Areas of consensus and controversy about goal setting in rehabilitation: a conference report

E Diane Playford Institute of Neurology, UCL, London, Richard Siegert Department of Palliative Care, Policy and Rehabilitation School of Medicine at Guy’s, King’s College and St Thomas’ Hospitals King’s College London, UK, William Levack Rehabilitation Teaching and Research Unit, University of Otago (Wellington), Wellington South, New Zealand and Jennifer Freeman School of Health Professions, Faculty of Health and Social Work, University of Plymouth, Peninsula Allied Health Centre, Plymouth, UK

Received 20th January 2009; manuscript accepted 20th January 2009.

**Objective:** To consider clinical issues surrounding goal setting in neurological rehabilitation, and to identify priorities for future research.

**Participants:** Twenty-four rehabilitation professionals were invited to attend because they had taught or published on the topic of goal setting. In addition two patient groups were represented.

**Evidence:** (1) The results of a systematic literature review, (2) presentations given during the two-day conference by investigators working within the field of goal setting, (3) questions and statements from conference attendees during open discussion, (4) a report initially formulated by a panel composed of four of the conference attendees, and then circulated to all attendees for comment, (5) views of the conference attendees gathered using a modified Delphi technique.

**Consensus:** There were significant areas of consensus about goal setting. The Delphi studies highlighted and confirmed these areas of general agreement with consensus that goal setting is a core component of the rehabilitation process, and that goals should be specific, ambitious, relevant and time limited, with incremental steps that lead to progressive achievement. It was also agreed that that goal setting has a major impact on the relationship between patient and professional, with the availability of professional time and expertise being key to the success of the process.

**Controversy:** Areas in which there was more controversy centred on the evaluation of goal achievement and the benefits of ambitious rather than achievable goals. The need for patient-centred goal setting was recognized, although it was felt at times that there were conflicts that prevented this being attainable.

**Introduction**

Goal setting has been described as a key element in the rehabilitation process,\(^1\)\(^-\)\(^3\) being widely employed as a technique to engage patients in their rehabilitation programme. There is limited evidence as to the best method of goal setting in rehabilitation, with a variety of approaches being described.\(^4\)\(^-\)\(^6\)
Typically, professionals understand goal setting as a process of discussion and negotiation in which the individual and staff determine the key priorities for rehabilitation for that individual, and agree the performance level to be attained by the patient for defined activities within a specified timeframe.

The theoretical understanding underpinning goal setting in rehabilitation has been informed by psychology research, particularly the literature from industrial and organizational psychology since the 1970s, summarized in 2002 by Locke and Latham. There are a number of other models and theories from cognitive psychology related to goals and their effects – for an overview of such models refer to Austin and Vancouver.

At a clinical level considerable emphasis has been placed on Schut and Stam’s seminal article from 1994 that identified many potential benefits of goal setting for both the team and the individual. Schut and Stam may also have first introduced the ‘SMART’ (specific, measurable, achievable, relevant, time-limited) approach to goal planning within rehabilitation, although it is noted here that there are a variety of interpretations of this acronym.

Most professionals report benefits from the goal-setting process, including better multidisciplinary teamwork with effort focused on discrete areas of functional change. Professionals have also identified a number of potential problems with goal setting, including patients who lack the skills to contribute formally to the goal-setting process, limited relevance to patients’ life roles, and difficulties in transferring goals set in hospital to community settings.

This two-day conference aimed to identify both the theoretical and clinical issues surrounding goal setting in rehabilitation. Specifically it attempted to address the following questions:

- What is the theoretical basis for goal setting in rehabilitation?
- What is the evidence for goal setting in rehabilitation?
- What terminology should be used?
- What structures, processes and outcomes define goal setting in rehabilitation?
- What structures, processes and outcomes are currently used in goal setting in rehabilitation?
- What do we understand by using goals as a basis for outcome measurement?
- What do we understand by goals being ‘achievable’?
- What do we understand by goals being ‘patient centred’?

**Methods**

Twenty-four rehabilitation professionals attended a meeting to discuss contemporary understandings of goal planning in rehabilitation research and clinical practice. This group comprised six doctors, one nurse, six occupational therapists, five physiotherapists, four psychologists and two speech and language therapists. The majority of these professionals were from the UK, but four attendees came from or had experience in other countries (one from each of New Zealand, Canada, Sweden and the Netherlands). Participants were invited to attend because they had taught or published on the topic of goal setting. In addition representatives from two patient groups (the Stroke Association and the Multiple Sclerosis Society) participated.

