
The early impact of Advanced Clinician Practitioner in Arthritis Care (ACPAC) program-trained extended role practitioners (ERP) on the Ontario healthcare system: A system-level evaluation

EXECUTIVE SUMMARY

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BACKGROUND

The Advanced Clinician Practitioner in Arthritis Care Program

The Advanced Clinician Practitioner in Arthritis Care (ACPAC) Program is an innovative (Lundon, 2008) post-licensure, clinical and academic training program hosted by St. Michael's Hospital and the Hospital for Sick Children in Toronto, Ontario. The program focuses on the assessment, diagnosis, triage and independent management of select musculoskeletal (MSK) and arthritis-related disorders in adults, children and adolescents. The aim of the program is to prepare experienced physical therapists and occupational therapists for extended practice roles and to facilitate the development of innovative models of arthritis care across various clinical settings in Ontario. The program was developed in 2005 and to date, there are 37 graduates working in diverse clinical settings across Ontario.

These extended role practitioners (ERPs) have received training, with formal evaluation, to establish competency in the advanced knowledge and skills associated with arthritis care. Some of their roles include additional performance expectations. These may involve authorized activities which are currently achieved through delegation or medical directives.

Evaluation Framework

A Balanced Scorecard approach (Kaplan and Norton, 1996) was chosen as the evaluation framework to determine the early impact of ACPAC program-trained ERPs on the Ontario healthcare system. The goal of this evaluation was to provide comprehensive data, from different perspectives, for use in quality and performance improvement initiatives, allowing the ACPAC program and its graduates to be responsive to a rapidly evolving healthcare environment.

The nomenclature for the ACPAC Balanced Scorecard is based on the Hospital Report: Rehabilitation Series (Cott et al., 2005) with a modification to the client perspectives quadrant. Table A summarizes the ACPAC Balanced Scorecard quadrants and respective indicators.

Table A. ACPAC Balanced Scorecard Quadrants and Indicators

Quadrant	Indicators
Clinical Utilization and Outcomes	<ul style="list-style-type: none"> • Direct patient care: <ul style="list-style-type: none"> - Patient volumes - Referral source - Patient type - Patient diagnosis • Other professional activities: education, research, leadership • Community Practice
System Integration and Change	<ul style="list-style-type: none"> • Access to care • Extended role practice • System integration • Interprofessional Care (IPC)
Patient and Stakeholder Perspectives	<ul style="list-style-type: none"> • Patient satisfaction • ACPAC ERP and colleague satisfaction
Financial Performance and Condition	<p>* No formal indicators developed at this stage; preliminary investigations were undertaken to determine potential indicators.</p>

Clinical Utilization and Outcomes

The Clinical Utilization and Outcomes quadrant includes indicators that address the ACPAC ERPs’ clinical performance at a broad system-level. Indicators include direct patient care, other professional activities, and differences in community practice between ACPAC program-trained ERPs and non-ACPAC therapists. Table B summarizes the methods and highlights some of the key findings related to the Clinical Utilization and Outcomes indicators.

Table B. Clinical Utilization and Outcomes Methods and Key Findings

Methods	Key Findings
Direct Patient Care and Other Professional Activities	
<p>Longitudinal survey (N=30), administered to ACPAC program-trained ERPs each quarter for the 2009 and 2010 fiscal years.</p>	<ul style="list-style-type: none"> • Total patient volumes (new consultations + follow-ups): <ul style="list-style-type: none"> - 2009: 13 407 - 2010: 14 546 • 39% of patients seen had inflammatory conditions (i.e. rheumatoid arthritis, juvenile idiopathic arthritis). • 61% of patients seen had non-inflammatory conditions (i.e. osteoarthritis). • At least half of ACPAC program-trained ERPs were contributing to indirect patient care through each of: education delivery, research and leadership.
Community Practice	
<p>Retrospective chart review comparing the charts (n=29) of ACPAC ERPs and the charts (n=29) of matched non-ACPAC therapists working for The Arthritis Society (Lineker et al., 2011).</p> <p>Note: This study is not expanded upon in the body of this report as it has been published and copyrighted.</p>	<ul style="list-style-type: none"> • Compared to non-ACPAC therapists, ACPAC ERPs received more referrals specifically for assessments (52% vs. 14%); treated more patients with undifferentiated arthritis (arthritis suspected or type of arthritis unconfirmed) (48% vs. 10%); documented co-morbidities more often (90% vs. 66%); more frequently advocated on behalf of the patient with the patient’s family, physician or specialist (52% vs. 21%); recommended exercise or physical activity more often (41% vs. 31%); and more frequently recommended radiologic or laboratory assessments (14% vs. 3%). • Compared to ACPAC ERPs, non-ACPAC therapists more frequently provided education about joint protection (41% vs. 31%) and community resources (31% vs. 7%); and more frequently recommended the use of assistive devices (45% vs. 21%).

