Potential Advantages of Interprofessional Care in Rheumatoid Arthritis

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ABSTRACT

BACKGROUND: Rheumatoid arthritis (RA) affects over 1 million people in the United States. Although the emergence of new medications has substantially improved treatment options and outcomes for patients with RA, the disease is still a major cause of morbidity and mortality. In addition, significant barriers to adherence characterize RA medication management. A reasonable approach to improving RA patient outcomes entails interprofessional, multidisciplinary models of care. Working with rheumatology specialists, RA multidisciplinary care teams may comprise case managers, pharmacists, physical and occupational therapists, social workers, physiatrists, orthopedists, or other health professionals. Experience and evidence have supported the value of interprofessional, coordinated care models for patients with various chronic diseases. However, potential drawbacks include the costs associated with implementation of such approaches, the extra time required for their administration, and the lack of incentives for clinicians to adopt collaborative care approaches.

OBJECTIVES: To summarize the arguments and evidence for interprofessional, multidisciplinary care programs in RA.

SUMMARY: Various multidisciplinary models of RA care have been described in the literature. Whereas the case for implementing such models is underscored by the chronic nature of the disease, by its comorbidities and complications, and by barriers to patient medication adherence, cost-effectiveness analyses to document benefits of coordinated interprofessional RA care are lacking. Most studies on interprofessional care in RA are relatively old and have been conducted outside of the United States. Nonetheless, the findings are still relevant and may shed light on potential avenues for the development of new models in this country.

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With recent advances in the treatment of rheumatoid arthritis (RA), including the development of biologic agents, primary therapeutic goals and strategies have shifted from relieving symptoms to reducing disease activity and progression. Today, expert rheumatologists generally view low disease activity states or, in some cases, clinical remission as attainable goals for people with RA. Nonetheless, due to a number of challenging barriers, including lack of access, low income, low health literacy, and perceived lack of efficacy, many patients unfortunately do not receive appropriate medications and/or achieve these goals.[1-3] To address this issue from the managed care perspective, it is necessary to evaluate the effectiveness of structural and procedural models of health care delivery. Given the fact that RA is associated with multiple comorbidities and complications, managed care professionals must be especially attentive to the potential for awkward and unsafe care transitions, lack of communication among the patient's care providers, and ineffective utilization of resources in this population. As discussed in this article, an alluring alternative to the standard rheumatologist-centered care model is the development of interprofessional coordinated care models.

Potential Advantages of Interprofessional Care Models

Interprofessional care models are defined by the nature of interactions among health providers serving individual patients. According to the authors of a large-scale technical review of interprofessional care models, these interactions are ideally based on shared power and authority, along with mutual respect for each participant's professional abilities.[4] By transforming this textbook definition into a working practice, health professionals engage in cooperative problem solving and shared decision making. Given effective cooperation among the patient, providers, health systems, and employers, coordinated care approaches offer promise for improving outcomes and minimizing waste and duplication of services. The potential exists for patients to experience greater satisfaction with their health care, more appropriate care in less intensive settings, and more timely and accessible care. Providers may benefit from less variance in care strategies and from supplementary resources to assist with more intensive patients—resources such as disease and medication therapy management programs. In addition, health systems and employers may benefit from less variation in care, controlled costs, and improvement in patient adherence to plans of care.

Optimal care coordination models vary by patient population, payer organization, and program goals.[4] Ideally, models should be designed to reduce hospital readmission rates

specific to medication errors, to improve compliance with treatment plans, and to provide formal follow-up care. For members with high average length of stay (ALOS), the model should promote adherence to medication regimens, resolve access issues, provide disease- and medication-related education, and offer medication assessment at discharge in order to minimize complications of illness.

One example of an interprofessional coordinated care model comprises the patient, pharmacist, and nurse case manager. This patient-centered model is especially pertinent for patients in transition and those who may have access issues. More specifically, this model may ideally serve patients in transition who have complex discharge needs, multiple providers, and multiple medications that have been prescribed by different providers. In addition, the model may be especially appropriate for complex cases, including patients who are experiencing fragmentation or gaps in care, frail elderly patients with multiple chronic conditions, high users of health care, and at-risk populations (e.g., dual-eligible Medicare beneficiaries with disabilities).

