Evaluation of perceived collaborative behaviour amongst stakeholders and clinicians of a continuing education programme in arthritis care

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Abstract
Successful implementation of new extended practice roles which transcend conventional boundaries of practice entails strong collaboration with other healthcare providers. This study describes interprofessional collaborative behaviour perceived by advanced clinician practitioner in arthritis care (ACPAC) graduates at 1 year beyond training, and relevant stakeholders, across urban, community and remote clinical settings in Canada. A mixed-method approach involved a quantitative (survey) and qualitative (focus group/interview) evaluation issued across a 4-month period. ACPAC graduates work across heterogeneous settings and are on teams of diverse size and composition. Seventy per cent perceived their team as actively working in an interprofessional care model. Mean scores on the Bruyère Clinical Team Self-Assessment on Interprofessional Practice subjective subscales were high (range: 3.66–4.26, scale: 1–5 = better perception of team’s interprofessional practice), whereas the objective scale was lower (mean: 4.6, scale: 0–9 = more interprofessional team practices). Data from focus groups (ACPAC graduates) and interviews (stakeholders) provided further illumination of these results at individual, group and system levels. Issues relating to ACPAC graduate role recognition, as well as their deployment, integration and institutional support, including access to medical directives, limitation of scope of practice, remuneration conflicts and tenuous funding arrangements were barriers perceived to affect role implementation and interprofessional working. This study offers the opportunity to reflect on newly introduced roles for health professionals with expectations of collaboration that will challenge traditional healthcare delivery.

Keywords
Arthritis care, extended role practitioner, interprofessional care, interprofessional education, mixed methods

Introduction
Known service-demand issues in rheumatology have been addressed recently through the development and implementation of specialized training initiatives (Crowson et al., 2011; Perruccio, Power, & Badley, 2006). The advanced clinician practitioner in arthritis care (ACPAC) programme was developed to promote the extension of roles of existing healthcare professionals in Ontario, Canada (Lundon, Shupak, Schneider, & Herold-McIlroy, 2011). Since 2005, the ACPAC programme has trained 37 experienced physical and occupational therapists to work as extended role practitioners (ERPs) in two identified streams of arthritis care that include ongoing management and triage. ERPs from rural or remote areas may also work collaboratively in consultation support using telemedicine models of arthritis care (MacKay, Veinot, & Badley, 2008).

ACPAC ERPs represent a new cadre of practitioner having received additional training with formal evaluation to establish competency in advanced assessment, diagnosis and management of select arthritis conditions described elsewhere (Lundon et al., 2011). Their roles may require additional performance expectations of authorized activities which are currently achieved through delegation or medical directives. Medical directives are defined as “indirect physician orders, used to expedite patient care by competent health professionals” (The Hospital for Sick Children, 2011). A wide circle of support for this initiative exists with partnerships forged between government, consumer groups, academia, clinical faculty and their healthcare institutions across Ontario. In other systems, advanced practitioner intervention has been shown to contribute to ease and accelerated access to specialist services with improved patient outcomes (McPherson et al., 2006) and in the context of musculoskeletal care, such as triaging of orthopaedic cases, equivalent diagnostic accuracy and clinical decision making with orthopaedic specialists (MacKay, Davis, Mahomed, & Badley, 2009; Moore et al., 2005). Although the notion of ERPs as a new human healthcare resource to help manage and organize aspects of health service delivery is aligned with political and financial imperatives highlighted in Ontario (Trypuc, MacLeod, & Hudson, 2006), evaluation of these new roles in the context of interprofessional working has remained largely unaddressed.