System Integration and Change

The System Integration and Change quadrant includes indicators that measure the extent to which ACPAC ERPs are delivering integrated and timely healthcare for patients with arthritis. Table C summarizes the methods and highlights some of the key findings related to the System Integration and Change indicators.

Table C. System Integration and Change Methods and Key Findings

Methods	Key Findings
Access to Care, Role Utilization and System Integration	
<p>Longitudinal survey (N=30), administered to ACPAC program-trained ERPs each quarter for the 2009 and 2010 fiscal years.</p> <p><i>Definition:</i> Medical directives are:</p> <ul style="list-style-type: none"> • Instructions, written in advance, outlining specific conditions under which specified activities can be enacted. • Usually provided by physicians. <p>Medical Directives are in place to assist ERPs in the evaluation and management of their patients. ERPs working in Ontario may perform clinical activities (i.e. ordering x-rays and laboratory tests) that are currently beyond the authorised controlled acts assigned to their profession.</p>	<ul style="list-style-type: none"> • <i>Access:</i> Over the 2-year period, three quarters of ACPAC program-trained ERPs reported an average wait time of no greater than 39 days from the date the referral was received to the date the patient was actually seen by the ERP. The longest median wait time across quarters to see an ACPAC program-trained ERP was 22 days. • <i>Extended Role Practice:</i> The majority of ACPAC program-trained ERPs were working in extended practice roles (2009: 90%, 2010: 86%). • <i>Medical Directives:</i> In support of their role, across the 2-year period (2009; 2010), the majority of ERPs reported ordering x-rays (82%; 83%) and laboratory tests (64%; 71%) on a frequent basis (frequent was defined as a daily, weekly or monthly basis). Approximately 40% of ERPs reported ordering diagnostic ultrasounds and bone density tests over the 2009 and 2010 fiscal years. Across the 2 years, about 70% of ERPs recommended medication and/or dosage changes with up to 14% making these changes independently and about 90% of ERPs recommended joint injections with as many as 18% performing them independently. • <i>Integration:</i> Approximately one third of patients seen were referred for x-rays, laboratory tests and other services (such as specialized equipment, orthotics, splints and footwear). ERPs also referred patients to allied health services and select physician specialists who collaborated with the ERP to provide efficient and appropriate care for patients. ERPs also communicated by way of dictated letters, and were responsible for letters to schools, insurance agencies and Ontario drug benefit programs.

Interprofessional Care (IPC)	
<p><i>Qualitative</i></p> <p>ACPAC ERPs (n=20) participated in 3 focus groups and their colleagues (clinical team members and administrators, n=18) from 15 institutions across Ontario participated in individual interviews.</p> <p><i>Definition:</i> Interprofessional Care (IPC) 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 (World Health Organization, 2010).</p>	<p><i>Qualitative Focus Groups and Interviews</i></p> <ul style="list-style-type: none"> • Varying degrees of IPC exist within ERPs’ arthritis care teams. As indicated by the quotes below, ERPs are generally effective at promoting and contributing to IPC within arthritis care settings.
<p>“... I work across every MSK program ... 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.” - ACPAC ERP</p> <p>“... 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 in the short term ...” - Physician</p> <p>“... we don’t have just physicians providing care. We have ... extended class RNs and physiotherapists; health professionals [who are] able to expand their practice as far as being able to follow more patients and being able to follow them in a more logical and comprehensive way.” - Administrator</p>	
	<ul style="list-style-type: none"> • The following barriers were perceived to impede role implementation at select sites and consequently influence IPC relationships: institution-specific lack of medical directives, role recognition issues and remuneration conflicts.