In the collaborative model described above, the pharmacist should be highly integrated into case management activities. Pharmacists can serve this role by providing access to real-time pharmacy utilization data for appropriate case management staff; by relaying potential medication therapy concerns, when raised by case management staff to appropriate pharmacy staff; and by providing medication therapy management services. The nurse case manager would be responsible for integrating the pharmacist's recommendations into existing case management programs that can help close the loop in assessing and managing a given patient population. The joint responsibility of case managers and pharmacists in this model may improve clinical, economic, and quality-of-care outcomes; moreover, the model offers the potential to increase the likelihood that patients will adhere to their prescribed medications.

Of course, the promise of interprofessional coordinated care models must be weighed against potential drawbacks and system barriers. As it stands, physicians currently do not have sufficient incentive to integrate diagnosis, therapy, and medication management. This is clearly an important system barrier to the effectiveness of the coordinated care model. Current systems also tend to foster limited communication among primary care providers, specialty physicians and clinicians, pharmacists, and case managers. Insufficient education among treating providers regarding the interprofessional processes and tools available in the managed care organization also provides challenges. Costs of these programs, cost sharing, and funding would also need to be addressed, especially in systems in which care is provided by different companies. When evaluating outcomes, providers may disagree on the assessment framework and on who should get credit for coordinated care interventions. Considerable systematic and evidence-based planning is required to identify populations to be served and to establish the specific roles and functions of the various health care providers involved in the coordinated care model. Moreover, the framework for outcomes reporting must be agreed upon early on in the process, before care is provided to the patient. In short, successful interprofessional care programs depend on minimizing role confusion and breaking down barriers of working in silos.

Our present health care system certainly presents challenges to implementing an effective interprofessional care model. We still have boundary issues within our industry, such as confusion about how to coordinate various payer entities. We also have confidentiality issues that have not been resolved. As an industry, we have not yet developed standardized tools that are widely accepted, thus creating difficulties when working with many different entities. An important premise for addressing these issues is that coordination of the team working with a specific patient population is as important as coordination of individual patients themselves.

Applying Interprofessional Care Models to RA Management

Interprofessional care models have been a hallmark of case management and are gaining wide recognition in the industry as a way to maximize patient outcomes in various populations and health care settings. Such models may indeed be intuitively pertinent for patients with chronic diseases, such as RA, that are associated with multiple complications and comorbidities. Given the focus on RA in this educational supplement, it is appropriate to review the literature on interprofessional care models in this field. Although most studies on interprofessional care in RA are relatively old and have been conducted outside of the United States, the findings are still relevant and may shed light on potential avenues for the development of new models in this country.

Variations on Multidisciplinary Care Models in RA. Toward the goal of ensuring optimal patient care, efforts to form collaborative teams of rheumatologists along with other health care professionals have been documented over at least the last 5 decades.[5] What are the characteristics, strengths, and weakness of current models of care in RA? This question was central to a study conducted by MacKay et al. (2008) in which 74 opinion leaders in arthritis were interviewed about the structures and processes of their health care organizations.[6] The key informants, most of whom worked in Canada or the United Kingdom, represented physiotherapists, nurses, and rheumatologists who specialized in RA. Upon analysis of the qualitative data derived from these interviews, MacKay et al. identified 5 main types of care models, designated as (a) specialized arthritis programs, (b) ongoing management, (c) triage, (d) rural consultation support, and (e) telemedicine.

