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SPECIAL REPORT

THE ROLE OF INTERDISCIPLINARY TEAMS IN PHYSICAL AND REHABILITATION MEDICINE

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The increasing complexity of healthcare provision and medical interventions requires collaboration between large numbers of health professionals. The nature of the interactions between team members determines whether the pattern of working is described as multi-, inter- or trans-disciplinary. Such team-working is an important part of the specialty of Physical and Rehabilitation Medicine. Grounded in group behaviour theory, team-working demonstrates that joint aims, trust and willingness to share knowledge, can improve patient outcomes, including mortality. The synthesis of individual skills and knowledge and working to common patient goals, has shown benefit in many conditions. This evidence base is perhaps best in stroke, but has been demonstrated in many other conditions, including acquired brain injury, back pain, mental health, cardiopulmonary conditions, chronic pain and hip fracture. There are also considerable benefits to staff and health organizations in terms of outcome and staff morale. This review paper examines the evidence for the benefit of such team-working and for the recommendations of team-working in rehabilitation services.

Key words: Physical & Rehabilitation Medicine; team; interdisciplinary; outcome; organisation.

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LAY ABSTRACT

Groups are more likely to perform well when individuals work together effectively as a team. This harnesses the individual skills, knowledge and talents of each member. It has been shown in many areas of medicine that good teamwork can produce an effect greater than the sum of individual efforts. This is particularly true in Physical and Rehabilitation Medicine, where the work of separate specialists and professions combines to direct treatments toward patient-oriented goals. It is important that a team has common goals, structured meetings and agreed processes for decision-making and accountability. The literature on evidence and guidance for such teamwork in rehabilitation is discussed.

In the field of Physical and Rehabilitation Medicine (PRM), clinicians work to reduce the effects of impairments on activity limitations and participation restrictions (1). At the same time as promoting function, key aims are to prevent complications, such as contractures and pressure sores, and to modify the impact of environmental factors on the individual (2–6). It has long been recognized that the achievement of successful rehabilitation requires a number of specific components. One of the most important of these is the synergy of multiple healthcare professionals with a wide range of clinical skills and expertise (7, 8). These individuals must work together harmoniously, but also effectively, as a team in order to achieve rehabilitation goals for patients and their families. However, simply bringing individual professionals together does not necessarily imply that they will cooperate and work effectively as a team (9, 10). This multiprofessional teamwork and the need to work with other disciplines, perhaps differentiates PRM from many other medical specialties, as it involves intense collaboration between disciplines in order to achieve rehabilitation goals.

The development of appropriate team structures and joint working stems from the belief that the dynamics between team members can produce results that are greater than the mere sum of the individual parts. The term "group dynamics" was coined by Lewin in 1947, describing both the positive and negative forces within groups and the underlying processes that lead to the relationships and goals that drive a team (11). Later theories described the steps by which a team evolves into a model of cooperation (12). It has been shown that team decision-making is better and more consistent than that of individuals (13), and the synergy of combined group activity should, in theory, result in better outcomes for patients (14–16).

Each member of a team has a set of specific skills that enhance patient care. The combination of these separate skills allows access to a range of knowledge in the diagnosis and assessment of a condition and the measurement of restrictions and activity limitations. This leads to the setting of goals and the selection of appropriate treatment options (17, 18). Finally, the measurement of outcomes must be documented in

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order to show service efficacy. No single professional has all of these skills or is able to perform all of these important actions. Thus, a set of professionals need to come together to work as a team. The aim of this paper is to examine the evidence for the benefit of such team-working and for the recommendations of team-working in rehabilitation services.

TYPES OF TEAMS

The terms used to describe teams in medical and management literature can be confusing at times, as different team approaches or models exist. These are best defined according to the interaction between team members (19).

A *multidisciplinary team model* utilizes the skills of individuals from different disciplines, but each discipline still approaches the patient from their own perspective and usually the physician communicates with the other professionals in the team (8, 20). Indeed, in many instances, team members may not directly communicate with one another at all. It is often said that in such teams, communication is more vertical than horizontal, with a lack of team members influencing or coming together in meetings (16).

By contrast, an *interdisciplinary team model* (IDT) integrates the approach of different disciplines with a high level of collaboration and communication among the team professionals using an agreed and shared strategy (21, 22). The key feature of such a team is that members establish the means of working together in the assessment and treatment of patients, with joint decision-making and goal-setting. Communication is paramount in such an arrangement (23).

