

Extending Dermatology-Rheumatology Shared Management Practices from Academic to Community Settings to Benefit PsA Patients

Grant ID: 35984615

Collaborators

- PRIME Education, LLC (PRIME®)
- Group for Research and Assessment of Psoriasis and Psoriatic Arthritis (GRAPPA)

Abstract

Through a collaborative initiative led by PRIME and GRAPPA, the proposed project is intended to support community-based dermatology and rheumatology clinicians in closing major gaps of underdiagnosis, undertreatment, and suboptimal care coordination practices for patients at risk of psoriatic arthritis (PsA) or who have the disease. As indicated in the RFP for this project, a promising approach to closing these gaps involves the shared management of patients with PsA. In this paradigm, dermatologists and rheumatologists integrate key clinical practices and collaborate in ongoing coordinated care. Whereas positive outcomes of shared PsA management approaches have been reported in seminal studies, formidable challenges and barriers must be addressed to fully realize the paradigm's potential, especially in community-based settings.

To address the pressing gaps, challenges, and barriers associated with shared PsA management, PRIME and GRAPPA propose an initiative that involves 3 components:

1. **A national survey study** designed to assess perceptions and practices regarding shared PsA management among community-based dermatologists and rheumatologists
2. **Six regional CME/CE workshops** led by GRAPPA members and designed to support community-based dermatology and rheumatology clinicians in developing and implementing pragmatic action plans for shared PsA management
3. **Methods for promoting the sustainability and scalability of the CME/CE workshop outcomes**, including follow-on reminders for participants and presentation of the project methods and findings at a GRAPPA national conference and at a second national medical meeting or journal article

Our plan for evaluating the project outcomes includes an innovative approach to assessing relational education-associated changes among dermatology and rheumatology providers.

Table of Contents

Overall Goal and Objectives..... 3

Current Assessment of Need in Target Area 4

 The Potential for Shared PsA Management to Close Gaps in Patient Care..... 4

 Needs Assessment Data Collected by PRIME 6

Target Audience 7

 Audience Engagement and Beneficial Outcomes..... 8

Project Design and Methods..... 9

 National Survey Study on Shared Management of PsA Patients 10

 Regional CME/CE Workshops 11

 Project Sustainability and Scalability Methods..... 12

Evaluation Design..... 13

 PRIME’s Innovative Relational Analysis of Education-Associated Changes 13

 Qualitative Analysis of Educational Outcomes 14

Detailed Workplan and Deliverables Schedule..... 15

References 16

Organizational Detail 18

 Organizational Capabilities 19

 Leadership and Staff Capacity..... 20

 Partnership with GRAPPA 21

 Budget Narrative..... 21

Staff Biosketches..... 24

Letter of Commitment 39

Overall Goal and Objectives

Through a collaborative initiative led by PRIME Education and GRAPPA (Group for Research and Assessment of Psoriasis and Psoriatic Arthritis), the overall project goal is to support community-based dermatology and rheumatology clinicians in closing significant gaps in the quality of care and outcomes for patients who are at risk of psoriatic arthritis (PsA) or living with the disease. As described in the project RFP and in the *Assessment of Needs* section of this proposal, these gaps are evidenced by high rates of undiagnosed PsA among patients with psoriasis; undertreatment of PsA, especially among patients with moderate-to-severe disease activity; suboptimal interdisciplinary practices involving referrals, communication, and care coordination; and disconnects in perceptions about PsA care among patients and clinicians.

As proposed by national leaders in rheumatology and dermatology—many of whom are members of GRAPPA—a promising approach to closing persistent gaps in PsA care involves the shared management of patients, by integrating key clinical practices and promoting better communication across the 2 disciplines. In academic medical centers and, to a lesser extent, community settings, new models of shared PsA management have recently been developed and implemented. As reviewed in the *Assessment of Needs* section, seminal studies on shared management approaches have provided preliminary evidence for their effectiveness in promoting accurate and early PsA diagnosis, evidence-based and guideline-directed use of disease-modifying therapies, and ongoing coordinated care to address patients' skin and joint symptoms and to achieve clinical remission.

Notwithstanding the impressive preliminary evidence for the effectiveness of shared PsA management, formidable challenges and barriers must be addressed to fully realize the paradigm's potential, especially in community-based settings. Empirical and anecdotal evidence reflects significant attitudinal, knowledge- and competency-based, logistic, and financial barriers to the adoption and implementation of shared PsA management practices by community-based dermatologists and rheumatologists. PRIME and GRAPPA strongly believe that these barriers will be ideally overcome through culture-changing educational initiatives that engage dermatology and rheumatology clinicians in collaborative problem-solving. Accordingly, our main project objectives are to:



Identify aspects of concordance and discordance in the attitudes, barriers, and current practices regarding shared PsA management among community-based dermatologists and rheumatologists. This objective will be achieved through a national survey study, which is described in the Project Design and Methods section. Results of the survey will provide valuable insights to be included in future abstracts, as discussed below.