**Conference process**

The meeting involved presentations, workshops and open discussion. Presentations covered topics such as: the theoretical foundations of goal setting; an updated systematic review of goal-setting literature; a review of current goal-setting practice in rehabilitation environments; goal-setting terminology; the concept of ‘patient-centredness’ in goal-setting practice; and goal setting and outcome measurement. In workshops, the meeting attendees explored the application of theoretical models of goal planning to clinical practice and debated common elements in goal-setting practice from the perspective of process, structure and outcomes. Open discussion focused on the views proposed in the presentations and workshops as well as other questions and statements that the meeting attendees presented with.

In addition to presentations, workshops and open discussion, a modified Delphi method...
was used to explore the degree of consensus around key aspects of goal setting in rehabilitation. This method elicited opinions from those invited, prior to attendance at the conference using a four-stage iterative procedure (two stages by e-mail prior to the meeting, then two more stages during the meeting). First, participants were asked via e-mail to identify three aspects of goal setting around which they believed consensus currently existed, and three areas for which they believed there was disagreement. They were also asked to identify three or more topics in goal planning that they considered priorities for research.

Second, these suggestions regarding areas of consensus and disagreement were collated and formulated into a series of statements. The statements fell into seven broad categories: (1) general beliefs about goal setting in rehabilitation, (2) SMART goals, (3) relationship between professionals and patients, (4) short- and long-term goals, (5) goal setting and measurement, (6) team factors, and (7) miscellaneous comments. Participants were asked, again by e-mail, to rate their level of agreement or disagreement with each of these statements. The participants were also asked to prioritize all of the proposed research questions and topics in order of their perceived importance.

Third, this Delphi process was repeated twice (once by e-mail prior to the meeting, and twice more during the meeting), with open discussion between each round. During the fourth and final round of the Delphi method participants were allocated a restricted number of votes (10 each) to use as they chose when selecting the research priorities they considered the most important from a list of possible priorities, derived from the initial e-mail rounds and in the course of the two-day meeting.

Following the meeting, a report by a panel composed of four of the conference attendees (DP, RS, WL, JF) was drafted.

What is the theoretical basis for goal setting?

Two influential theories of goal setting were discussed at the conference, although it was acknowledged that many more are identifiable.

Locke and Latham’s seminal work took place within the context of industrial organization psychology. They have defined the term ‘goal’ (within this context) to refer to ‘the object or aim of an action, for example, to attain a specific standard of proficiency, usually within a specified time limit’. They identified a number of mechanisms that influence goal performance including: (1) the directing of attention and effort, (2) an energizing function, (3) enhancing persistence and (4) the learning of task-relevant knowledge and strategies. They also identified goal moderators such as goal importance, which may be internal to the person or external (e.g. in the case of an organizational goal), task complexity, self-efficacy and the type of feedback provided. Importantly, they have demonstrated that goal specificity and goal difficulty are key factors in influencing human performance during set activities. Locke and Latham’s findings have suggested that specific, difficult goals are more likely to result in a higher level of effort on set tasks than specific, easier goals or instructions to ‘do your best’.

Discussion by conference attendees highlighted that interpretation of these findings within a rehabilitation context may cause some difficulties because Locke and Latham’s work conflicts with many commonly held beliefs in clinical rehabilitation.

First, Locke and Latham hold a different perspective on the purpose of goal setting, as in their field (organizational/industrial psychology), goal achievement is not the primary aim of goal setting but rather it is simply a mechanism for enhancing task performance. Thus, Locke and Latham’s goal theory suggests that it is more important for goals to be ambitious than to be achievable. Second, such a focus suggests that goals might not necessarily even need to be realistic (if the word ‘realistic’ is used to mean ‘highly likely to be achieved’); so long as patients believe that their goals are sufficiently possible to be committed to them. Third, Locke and Latham’s theory would promote the view that that goal importance can be external to the patient, and driven by the rehabilitation team’s organizational priorities rather than necessarily being relevant to the patient.