Interprofessional Care (IPC) continued

Quantitative

ACPAC ERPs completed the Bruyère Clinical Team Self-Assessment on Interprofessional Practice (Patrick, 2010).

The above outcome measure includes:

a) Subjective evaluation: evaluates a clinical team's perception of key team characteristics known to enable interprofessional care.

Overall score (mean of 23 items) and subscale scores:

Collaboration and cohesion (mean of 7 items);

ii) Decision-making and leadership (mean of 6 items);

iii) Communication and conflict resolution (mean of 6 items); and

iv) Accountability (mean of 4 items)

(each item rated on scale of 1 [agree very little] to 5 [agree strongly]; overall and subscale scores range from 1 to 5, where 5=better perception of team's interprofessional practice).

b) Objective evaluation: evaluates the level of actual team practices associated with interprofessional practice (9 items, yes/no response; score is sum of yes responses, score ranges from 0 to 9, where 9=greater levels of IPC practices are in place).

Quantitative survey

- Bruyère subjective evaluation:
 - Overall perception of IPC practices among team members was moderately high (mean 3.9, scores ranged from 2.8 to 4.8).
 - Mean (sd) subscale scores were as follows:
 - Collaboration and cohesion = 4.3 (0.6)
 - Decision-making and leadership = 3.7 (0.7)
 - Communication and conflict resolution = 3.7 (0.8)
 - Accountability = 3.93 (0.6)
- Bruyère objective evaluation:
 - Team practices associated with IPC were moderate (mean score 4.6, scores ranged from 1 to 9).

Patient and Stakeholder Perspectives

The Patient and Stakeholder Perspectives quadrant addresses satisfaction with the ERP role from a number of perspectives. Patient satisfaction with the care received from the ACPAC ERPs was measured. In addition, role satisfaction among the ACPAC ERPs, their clinical colleagues and their administrative colleagues was also captured. Table D summarizes the methods and highlights some of the key findings related to the Patient and Stakeholder Perspectives indicators.

Table D. Patient and Stakeholder Satisfaction Methods and Key Findings

Methods	Key Findings
Patient Satisfaction	
<p>Cross-sectional self-report survey distributed to the patients of 27 ACPAC ERPs across the 15 sites in which they practise. Research ethics approval was received from all sites.</p> <p>Survey Content included:</p> <ul style="list-style-type: none"> • Demographics • Patient-Therapist Interaction Scale (PTIS) (Falvo and Smith, 1983; Taenzer et al., 2000) <p>Based on the Patient-Doctor Interaction, the PTIS is an 11-item scale asking patients' satisfaction with various elements of care. The scale has three subscales: Providing Information (2 items), Rapport (6 items), and Meeting Patient Needs (3 items). Response option range: 1-5, 5 indicates greater satisfaction; subscale score is mean of items.</p> <ul style="list-style-type: none"> • Acceptability of wait time from referral to appointment; in clinic prior to appointment • Comparison of care provided by an ERP with arthritis care previously received • Qualitative patient-generated suggestions, commendations 	<p><i>Demographics</i></p> <ul style="list-style-type: none"> • The survey response rate was 47% (325/692). Respondents had a mean age of 54 years (3-92). The majority were adult (82%), female (72%), and living in urban areas (79%). Most respondents had an inflammatory (52%) or non-inflammatory (33%) diagnosis. <p><i>Satisfaction</i></p> <ul style="list-style-type: none"> • Overall, the mean scores on the PTIS subscales were high [reported as a mean (sd)]: <ul style="list-style-type: none"> - Providing information = 4.5 (0.6) - Rapport = 4.6 (0.5) - Meeting Patient Needs = 4.6 (0.5) • The length of time the patient waited from initial referral by the family doctor or other doctor/healthcare professional until they were seen by the ERP was acceptable (88% agree/strongly agree). The length of time the patient waited in clinic to see the ERP on the day of their appointment was acceptable (87% agree/strongly agree). • The majority felt the arthritis care they received was comparable to (37%) or better than (61%) that previously received from other healthcare professionals. • As indicated by the following quotes, patients appreciated the triage aspect of the ERP service prior to seeing the specialist and noted ERPs' competencies, excellent communication skills and compassion, as well as the efficient, yet thorough care provided.