Support a select audience of community-based dermatology and rheumatology clinicians in reinforcing concordances and resolving discordances in their perceptions and practices regarding shared PsA management. This objective will be achieved through 6 multi-accredited educational workshops, to be held in major cities across the US selected by GRAPPA and PRIME. The regional CME/CE workshops will be designed according to collaborative and coproductive educational methods that PRIME has developed and recently reported in peer-reviewed publications and at national conferences.¹⁻⁸ The workshops will support participants in developing pragmatic strategies and action plans for shared PsA management in order to realize their potential for improving diagnostic, treatment, and care coordination practices.



Promote the sustainability and scalability of the 6 regional CME/CE workshop outcomes, to support a national audience of dermatology and rheumatology clinicians in implementing shared PsA management practices. As described in the Project Design and Methods section, this objective will be achieved through the dissemination of follow-on reminders to workshop participants about the strategies and action plans they developed, and abstracts for 2 national conference presentations, or a conference presentation and a publication in a peer-reviewed medical journal, based upon approvals. These will be developed in a tutorial format to support dermatology and rheumatology clinicians in applying exemplary model approaches and pragmatic strategies for shared PsA management.

Our overall goal and objectives for this project are based on the premise that widespread adoption and implementation of shared PsA management will depend on cultivating shared attitudes and values regarding the paradigm among dermatology and rheumatology clinicians. The proposed project is designed to engender the cultural and practice-based changes that are fundamental to overcoming barriers to shared PsA management and realizing its potential to close the clinical gaps in patient care and outcomes that are described as follows.

Current Assessment of Need in Target Area



This educational needs assessment is based on (1) a review of landmark studies that have reported significant gaps in PsA diagnosis, treatment, and patient-centered care; (2) a review of recent studies that demonstrate positive outcomes of PsA management in dual dermatology-rheumatology clinics in academic medical centers; and (3) data from surveys completed by community-based dermatology and rheumatology providers who participated in CME/CE workshops and online activities that PRIME recently conducted.

The Potential for Shared PsA Management to Close Gaps in Patient Care

As proposed by national leaders in dermatology and rheumatology, the shared management of patients with PsA offers the potential to close significant gaps in PsA care, including underdiagnosis and undertreatment;^{9, 10} suboptimal practices involving referrals, communication, and care coordination among dermatologists and rheumatologists;¹¹⁻¹³ and disconnects in perceptions about PsA care among patients and providers.¹¹ However, as reviewed in this section, empirical and anecdotal evidence indicates major challenges and barriers to advancing the shared PsA management paradigm, especially in community-based settings. This evidence underscores the rationale for our proposed survey study, educational workshops, and sustainability/scalability methods.

Landmark Studies Indicating Gaps in Psoriatic Arthritis Patient Care

Studies have indicated that up to 50% of patients with plaque psoriasis are at risk for PsA or are living with the disease.^{10, 14} The large-scale PREPARE study investigated the prevalence of PsA among patients with psoriasis (n = 949) who were seen in dermatology clinics in 7 North American and European countries.¹⁰ Upon evaluation by rheumatologists, 30% of these patients were determined to have PsA, and 41% of this group had not been previously diagnosed. This finding aligns with reports of significant undertreatment of PsA.^{9, 11, 15} In the

PREPARE study, all patients with psoriasis were referred from dermatologists to rheumatologists. As suggested by the study authors, rates of undiagnosed PsA may be even higher in real-world settings due to suboptimal referral practices.¹⁰ The authors called for greater vigilance among dermatologists and rheumatologists in screening for PsA, emphasizing an integrated care approach.

Educational Needs Associated with Evolving Shared Management Models



Several studies have demonstrated the potential for closing key gaps in PsA care through shared management practices. A systematic review published in 2016 reported that patients with moderate-to-severe PsA who were seen in multidisciplinary dermatology-rheumatology clinics had relatively high rates of PsA diagnosis, improved skin and joint symptoms, and high levels of satisfaction.¹⁶ One of the studies included in this systematic review was the seminal investigation of Velez and coauthors.¹⁷ They conducted a retrospective review of patient charts from 2003 to 2009 at Brigham and Women's Hospital, which has established a leading model for dual dermatology-rheumatology clinics. In reviewing the charts of 268 patients with psoriasis and/or PsA, the authors compared outcomes of previous standard care versus care in the dual-clinic approach. In the standard care setting, a high proportion of patients with PsA were treated with conventional topical therapy alone. The dual-clinic approach was associated with an increase in the proportion of patients receiving appropriate systemic medication (increase from 15% to 25%) and, specifically, biologic therapies (increase from 16% to 37%). In addition, Velez and coauthors reported a low rate of adverse events among PsA patients who received care in the dual dermatology-rheumatology clinic.¹⁷

In a recently published survey study conducted by members of GRAPPA and the Psoriasis and Psoriatic Arthritis Clinics Multicenter Advancement Network (PPACMAN), perceptions and methods regarding dual dermatology-rheumatology clinics were assessed among 16 dermatologists and 14 rheumatologists.¹⁸ All of the respondents reported that dual clinics improved communication, 92% reported that they provided excellent training opportunities, and 92% reported that they facilitate prompt and accurate diagnosis of PsA. Respondents indicated that their most common challenges in the dual-clinic approach were identifying appropriate patients, scheduling synchronized visits with dermatologists and rheumatologists, and convincing their institutions to support the shared management approach.¹⁸ It is noteworthy that the survey was conducted in academic medical centers, where the logistics of dual-clinic approaches are challenging yet more manageable than in community settings (Philip Mease, MD and Paul Yamauchi, MD; personal communication; June 9, 2017). Nonetheless, the evidence from studies situated in academic centers, as well as evolving models of shared management in community practices, reflects the potential for the paradigm to close key gaps across care settings. Thus, our proposed agenda for the CME/CE workshops will include presentation and discussion of successful features and challenges of shared PsA management approaches in academic and community settings.