According to the World Health Organization (WHO, 2010), interprofessional care occurs when multiple health workers from different professional backgrounds provide comprehensive health services by working with patients, their families, carers and communities to deliver the highest quality of care across settings.
Support for an interprofessional care approach in primary healthcare systems (Barr, Koppel, Reeves, Hammick, & Freeth, 2005; HealthForceOntario, 2010) reflects the multiple benefits and optimized level of functioning achieved in various environments (Lemieux-Charles & McGuire, 2006). Although they are autonomous practitioners, ACPAC ERPs anticipate working collaboratively with other healthcare providers as patients with complex forms of arthritis benefit most from early intervention by a competent practitioner (van der Linden et al., 2010) and an interprofessional collaborative approach to their care (Pettersson, 2005).

The ACPAC programme exemplifies the belief that interprofessional education opportunities support the development of collaborative practice skills among the healthcare workforce (MacDonald, Archibald, Stodel, Chambers, & Hall, 2008), and if advanced simultaneously are of greatest benefit (e.g. D’Amour & Oandasan, 2005). Current interest lies in determining both efficacy of, and efficiencies gained through interprofessional care, as well as in interprofessional education, to prepare healthcare providers for participation in this approach (Curran, Sargeant, & Hollett, 2007; Zwarenstein, Reeves, & Perrier, 2005).

Preliminary evaluation of a smaller cohort of ACPAC graduates indicated that variable levels of interprofessional working exist within their primary healthcare settings by 12 months following graduation influencing the success and optimization of their practice in the delivery of arthritis care (Lundon, Shupak, Reeves, Schneider, & Herold-McIlroy, 2009). However, broader evaluation of the ACPAC ERP in terms of interprofessional care also requires consideration of the responsibility of other healthcare team members and environmental factors that may affect extended role implementation.

Methods

Aim

The aim of this study was to describe perceived practice behaviour amongst ACPAC practitioners and relevant stakeholders in order to determine the extent to which this new health professional in arthritis care is functioning in the context of interprofessional care across diverse clinical settings in Ontario, Canada. The desired outcome is to determine the changes required for improved implementation of this new role for the ACPAC ERPs, their colleagues, hospital administrators, regulatory bodies and healthcare policy makers.

Design

This study represents part of a large, health services evaluation to address the research question of whether the ACPAC ERP practices in the context of interprofessional care at 1 year following graduation. A sequential mixed-method design (Creswell & Plano Clark, 2007), including quantitative (survey) and qualitative (focus groups and interviews) components was used to address the research purpose. Ethical approval was received from the local Research Ethics Board where the study was conducted.

Recruitment

The following inclusion criteria were employed when recruiting participants for this study: (1) ACPAC graduates (ERPs) – participants were graduates of the ACPAC programme and had practised for at least 1 year following completion of training; (2) Stakeholders – clinical team member; participants identified by an ACPAC ERP as a healthcare professional (e.g. physician) with whom the graduate worked regularly as an ERP; administrators: participants identified by an ACPAC ERP as a clinic administrator, department head, department chair, or hospital administrator responsible for the clinic, unit or area in which the graduate worked.

Quantitative data collection and analysis

ACPAC graduates \((n = 30)\) were invited by the research coordinator for the health services evaluation to complete an electronic questionnaire using Survey Monkey© (ResearchWare, Inc., Randolph, MA). The survey included questions related to the demographics on their primary team (number of team members, professions or roles). In addition, the ERP was asked to rate their primary team’s “Readiness for Interprofessional Practice” based on a single item with six response options generated based on the trans-theoretical model of change (DiClemente & Prochaska, 1998, Appendix 1). The Bruyère Clinical Team Self-Assessment on Interprofessional Practice was used to assess the ERP’s perception of how their primary team’s current status related to this approach (Patrick, 2010). The scale consists of two parts: Part 1: Subjective evaluation [23 items, scored on a 5-point scale: agree very little (1) to agree strongly (5)] evaluates a clinical team’s perception of key team characteristics known to enable interprofessional care, and Part 2: Objective evaluation (nine items, response: yes/no) evaluates the level of actual team practices associated with this approach. The subjective evaluation includes an overall score and four subscales reflecting areas that are important to interprofessional care: collaboration and cohesion, decision making and leadership, communication and conflict resolution, and accountability. Construct validity has been demonstrated in high correlations (Pearson correlation: 0.768) with a measure of similar concept, the Interdisciplinary Team Performance Scale (Temkin-Greener, Gross, Kunitz, & Mekamel, 2004). Descriptive statistics were used to summarize the data. Each part was scored and interpreted separately.

