Rising to the challenge: rheumatology can lead in multi-professional education and training globally in the 21st century

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Introduction

In an era of increasing clinical demands, more elderly patients with multiple co-morbidities, complex treatment algorithms and the increasing use of costly treatments requiring close supervision, there is pressure on all rheumatology teams to deliver safe effective treatment within new collaborative multi-professional paradigms of care (1). Although healthcare professionals have always worked together to provide patient care, multi-professional teams became more formalised in the 1970s and 1980s. These teams initially developed in the fields of primary and rural healthcare (2) and the World Health Organisation quickly noted the potential for the team as a whole to have a health impact greater than the sum of the contributions of its members (3). Such multi-professional teams are now commonplace in healthcare delivery in both primary/community and secondary/hospital care. Professional bodies frequently highlight the perceived benefits of multi-professional team working (4) and often make an understanding of multi-professional team work an explicit requirement for students on graduation (5,6)

These multi-professional teams have become embedded in rheumatology practice over the past thirty years and previous work has shown that such teams can provide an improved quality of care for patients and facilitate this care more cost effectively (7). There has also been a strategic directive towards greater collaboration between professions with multiprofessional professional working highlighted as an element of modernisation (8-10), often in tandem with service user involvement (11-13). The UK NHS five-year forward view (14) and multi-professional team development documents (15) have recently highlighted a pivotal role for multi-professional care, with the creation of integrated out-of-hospital services through Multi-speciality Community Providers – a model that has the potential to enhance the care of people with musculoskeletal problems.

From an international perspective, similar paradigms of multi-professional care have developed in Oceania, North America and across much of mainland Europe; although allied health professions across the world have differing scopes of practice.

In many parts of the middle and Far East and Africa, multi-professional team working is an emerging model and becoming increasingly widespread. The Qatar Interprofessional Health Council, is working at a national level on pre- and post-licensure interprofessional education leadership through research and policy led by the University of Calgary in Qatar (16). A similar network has been formed in Africa, the Africa Interprofessional Education Network (AIFN) (17). The focus of the 2015 Bone and Joint Decade Summit 2015 is focusing on the benefits of health professionals and countries working together to manage the global burden of
musculoskeletal disease (18). These new initiatives are using the power and global reach of social media such as Facebook and Twitter to achieve their goals. With this global shift to promoting interprofessional working there is little doubt that future healthcare professionals will need to obtain the necessary knowledge, skills and attitudes in order to work effectively in these teams, wherever the setting.

To facilitate multi-professional paradigms of care, healthcare education programmes need to consider how learning continues to reflect this more collaborative approach to practice, without deconstructing the essential strengths and identities of the individual professions. These educational approaches are variously termed: multiprofessional education, interprofessional education, shared learning and multidisciplinary education. The term interprofessional education (IPE) will be used in this review and is defined as occurring “when two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes” (19). This review will discuss how interprofessional educational programmes are best delivered, at both undergraduate and postgraduate level, using contemporary educational theory and practice evidence from both musculoskeletal care and other areas of health and social care.

The key challenges faced by healthcare educators are how to best provide appropriate IPE:

- during the continuum of healthcare education,
- within current paradigms of funding and commissioning,
- that enables constituent members to appreciate the complementary roles of different professional groups,
- that develops specific skills required for multi-professional working,
- that maintains individual and evolving professional identities and strengths.

It is vital that commissioners of healthcare appreciate the importance of workforce development and give appropriate time for these educational activities. The danger is that multi-professional care delivered without a foundation of pedagogic, financial and institutional support could lead to the perverse outcome of increasing fragmentation and reinforcing of professional stereotypes, to the detriment of patient care.
Caution is therefore needed when planning appropriate interventions but the quality of current evidence to inform best practice remains limited. Two Cochrane reviews (20, 21) of interprofessional educational interventions found that although they were generally effective, there was limited evidence that the outcomes would be any different with profession-specific approaches and there was no evidence that the interventions were cost-effective. A systematic review (22) of educational interventions in health professionals focusing on patients with long term conditions found that study heterogeneity was a considerable limitation, with research limited to one institution or medical specialty, with little evaluation of longer-term educational and patient outcomes. This is an area that requires further research work since well-functioning multiprofessional teams are, as highlighted, a requirement of contemporary clinical care as well as specific musculoskeletal and rheumatological practice. Collaborative multi-centre studies in a variety of healthcare environments are needed, and both short and long term evaluation of development of knowledge, skills and behaviours and their effects on patient outcomes are required.

