



Chronic Osteoarthritis Management Initiative

Building a Model for Osteoarthritis (OA) Care

**Summary of Discussions and Presentations
at the Chronic Osteoarthritis Management
Initiative (COAMI) Management Conference**

EXECUTIVE SUMMARY

The conversation between patient and doctor was rushed but efficient, following a familiar pattern. After all, the pair had been meeting in 20-minute intervals for years, gradually bringing the patient's diabetes under control — a success story.

But in all those visits over all those years, the otherwise astute doctor had never asked about her patient's joint pain, nor had her team of medical assistants, nurses, and physician assistants. No member of the care team had ever asked; nor had the patient ever volunteered the crucial information that he couldn't fathom following the doctor's instructions to be more physically active to keep his weight under control.

The reason was worsening pain in first one knee, then both. The patient had not mentioned his increasingly painful knees for a number of reasons. First, he saw his diabetes — and other problems, such as a family history of heart disease — as far more immediate threats to his health. Diabetes and heart disease were the health problems that could potentially be fixed or at least controlled by his doctor, he thought. But his painful knees? That was just part of aging, wasn't it? Eventually, he'd probably have to have a knee replaced, or maybe both, like many people he knew. But what was the hurry? The surgery and convalescence sounded painful — more painful than struggling across a room, or out of a chair. Sure, he wasn't moving around very well. But what could anyone really do about it?

The Burden of Osteoarthritis and Common Co-Occurring Conditions

This scenario and the assumptions of both patients and providers are all too common. Instead of routine screening that provides early alerts to patients and physicians about the possible presence of osteoarthritis (OA), followed by a systematic exploration of strategies to reduce pain and preserve or increase function, patients and providers often have their first conversations about joint pain when the joint is damaged enough to require surgical replacement. Indeed, the number of annual knee replacements has doubled over the last decade, but the rate has increased even more among younger patients under the age of 65. OA is the leading cause of knee replacement surgery, but also affects other joints and is the most common form of arthritis, affecting as many as 27 million Americans in 2008.

Fueled by common risk factors that include obesity, occupational and sports injuries, sex, and family history, OA and other forms of arthritis lead the top 10 causes of disability, outpacing back or spine problems, heart trouble, lung and respiratory problems, and diabetes. Yet OA and arthritis are not only a cause of disability in their own right. They also amplify the impact of limitations caused by other chronic diseases, with which they so often co-occur. Eighty-eight percent of those who report arthritis have at least one other physical or mental co-morbidity — most commonly obesity, heart disease, and/or diabetes.

The prevalence of co-morbidities has many important implications for how and where OA is screened, diagnosed, and treated. For example, a quarter of primary care visits are related to OA, and most OA patients (whether they have been diagnosed with OA or not) are seen in primary care settings.

Another consequence of co-morbidities is that OA can complicate the prevention and treatment of other chronic diseases. For example, the pain and loss of function from OA can undermine many patients' ability to follow lifestyle recommendations regarding physical activity that would help address both OA symptoms *and* risk factors for diabetes and heart disease. Patients thus find themselves in a spiral in which pain and joint degradation reduce their physical activity, leading to weight gain and increased risks for heart disease and diabetes; weight gain and decreased activity also lead to further joint pain, resulting in further loss of function and mobility.

The Chronic Osteoarthritis Management Initiative (COAMI)

In 2012, the Chronic Osteoarthritis Management Initiative (COAMI) issued a Call to Action to begin exploring a more coordinated and proactive approach to preventing and treating OA, intervening earlier and more effectively — and in closer alignment with the approach to preventing and managing other chronic conditions. With that goal in mind, a September 2013 meeting convened both founding and new COAMI members to identify the elements of a model of care for OA. COAMI members include representatives of a variety of health care disciplines and patients. As they deliberated over how to accomplish the above goal, participants were asked to consider disparities in sex/gender, race and ethnic origin.

Assessing OA Guidelines, Recommendations, and Outcomes

Joanne Jordan, MD, MPH, Professor of Medicine and Orthopaedics at the University of North Carolina's Thurston Arthritis Research Center and COAMI Chair, worked with colleagues to prepare for the USBJI/COAMI an annotated bibliography of guidelines and recommendations on the management of OA. An extensive literature review and rigorous screening process

yielded several areas where current recommendations and guidelines offer general consensus: education and self-management, exercise and weight loss, use of assistive devices, alternative/complementary approaches, surgical interventions, and pharmacologic interventions.