Qualitative data collection

All ACPAC graduates \((n = 30)\) were contacted in writing by the research coordinator to introduce them to the study and invite their participation in one of three focus groups. All introductory letters were accompanied by two copies of the consent form and an information sheet detailing the process in the form of frequently asked questions. Those willing to participate contacted the study coordinator directly.

To recruit stakeholders, the initial contact package sent to the ACPAC graduates (described above) also asked participants to indicate the number of members in their clinical teams. Those who chose to participate were sent a corresponding number of recruitment packages for each member of the clinical team and one administrator. These introductory packages included the same information about the study described above. Participating colleagues were invited to contact the qualitative research consultant (facilitator) directly to set a time for the interview.

Focus groups and semi-structured interviews were conducted by an experienced qualitative research consultant not associated with the ACPAC programme. The focus groups were conducted for ACPAC graduates with the purpose of soliciting details of participants’ experiences including: motivations and aspirations in becoming ERPs; experiences of moving into extended practice roles; barriers and enablers to achieving their full scope of practice; experience of interprofessional care and perceived impact on patient care. One-on-one interviews for the stakeholders involved soliciting details of participants’ experiences including: their actual experience of working with an ACPAC practitioner; perceptions of value added to their service by the presence of an ACPAC practitioner; challenges associated with the role and proposed improvements to the current system.
Qualitative analysis

Data were digitally audio-recorded for verbatim transcription and entered into HyperResearch software (SurveyMonkey Inc., Palo Alto, CA) for qualitative textual data analysis. Transcripts were coded for anticipated and emergent themes. A coding structure was developed in discussion with the project team. For the analysis, the method of constant comparison was used and included searches for disconfirming evidence. A framework previously employed for evaluating interprofessional education initiatives (Barr et al., 2005) was applied to further distil and categorize concepts of interprofessional care embedded in the emergent data at the level of the individual, organization and system (patients) to whom healthcare services were provided. This framework, based on the original Kirkpatrick (1967) model, includes the following evaluation levels in order of increasing complexity: (learner) reaction, modification of attitudes and perceptions, acquisition of knowledge and skills, behavioural change, change in organizational practice, and benefit to patient. Due to the heterogeneity of the ACPAC graduates’ practice settings, use of a modified organizational framework (Barr et al., 2005; Zwarenstein et al., 2005) was considered relevant in an effort to evaluate interprofessional care broadly in terms of the latter three components based on the perspectives of ACPAC graduates and their colleagues.

Results

Quantitative data

ACPAC graduates

The interprofessional care survey was administered to 30 ACPAC graduates across one fiscal quarter. Twenty-five of the 29 respondents reported that they were working as an ERP and of these, 24 (96%) responded to the questionnaire.

Primary team demographics

Most respondents reported working in an interprofessional team, with a mean of nine people (range: 2–25). More than 40% of teams included: another ACPAC practitioner, rheumatologist, registered nurse and administrative support; 20–30% included: social worker, physiotherapist, orthopaedic surgeon and pharmacist; 10–20% included: occupational therapist, other physician, dietitian and researcher; and less than 10% included: family practitioner, volunteer, kinesiologist, nurse practitioner, resident/ fellow, rehabilitation assistant, orthopaedic technician, team leader, patient representative and families.

Readiness for interprofessional practice

Participants perceived that their teams were working in an interprofessional care model as follows: action (70%); prepared for action: making plans (5%); pre-contemplation: never thought about it (17%) or contemplation: thinking about it (8%) stages (see Table I).