Objectives of IPE: Developing a musculoskeletal community of practice
The effectively functioning musculoskeletal multi-professional team can be seen as a community of practice (23). The team has a shared goal and there is a foundation of knowledge that can inform the group how to achieve its goal. New members, through supportive working within the team and through developing relationships with other group members, will progress, acquiring an enhanced understanding of the group’s purpose. Professional barriers may well be broken down in this process and team members will develop a greater understanding of each professional group’s identity, competencies and limitations (24) and value their skills. Through the community team members learn the skills they require to negotiate and compromise when the team is faced with difficulties. An appropriately structured educational model, which utilises learning experiences (both generic and rheumatology-specific) in such a community of practice, would therefore enable learners to identify the appropriate learning needed for multi-professional working and address these within that group. Similar requirements to these were identified as the key foundations for planning, in a survey of types of IPE in southern England (25). Furthermore learning experiences within the team needed to be contextualised within actual working practice, motivating self-directed adult learners to acquire the relevant skills (26). These findings provide a foundation for planning IPE but more high quality studies using robust qualitative and quantitative methodologies are needed to help define the
optimum ways of delivering the kind of education that leads to longer term changes in the skills and behaviour that improve multiprofessional team care. However this should not stop educational institutions and healthcare providers from positive engagement in this area.

Approaches to IPE in practice: What could be done in a rheumatology setting?

Multiprofessional teachers
Studies have shown that a very simple approach of using non-medical members of the multi-professional team to teach the rheumatology curriculum to medical students can be effective (27). Such exposure in the early years of undergraduate experience could potentially facilitate a greater awareness of other professional groups and provide an introduction to understanding their specific skills. However there is a paucity of evidence that such learning outcomes are actually achieved in this context of single encounters with other health professions.

Interprofessional team training seminars
This approach is one where all the professional groups represented in the multi-professional team are brought together for teaching on specific areas of multi-professional practice. The educational approaches can take the form of discussion groups, role play or lectures and may look at communication skills, team behaviours, leadership or patient safety. A review of such interventions (28) found that the studies that had been undertaken were generally weak in design. Although they identified improved professional behaviour as a result, there was no evidence that this translated into improved multi-professional team-working in clinical practice, and no studies have been undertaken looking specifically at this approach in rheumatology. The authors suggest that this approach, with more senior students or postgraduates, is more relevant contextually, as learning can be more clearly applied to daily practice.

Shadowing of multiprofessional teams
Learning is recognised as more effective when embedded in relevant experience (29). Projects like the TUILIP project have taken this approach providing structured shadowing experiences during training (30). The shadowing experiences improved medical students’ understanding of and respect for other members of the multiprofessional team (31, 32) and additional reflective activity enabled students to learn about broader aspect of multiprofessional team working such as power.
dynamics and attitudes (33). However there was limited inter-professional learning in such experiences and very little opportunity to develop a functional community of practice to allow students to develop the collaborative skills and communication skills required to function in a future multi-professional team. The authors therefore suggest that his approach alone is not sufficient, but should be used in conjunction with other methods described in this section.

**Interprofessional simulation training**

Over the past twenty years there has been increasing interest in simulation as a tool to develop student and trainee procedural skills in a realistic but safe environment. Simulation can vary from part-task trainers (e.g. joint injection manikins), through integrated simulators (e.g. SimMan), simulated patients (trained actors) through to simulated environments (e.g. hospital wards). These approaches meet the criteria required for adult learning, i.e. problem-orientated experiential learning. Furthermore they facilitate the development of a community of practice, particularly if such programmes provide longitudinal experience within the same group. Inter-professional training sessions using integrated simulators have been shown to improve the subsequent team-working climate, with improved ability to communicate disagreement between professional groups (34). There is increasing evidence that simulated learning environments such as simulated wards can be used to develop the non-technical skills that would be required for multiprofessional team working. Such in-patient ward experiences do appear to improve the participants understanding of their own and others professional identities, even when utilised at an early stage in undergraduate training (35). An example of using such integrated ward-based simulation, in the context of rheumatology, was a musculoskeletal training ward. In this study selected rheumatology and orthopaedic patients were managed for 2 weeks by a supervised multiprofessional team of students (36) from nursing, medicine, physiotherapy and occupational therapy, reinforced by embedded reflective practice. This clearly mapped to the parameters of a community of practice. Although the realism was beneficial in contextualising the student learning and satisfaction was high, the inter-professional learning and engagement in team-working, particularly for the medical students, was limited, probably due to issues around study design, rather than any inherent difference in the medical students. More recently rheumatology practice has moved progressively away from in-patient care and ward based simulation may therefore no longer be the ideal setting for such educational interventions. Nonetheless a similar educational approach to management of rheumatology patients in outpatient or community settings provides
a model for interprofessional education that would map to current clinical practice. As yet no such study has yet been undertaken, These higher fidelity approaches certainly have face validity, and the authors recommend that investment (at both undergraduate and postgraduate level) should take place in such initiatives, notwithstanding the need for further research to help define the optimum length and evaluation of such experiences that focus on patient outcomes in the short and longer terms.

Where in the continuum of healthcare education should IPE occur?
The timing of IPEs is important. Since the barriers separating traditional under- and postgraduate education are becoming blurred, with the emerging concept of a continuum of healthcare education with multiple transitions (37), IPE should probably be encountered as a recurring experience in all health professional education (both undergraduate and postgraduate). There is certainly evidence that the professional identities of the different groups, and their understanding of the roles of other healthcare professionals, evolves with increasing exposure to multiprofessional working (38). A spiral approach to IPE, with exposure increasing in complexity as learners become more experienced and comfortable in their own roles, is therefore recommended.