In a *transdisciplinary team model* the boundaries of professionals' practice become blurred and any professional is capable of working in any particular team role. The crossing of roles creates more flexibility in treatment, but requires staff who are trained across a number of skills or professions. This is clearly time- and resource-consuming, especially as team members change (21, 24).

The overwhelming view amongst PRM physicians (1, 25) is that an interdisciplinary team approach is the preferred pattern of team-working; however, at times, other models can be found in various rehabilitation settings. For example, a multidisciplinary approach in an acute care setting or transdisciplinary approach in long-term community care for a patient with educational needs and with a limited number of professional disciplines available.

In most settings, an interdisciplinary model is most effective because it allows a collaborative, holistic and patient-centred approach to rehabilitation (21, 22, 26). The acceptance of slightly overlapping or blurred boundaries between professional roles facilitates more rapid information transfer, earlier interventions, and has been shown to expedite earlier discharge (9, 27).

The PRM team should agree and set realistic goals, working alongside patients and their families. The team then work together to achieve these goals using a shared strategy. The use of such goals follows the SMART principles (Specific, Measurable, Achievable, Relevant and Time-limited) (17, 18, 28). Research shows that this approach is effective, although somatic/physical goals seem to be more frequently achieved than those in psychological and behavioural domains (21). Goals need to be reset regularly in order to continue progress and maximize returns for the patient. This is often best done in joint sessions, which may serve to avoid overstimulation, fatigue or repetition.

Evidence shows that improved functional outcomes, and even better survival, can be achieved with interdisciplinary teamwork in a number of conditions. The evidence is strongest for stroke, where benefits are well documented in a Cochrane review (29). Interdisciplinary team-working is now a core element of quality stroke services (30). Studies also show benefits of such team-working in traumatic brain injury, hip fracture, pulmonary rehabilitation, mental health, musculoskeletal pain, chronic pain and lower back pain (25, 31–39). However, the quality of studies varies considerably as demonstrated in an excellent review of the topic (37).

COMPOSITION OF INTERDISCIPLINARY REHABILITATION TEAM

The exact composition of a specialized rehabilitation team is likely to vary across clinical settings; it will also vary for individual patients, depending on their needs and on the time course of their rehabilitation pathway. An outpatient-based team treating individuals with long-term conditions will have different specifications compared with an acute team working in traumatic brain injury. Each team must have a mission statement or a declaration of its goals and purpose; this may differ depending on the parent organization in which the team work or the individual team members. Nevertheless, a set of common goals, philosophy and a desire to work together toward common interests should be integrated into the assessment and management of each patient.

PRM is a medical specialty concerned with the promotion of physical and cognitive functioning, activities (including behaviour), participation (including quality of life) and modifying personal and environmental factors. It is thus responsible for the prevention, diagnosis, treatment and rehabilitation management of people with disabling medical conditions and co-morbidity across all ages (1). A specialized rehabilitation team should

be led by a specialist in PRM. Historically, physicians have led teams in most healthcare systems. Training in PRM gives physicians a very broad range of rehabilitation and medical skills, offering a holistic picture of a patient's range of impairments and activity limitations (4, 5, 25). This places the physician in an ideal position to draw on the skills of the entire team, to influence and to guide the overall path of patient care and progression.

Furthermore, and perhaps most importantly, in most countries, responsibility for a patient ultimately lies with the physician in both professional and legal contexts. It therefore seems reasonable that this model of care, dictates that the physician retains overall responsibility for decision-making in the team, as they must be able to defend any decision that is made. However, in some countries or settings, particularly the community, there may be no physician in the team; in such instances, the most senior team member is likely to bear ultimate responsibility for team decisions. There is no reason why another professional discipline cannot be the team leader, as long as they can assume legal responsibility for the decisions made.

Whichever discipline fills the chair, a successful IDT requires skilful leadership. A leader needs to have good listening and problem-solving skills, a proactive management style and be willing to compromise (40). It is important to value, accept or even cherish individual differences. Using collaborative strategies, it should be possible to reach final agreement (41). This is learned over time, and successful teams have usually worked together for some time.

A team requires a number of members across professional disciplines (15). In no particular order, a typical team may comprise the professionals described below.