The international MAPP study assessed perceptions and practices regarding PsA care among patients, dermatologists, and rheumatologists in community settings.^{11, 15} In contrast to the

survey study proposed in this grant request, MAPP primarily explored similarities and differences in attitudes toward PsA disease severity and treatment, rather than focusing directly on shared PsA management. However, several findings from the US-based MAPP study are especially relevant to demonstrating needs for educational programs that support community-based dermatologists and rheumatologists in developing and implementing pragmatic strategies for shared PsA management:¹¹

- Only about one-third of the dermatologists (n = 101) and rheumatologists (n = 100) indicated that they practice shared management strategies.
- The rheumatologists reported that most of their referrals for newly diagnosed PsA patients came from primary care physicians rather than from dermatologists.
- Only 6.9% of dermatologists reported that they would need to refer their PSA patients to other specialists or involve other specialists in their ongoing PsA patient care.
- Only about one-third of the rheumatologists reported that dermatologists are involved in monitoring skin symptoms in their PsA patients.
- 82% of the dermatologists indicated that they would initiate and manage biologic therapy independently for PsA patients who need aggressive therapy; however, only about one-third of these specialists reported broad use of biologic agents. In contrast, broad use of biologic agents was reported by nearly 75% of the rheumatologists.
- Approximately 80% of the dermatologists and 50% of the rheumatologists reported being somewhat or very concerned about their patients' long-term use of conventional oral or biologic therapy.

The MAPP study did not assess perceptions and practices involving recently approved and emerging therapies for PsA, including biologic and small-molecule agents that act through novel mechanisms.¹⁹ Thus, our proposed survey study and educational workshops will build on previous initiatives by addressing interdisciplinary knowledge and practice needs in the context of expanded treatment options.

Needs Assessment Data Collected by PRIME

The clinical gaps that have been reported in the literature are substantiated by needs assessment data that PRIME collected in conducting a 2015-16 pilot program involving 4 half-day CME/CE workshops and enduring CME activities on psoriatic diseases for community-based dermatologists and rheumatologists. In pre-program surveys, participants (n = 482) reported that they provide care for more than 4,400 patients with psoriatic diseases per week. Key aggregated findings from the pre-program surveys are summarized as follows, further reflecting educational needs that are related to shared PsA management and motivate the proposed project.

Suboptimal Team-Based Approaches: The pre-program survey included an item for respondents to rate the quality of team-based approaches to the care of patients with psoriatic diseases. Effective team-based approaches are obviously fundamental to promoting successful shared PsA patient management among dermatologists and rheumatologists. However, across

the educational activities in this pilot program, only 40% to 50% of participants agreed that there is an effective team-based approach to patient care in their settings. Up to 48% of participants identified needs for improvement in their co-management approaches to patient care. These findings are especially relevant because 76% to 86% of participants indicated that collaboration between dermatologists and rheumatologists is “important” or “very important.” Thus, a gap exists between positive ideals about shared management and actual team-based practices.

Lack of Knowledge and Confidence Involving Essential PsA Competencies: Through effective approaches to the shared management of patients with PsA, dermatologists and rheumatologists can collaborate in ways that address gaps in discipline-specific clinical knowledge and competencies. Our pre-program survey included items for participants to self-assess their confidence in performing key PsA-related competencies. Across the educational activities, only 12% to 46% of participants reported high levels of confidence in identifying prognostic factors for PsA, distinguishing hallmark features of the disease, assessing disease activity, and making treatment decisions for patients. Among other findings indicating significant knowledge gaps, low proportions of participants correctly identified (1) peripheral involvement as a common characteristic of PsA (< 25%), (2) risk factors for PsA (< 30%), and (3) mechanisms of action for biologic and small-molecule PsA therapies (< 40%). To address these gaps, the educational workshops in the proposed project will address the potential for shared management approaches to promote collaborative interdisciplinary learning among dermatologists and rheumatologists.

In summary, evidence from published studies and our pilot data reflect PsA care gaps, interdisciplinary variations in care, and discordance in shared management perceptions and practices among US-based dermatologists and rheumatologists. Empirical and anecdotal evidence also suggests formidable barriers to adopting and implementing shared PsA management approaches in community settings. Our proposed survey study, educational workshops, and sustainability-scalability methods will directly target these gaps and barriers.

Target Audience



The primary target audience for this project will be dermatology and rheumatology treaters who practice in community settings across the US. This audience will include physicians, nurse practitioners (NPs), and physician assistants (PAs). The engagement of NPs and PAs is especially important because they play key roles in interdisciplinary care coordination and communication. Our rationale for focusing on shared PsA management in community-based practices is presented in the *Assessment of Need* section. As follows, we describe our plan for recruiting participants for the regional CME/CE workshops and our expectations for audience engagement and beneficial outcomes.

