky 1993, Shuster 1993).

Role of the family

Involvement in the assessment process is an important way to garner the family's commitment to assistive technology use. Families are more likely to commence and maintain involvement if it is clear to them that they are valued team members, an effort is made to determine their preferences and their ideas are seen as integral to the assessment process (Angelo et al 1995). The literature advocates a collaborative family-centred model, in which families openly express their needs, goals and values and contribute knowledge of the child's daily environments outside the school setting. Continuing discussion and exchange of information is used to generate possible solutions, the family making the final choice from the identified options (Phillips and Zhao 1993, Todis and Walker 1993, Parette and Hourcade 1997). Shared responsibility for assistive technology implementation can only be encouraged if a parent-professional partnership is established (Judge and Parette 1998).

To enable collaboration, the expectations and beliefs of families and professionals must be clarified and understood by all parties involved (Luborsky 1993, Judge and Parette 1998). To this end, families' expectations for the technology should be investigated. Service providers must also communicate their expectations to families about the possible outcomes and the extent of family involvement (Judge and Parette 1998). A further point that needs to be clarified is who owns the devices – the school or the family – because this has implications for the child's continuing device use (Hourcade et al 1997).

Collaboration also relies on effective communication. For parents to feel able to contribute meaningfully to the assessment process, they must appreciate the worth of their own knowledge and ideas. Families may see professionals' judgement as more discerning than their own or may lack confidence in their own knowledge base (Kroth and Bolson 1996, Judge and Parette 1998). It is therefore important that the assessment is conducted in a non-threatening manner, with minimal use of professional jargon (Kroth and Bolson 1996, Parette and Brotherson 1996). Open-ended questions designed to encourage parents to share information and build rapport are advocated (Summers et al 1990).

Assessment components

In order to be accountable to funding bodies, the assessment for assistive technology needs to occur on an individual basis using a systematic and comprehensive approach (Enders and Hall 1990, Parette 1997). It should be underpinned by clear goals that are reached by team consensus and include components such as task analysis and observations of the child functioning within his or her daily environments. It should examine closely the child's abilities and interaction with assistive technology, as well as the characteristics and properties of specific devices. Attention to the resources available to implement assistive technology use is also considered integral to comprehensive assessment. Specific recommendations included in the literature for each of these assessment components are discussed below.

Establishing goals

At present, legislation regarding assistive technology practice in schools is most developed in the United States. Here, the Individuals with Disabilities Education Amendments of 1990 (IDEA) mandates that a student's assistive technology needs be considered at the time the Individual Education Plan (IEP) is developed. Assistive technology may be included as a component of the goals or objectives or it may constitute an accommodation to allow the student to function in the least restrictive educational environment (RESNA 1994). Goals should assist the child to achieve an individual or family function that would not be attained without the use of assistive technology (Parette 1997, Margolis and Goodman 1999).

Goals are formed partially in response to anticipated future academic and vocational needs and partially in response to family, economic, residential and social circumstances (Higginbotham 1993, Shuster 1993, Swinth and Case-Smith 1993). It may be that the goal-setting process is best supported by a team facilitator or coordinator, who promotes effective discussion among team members. Once goals are identified, assistive technology may be seen as one of the tools employed to achieve these goals.

Task analysis

If achievement of a specific task has been identified as a goal, task analysis is used to determine the abilities required to perform the task and the application of assistive technology to support these (Enders and Hall 1990, Mann and Beaver 1995). The parameters of successful task completion must also be ascertained. For example, the speed with which a task is performed may be more important than the quality (Inge and Shepherd 1995).

Observations of functioning in daily environments and routines

Information about the child's functioning in typical environments could be gained using interviews and observations (Todis and Walker 1993, Margolis and Goodman 1999). It may therefore be necessary to conduct home or workplace visits (Shuster 1993). Additionally, the use of videotaping can assist consultation between the team and technology experts during the problem-solving process (Behrmann and Schepis 1994).

Individual abilities

Child characteristics

A comprehensive functional assessment of the child within naturalistic environments will provide data about strengths and assets that will facilitate task performance, together with difficulties and incapacities that must be accounted for when considering assistive technology needs (Enders and Hall 1990, Swinth and Case-Smith 1993, Inge and Shepherd 1995, Judge and Parette 1998).