Assessment on interprofessional practice

The mean subjective subscales (mean score range: 3.66–4.26) and overall scores (mean score: 3.9) were high (scale range 1–5 = better perception of team’s interprofessional practice) (see Table II and Figure 1). However, the objective scale that evaluates the level of actual team practices associated with interprofessional care was lower (mean: 4.6, scale range

<table>
<thead>
<tr>
<th>Elements</th>
<th>Overall score (mean of items 1–23)</th>
<th>Collaborations and cohesion (mean of items 1–7)</th>
<th>Decision-making and leadership (mean of items 8–13)</th>
<th>Communication and conflict resolution (mean of items 14–19)</th>
<th>Accountability (mean of items 20–23)</th>
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<tbody>
<tr>
<td>N</td>
<td>4</td>
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<td>Mean</td>
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<td>3.66</td>
<td>3.71</td>
<td>3.92</td>
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<td>SD</td>
<td>0.57</td>
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<td>0.67</td>
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<td>Min</td>
<td>2.78</td>
<td>3</td>
<td>2.33</td>
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<td>Max</td>
<td>4.78</td>
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<td>Median</td>
<td>3.89</td>
<td>4.29</td>
<td>3.83</td>
<td>3.67</td>
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Subjective scales: ranges from 1 to 5 (better perception of team’s interprofessional practice). Objective scale: ranges from 0 to 9 (more team practices associated with interprofessional practice). SD, standard deviation; min, minimum; max, maximum.
0–9 = more team practices associated with interprofessional care) (see Table II and Figure 2). In five of the nine items which reflect actual interprofessional team practices, fewer than 50% of ERPs identified with the following practices being in place: integrated care plans are in place for patients; integrated assessments are performed among professions; there are indicators to assess how well the team works together; the team regularly reviews specifics of how it goes about delivery of care;
and the team engages in collaborative decision making regarding operations and care delivery.

**Qualitative data**

**ACPAC graduates**

A total of 20 (of 30) ACPAC graduates (67%) participated in one of the three focus groups (average duration: 80 min) involving nine, four and seven ERPs, respectively. Fifteen (75%) graduates were physiotherapists and five (25%) were occupational therapists. Sixteen (80%) graduates worked in urban areas, whereas the rest (20%) worked in rural settings. Eleven participants (55%) worked in academic hospitals and nine (45%) worked in community hospitals or other community-based settings.

**Stakeholders**

A total of 18 (of 45) colleagues of ACPAC graduates participated in one-to-one semi-structured interviews (average duration: 31 min), and included a range of clinical and administrative team members. Seven (39%) were rheumatologists, four (22%) were other clinicians (orthopaedic surgeons, family physicians and nurse practitioners) and seven (39%) were administrators. One interview was conducted in person, with the remainder made by telephone.

**General findings**

**ACPAC graduates.** Most participants understood interprofessional practice to refer to team work in some way or to the interaction between clinicians from different professions. Some felt that they experienced interprofessional practice expressed through effective working relationships, co-training and education, and the informal sharing of professional competencies. At one site, this was because interprofessional practice was entrenched within the institution; in others, it was because effective working relationships had been established by individual clinicians. Role recognition was an issue with the absence of medical directives impeding some practitioners from moving beyond their traditional role, broadening scope of practice and functioning to full capacity as an ERP. In some cases, a lack of interprofessional practice was discipline-specific, where colleagues would variably engage with the ERP, or would not under the reported guise of liability risk.

**Stakeholders.** Participants generally found ACPAC practitioners to be highly clinically competent, willing to acknowledge their expertise limits and unhesitating in soliciting help as required. ERPs were seen as adding value to existing services by their expertise limits and unhesitating in soliciting help as required. ERPs were seen as adding value to existing services by

**Perceived changes to behaviour, organizational practice and patient benefit**

The emergent data were consistent with addressing three of the more complex levels (changes to behaviour, organizational practice and patient benefit) of an evaluative framework (Barr et al., 2005) chosen to reflect current status of interprofessional practice as perceived by both ACPAC ERPs and stakeholders.