In the model designated as *specialized arthritis programs*, a

primary care physician refers the patient to a specialist, and the patient is subsequently referred to other health care practitioners in an effort to deliver high-quality care, provide educational benefits, and allow for access to a comprehensive range of services. This model is consistent in structure and process with common approaches in the United States. In the *ongoing management model*, health care providers expand their clinical roles, working with the specialist. Patients are also referred to extended role providers (ERPs), nurse practitioners, clinical nurse specialists, and other health professionals in order to facilitate the maintenance of care. In addition, addressing psychosocial issues and continuity of care, patient education and self-management are considered integral components of the ongoing management model.[6]

According to the classification format described by MacKay et al., the *triage model* is designed to accommodate the needs of patients with musculoskeletal conditions such as arthritis by providing a primary care physician for consultation purposes, in addition to an ERP to conduct assessments.[6] The approach varies, with some teams led by physiotherapists while others are led by primary care physicians or other members of the health care team. MacKay et al. identified 2 models focusing on the provision of local access to specialist care in rural and remotely geographic regions. First, the *rural consultation support model* facilitates the provision of health care resources to rural communities through patient referrals to a specialist. Patients visit the primary care physician in their local area, who makes referrals to a specialist. The referrals may be conducted through a centralized coordinating system, and the specialist travels to the rural location. Since the visits by the specialist can be brief or infrequent, a liaison is often incorporated in order to ensure ongoing patient monitoring. In the *telemedicine model*, health information is shared via telecommunication of the health care services. Once the patient is referred to a specialist, a health care professional will accompany the patient to the remote facility where the musculoskeletal assessment is performed while the specialist views the examination.[6]

According to MacKay et al., the strengths of multidisciplinary, collaborative care models are characterized by their access to several health care service providers in a single location, including specialists, and facilitation of care continuity.[6] The models also tend to decrease waiting times and allow for the rationing of specialist resources. However, the provision of this broad range of health care services and coordination of the multidisciplinary team present both time and fiscal constraints. Informants of the study identified many challenges, including a lack of coordination in networking among providers, poorly defined roles of health practitioners, deficiencies in standardized billing procedures, and a lack of communication between providers.

Effectiveness of Multidisciplinary Approaches to RA Care. The case for multidisciplinary care programs in RA is supported by the chronic nature of the disease and by patients' unique needs.[5] As reviewed in the previous articles in this supplement, over the last several decades the documented clinical and radiographic effectiveness of synthetic disease-modifying antirheumatic drugs (DMARDs), and more recently the biologic agents for RA, has substantially shifted treatment goals and management strategies, which now largely focus on achieving low disease activity states and remission. However, inadequate receipt of appropriate DMARD therapies and low adherence rates are not uncommon among individuals with RA.[1,2] Adherence can be undermined by patients' naïve perceptions and lack of education about the disease as well as by its negative functional consequences, which include pain, fatigue, physical disability, and depression.[5,7] Accordingly, a logical hypothesis is that the standard rheumatologist-centered approach to care may not be sufficient to address the multidimensional needs of all RA patients.[8]

A cross-sectional study conducted by Esselens et al. (2009) in Belgium compared clinical and functional outcomes in RA patients who received multidisciplinary outpatient care (n = 89) or standard rheumatologist-centered care (n = 102).[5] Disease duration for all patients was less than 5 years. The study authors reported that the distribution of treatment regimens, which included monotherapy or combination therapy with biologic agents and/or synthetic DMARDs, was comparable across the 2 study groups. Under the supervision of a rheumatology nurse specialist, patients in the multidisciplinary group attended an outpatient clinic where their nonpharmacological care comprised patient education and visits with a physiotherapist, an occupational therapist, and/or a social worker. Through weekly meetings, the nurse specialist facilitated communication among members of the care team. The multidisciplinary team discussed individual patient cases at least once per month. When specific medical, psychosocial, or vocational problems were identified for a given patient, he or she was contacted for follow-up by the appropriate member of the care team.