The child's sensory functioning (that is, vision, hearing and touch) must be considered when determining the modalities that are most appropriate for accessing and communication purposes (Enders and Hall 1990, Mann and Beaver 1995). For example, auditory scanning may be most suitable for a child who has visual impairment and who responds to sound in a discriminative manner.

The child's motor performance (neuromuscular status, muscle strength, range of movement, coordination and gross and fine motor abilities) also needs to be investigated within the context of functional activities. This assists the preliminary identification of possible access methods (Enders and Hall 1990, Judge and Parette 1998). For instance, attention to specialised seating may be required to allow comfortable positioning, thereby optimising voluntary movement. Given that hand access is often the most readily accepted accessing option, specific documentation of problems that limit hand use has been suggested (Enders and Hall 1990, Goossens and Crain 1992, Inge and Shepherd 1995).

Cognitive skills are as relevant to the child's potential for assistive technology use as physical abilities (Enders and Hall 1990, Swinth and Case-Smith 1993, Mann and Beaver 1995, Parette 1997, Judge and Parette 1998). Motivation, intellectual ability, judgement, attention span and problem solving may influence decisions about the complexity of the device and the child's insight into the ways in which it can be used (Mann and Beaver 1995). Observation of the child performing tasks in daily life settings can provide valuable data about sequencing skills, organisation and the ability to follow directions (Inge and Shepherd 1995).

Other characteristics that should be taken into account in the assessment process are social and emotional development and communication needs (Swinth and Case-Smith 1993, Parette 1997, Judge and Parette 1998). Information regarding the child's preferences and desire for independence can be highly influential when making assistive technology decisions (Judge and Parette 1998). Similarly, the communication partners with whom the child regularly interacts, the locations in which the interaction takes place and the types of message that the child may need to convey will affect the creation of viable solutions (Mann and Beaver 1995).

Interaction with technology

After gaining a comprehensive picture of the child's functional abilities, a more detailed analysis of the ways in which the child can interact with technology is required. Determining optimal positioning for successful access becomes a focus of assessment. Adapted or customised seating used by the child is scrutinised (Tamburello and Peuler 1998) and the child's positioning in different environments considered (Inge and Shepherd 1995). Observations of the child using assistive technology can be conducted with the purpose of assessing the child's postural alignment, symmetry and endurance for maintaining a consistent position throughout the task. A suggested approach to this phase of assessment involves varying the positions of the device and the student in relation to each other and within the environment to gain further information about the most advantageous conditions for effective technology use (Inge and Shepherd 1995).

Exploring options for the child's operation of the assistive technology equipment forms the next step in assessment. The body part used to access directly the equipment or alternative input device (for example, microswitch or joystick) is termed the control site or access site (Williams et al 1993, Inge and Shepherd 1995). First, the team must decide which movement patterns are reliable and energy efficient for the child (Goossens and Crain 1992, Inge and Shepherd 1995). Goossens and Crain (1992) advocated observing and videotaping the child performing familiar tasks in typical environments in order to determine voluntary and involuntary movement patterns. The reliability of different movements can then be tested using input devices with motivating stimuli. Collecting data on the accuracy, speed, endurance and quality of movement is also recommended (Goossens and Crain 1992, Inge and Shepherd 1995), but the literature provides scant guidelines on how this should be done.

Most appropriate input device

Once the access site and movement pattern are identified, a more detailed assessment to determine the most appropriate input device is required. An analysis of the selected movement patterns and other child characteristics can be used to determine features, such as the amount of force and extent of movement required to activate the device; the sensory feedback required by the child (for example, whether this should be an auditory 'click' or a visual display); the height and surface area of the input device; the need for multiple switches for directed scanning; and individualised features, such as a moisture-resistant interface (Goossens and Crain 1992).

Once chosen, the position and presentation of the input device must be considered, with a view to minimising the effort required for access. The height and angle of the surface on which the device will be placed and the location and angle of the device must be considered to facilitate the child's ability to monitor the movement and target and to prevent unnecessary effort. The aim of this intricate procedure is to ensure that effortless contact with the device is promoted and accidental activation is minimised (Goossens and Crain 1992).