An alternative theory that informs goal setting is self-regulation. Self-regulation theory states that
human behaviour is goal oriented, that humans have multiple goals and that goal attainment has affective (emotional) consequences, and vice versa. Thus motivation, goals and emotional status are all interconnected. This approach appears to be attractive to many rehabilitation professionals who work with patients experiencing grief at loss of previous function. There is good evidence in fields such as sports psychology and health psychology for interventions at the level of self-regulation and it has been speculated that self-regulation interventions are of particular relevance to patients with emotional, cognitive and behavioural difficulties.

In addition to these two theories, two practical models of goal setting were identified. First, goal management training which targets patients with frontal executive dysfunction through a series of steps including defining the task, listing the steps, learning each step, doing the task and checking whether it has been performed. Second, identity-oriented goal training which involves focused discussion about ‘heroes’ for that individual (e.g. actors, sports people, musicians or friends) leading to an ‘identity map’ for the injured person according to how they see themselves as that ‘hero’ in terms of appearance, facts, feelings and goals. In this method goals are chosen in keeping with that ‘identity’ following specific and focused development of strategies.

The conclusions drawn were that:

- Current models and theories provide only incomplete explanations of how goals can be or should be applied to clinical rehabilitation, or provide explanations that apply only to very specific areas of clinical practice.
- Future work is needed to explore how these and other goal theories interrelate within rehabilitation contexts.
- None of the theories explored were mutually exclusive; rehabilitation tends to draw on the most relevant elements of each theory.
- Mapping the various goal settings theories to identify areas with relevance to rehabilitation would be helpful.

The following elements (shown in Figure 1) need to be acknowledged in any theory of goal setting in rehabilitation:

- The social, familial, political and economic environment in which patients and teams operate.
- The emotional status of the patient, and the relationship between emotion and motivation.

![Figure 1](image-url) Elements that are considered important in goal setting in rehabilitation.
Readiness to change.
Leadership, teamwork and collaboration.
The taxonomy described by the World Health Organization’s International Classification of Functioning, Disability and Health (ICF).\textsuperscript{20}
The limitations imposed upon outcomes by patient pathology.

What is the evidence base for goal setting?

Levack et al. have previously published a systematic review of the effectiveness of goal planning in the rehabilitation of adults with acquired disabilities.\textsuperscript{21} They included original randomized controlled trials from peer-reviewed journals published between 1966 and June 2005 in which goal planning was investigated as an independent variable as part of a study into rehabilitation for adults with an acquired disability. The selection process ended with 19 studies covering a wide patient population including those with neurological, musculoskeletal, mental health, cardiovascular disorders, those with clinical obesity and the frail elderly. Most studies were generally of a low scientific quality.

The conclusions of the review\textsuperscript{21} were that:

- There is currently strong evidence that prescribed, specific, difficult goals lead to improved patient performance on simple cognitive or motor tasks in some specific contexts.
- There is some evidence, but of a limited quality, that goal planning leads to improved patient adherence to treatment regimes.
- There is, however, no consistent evidence for any generalizable effects of goal planning on improved patient outcomes following rehabilitation programmes.

What terminology should be used?

In line with the literature, it was clear from discussions held throughout the conference that a wide range of terms were used to describe elements of the goal setting process. There was widespread agreement that this acted as a barrier to communication within both the clinical and research environments. However the following points were agreed:

- A goal can be described as how things will be at some specified time in the future and that it is a desired state that requires both action and effort.
- Goals can be classified across many hierarchies covering different time scales, different organizational levels or interactions (e.g. from whole organizations to single individuals), different aspects of an illness (e.g. from pathology to social roles) and different contexts (e.g. the acquisition of knowledge, physical skills, or social and personal changes).
- Goals should be identified by their time frame.
- Long-term goals (or aims) being those goals set at the limits of the foreseeable future, that are based on patient’s life priorities and values, and that tend to focus on their social roles and participation restrictions.
- Intermediate goals (or objectives) should work towards and be linked to aims and typically be defined at the level of activity.
- Finally, short-term goals (or targets) could be set at any level of functioning, although should be linked to an objective.
- The terminology itself is not as important as demonstrating the context for the goal, the logical connections, the interdependence of different goals and the linkage to overall, higher-level aims.

What structures, process and outcomes should be used to define goal setting in rehabilitation?