Rehabilitation physician

The rehabilitation physician has overall responsibility for the patient and team coordination, diagnosing underlying pathology and impairments, medical and functional assessment, setting up treatment and rehabilitation plan, including prescription of pharmacological and non-pharmacological treatments. An important role is to organize the collection of appropriate outcome data to show service efficiency and benefit for patients.

Rehabilitation nurse

The rehabilitation nurse is responsible for day-to-day care and management of the patient and has a unique view-point, as they are present all the time (for inpatients). They often have particular expertise in continence management, tissue viability, positioning, and providing educational and emotional support for patients and families. Nursing staff often provide support for patients to practise their newly rehabilitated skills, outside of therapy sessions.

Occupational therapist

The occupational therapist assesses the effect of impairments on activities of daily living, not only in the home, but also for leisure activities and return to work, providing expertise on strategies and environmental adaptations to facilitate patients' activities and participation. The aim is to maximize performance in ADLs and return to function.

Physiotherapist

The physiotherapist is responsible for the assessment of movement and posture, address improvement in gross motor skills and mobility through exercise and training, including wheelchair training.

Speech and language therapist

The speech and language therapist is responsible for the assessment and treatment of communication and swallowing disorders. This includes the impact of cognitive impairment on the ability to communicate or learn, followed by training of vocalization or testing and implementing of alternative communication options or devices.

Clinical psychologist

A clinical psychologist may make a detailed assessment of cognitive, emotional, and behavioural problems, including the development of strategies for the patient and family to manage these problems. This may include time-limited psychotherapeutic interventions with patients and their families, as well as strategies to manage challenging behaviours, risk, and cognitive deficits. They may also undertake assessments of mental capacity in those patients with cognitive sequelae.

Social worker

The social worker aims to improve community reintegration and social support. They are involved in finding appropriate discharge destinations for those with significant changes from pre-admission, and identifying resources available after discharge to support patients and family. They can often be a link to community teams, equipment or long-term care facilities. A social worker can provide counselling and advice on claiming benefits.

Prosthetist, orthotist and rehabilitation engineer

These professionals may contribute specific expertise in providing aids and technologies, such as splints,

prosthetics and environmental controls to enhance functioning.

Dietitian

A dietitian may assess and promote adequate nutrition and educate the patient and family regarding diet.

Other professionals

According to the setting of a service and the size of the parent organization, other specialist professionals may be required (e.g. other medical doctors, such as neurologist, orthopaedic surgeon, paediatrician or psychiatrist, sports and recreation therapist, vocational counsellor). As many services assume more acute roles, the place of respiratory therapists becomes integral in suctioning, positioning and postural drainage in respiratory insufficiency. There is some evidence that larger teams become less flexible, and behaviours are more likely to regress to uni-professional-based patterns (42).

INTERDISCIPLINARY TEAM MEETINGS

Each team must meet on a regular basis to ensure close cooperation and communication and avoid working in "silos". Outside of the regular meeting (usually weekly) extra meetings may be required for setting of goals or a meeting with the family. Each professional discipline should commit to attendance at this meeting in order to maximize effective team-working. In times of economic austerity such resource commitment may be a challenge to many organizations, but effective teamwork requires good communication and involvement of all staff (43).

Depending on the number of patients and staff, a suitable period of time must be allowed for each meeting. The team meeting constitutes the interface for exchange of ideas, discussion, reporting and recording of progress and future plans (25, 44). Appropriate outcome measures may be evaluated and recorded. The discussion should be based around patient goals in order to provide appropriate focus (17). Meetings are chaired by the PRM specialist, who should direct discussion where appropriate for effectiveness. The role of chairperson requires a high level of inter-personal skills, and the meeting should ensure equitable discussion for each patient and staff member (15, 19, 45). At the same time, all team members bear responsibility for the smooth order of the meeting, rather than devolving this to the chairperson. In some instances, written rules may be required to ensure acceptable behaviour and respect for all staff. All team members have equal status and decisions are made by the team for each patient. However, as discussed previously, overall responsibility usually lies with the physician, who therefore must be comfortable with the ultimate decision.

The family and patient are an integral part of the team, and regular meetings with the team should be organized to discuss patient progress and future plans (43).