With the support of GRAPPA, we will recruit an equal number of dermatology and rheumatology specialists (primary audience) for the survey, as for the live workshops. We will also include NPs and PAs in rheumatology and dermatology practice to participate in the

workshops. The goal is at least 20 providers at each event with a suitable mix. PRIME has extensive experience in these types of provider CME/CE live sessions and utilizes a well-established recruitment method to ensure that the right audience is identified and benefits appropriately from the education.

We will recruit > 30 attendees to each workshop location to ensure we account for anticipated drop-off rates, to achieve intended goals. We manage the budget potential for a larger group by serving buffet style (no Pfizer funds have been allocated for meals), as there are always attendees who do not eat, and by preparing additional handout materials. We will conduct attendee generation via e-invitations, blast promotional ads, telephone calls, social media (where appropriate) and faxing to the appropriate offices. Invitations will provide 3 forms of registration: by the web, phone, and fax for the convenience of busy providers.



Importantly, PRIME's attendee generation protocols include screening of every registration to ensure the practitioner is the intended audience. We have a sophisticated and proprietary pre-approval process tied to our LMS that allows our team to approve or deny every workshop registration within 48 hours. If the registrant is not the intended audience, that person is denied registration and offered other complimentary online and mobile education to augment his/her CME needs. This is an essential and highly effective best-practice utilized by PRIME for the last 2 decades to ensure limited available seats are saved for the intended audience.

All approved meeting registrants receive automated reminders from PRIME's Registration, RSVP, and Reminder system, linked to our Learning Management System (LMS). Registrants who prefer can provide their cell phone numbers to receive optional text reminders, and a significant number of physicians and other healthcare professionals typically opt-in to this personalized concierge service, demonstrating their trust in PRIME. We never use cell phones for any promotional endeavor, except as intended to remind registrants of a live activity.

Individualized web-based advertising, registration, and reminder pages for each activity will be developed on the highly active PRIME Live CME website (Example: <https://primeinc.org/hcvhiv>) and will identify all aspects of each unique workshop, including faculty affiliations, faculty disclosures, venue (inclusive of contact information and directions), advance information pertaining to participants' responsibilities, such as any required parking fees, as well as all program design information, accreditation information, and funder information.

The accompanying budget narrative provides details on costs of participant recruitment.

Audience Engagement and Beneficial Outcomes

We expect a high level of interest in and commitment to the project among the targeted audience members. This expectation is based on PRIME's extensive experience in conducting collaborative CME/CE programs in which healthcare professionals in different disciplines, along with patients, gather to share their perceptions, barriers, and coproductive strategies for improvement involving various aspects of coordinated patient care. As we have described in recent publications and presentations, the collaborative interdisciplinary learning context naturally engenders heightened engagement and motivation for positive change.^{2, 8, 20}

Beyond participants in the CME/CE workshops, the proposed project is designed to benefit a national audience of dermatology and rheumatology clinicians. As detailed in the *Project Design and Methods* section, this goal will be achieved through targeted sustainability and scalability methods. Ultimately, the project affords the potential to benefit patients with psoriasis who are at risk for developing PsA or who have been diagnosed with the disease. To support project participants in achieving this goal, we will design the educational components to focus on methods by which shared PsA management directly addresses the significant clinical gaps—including underdiagnosis, undertreatment, and suboptimal interdisciplinary care coordination—that are described in the *Assessment of Need* section.

Project Design and Methods

The proposed project is organized by tasks and deliverables in 3 sequential components:



1. A national survey study designed to assess perceptions and practices regarding shared management of PsA patients among community-based dermatologists and rheumatologists



2. Six regional CME/CE workshops utilizing expert faculty who are US-GRAPPA members in effective PsA co-management models in academic and community settings. The workshops and follow-on communications are designed to support community-based dermatology and rheumatology clinicians in developing and implementing pragmatic action plans for effective shared PsA management



3. Methods for promoting sustainability of the CME/CE workshop outcomes among participants and scalability to a national audience of dermatology and rheumatology clinicians

In recent years, PRIME has conducted many interprofessional CME/CE programs based on models of collaborative learning and coproductive health care, engaging clinicians across different disciplines, payers, and patients. Currently, for example, we are conducting in-person seminars and online/mobile activities with collaborative and coproductive designs in areas of infectious diseases (<https://primeinc.org/webinars/1325>; <https://primeinc.org/hcvhiv>); oncology (<https://education.nccn.org/inhl>); and immune-mediated inflammatory diseases, including psoriasis and PsA (<https://primeinc.org/federal/>, <https://primeinc.org/hcvibd>, and <https://primeinc.org/65WB162>). Other examples are accessible at <https://www.primeinc.org>.

Our experience in developing and implementing collaborative learning initiatives informs the design and technical approaches for the proposed project, which are described as follows.