Table D. Patient and Stakeholder Satisfaction Methods and Key Findings

Methods	Key Findings
Patient Satisfaction continued	
<p><i>“What an excellent service!! It cuts down on the amount of time you have to wait to learn more about the diagnosis, ways to deal with it and go for more tests before seeing the specialist. My advanced practitioner was very patient and knowledgeable in every way.”</i></p> <p style="text-align: right;"><i>- Patient</i></p> <p><i>“I am very pleased with the care and support I have received from my practitioner. It is easy to talk with [them] and if [they] don't have an answer to a question [they are] quick to find out for me. [My ERP] makes me feel like I am a person and not just a number in a long line of people. Keep it up, this is a wonderful support system. Thank you.”</i></p> <p style="text-align: right;"><i>- Patient</i></p>	
ACPAC ERP and Colleague Satisfaction	
<p>ACPAC program-trained ERPs (n=20) participated in 3 focus groups and their colleagues (n=18) from 15 institutions across Ontario participated in 18 individual interviews.</p>	<ul style="list-style-type: none"> • <i>ERP perspective:</i> Generally, ERPs felt they were improving communication, continuity of care and access to care.
<p><i>“I guess it comes down to triage, making sure ... people are where they should be at an acceptable time because there's a lot of people that can wait for months ... to see a specialist and you think, “Oh, you don't need a rheumatologist, you need a knee replacement,” and they may have to wait to see an orthopaedic surgeon for another three months and then they have to wait for the surgery ... So if a [physiotherapist] with the ACPAC training can identify that patient right away you'll get the patient, ideally, in the right spot.”</i></p> <p style="text-align: right;"><i>- ACPAC ERP</i></p>	
	<ul style="list-style-type: none"> • <i>Colleague perspective:</i> Colleagues, including those in administrative and clinical positions, valued ERPs' roles. They felt ERPs were innovative; provided enhanced provision of care in under-served areas; allowed physicians to see more patients, and that they enhanced communication and education of patients (i.e. regarding disease process, treatment and recovery).

Table D. Patient and Stakeholder Satisfaction Methods and Key Findings

Methods	Key Findings
ACPAC ERP and Colleague Satisfaction continued	
	<p><i>“... I have a lot of people who come here from a two or three hour drive away at least ... I’m able to put those people on appropriate medications because I know they can come back [and see an ACPAC ERP]... on a much more regular basis, whereas before [you would] put somebody on a biologic and say, “Okay, good-bye ... see you next year”. [I]t’s improved the quality and quantity of care and now that much more effective treatments are available the stumbling block has been access to the care ...”</i></p> <p style="text-align: right;"><i>- Physician</i></p> <p><i>“... before [we had an ACPAC ERP] we had no programs for inflammatory arthritis ... there is a need ... we have 14-16% inflammatory arthritis in this region and they weren’t getting treated before ...”</i></p> <p style="text-align: right;"><i>- Physician</i></p> <p><i>“... we’re seeing very big changes in wait list management, especially in a very [underserved] area ... where it was getting to be almost a catastrophe of wait time ... it’s really changed the entire practice of how clients ... are managed in that area.”</i></p> <p style="text-align: right;"><i>- Administrator</i></p>
	<ul style="list-style-type: none"> ● Barriers to ERP role utilization were also identified including: <ul style="list-style-type: none"> - Lack of dedicated funding; - Lack of administrative recognition through title; - Inadequate remuneration relative to responsibilities; - Lack of medical directives; and - The unwillingness of others to understand or accommodate extended practice roles within their practice structure.

Financial Performance and Condition

Within this quadrant, the goal of the system-level evaluation was to develop indicators that could be used in future economic evaluations. The following recommendations are based on information collected from various sources including the longitudinal survey administered to ACPAC program-trained ERPs, qualitative data collected from ERPs and their colleagues, and our growing understanding of extended roles and the feasibility of collecting financial data.

- Future economic evaluations of ERP roles may have to be role or program specific, or focus on subgroups of ERPs working in similar roles or settings. Due to the heterogeneity of ERP roles, measurable and relevant financial indicators will be determined by individual role responsibilities, patient population, funding, system integration, and resource utilization.
- Financial indicators may include: training costs, program start-up costs, salary and benefits, proportion of full-time equivalent in an extended role, insurance costs, infrastructural costs, wait times, time spent with patient, cost per visit, out of pocket costs to patients, number and cost of recommendations (i.e. tests, interventions), ERP travel expenses, relevant physician billing data, patient outcomes (i.e. impact on long-term disability, complex conditions).