Characteristics and properties of assistive technology devices

The overall aim of assistive technology assessment is to match the child with an appropriate assistive technology device (Enders and Hall 1990). Therefore, whilst investigating the child's needs, goals and abilities, team members need to seek information regarding the range of assistive technology equipment available (Judge and Parette 1998). Logistical factors such as availability, durability, reliability, comfort, safety features and ease of use can be critical in supporting or discouraging device selection (Phillips and Zhao 1993, Judge and Parette 1998). The compatibility of the device with other devices already in use must be established (Judge and Parette 1998). The transportability of devices is another key factor, because families may not be able to transport heavy or cumbersome devices between home and school (Phillips and Zhao 1993, Hourcade et al 1997, Judge and Parette 1998).

The cost is often an overriding consideration in the choice of equipment (Phillips and Zhao 1993, Judge and Parette 1998). A true indication of the relative cost-benefit of different devices can only be obtained if the team considers the need for customisation of equipment and the costs of installation, daily, monthly and annual operation, repairs, maintenance, training and follow-up (Enders and Hall 1990, Parette et al 1993, Phillips and Zhao 1993, Inge and Shepherd 1995, Judge and Parette 1998).

It is likely that this type of thorough assessment of devices can be obtained only through direct trial of the equipment prior to purchase (Judge and Parette 1998).

Resources

For assistive technology solutions to achieve the desired outcomes, they must be developed by the team in full awareness of the resources required to ensure their successful implementation (Enders and Hall 1990, Holder-Brown and Parette 1992, Parette 1997). The family's financial and time resources must be taken into account so that the demands on the family are realistic (Judge and Parette 1998). Other resources relate to service system factors, such as administrative supports that can be drawn upon to implement assistive technology use (Livesay and Murray 1992).

Human resources including availability of technically skilled staff and further training must be identified (Holder-Brown and Parette 1992, Livesay and Murray 1992, Judge and Parette 1998). Material resources such as hardware, software and transport, together with funds to secure these resources, also need to be considered (Livesay and Murray 1992, Judge and Parette 1998).

Planning, implementation and evaluation

The transition from assessment to developing a workable plan for assistive technology implementation is critical to promote a successful outcome. Research suggests that the incorporation of technology-related goals into the IEP is an indicator of the successful blending of assistive technology into the child's education (Cramer 1992, Hutinger et al 1996). It is important, then, that by the end of the assessment process the IEP clearly expresses the desired outcomes, specifies the expected behaviours and performance levels, and details the environments and activities within which assistive technology will be used (Carey and Sale 1994, Orelove and Malatchi 1996, Margolis and Goodman 1999).

In order to introduce a new device or system successfully into a child's life, the team's focus must initially change from carrying out the standard educational programme and home routine with the child to allocating programme time for training and practice in device use (Swinth and Case-Smith 1993, Inge and Shepherd 1995). It is recommended that the assistive technology use be integrated into relevant settings, and generalised across these settings, as soon as possible (Swinth and Case-Smith 1993, Todis and Walker 1993,

Hutinger et al 1996, Todis 2001). Using the technology in the contexts of academic work and social interaction as they naturally occur in the classroom and other daily environments allows the children to further their skills through practical application, with support provided as required (Todis and Walker 1993, Orelove and Sobsey 1996). However, this level of application may not automatically occur, therefore a detailed plan that systematically sets out, at least initially, when and where the technology will be used, how long it will be used for on each occasion and who will facilitate the child in its use may be needed. All team members should be aware of this plan and their roles in its implementation (Carey and Sale 1994, Inge and Shepherd 1995).

A final task for the team is to institute a system of regular monitoring and evaluation to determine whether the assistive technology plan is contributing positively to task performance and achievement of IEP goals (Inge and Shepherd 1995, Margolis and Goodman 1999). Given that children with multiple disabilities frequently experience bouts of ill-health, implementation over an extended period of time may be appropriate before the overall success of the system can be judged (Carey and Sale 1994). Continuing documentation of the child's accuracy, speed and efficiency of accessing is recommended (Inge and Shepherd 1995), together with measurements of achievement in the areas targeted by assistive technology goals such as learning or communication (Carey and Sale 1994).

Ethically, evaluation practices must be used to verify the educational integrity and social validity of any programme or practice used with the child (Garner and Campbell 1987). This responsibility suggests that qualitative information be gathered about the effect of the assistive technology on the lives of the child and significant others (Enders and Hall 1990). Evaluation should therefore include data on family satisfaction and the impact of the assistive technology on the family unit to determine whether a net benefit exists (Parette and Brotherson 1996, Parette and Hourcade 1997).