During a workshop participants were asked to identify the common structures, processes and outcomes associated with goal setting in rehabilitation. The aim was to define the parameters that would need to be described if goal setting
was comprehensively described within a research context. The key elements, which were identified by the participants, have been summarized below:

Structure

- What is the rehabilitation philosophy regarding the purpose of goal setting?
- Does the team have a documented goal setting method that they follow?
- What terminology does the team use?
- What training is provided to staff regarding the team's approach to goal setting?
- What resources are allocated to goal setting?
- Which team members are involved?
- What space is provided for goal setting meetings?
- How much time is allocated to goal setting?
- How much time is allocated to the initial goal planning?
- How much time is allocated to reviewing goals?
- What forms are used to facilitate each stage of the goal setting process (identifying patient and family perspectives on goals, documenting goals, structuring team meetings, reporting progress towards goals and evaluating goal outcomes).

Pre-process

- What strategies do the team use to: (1) assess the patient's individual impairments, activities and participation issues prior to goal negotiation; (2) evaluate the patient's prognosis prior to goal negotiation?
- What strategies do the team use to teach the patient and family about: (1) the team's approach to goal planning; (2) the rehabilitation journey; (3) the anticipated outcomes from a clinical perspective?

Process

- What approach is used by the team to identify, negotiate and/or select goals for rehabilitation?
- What approach is used by the team to provide feedback on progress regarding goal attainment?

Outcome

- How does the team evaluate outcomes with respect to goals?
- Achievement of functional rehabilitation outcomes?
- Achievement of enhanced level of patient autonomy?
- Patient satisfaction?
- Achievement of secondary outcomes (e.g., improvements in self-efficacy, self-awareness or depression)?
- Evaluation of process outcomes?
- How does the team record and communicate these outcomes?

What do we understand by measureable in goal setting?

Although the ‘M’ in ‘SMART’ goals tends to refer to a goal being ‘measurable’ there was considerable discussion about what was understood by the term ‘measurable’. Two concepts emerged: first, measurement as a tool that enables a quantitative representation of patient experience, and second, measurement for the evaluation of goal performance. It was agreed that most patients are not interested in measuring goal achievement per se but rather in the subjective evaluation of their own progress. In this context, evaluation would involve patients and could include intangible elements such as patient satisfaction in the task performance. In contrast, accurate measurement of
goal achievement was acknowledged to be of interest to clinicians, purchasers and researchers because of its perceived potential to enable comparison between patients and services. Commonly patient-reported outcomes and clinician-rated scales such as the Functional Independence Measure plus Functional Assessment Measure (FIM+FAM) are used for this. Goal attainment scaling uses the goals themselves to evaluate individual outcome.

The goal attainment scaling formula produces an overall score that is an average of the outcome scores adjusted for relative weighting assigned to goals, varying number of goals and expected intercorrelation among the goal scales. Tennant recently attempted to validate the underlying mathematical process of goal attainment scaling. Using simulated data to represent before and after treatment groups, he compared the change scores from ordinal non-linear-based GAS (usual approach) with those where the scores had been linearized using RASCH methodology. Fourteen per cent of subjects had a change score that differed ±10 points across the non-linear and linear change scores, where 10 points is felt to be the minimum clinically important difference. This work raises significant questions about the validity of the calculation when using ordinal scales to produce goal attainment scaling scores.

Tennant reported that the best way to make goal attainment scaling a meaningful measure would be to create an item bank(s) of goals that are precalibrated for difficulty. However, this in itself presents formidable difficulties as task difficulty may depend on impairment profiles and environmental setting. In addition an item bank may detract from the individualization of goals, which enables rehabilitation practice to be patient-centred.

In her presentation, Turner-Stokes noted that there are several potential advantages of using the five-point scale (−2 to +2) developed by Kiresuk and Smith. For example, it records over- and under-achievement of goals and it allows for goal weighting according to the importance of the goal to the patient and the degree of difficulty perceived by the treating team. However, Turner-Stokes noted that the method as originally described is time-consuming and not feasible for application in routine clinical practice. Instead she developed a simplified version of goal attainment scaling with an adapted form of scoring (Figure 2) allows the use of personalized goals and is robust enough for everyday practice, although it does not produce interval quality data – indeed she likened it to measuring with a set of elastic bands rather than a ruler.