National Survey Study on Shared Management of PsA Patients

In collaboration with US-based GRAPPA members, PRIME will develop a survey designed to assess PsA-related knowledge and attitudes, barriers, and practices regarding the shared management of PsA patients among community-based dermatologists and rheumatologists. We will administer the survey, which will take approximately 15 minutes to complete, to 50 physicians in each of the 2 disciplines (totaling 100). As examples, survey items for assessing attitudes and barriers toward shared PsA management will ask participants to indicate:



Which group of physicians dermatologists or rheumatologists—should be primarily responsible for making PsA treatment decisions



Level of agreement with statements about the value of shared PsA management for ensuring accurate diagnosis and promoting the evidence-based use of disease-modifying antirheumatic therapies



The extent to which various logistical, administrative, financial, and knowledge-based factors pose barriers to shared management practices, including interdisciplinary referrals and follow-up communication and collaboration

In addition, the survey will include case descriptions of PsA patients with varying treatment needs based on disease severity and history. Participants will be asked questions designed to assess (1) knowledge of evidence-based, guideline-directed treatment approaches; (2) the treatment decisions they would make in each patient case, including decisions about topical, biologic, and small-molecule therapies; and (3) confidence and self-reported competence in making treatment and management decisions.

Through methods that PRIME has described in recently published and presented survey studies,¹⁻⁸ we will compare the dermatologists' and rheumatologists' responses to the survey item choices. As detailed in the *Evaluation Design* section, these analyses will enable us to identify areas of concordance and discordance in the groups' relational knowledge, attitudes, barriers, and practices involving the shared management of PsA patients. For example, we will compare the proportions of dermatologists and rheumatologists who, on Likert scales, agree or strongly agree with statements about the value of shared PsA management. In addition, through regression analysis, we will identify provider-level characteristics (e.g., years in practice, gender, proximity to providers in the other discipline, and PsA treatment knowledge and confidence) that are associated with concordance and discordance in shared management perceptions and practices.

The proposed survey is pivotal to advancing initiatives for shared PsA management in community settings. An essential prerequisite to establishing effective shared management practices is identifying and cultivating shared perceptions, values, and pragmatic strategies regarding the paradigm. As reviewed in the *Assessment of Need* section, empirical and anecdotal evidence provides some insight into current challenges and barriers to shared PsA management, especially in academic medical settings. However, evidence is lacking on

knowledge, attitudes, barriers, and practices among community-based dermatologists and rheumatologists. The proposed survey affords an opportunity to provide this evidence and, most important, to reify alignments and mismatches in the groups' perceptions, values, and practices in the context of the collaborative educational workshops described below.

PRIME will recruit survey respondents through our opt-in learner database of approximately 3,000 rheumatologists and 2,000 dermatologists. To encourage participation, we will inform recipients of the survey that GRAPPA assisted in its design and views the outcomes as important to the organization's mission. We will also offer the opportunity to GRAPPA to extend the survey to its own members.

Guidance for developing the survey, and review of a draft survey, will be provided by GRAPPA through identified leadership members. In addition, GRAPPA members will contribute to interpreting the survey findings in preparation for presentation in the educational workshops and national conferences described as follows.

Regional CME/CE Workshops



In collaboration with GRAPPA members who agree to serve as subject matter experts, PRIME will develop the content for 6 regional CME/CE workshops, each accredited for physicians, physician assistants (PAs), and nurse practitioners (NPs). The 1.5-hour workshops will be held on weekday evenings in major cities across the US with high densities of community-based dermatologists and rheumatologists. Whereas education on shared PsA management is also greatly needed in rural areas, our focus on major cities is intended to promote homogeneity for reliable survey findings and applicable strategies for advancing the paradigm. The workshops will be held at modest hotels or restaurants with private rooms centrally located to the intended audiences, with ease-of-transportation access.

The workshop format of the proposed CME/CE activity will support participants in achieving the central educational goal, which is to develop pragmatic strategies and action plans for the shared management of patients with PsA in community-based dermatology and rheumatology practices. The educational content will address the potential for successfully implemented shared management practices to close the problematic gaps in PsA diagnosis, treatment, and patient-centered care that are described in the *Assessment of Need* section.

Each workshop will be led by a dermatologist and a rheumatologist who are US-based members of GRAPPA. The workshops will be guided by the agenda outline in Table 1. An experienced PRIME professional staff member will attend each workshop to manage logistics as well as take notes on the participants' discussions, including the strategies and action plans that they develop for shared PsA management.

Table 1. Proposed Agenda Outline for the 1.5-Hour Regional CME/CE Workshops

Topic or Activity	Duration
-------------------	----------

	(Minutes)
1. Presenter Introductions and Workshop Overview	5
2. Goals of Shared Psoriatic Arthritis (PsA) Management: Closing Gaps in Diagnosis, Treatment, and Patient-Centered Care	5
3. Exemplary Models of Shared PsA Management in Academic and Community-Based Settings: Successes and Challenges	10
4. Interdisciplinary Alignments and Mismatches in Perceptions and Practices Involving Shared PsA Management	20
5. Developing Pragmatic Strategies and Action Plans for Shared PsA Management in Community-Based Settings	45
6. Take-Home Messages and Methods	5

The potential of the proposed project to engender meaningful educational and clinical outcomes is largely manifest in 2 innovative aspects of the CME/CE workshop design:

- Presentation of the national survey data as feedback to reinforce alignments and resolve mismatches in perceptions and practices involving shared PsA management among dermatologists and rheumatologists (agenda item 4)
- The collaborative problem-solving approach in which participants will develop written strategies and action plans for implementing shared PsA management practices (agenda item 5)

PRIME has extensive experience in applying principles and methods of feedback-based education. Our approach to presenting survey data to guide the development of targeted action plans for improvement is similar to other effective audit-feedback educational methods.²¹⁻²³ As we have reported in recent publications and presentations,²⁴⁻²⁸ when clinicians see chart or survey data that indicate gaps in perceptions or practices—including discordances with colleagues in other medical specialties or with patients—they are often strongly motivated to implement changes for improvement.