This model can be extended to apply to outpatients as well as inpatients, although it requires a coordinator role to ensure the selection of appropriate patients for discussion at each meeting. The treatment of outpatients often involves several professionals in different organizations, and may require some individuals to cover other roles or pass on information. Hence, excellent organization and collation of information is imperative for such meetings.

In contrast to post-acute specialized rehabilitation services, acute or hyperacute clinical settings often have different demands. The normal interdisciplinary meeting may be less applicable when the patient status is rapidly evolving and communication of day-to-day changes is vital between team members. At this stage, acute specialists are more likely to be responsible for the patient, but PRM physicians should still be involved as early as possible in acute rehabilitation (46). This input is important for assisting the later rehabilitation process and limiting the risk of complications. It also informs the process of timely transfer to a rehabilitation ward, where appropriate (4, 25).

At the time of discharge from a team's care, a detailed report or handover involving the entire team's input, should be produced. This will assist the next team or individual responsible for the patient's care and should contain details of the treatment and interventions to date, planned further assessment or treatment, and advice on where to seek help in the event of future problems.

CHALLENGES TO TEAMWORKING

Successful teamwork requires development over time, and it is important that time be spent on team development and skill building, e.g. timeouts or away days. Without apportioning blame, it is important that individuals are accountable for their professional as well as team contributions. Most failures are multifactorial and it is often useful to reflect, as a team, on successes and failures and learn from these (27, 47).

There are a number of other challenges that a team may face. Establishing the time to attend and contribute to meetings is a distinct obstacle. Attendance *must* be compulsory, and a team has to be prepared to invest time in building relationships and trust. Frequent changes in staff can also undermine a team's morale and take time to re-establish trust and relationships (1). A team must be alert to the possibility of its own bias affecting parity of treatment (45, 48, 49). A challenge to

professional judgement may arise and can undermine a team. It is important to recognize that conflict is an inevitable consequence of working together, and this should be expected and even embraced (50, 51). On occasion, assertive and dedicated clinicians are likely to disagree on elements of management. The response should be to reaffirm that everyone is committed to the IDT, its principles and its common goals. Thinking in terms of the team and patient goals rather than one's specialty alone will allow better sharing of ideas and working together (52). Behm & Gray have described a "rehabilitation dance", as team members grow comfortable with each other's skills and working styles as the IDT ebbs and flows, allowing each person to intervene at the appropriate point (16). It is possible for teams to be coached into better ways of working together (48).

A final challenge is to demonstrate the need for such teams in an age of financial austerity, when managers may need to justify the time and number of staff in a meeting. The use of evidence-based research to demonstrate the distinct financial and functional benefits of specialized rehabilitation and interdisciplinary working (53–55) can help with this, but further cost-effectiveness studies would be valuable. It has been shown that morale is higher in well-organized IDTs, and patients show more frequent goal achievement (13, 21). A number of studies are listed in this paper and an excellent review details many of these and more (37). However, the financial challenge to team-working remains an ongoing problem.

In this respect, it is helpful that many national societies that recognize or accredit specialized rehabilitation services across North America and Europe, advocate, or even insist, on the role of IDTs in providing care. These include the Commission on Accreditation of Rehabilitation Facilities (CARF), the European Union of Medical Specialists (UEMS), the British Society of Rehabilitation Medicine (BSRM) and the Royal College of Physicians (RCP) (4, 5, 30, 56, 57).

Outcome measurement is an important part of any rehabilitation process. The collection of appropriate data to show the benefits of any treatment and of team effectiveness is vital. In the UK, collection of such national data by the UK Rehabilitation Outcomes Collaborative (UKROC) (54) has established criteria for standards of care and reimbursement, as well as shown clear cost benefits for specialized rehabilitation (55). It is important in times of economic austerity for such services to show the benefit of interdisciplinary working for both patients and staff. Interdisciplinary working has been shown to improve job satisfaction as well as outcomes (20, 58). User and relatives satisfaction surveys/questionnaires can also provide useful feedback to a service and to the IDT.

CONCLUSION

Research shows that collaborative efforts can reduce costs and improve patient outcomes, while many professional and regulatory bodies encourage or insist upon interdisciplinary working in their accreditation of rehabilitation programmes. At a time of spiralling health costs, it is imperative to extol the value of IDT and the harnessing of all the talents available in order to treat complex rehabilitation conditions and maximize improvements for patients.

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