KEY IMPLICATIONS OF SYSTEM-LEVEL EVALUATION FINDINGS FOR HEALTHCARE PROVISION IN ONTARIO

This section outlines some of the key implications of the ACPAC system-level evaluation for healthcare provision. For more detailed implications see the *System-level Evaluation Implications* section in the main body of this report.

Access

- With relatively short wait-times, the increased use of ERPs has the potential to improve access to care for both adult and paediatric patients with arthritis. ERPs can facilitate early detection and early intervention for patients with inflammatory arthritis, and guide appropriate treatment for patients with non-inflammatory arthritis.
- Of particular importance is the potential for ACPAC program-trained ERPs to provide access to arthritis care in areas where there are severe shortages of specialized arthritis care physicians, such as in rural and remote regions.

Strengthening Healthcare Capacity

- Not all ERPs working in the province of Ontario were being utilized to their full potential. This represents an opportunity to maximize the use of ACPAC program-trained ERP.
- Greater utilization of ERPs could: 1) assist in the delivery of healthcare in geographic areas where there is a scarcity of specialized care for specific patient populations; 2) help to improve access to care; 3) enhance interprofessional care; and 4) help to improve patient outcomes.

- To date, there has been no benchmark set for volumes of patients seen in either a new consult or follow-up capacity by ACPAC ERPs. This represents an important opportunity for future study.

Perceived Impact on Patient Outcomes

- ERPs are actively contributing to the care of patients with arthritis through the education and research pillars of healthcare. ERPs have taken on leadership roles in order to develop and adapt models of care and to contribute to patient care initiatives. ERPs have also maintained and expanded their own clinical competencies through continuing education forums.
- The use of medical directives has the potential to improve efficiencies, allowing the patient to see the most appropriate care provider, ideally releasing specialists (i.e. rheumatologists, orthopaedic surgeons) to see more complex medical cases, and strengthening interprofessional care capacity.

Role Promotion and Expansion

- It is expected that through appropriate role promotion, the volume of patients that ERPs are seeing will likely increase over time. Expansion of roles would be expected to lead to improved access and efficiency within the healthcare system.
- Increased collaboration between the ERP and primary care physicians, improved utilization of the ERP role, increased referrals from non-physicians and greater role promotion in general may help to reduce the burden of care on other practitioners.
- ERPs' colleagues suggested potential opportunities for improved role utilization and deployment of ERPs, and ways to address system-level challenges faced by ACPAC program-trained ERPs. These included hospital-wide deployment and greater integration and utilization in primary care, underserved areas and chronic disease management, as well as improved funding and support, and increasing the awareness of extended practice roles at all levels.

Financial Impact

- As ERP positions and roles emerge, it will be important for ERPs and their institutions to build financial evaluation into the development of new roles, programs and initiatives.
- Due to the current heterogeneity of ERP roles across the province of Ontario, future economic evaluations may have to be role specific, focusing on ERP-initiated programs, individual impact or subgroups of ERPs working in similar roles or settings.

SUMMARY AND FUTURE STUDY

Overall, this two-year system-level evaluation of the impact of ACPAC program-trained ERPs on the healthcare system in the province of Ontario provided detailed information regarding how ERPs are having a positive impact on the care of Ontarians with arthritis. In addition, the evaluation highlighted various barriers to the implementation of ERP roles.

This was the first iteration of a balanced scorecard approach measuring the impact of ACPAC program-trained ERPs on the healthcare system. As such, it is recognized that certain aspects of the care of patients with arthritis were not measured. Based on the results of the evaluation and those aspects of care that were not captured in this iteration, further study is suggested to develop an understanding of the following:

- Appropriate benchmarks related to patient volumes for ACPAC program-trained ERPs working in different capacities.
- Impact of ACPAC program-trained ERPs on patient outcomes.
- The financial impact of various ERP roles at the patient- and system-levels.
- Methods to overcome barriers to role implementation and to achieve more consistent remuneration for ERPs working in various sectors of the healthcare system.