Project Sustainability and Scalability Methods

To promote sustainability and scalability of the project’s educational methods and outcomes, PRIME will:

- Send e-mail commitment reminders to the clinicians who participated in the CME/CE workshops 15 days after each event. This communication will summarize the strategies and action plans for shared PsA management that participants developed in the workshops.

- Develop a presentation on the project methods and outcomes, which will be given by one or more of the expert faculty who are members of GRAPPA at the July 2018 annual meeting of GRAPPA, if approved
- Develop an abstract for submission to another national meeting, or a manuscript for an open-access journal, with an intended goal to reach additional practitioners and providers beyond GRAPPA regarding the project methods and outcomes

The presentations and publication will be developed in a tutorial format to support a national audience of dermatology and rheumatology clinicians in applying exemplary model approaches and pragmatic strategies for shared PsA management.

Evaluation Design

With oversight by GRAPPA, PRIME will develop an evaluation survey designed to assess the impact of the 6 accredited CME/CE workshops on participants’ knowledge, attitudes and barriers, and self-reported practices regarding shared PSA management. To be administered on paper immediately before and after the workshops, the survey will be a shorter version of the more comprehensive instrument that we will develop for the national survey study described in the *Project Design and Methods* section.

PRIME’s Innovative Relational Analysis of Education-Associated Changes

In addition to assessing outcomes in the conventional within-discipline format for CME/CE programs, the proposed survey will be designed to evaluate *relational* education-associated changes among the dermatologists and rheumatologists. This unique analysis, which PRIME has conducted in recent programs, involves quantifying the extent to which educational interventions reinforce interdisciplinary alignments and resolve discordances. As we have discussed in recent peer-reviewed publications and presentations, these critical relational outcomes are essential for establishing the shared perceptions and values that are foundational to effective shared management practices.^{2-7, 29}

A framework for PRIME’s novel relational analysis is shown in Table 2, which presents hypothetical responses to a case-based survey item that involves a patient with psoriasis who has significant joint symptoms. For this sample survey item, participants would be asked to indicate their level of agreement with a statement that reflects attitudes toward referring the patient to a rheumatologist. The response options would be presented on a 5-point Likert scale (from *strongly disagree* to *strongly agree*).

Table 2. Framework for Assessing Relational Education-Associated Changes Among Dermatology and Rheumatology Providers

Hypothetical Survey Item: Case presentation involving a psoriasis patient with significant joint symptoms. Participants are asked to indicate their agreement with a statement reflecting attitudes toward referring the patient to a rheumatologist.

Scale: 1 = Strongly disagree; 2 = Disagree; 3 = Neutral; 4 = Agree; 5 = Strongly agree						
	Hypothetical Survey Responses and Outcomes					
	Pre-Education		PRE Δ	Post-Education		POST Δ
Analysis	Derm	Rheum		Derm	Rheum	
Proportion of participants who <i>agree</i> or <i>strongly agree</i> with the statement	40%	90%	50%	65%	95%	30%

In one approach to analyzing the responses, we would calculate the percentage of participants who indicate that they *agree* or *strongly agree* with the statement about referral to a rheumatologist. Based on findings from the MAPP study,¹¹ as reviewed in the *Assessment of Needs* section, we would expect at least somewhat discordant responses between the 2 groups on the pre-education survey. Accordingly, Table 2 presents the hypothetical proportions of 40% and 90% of dermatologists and rheumatologists, respectively, who initially agree or strongly agree that the patient should be referred. Thus, the pre-education discordance between the 2 groups is measured by the absolute difference of 50% in their responses of *agree* or *strongly agree*.

For this analysis, a positive effect of the CME/CE workshops would be indicated by a significant pre- to post-education reduction in the proportion of discordant responses between dermatologists and rheumatologists. Accordingly, for the post-education survey, Table 2 posits proportions of 65% and 95% of dermatologists and rheumatologists, respectively, who agree or strongly agree with the statement regarding referral to a rheumatologist. The measure of post-education discordance, a 30% difference between the 2 groups, reflects a narrowing of the pre-education gap (50%), in this case by an absolute value of 20%. To our knowledge, validated thresholds have not been established for evaluating interdisciplinary relational changes in perceptions and practices among healthcare professionals. However, our experience in this analysis suggests that pre- to post-education reductions in the frequency of discordant responses of at least 10% to 20% are meaningful. To assess the reliability of the relational changes observed through the proposed outcomes evaluation, we will conduct appropriate statistical tests and report p-values.

The analysis described above will be applied to survey items that assess participants' perceptions and practices regarding various aspects of PsA patient screening, diagnosis, referral, treatment, and ongoing coordinated care to adequately address skin and joint symptoms.