**Behaviour change.** One of the most challenging aspects of working as an ERP manifested when the new role was not consistently recognized by other professions. A sense of interprofessional competition and the dominance of medicine and nursing in established models of career progression made it difficult for ERPs to gain traction in their new roles. It took time and external pressure to elicit behavioural change by other professions in terms of acceptance of the new role. The reticence of individual physicians was an ongoing challenge in a number of settings. For family physicians unfamiliar with the role, it was perceived that the ERP was an additional gatekeeper rather than a professional expediting access to specialist care:

...our general family doctors were a little out of sorts at first saying, ‘‘well, I know they need to see a rheumatologist, I don’t need them to be seen by a physiotherapist’’...now they love it because it works in terms of getting their patients the care they need right away...[Stakeholder]

On occasion, stakeholders perceived a lack of flexibility on the part of the ERP and placed the onus on them to develop and negotiate their role within their institution, and engage proactively with system-level responsibilities.

**Changes in organizational practice.** Deployment, integration, inclusion in circles of care and institutional support of the ERP varied with mixed promotion from both clinicians and administrators. Some sites recognized the ACPAC ERP as central to providing new and innovative services which garnered enhanced institutional reputation. Graduates working in under-serviced communities tended to be deployed more fully than those working in better-resourced urban centres.

**Medical directives and scope of practice issues.** Some administrators were concerned with lagging regulatory structures to support new roles. Physician support for attaining medical directives was integral to implementing ERP roles allowing broadened scope of practice and was linked to enhanced interprofessional practice:

...the medical directive issue actually came out fairly easily for us because it came from the doctors. They said, ‘‘we want this, this and this...and so they’ve put it together and signed the papers and pushed it through that way...[ERP]

Most graduates, however, were routinely hampered to some degree by the lack of medical directives:

...it was “who are these non-nursing people asking for medical directives?” The committee was made up of physicians and nurses and so it was a battle explaining who we are, why we were okay to have these directives, what our training was...[ERP]

**Remuneration and billing practice conflict.** Remuneration and billing issues were consistently identified as having a negative impact upon interprofessional relationships. Although largely discipline-specific, these issues did not present in cases where the ERP worked with salaried physicians but did for those clinicians who were highly focused on volumes and billings and who were reluctant to relinquish contact with patients:

...the newer physicians with a smaller patient population were not ready to join this program and give up their patients.
The more established physicians who had a long wait list of patients were quite ready and willing... [Stakeholder]

Inadequate resourcing for the role and vulnerability to politically driven changes in priority was perceived to strain interprofessional relationships at some sites.

**Benefit to patients.** The ERP was perceived to have a substantial impact on patient-centred interprofessional care and safety via diminishing the silo effect, and providing a conduit for communication and collaboration between different departments or professionals:

...I work across every MSK program in our hospital and so I think the biggest difference that I’ve made is that I unite those silos...I’m the person who’s a constant...so I think I’m improving efficiencies and I think I’m making them work together more than they ever did before...[ERP]

The ERPs were perceived to substantially improve patient care in the context of interprofessional practice by effectively triaging and directing patients to the most appropriate care provider, reducing wait times and allowing physicians to prioritize genuinely urgent cases. Working with the ERP was considered important in reducing multiple patient visits and helping to maintain consistency of communication and care between patients and arthritis care providers:

...it’s helping my practice, it’s also helping patients to get in and be seen sooner who would benefit from earlier assessment and treatment that may make a difference in terms of their functioning and contribution to society... [Stakeholder]

**Discussion**

ACPAC ERPs are generally effective participants in and contributors to interprofessional care as perceived by ERPs and their stakeholders at select sites. Their presence appears to both promote organizational change and impart benefit to the collaborative care of patients with arthritis. ERPs are, however, working on teams that are at varying stages of readiness for interprofessional practice. Although they appear to understand and be willing to perform collaboratively are required to ensure successful new role implementation and achieve interprofessional working.