Assistive technology assessments

Few assistive technology assessments exist that satisfy the optimal requirements for team administration, family involvement and comprehensive consideration of the individual, the environment and the device, and for detailed analysis of the interaction among all these factors. The Matching Assistive Technology and Child (MATCH) assessment (Scherer 2004) encourages team collaboration to complete a series of questionnaires, with the aims of clarifying the goals for technology use and considering the surrounding influences on the use of a particular device. However, it does not provide a means of directly assessing the child's interaction with the technology in order to determine, for example, access sites or positioning. These components of assessment are particularly important for children with multiple disabilities. Two assessments that appear to translate best the principles of assessment recommended in the literature are the Technology Team Assessment Process (TTAP) (Hutinger et al 1992) and the Lifespace Access Profile (LAP) (Williams et al 1993).

The Technology Team Assessment Process

The TTAP is driven by a 'core team', which includes people with assistive technology expertise such as technology specialists. Speech and language therapists, occupational therapists and special education teachers are also likely to be part of the core team if they are experienced in assistive technology use. A second team, termed the 'support team', consists of the child's family together with others who can contribute information about the child's abilities and goals. The core team has the predominant responsibility for assessment administration, whereas those people involved in the child's daily life have a secondary role.

The TTAP advocates a team approach and seeks family input. It furnishes the team with a clear and systematic process to follow in compiling data about the child and investigating the specifics of device use. The child's ability to function within natural environments is observed and incorporated into this process. Follow-up support and evaluation of outcomes are promoted as integral components of the assessment. Where the TTAP deviates from literature recommendations is in its unequal involvement of team members and lack of consideration of available resources. A further limitation is its focus on younger children (0-8 years).

As stated above, a secondary role is taken by the child's family and others involved in his or her daily life. The lack of opportunity for all team members to discuss the child's goals and capabilities in an open forum may mean that insights into the current situation and possible solutions are forfeited. This model of team involvement may not instil school staff and parents with the belief that they are making valued contributions to assessment or that they own the resultant decisions. Another effect of unequal involvement of team members is that information about the family and school resources is not gathered in a comprehensive way. If the technology plan is not developed within the parameters of existing supports and resources, expectations for its implementation may not be realistic.

The Lifespace Access Profile

The LAP was developed for individuals with severe and multiple disabilities. The Lifespace Access Profile: Upper Extension (LAPUE) (Williams et al 1994) is a slightly modified version of the LAP, intended for use with people who have physical disabilities but do not have significant cognitive impairment. Both assessments provide a structure for the educational team to collect data on all the aspects of the individual and the environment regarding the use of assistive technology. Written records of observations are made, with each team member contributing throughout the assessment and planning process. All relevant team members are identified and may include parents or care providers, teaching and support staff, therapists and other specialist education or medical staff. The focus of assessment is to bring together the different perspectives and ideas of

team members to identify how assistive technology can benefit the child and then to develop assistive technology solutions that are acceptable to all team members.

The LAP and LAPUE contain five major sections: physical resources, cognitive resources, emotional resources, support resources and environmental analysis. Each section includes a series of rating scales, which cover the range of student abilities and preferences together with the range of support resources available in each relevant environment. One team member assumes the role of team coordinator. The team may meet in person and use direct discussion to rate each item and record any related qualitative information contributed by team members. Alternatively, team members may be contacted individually by the team coordinator, who then takes into account each individual's input to complete the profile. Either way, each team member has the opportunity to share his or her knowledge and ideas in reaching a consensus on all items. Making observations of the student during systematic trialling of various assistive technology options is suggested where appropriate.

Although rating the child's skills based on team discussion and informal observations rather than standardised measures could be seen as subjective, the authors make the point that the child's use of assistive technology is not an exact science. Rather, it depends in part on the preferences and motivations of the child, together with the interactions among the child, the team members, the environment and the resources available. Taking this perspective, the process of discussing each team member's viewpoint becomes as important as obtaining objective data. The implementation of an assistive technology plan will rely upon these people and their interactions with the child within these environments. Qualitative information gained from team members' subjective viewpoints is therefore a valid focus of assessment.

The type of information collected about the child in the LAP and LAPUE includes general health, vision, hearing and sensation, postural control, muscle tone, coordination, mobility support, range of motion and body sites for switch access. With respect to cognition, receptive and expressive communication, understanding of switch functions and preferred methods of choice making are also determined. In the LAPUE, information is also gathered about the child's higher level academic skills. In both assessments, the team is further guided to consider the workspace that the child can access, the workspace angle at which the child works best, the size target (representative of a switch or other input device) that is most accurately accessed, the number of targets of a certain size that can be accessed within a single task, the speed of accessing and the endurance during assistive technology activities. In the LAPUE, there is a greater emphasis on these skills in relation to computer use.