Esselens et al. found that clinical and functional outcomes were significantly better among patients who received multidisciplinary outpatient care versus standard rheumatologist-centered care. Disease activity was measured by the Disease Activity Score using 28 joints (DAS28) instrument, with low disease activity scores and clinical remission cutoffs set at < 3.2 and < 2.6, respectively. Disease activity was relatively low in both groups. However, significantly more patients achieved low disease activity (80% vs. 60%, $P = 0.01$) and clinical remission criteria (69% vs. 39%, $P = 0.001$) in the multidisciplinary outpatient versus standard rheumatologist-centered groups, respectively. Group differences in functional outcomes were evaluated by the Health Assessment Questionnaire (HAQ) and the Short Form-36 instrument (SF-36). The percentage of patients with no

functional impairment on the HAQ was significantly greater in the multidisciplinary group (38%) than in the standard care group (15%, $P = 0.000$). The multidisciplinary group also had significantly better scores on various SF-36 indices, including measures of general health, physical function, social function, physical pain (less pain), vitality, and mental health.[5] However, in addition to the limitations of its cross-sectional design, this study did not address the differences in costs between the 2 care programs.

The most comprehensive analysis of multidisciplinary approaches to RA care was a 1997 systematic review conducted by Vliet Vlieland and Hazes.[9] Although dated, the review findings reflect many of the issues that one might expect in contemporary multidisciplinary approaches to RA care. The review included studies comparing the effectiveness of inpatient multidisciplinary team care approaches with regular outpatient care. For this analysis, the review authors identified 6 randomized controlled trials (RCTs) that included RA patients between 50 and 65 years with a disease duration of 3 to 14 years. The studies were conducted in the United States, Canada, The Netherlands, and the United Kingdom. In addition to rheumatologists and rheumatology nurse specialists, the composition of multidisciplinary team members included occupational therapists and social workers. The overall findings from this review indicated that compared with regular outpatient care, inpatient multidisciplinary team care was generally associated with better clinical outcomes but higher costs. For example, in 1 RCT, self-reported pain (assessed on a visual analogue scale) was reduced by 24% in the inpatient multidisciplinary group versus 0% in the regular outpatient care group ($P < 0.05$).[10] Directly following treatment, significantly greater reductions in articular joint tenderness on the Ritchie Index were also reported for the multidisciplinary inpatient group (28% improvement) versus the regular outpatient care group (0% improvement; $P < 0.05$). Reductions in pain intensity and articular joint tenderness, both indicators of disease activity, provided evidence for the efficacy of inpatient multidisciplinary team care group compared with standard outpatient care directly following treatment. However, these differences were not found after a 1-year follow-up. Although the studies included in the systematic review by Vliet Vlieland and Hazes did not include detailed data on cost differences between the 2 treatment approaches, the review authors concluded that inpatient multidisciplinary RA care was more expensive than the standard approach and that the difference was mainly attributed to hospitalization costs.[10]

The systematic review by Vliet Vlieland and Hazes also included 6 studies that compared outpatient multidisciplinary team care versus regular outpatient care.[11-17] In these studies, the multidisciplinary team usually comprised a rheumatologist, nurses, physical and occupational therapists, and a social worker. In several of the studies, multidisciplinary care included telephone interviews or regular home visits by a nurse. Over intervention periods of 1 to 2 years, the studies measured outcomes of disease activity as well as functional and psychosocial status. With regard to clinical outcomes, the RCTs in this analysis had mixed results. In 1 study that assessed functional capacity with the Sickness Impact Profile, functional status and overall health were better among patients who received outpatient multidisciplinary care versus regular outpatient care.[15] However, other studies revealed no significant differences in disease activity and functional outcomes for this comparison of care models.[11,12,17] The systematic review by Vliet Vlieland and Hazes did not address the comparative costs of multidisciplinary versus standard approaches to RA care. To our knowledge, no systematic study has been published that compares the economic costs of multidisciplinary RA care with other care models in the United States.

Conclusions

Whereas multidisciplinary, coordinated care approaches to managing patients with RA seem intuitively appropriate, a lack of contemporary research on cost-effectiveness outcomes precludes conclusions about their utility. In addition to RCTs that focus on these outcomes in patients who receive care through different interprofessional models, new studies are needed to identify best practices and strategies for implementing and administering such models, for enhancing communication among members of the care team, and for resolving issues of provider compensation and patient outcomes assessment.

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