Qualitative Analysis of Educational Outcomes

As described in the *Project Design and Methods* section, during the 6 regional CME/CE workshops a PRIME CME/CE professional will take notes on peer-to-peer discussions and the shared PsA management strategies and action plans that participants develop. This qualitative

data will be organized through content-thematic analysis. We will include the qualitative analysis in our outcomes report and conference presentations and/or publication.

PRIME’s qualifications for designing and analyzing the proposed evaluation surveys and qualitative assessments are presented in the *Organizational Detail* section, which provides information about the leadership and capabilities of our research department.

Detailed Workplan and Deliverables Schedule

Details on the project tasks and deliverables, along with start-end dates and organizational roles, are outlined in Table 3. Additional details on the workplan are included in the *Project Design and Methods* section.

Table 3. Project Tasks and Deliverables: Schedule and Organizational Roles

Tasks and Deliverables	Start Date – End Date	Organizational Roles
Develop survey to assess perceptions and practices involving shared PsA management	2/1/2018 – 2/22/2018	PRIME ^{a,c} with guidance and review/revisions by GRAPPA members
Recruit survey participants, administer the survey, and organize the data for analysis	2/23/2018 – 3/23/2018	PRIME ^{b,a} and GRAPPA
Recruit participants for the 6 regional CME/CE workshops	2/23/2018 – 3/23/2018	PRIME ^b and GRAPPA
Analyze the survey data	3/16/2018 – 4/6/2018	PRIME ^a with guidance and review/revisions by GRAPPA members
Develop content and educational outcomes assessment surveys for the regional CME/CE workshops	3/26/2018 – 4/23/2018	PRIME ^{c,a} with review/revisions by GRAPPA members
Conduct the 6 regional CME/CE workshops	5/1/2018 – 6/8/2018	GRAPPA members serving as faculty; PRIME ^b CME monitors and Scribes attending
Disseminate e-mail commitment reminders to workshop participants	5/22/2018 – 6/29/2018	PRIME ^{a,b}
Preparation of presentation to be given at the 2018 GRAPPA annual meeting (7/2018)	7/2018	PRIME ^{a,c} with guidance and review/revisions by GRAPPA members; presentation to be given at

		GRAPPA annual meeting by project's key faculty
--	--	--

^a Research Department, directed by Caroline Pardo, PhD, CHCP, Senior Director of Learning and Analytics; ^b Implementation Department, directed by Holly Murray, MS, CMP, Senior Director of Quality, Programs, and Events; ^c Scientific Content Department, directed by Tamar Sapir, PhD, Chief Scientific Officer.

References

1. Arnold S, Deedwania PHC, Greene L, Carter J, Sapir T. Discordance in patient-physician perceptions of angina experiences and delivery of care. Poster presentation at: American Heart Association Quality of Care and Outcomes Research annual meeting. Arlington, VA; April 2-3, 2017.
2. Moreo K, Greene L, Sapir T. Improving Interprofessional and Coproductive Outcomes of Care for Patients with Chronic Obstructive Pulmonary Disease. *BMJ Qual Improv Rep*. 2016;5(1).
3. Moreo K, Sapir T, Greene L. Comparing Patient and Provider Perceptions of Engagement and Care in Chronic Diseases. *J Contin Educ Health Prof*. 2016;36 Suppl 1:S44-5.
4. Sapir T, Bronich-Hall L, Moreo K. Quantifying and closing systems-based and interprofessional collaborative gaps in oncology care through tethered patient and provider interventions. Poster presentation at: The Alliance for Continuing Education in the Health Professions (ACEhp) Alliance Industry Summit (AIS). Philadelphia, PA; May 9-11, 2016.
5. Sapir T, Moreo K. Comparing patient and clinician perceptions of engagement and care in chronic diseases. Poster presentation at: World Congress on Continuing Professional Development. San Diego, CA; March 17-19, 2017.
6. Sapir T, Moreo K, Carter J, Rusie E, Greene L. Variations in care in community practice for patients with coronary artery disease, angina, and concomitant diabetes. Poster presented at: The 2015 American Academy of Family Physicians (AAFP) Family Medicine Experience (FMX). Denver, CO; September 29, 2015.
7. Sapir T, Moreo KF, Greene LS, Simone LC, Carter JD, Mateka JLL, et al. Assessing Patient and Provider Perceptions of Factors Associated with Patient Engagement in Asthma Care. *Ann Am Thorac Soc*. 2017;14(5):659-66.
8. Sapir T, Bronich-Hall L, Moreo K. Quantifying and closing systems-based and interprofessional collaborative gaps in oncology care through tethered patient and provider interventions. Poster presentation at: The Alliance for Continuing Education in the Health Professions (ACEhp) Alliance Industry Summit (AIS). Philadelphia, PA; May 9-11, 2016.
9. Armstrong AW, Robertson AD, Wu J, Schupp C, Lebwohl MG. Undertreatment, treatment trends, and treatment dissatisfaction among patients with psoriasis and psoriatic arthritis in the United States: findings from the National Psoriasis Foundation surveys, 2003-2011. *JAMA Dermatol*. 2013;149(10):1180-5.