Undergraduate (Pre-qualification) Training
Most current undergraduate healthcare training models remain predominantly uniprofessional with parallel, profession specific training programmes. These structures provide fertile ground for students to develop their own professional identity. Uniprofessional approaches can provide opportunities for students to learn the core skills required for effective collaborative practice but may provide limited opportunities to explore the professional identities of the other healthcare team members and may also result in negative stereotyping of other professional groups (39). Counterintuitively, introducing undergraduate interprofessional learning experiences have been shown to make no difference to these attitudes (40) and further work is required to explore the complexity of professional identity formation at these early stages and the impact (both positive and negative) IPE could have. Assuming uniprofessional undergraduate healthcare training remains the norm, the educational focus during this period of training should perhaps be on facilitating the development of the generic skills required for future multiprofessional team working. For rheumatology teams these skills are likely to be those identified for effective
teamworking (41, 42) such as shared leadership skills, negotiation skills, collaborative decision making and communication skills. Given the potential benefits of collaborative multiprofessional teams, rheumatology educators should be proactively working with undergraduate curriculum developers to embed such skills training within their programmes.

**Postgraduate Training**

The postgraduate training environment may be the most appropriate setting to embed longitudinal IPE experiences, potentially using simulated team working simulation in both in-patient and outpatient/community settings. A model could be constructed where junior trainees from across the spectrum of health care professionals are provided with a spiral of structured IPE experiences, linked with their working environment. As trainees become more senior they could cycle through simulation settings with increased specialisation (incorporating outpatient work). However if multiprofessional working is seen as important, by healthcare providers, commissioners and government, then postgraduate continuing professional development requirements and opportunities should reflect this. The authors advocate healthcare teacher training to support IPE activities, and collaborative national/international research into innovative ways of delivering, evaluating IPE.

Postgraduate education and training has financial implications, as time out of direct service to attend training is variable. Funding needs to be reviewed so that all health professionals have equivalence of access to learning and professional development opportunities.

**Conclusion**

Multiprofessional team working is an increasingly important part of rheumatology practice. Training in the collaborative skills required for this role is an important consideration and skills acquisition should start as a healthcare student. Although there has been much interest in interprofessional education the evidence base to support its effectiveness is currently limited due to heterogeneity of approaches and lack of longer term outcome measures. This should not deter the rheumatology community from engaging and leading in developing innovative new models of teaching, learning and patient care and researching the outcomes of these interventions, with collaborations harnessing the increasing engagement in this area internationally. The nature of rheumatology practice potentially lends itself to providing educational experiences in a community of practice, whether the setting is
urban or rural in high, middle or low income environments. Rheumatology education should therefore lead on both implementation and research of such interventions using new technologies to aid collaborations locally, regionally and internationally. High-quality programmes, underpinned by pragmatic research should be supported, since the multiprofessional paradigm of care is likely to be a core foundation of all future rheumatology practice. The authors would support a longitudinal educational programme, spanning undergraduate and postgraduate rheumatology training, building on basic skills with experiential practice and simulation (Table 1) (43). Such a model has high face validity and educational merit and could help provide longer-term changes in knowledge, skills and behaviour and ultimately improve the quality of our patient’s care.

References
5. General Medical Council (2009) Tomorrow’s doctors. London: GMC


43. Joint Royal Colleges of Physicians Training Board (2010). *Specialty Training Curriculum for Rheumatology*
TABLE 1

The role and activities of other members of the multi-disciplinary team

Sound rheumatological practice relies upon an effective multi-disciplinary team, including input from nurses, therapists, chiropodists/podiatrists, orthotists, dieticians and clinical psychologists. For these team members, it is essential that the rheumatologist can:

- Describe their role
- Describe, in principle, their activities
- Identify which patients may benefit from their input
- Recognise effective ways of communication with them and between members of the team

Team Working

Objective: To demonstrate the ability to work in clinical teams

<table>
<thead>
<tr>
<th>Subject</th>
<th>Knowledge</th>
<th>Skills</th>
<th>Behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical teams</td>
<td>Roles &amp; responsibilities of team members.</td>
<td>Respect skills and contribution of colleagues to be conscientious and work constructively.</td>
<td>Recognise own limitations.</td>
</tr>
<tr>
<td>Respect others opinion</td>
<td>How a team works.</td>
<td>Respect for others opinion.</td>
<td>Enthusiasm; integrity; courage of convictions; imagination; determination; energy; and professional credibility.</td>
</tr>
<tr>
<td>Effective leadership</td>
<td>Ensuring colleagues understand the individual roles and responsibilities of each team member.</td>
<td>To recognise your own limitations.</td>
<td></td>
</tr>
<tr>
<td>skills</td>
<td>Own professional status and specialty</td>
<td>Objective setting; Lateral thinking; Planning; Motivating;</td>
<td></td>
</tr>
<tr>
<td>A knowledge of the field</td>
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</table>
The capacity to perceive the need for action and initiate that action

Organising; Setting example; Negotiation skills.

Extracts from the Specialty Curriculum for rheumatology – JRCPTB 2010 (39)