As well as the patient’s ability to achieve their goals, goal attainment scaling depends on the clinicians’ ability to predict goal achievement. Turner-Stokes recognized that this requires knowledge and experience, and some may find this challenging. However, she argued that as much time and resource is invested in rehabilitation and goal setting, it is appropriate to evaluate the extent to which goals are achieved and to do this in consistent manner. She stressed, however, that goal attainment scaling complements standardized measures and does not replace them.

The conclusions drawn were that:

- The purpose of measuring goal achievement needs to be carefully thought through.
- It may be meaningful for individual patients to evaluate their own goal attainment.

<table>
<thead>
<tr>
<th>−2</th>
<th>−1</th>
<th>0</th>
<th>+1</th>
<th>+2</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lot less</td>
<td>A bit less</td>
<td>Expected Outcome</td>
<td>A bit more</td>
<td>A lot more</td>
</tr>
</tbody>
</table>

Figure 2 Goal attainment scaling in everyday practice.
In its current form the GAS formulaic approach does not appear to conform to the expected criteria for scientific measurement. Pragmatic approaches to GAS may be good enough for everyday comparisons between individuals and services, but should not be used in isolation to evaluate the performance of rehabilitation services.

What do we understand by achievable?

Discussion highlighted that the ‘A’ in ‘SMART’ has a number of interpretations including both ‘achievable’ and ‘ambitious’. There was some debate as to whether goals can be both achievable and ambitious. Achievable goals may give patients opportunities for mastery and for minimizing anxiety (although these assumptions about patient behaviour have not yet been scientifically tested).

Patients also sometimes hold ‘unrealistic’ goals frequently to their detriment but sometimes to their benefit, and there was debate about how ‘unrealistic’ goals should be managed. It was felt that rephrasing goals so they were achievable could be regarded as not listening to patients’ wants and even dashing their hopes.

Goal attainment scaling may offer one solution. The ambitious or ‘unrealistic’ goal can be recorded as +2, thus allowing the patient to work towards a goal that is very challenging. Overall, however, there was a view that too much attention has been paid to ensuring goals are achievable. It was suggested that short-term goals should be ‘probably achievable’, and long-term goals ‘possibly achievable’ and thus the ‘A’ in SMART should stand for ‘ambitious’.

The conclusions drawn were that:

- Achievable goals may well have a role in helping some patients achieve mastery.
- Goals do not necessarily need to be achievable to motivate patients, although they should be at least possible.
- Goal attainment scaling is one way to set patient-led, demanding goals.

What do we understand by patient centredness?

Patient-centred care may be defined as a philosophy of care that encourages: (a) shared control of the consultation, finding common ground on what the problem is and mutually agreeing management and (b) a focus in the consultation on the patient as a whole person, exploring patients’ motivations, concerns, and need for information and seeking an integrated understanding of the patients’ world; that is, their whole person, emotional needs and life issues.

Using this definition there is little doubt that goal setting in rehabilitation, when it takes place in partnership with the patient, is a mechanism for facilitating patient-centred care. However, a number of issues were highlighted during the meeting which merit consideration.

First, patient-centred care means recognizing patients’ implicit as well as explicit goals, not simply accepting goals at face value. One aim of rehabilitation is to enable a person’s sense of autonomy, self-worth and social participation. Patients may present with overt goals that may undermine autonomy, self-worth and social participation, e.g. the patient who chooses to live upstairs because it will be ‘more convenient for me and my family’ may need further support to consider what that means in terms of social participation and family links.

Second, patient-centred care includes the appropriate pacing of information and responsibility. In the immediate period after new-onset disability patients may want more support and it is important to establish how much the patient wants to be involved. Levels of involvement can vary from simply witnessing the discussion to leading it, with varying levels in between. The key question here is to ask patients how much they want to be involved in decision making at each stage.

Thompson has provided a taxonomy of patient centeredness which can be useful when considering the extent of different patient-centred types of goal setting (Table 1).