10. Mease PJ, Gladman DD, Papp KA, Khraishi MM, Thaci D, Behrens F, et al. Prevalence of rheumatologist-diagnosed psoriatic arthritis in patients with psoriasis in European/North American dermatology clinics. *J Am Acad Dermatol*. 2013;69(5):729-35.
11. Lebwohl MG, Kavanaugh A, Armstrong AW, Van Voorhees AS. US Perspectives in the Management of Psoriasis and Psoriatic Arthritis: Patient and Physician Results from the Population-Based Multinational Assessment of Psoriasis and Psoriatic Arthritis (MAPP) Survey. *Am J Clin Dermatol*. 2016;17(1):87-97.
12. Villani AP, Rouzaud M, Sevrain M, Barnetche T, Paul C, Richard MA, et al. Symptoms dermatologists should look for in daily practice to improve detection of psoriatic arthritis in psoriasis patients: an expert group consensus. *J Eur Acad Dermatol Venereol*. 2014;28 Suppl 5:27-32.
13. Wernham AG, Jobanputra P. Dermatologists seeking rheumatologists: an analysis of referrals of patients with psoriasis to a rheumatology service. *Rheumatology (Oxford)*. 2015;54(10):1929-30.
14. Gladman DD. Psoriatic arthritis from Wright's era until today. *J Rheumatol Suppl*. 2009;83:4-8.
15. van de Kerkhof PC, Reich K, Kavanaugh A, Bachelez H, Barker J, Girolomoni G, et al. Physician perspectives in the management of psoriasis and psoriatic arthritis: results from the population-based Multinational Assessment of Psoriasis and Psoriatic Arthritis survey. *J Eur Acad Dermatol Venereol*. 2015;29(10):2002-10.
16. Cobo-Ibanez T, Villaverde V, Seoane-Mato D, Munoz-Fernandez S, Guerra M, Del Campo PD, et al. Multidisciplinary dermatology-rheumatology management for patients with moderate-to-severe psoriasis and psoriatic arthritis: a systematic review. *Rheumatol Int*. 2016;36(2):221-9.
17. Velez NF, Wei-Passanese EX, Husni ME, Mody EA, Qureshi AA. Management of psoriasis and psoriatic arthritis in a combined dermatology and rheumatology clinic. *Arch Dermatol Res*. 2012;304(1):7-13.
18. Okhovat JP, Ogdie A, Reddy SM, Rosen CF, Scher JU, Merola JF. Psoriasis and Psoriatic Arthritis Clinics Multicenter Advancement Network Consortium (PPACMAN) Survey: Benefits and Challenges of Combined Rheumatology-dermatology Clinics. *J Rheumatol*. 2017;44(5):693-4.
19. Lubrano E, Perrotta FM. Beyond TNF Inhibitors: New Pathways and Emerging Treatments for Psoriatic Arthritis. *Drugs*. 2016;76(6):663-73.
20. Moreo K, Sih-Meynier R, Carter J, Simone L, Sapir T. A Quality Improvement Initiative to Improve Team-Based and Patient-Centered Bladder Cancer Care. Presentation at: The Alliance for Continuing Education in the Health Professions (ACEhp) Alliance Industry Summit (AIS). Philadelphia, PA; May 22-24, 2017.
21. Bloom BS. Effects of continuing medical education on improving physician clinical care and patient health: a review of systematic reviews. *Int J Technol Assess Health Care*. 2005;21(3):380-5.
22. Ivers N, Jamtvedt G, Flottorp S, Young JM, Odgaard-Jensen J, French SD, et al. Audit and feedback: effects on professional practice and healthcare outcomes. *Cochrane Database Syst Rev*. 2012(6):Cd000259.

23. Jones S, Sloan D, Evans HE, Williams S. Improving the implementation of NICE public health workplace guidance: an evaluation of the effectiveness of action-planning workshops in NHS trusts in England. *J Eval Clin Pract.* 2015;21(4):567-71.
 24. Greene L, Moreo K. Quality improvement education to improve performance on ulcerative colitis quality measures and care processes aligned with National Quality Strategy priorities. *BMJ Qual Improv Rep.* 2015;4(1).
 25. Greene L, Sapir T, Moreo K, Carter JD, Patel B, Higgins PD. Impact of Quality Improvement Educational Interventions on Documented Adherence to Quality Measures for Adults with Crohn's Disease. *Inflamm Bowel Dis.* 2015;21(9):2165-71.
 26. Moreo K, Sapir T, Greene L. Applying Quality Improvement into Systems-based Learning to Improve Diabetes Outcomes in Primary Care. *BMJ Qual Improv Rep.* 2015;4(1).
 27. Sapir T, Moreo K, Carter JD, Greene L, Patel B, Higgins PD. Continuing Medical Education Improves Gastroenterologists' Compliance with Inflammatory Bowel Disease Quality Measures. *Dig Dis Sci.* 2016;61(7):1862-9.
 28. Sapir T, Rusie E, Greene L, Yazdany J, Robbins ML, Ruderman EM, et al. Influence of Continuing Medical Education on Rheumatologists' Performance on National Quality Measures for Rheumatoid Arthritis. *Rheumatol Ther.* 2015;2(2):141-51.
 29. Sapir T, Moreo K. Linking patients and clinicians to improve the quality of care in asthma control. Podium presentation at: World Congress on Continuing Professional Development. San Diego, CA. ; March 17-19, 2016.
-