The LAP and LAPUE both investigate the child's preferences and determine which reinforcers motivate the child. They further explore the child's attention span, distractibility and tolerance for change. The examination of support resources involves considering the family, other carers and professionals involved with the child. Finally, an environmental analysis cues the team to consider how fully the child participates in home, school and community environments and how well the technology is integrated into that participation. In the LAPUE, more detailed information is collected regarding the child's level of independence and computer use in each environment.

Once the assessment is completed, scores from all sections are plotted onto a profile summary graph. This allows the team to look at the status of the child and team in terms of all factors that influence assistive technology use and to identify relative areas of strength and weakness. The team then selects behaviours, abilities or current environmental conditions that could change and decides on goals that should be prioritised. For example, priorities may include obtaining appropriate seating for the child to promote more effective accessing using a particular body part and improved endurance for technology use through more consistent positioning. In addition, assessment may have revealed that the child can choose between and access two targets of a defined size if auditory feedback is provided. A priority may therefore be the introduction of scanning skills using a communication device programmed with two messages relevant to certain classroom activities.

After team discussion, the documentation of assistive technology priorities includes the strategies or actions that need to occur, the equipment, training or support required to enact these strategies, the environments within which each priority will be addressed and who will be responsible for each aspect of this plan.

Conclusion

The LAP and LAPUE appear to satisfy many of the criteria for effective assessment advocated in the literature. They use a transdisciplinary team model, are family centred and place value on the unique perspective and experience of every team member. They use a systematic framework for collecting information about individuals and their specific accessing requirements. The human, equipment, support and training resources that may be needed to implement assistive technology plans are carefully considered so that planning can proceed within realistic parameters. The methodical approach to prioritising goals and identifying the steps to be taken by each team member should encourage the team to take ownership of implementation and to work together to integrate technology use into the child's daily life. To date, however, no research studies investigating the effectiveness of the LAP and LAPUE have been located; the promising features described above suggest that research application of these assessments is warranted.

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BJOT: Call for Papers 2006

During 2006, the Editorial Board of the *British Journal of Occupational Therapy* will publish a series of articles and other items in the areas of 'Long-term conditions' and 'Assistive and emerging technologies'.

Long-term conditions

The Long-Term Conditions National Service Framework (NSF) was launched by the Department of Health in March 2005. It aims to transform the way that health and social care services support people to live with long-term neurological conditions. This call for papers welcomes contributions that relate to the key themes of the NSF, which are independent living, care planned around the needs and choices of the individual, easier and timely access to services and joint working across all agencies and disciplines involved. In addition, articles relating to service development would be welcome. In making this call for papers, we are seeking contributions relating to long-term health conditions, not just neurological conditions.

Assistive and emerging technologies

There has never been a more exciting time for therapists to engage with and contribute to the rapidly expanding role that assistive and emerging technologies are playing in the health and social care sectors. This theme has been chosen to stimulate contributions from people using a wide range of technologies in clinical, educational and managerial settings. We are interested in receiving articles relating to the use of technologies across sectors and in a wide range of settings relevant to occupational therapy. Are you working in areas such as SMART housing, telemedicine or the application of virtual technologies? Are you a member of a group involved in the design, development or evaluation of new technology? Do you have opinions on the future development or evaluation of assistive technology services? If so, this call provides an opportunity for you to share your work in this field with colleagues, stimulate discussion and debate within the profession and highlight the contributions being made by occupational therapists in this field.

Submission

Articles, short reports, practice evaluations, opinion pieces and editorials that address either of these topics, with particular relevance to occupational therapy practice, are welcome and will be considered for publication using the usual peer review process. These should be submitted according the *BJOT* Author's Guide, which is available on the College of Occupational Therapists' website (www.cot.org.uk). In order to ensure that there are items published throughout the year, the deadline for submission is 16 January 2006.

If you have any queries, please contact Upma Barnett, Editor, *BJOT*, at upma.barnett@cot.co.uk or on 020 7450 2338. Contributions should be marked for the appropriate series and sent to the editor at the British Journal of Occupational Therapy, 106-114 Borough High Street, London SE1 1LB.