Third, we need to develop structures for negotiating as well as setting goals. Barnard reported a number of strategies employed by patients and professionals when negotiating goals...
Strategies used by the treating team include:

- Using clinical reasoning to justify why certain tasks have to be achieved before an ‘unrealistic’ patient goal can be tackled.
- Framing a goal around the admission rather than the long term to enable it to be modified without denying the possibility of its eventual achievement, thus softening unwelcome news and enabling the discussion to move forwards.
- Collaboratively formulating a goal with other team members to indicate both to each other and to the patient that they will ‘fight’ for a goal in the face of patient resistance.
- Indicating that the goal is essentially non-negotiable, for example by writing it down on goal-setting documentation, or by indicating that if the therapists’ assessment of what is achievable is wrong the patient can exceed the performance level specified in the goal.

Strategies used by patients include: attempting to resist goals if they perceive they lack the ability to pursue them (low self-efficacy) and moderating requests for ambitious goals they suspect might be considered unrealistic by the treating team. The experience of the conference participants supported Barnard’s findings. In her study, patient goals deemed unachievable by the treating team were never agreed as goals for rehabilitation. Expressions of dissent by patients were seen to influence the patient–clinician interaction in two main ways: by stimulating the provision of clinical reasoning and, less frequently, by leading to very minor modifications to the goal.

The issue of achievability again featured prominently, with recognition that the drive to ensure achievability may take place at a cost to patient-centredness. Barnard also observed that while the core of the goal is often jointly negotiated with the patient, ‘SMART’ening the goal remains within the professional domain, heavily influenced by professional training and rehabilitation team culture. This process of goal transformation may detract from patient-centredness.

The conclusions reached for the process of goal setting were that:

- Despite the best efforts of rehabilitation teams, working with patients to set goals can be challenging.
- Negotiating the goal core with patients is part of a patient-centred approach to rehabilitation.
- Concern about achievability can dominate the interaction (on both sides) and may inhibit application of the patient-centred care philosophy.
- Incorporating ambitious, difficult to achieve goals may be an important part of patient-centred care.

**Delphi report**

The specific results of the Delphi process are available online (Tables W1 and W2). In summary, most participants agreed that goal setting is a core process in rehabilitation and that it is effective but time consuming and often limited by practical constraints. It was also agreed that goals should be patient-centred, specific, ambitious and time limited.

The top five research priorities were (the number in brackets is the total votes cast for that question):

- Does goal setting result in improved patient outcomes? (42)
- How do we facilitate patient involvement in goal setting? (27)
- What are the specific components of goal setting? (25)
What is the relationship between goal planning, hope and motivation? (19)
Can we agree key terminology? (18)

Conclusions

This conference stimulated significant debate about goal setting, identifying both areas of consensus and controversy. More work needs to be done to establish the theoretical basis for goal setting in rehabilitation practice, recognizing that different patient groups and different settings may demand different models. Once a theoretical model is established it will be easier to design studies that evaluate different aspects of the goal-setting process.

The priorities for research identified during this conference focused on the impact of goal setting on patient outcome, on approaches to support patient involvement in goal setting, and on identifying specific components of goal planning that enhance its effect. Future research may be able to answer some of the areas of controversy, but will also, undoubtedly, identify new questions.

Clinical messages

- Current models and theories provide incomplete explanations for how goals can or should be applied to rehabilitation.
- Clearly defining the reasons and methods used for evaluation of goal attainment will ensure that the interpretation of such data is meaningful.
- Goals do not necessarily need to be achievable but may reflect patient’s ambitions. Incorporating ambitious difficult to achieve goals may be an important part of patient-centred care.

Acknowledgements

William Levack would like to thank the New Zealand Ministry of Research, Science and Technology for the Bilateral Research Activities Programme grant they awarded from the International Science and Technology Linkages Fund to assist with his travel to the UK to attend the meeting described in this paper.

The authors would like to thank all those who attended the conference for their contributions. Attendees: Rachel Barnard, Rachell Botell, Sharon Bouwens, Thamar Bovend’Eerdt, Trish Cunnison, Gail Eva, Kate Ewing, Richard Greenwood, Julia Johnson, Gayle McCormack, Steve Park, Anne Pill, Lucy Rodriguez, Doreen Rowlands, Alessia Saverino, Alan Tennant, Lynne Turner-Stokes, Martin van den Broek, Derick Wade, Judy Walker, Sue Winnall and Ewa Wressle.

References


13 Richardson J, McKie J. Increasing the options for reducing adverse events: Results from a modified Delphi technique. *Aust NZ Health Policy* 2008; **5**: 25.