The premise of this study is that interprofessional education initiatives, such as the ACPAC programme, play a key role in improving interprofessional collaboration and ultimately healthcare outcomes (WHO, 2010) specifically beneficial in the provision of focused (Howarth, Warne, & Haigh, 2012) care, and attempts to provide some evidence of that effect to appropriately inform policies and practices (Reeves, Goldman, Burton, & Sawatzky-Girling, 2010). The mixed-method approach in this study provides a broader spectrum of information than previously obtained (Lundon et al., 2009), collecting different but complementary information from multiple perspectives and evaluating broadly a heterogeneous group of well-trained but newly introduced practitioners who work in complex clinical environments. This challenged the determination of uniform impact of ACPAC ERPs on interprofessional care and thus provides only a snapshot of perceived behaviour. The method of sampling of stakeholders may have introduced significant bias to the study; however, as is often the case when conducting programme evaluations, it is extremely difficult to recruit participants who are strongly opposed to the programme and thus their views may be underrepresented.

Team processes are the critical components of interprofessional care (Xyrichis & Lowton, 2008), and as fewer than 50% of ERP’s identified with objective practice criteria significant for interprofessional care, this represents an opportunity for improvement for the arthritis care teams in this study. Categories created from thematic analyses evaluating interprofessional care are often not mutually exclusive (Xyrichis & Lowton, 2008) and the functioning of a team will depend on how these factors interrelate (Sinclair, Lingard, & Mohabeer, 2009). Recognition of the ERP role was perceived as an issue at the individual (behaviour) level involving clinicians reluctant to allow ERPs to practice to the full extent of their capabilities. This may represent how poorly understood core competencies achieved by another health profession impedes interprofessional working (Verma et al., 2009) and undermines how support for innovation in a team strongly predicts overall team effectiveness and quality of team working (Borrill, West, Shapiro, & Rees, 2000). Similarly, an organization’s preparedness to broaden capacity of newly introduced healthcare workers or by administration’s trepidation to commit to something new dually affects interprofessional working culture (Scarvell & Stone, 2010). This exemplifies that newly introduced workforce roles which transcend traditional boundaries can be expected to challenge any system (Conference Board of Canada, 2007) irrespective of whether it involves new types of workers or new ways in which work is done (Buchan & Dal Poz, 2002). Introduction of regulatory structures to reflect wider diversity of workforce roles in healthcare do tend to lag significantly behind the realities of practice or regulatory development (Bridges & Meyer, 2006).

The imperative to broaden the ERP’s role and collaborate appears closely related to existing need, mandate and willingness (Virani, 2012) as opposed to ‘whether it could work’ even though interprofessional care is identified as a service model that improves access to care (Ministry of Health Long Term Care, 2010, p. 35). Tenuous financial support for these often fractional new roles, however, made them vulnerable to competing forces for funding posing considerable threat to collaborative working relations and stability important to effective teams (Cashman, Reidy, Cody, & Lemay, 2004).

Evaluation of ERPs within homogeneous contexts, focusing on attributes of team arrangements including size (Poulton & West, 1999), composition (Borrill et al., 2000), team maturity and negotiated space (Howarth et al., 2012), would allow for a clearer construct of interprofessional practice and improved evaluation of interprofessional interventions (Reeves et al., 2011).

**Concluding comments**

This study offers the opportunity to reflect on the impact of a newly introduced human health resource in arthritis management in the context of interprofessional care. The study findings suggest that elements of professional culture and behaviour may impede role recognition which in turn affects deployment, integration and implementation of ERP roles at the organizational level. A shift in traditional roles and professional boundaries by competent new healthcare providers can narrow the gaps in healthcare to allow patients to receive the most appropriate and timely care making continued effort at developing these roles well worth the effort to overcome the challenges.

**Declaration of interest**

The authors report no declarations of interest. The authors alone are responsible for the writing and content of this paper.

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