Despite the consensus revealed by the review, few of these recommendations are implemented in any systematic way, rendering them largely ineffective. Dr. Jordan noted that future research should focus on dissemination and implementation of the consensus guidelines. COAMI meeting participants also offered suggestions for making the existing recommendations and guidelines more useful and specific.

Summary Recommendations from a Systematic Review of Recommendations and Guidelines for the Management of OA

- Provide or refer patients to self-management programs.
- Provide education, regular contact to promote self-care, joint protection strategies, and individualized treatment plans.
- Advise patients to engage in low-impact aerobic exercise and, if overweight, to lose weight.
- Consider range of motion, flexibility, endurance, and strengthening exercises, exercise combined with manual therapy, and PT/OT referral.
- Recommend walking aids and assistive devices to improve Activities of Daily Living (ADLs).
- Discuss thermal modalities for hand, knee and hip OA.
- Joint replacement is recommended for appropriate patients.
- Arthroscopy with debridement is not indicated for symptomatic OA.
- For pharmacologic management of OA:
 - First line: acetaminophen/paracetamol
 - Second line: topical capsaicin, and topical or oral NSAIDs (with appropriate risk stratification)
 - Refractory symptoms: consider tramadol, opioids, or possibly duloxetine
- Intra-articular therapy
 - Use IA corticosteroids for hip or knee OA
 - Consider IA hyaluronans for knee OA in select patients

The Annotated Bibliography of OA Guidelines and Recommendations team included: Joanne Jordan, MD, MPH; Amanda E. Nelson, MD, MSCR; Kelli D. Allen, PhD; Yvonne M. Golightly, PT, MS, PhD; and Adam P. Goode, PT, DPT, PhD.

Dr. Jordan also shared findings from a similar review of patient-centered clinical outcome measures for OA management that is still in draft form. The team in this case sought out measures that would be useful in primary care settings (in which over half of patients with OA are seen), as well as with specialists who are likely to see patients with OA due to common co-morbidities. These include endocrinologists, cardiologists, and oncologists.

Criteria for inclusion in this review included assessing whether the measures were both feasible to implement in these settings (e.g., free or low-cost, low burden for patients and clinicians) and meaningful in terms of assessing OA management outcomes (i.e., outcomes relevant to patients and with adequate psychometric properties for measuring constructs consistently and accurately — and in populations with OA, arthritis, or applicable across chronic diseases). Twenty-eight measures that made it through the feasibility/meaningful litmus test were then ranked into three tiers, ranging from least burdensome to more burdensome but yielding more detailed and potentially useful information for clinicians. Dr. Jordan emphasized that the shorter list is not a recommendation, but rather a culled set of options from which clinicians and care teams can choose those which might be best suited to their practices and patients as they seek to coordinate and improve care for patients with OA.

Learning from Other Chronic Care Guidelines, Coalitions, and Models

Participants heard from presenters who described relevant elements of other Chronic Care Models and approaches. These presentations and discussions are presented in more detail in a full summary of the September 2013 COAMI meeting and included: an overview of the Chronic Care Model, Lessons for OA from Diabetes, Lessons from the Canadian Framework to Improve Arthritis Prevention and Care, Managing OA in Primary Care Settings, and Building and Sustaining a Strong OA Coalition.

The Chronic Care Model. Darren DeWalt, MD, MPH, Associate Professor in the Division of General Internal Medicine at the University of North Carolina at Chapel Hill, explained the elements of the Chronic Care Model, based on the work of Ed Wagner, MD, MPH and his colleagues. The model specifies the elements that yield improved outcomes for patients by matching an informed, activated patient with a prepared, proactive practice team.

Productive interactions between patients and their care teams — the source of value in our health system — occur when the following pieces are in place: self-management support for patients (beyond handing a patient a flyer or a one-sentence instruction to exercise more); delivery system design that delineates how roles and tasks are distributed among care team members; decision support that embeds evidence-based guidelines into daily practice (and

shares them with patients), and clinical information systems that provide useful data, prompts, reminders, and support for monitoring and quality improvement. In addition to these features of interactions between patients and providers, the Chronic Care Model also calls for improvements in the broader health care system that surrounds and influences clinical care, as well as the community resources and policies that influence the health of individual patients and of entire populations.

Dr. DeWalt noted how Chronic Care Model elements have been applied to heart failure management, depression, and hypertension, in each case demonstrating better functional and clinical outcomes. Reflecting on aspects of the model that make it particularly relevant for OA, Dr. DeWalt noted that physicians cannot — and should not — do everything, and need to move from a “sage on the stage” perch to being more of a coach or “guide on the side.” Care needs to be standardized, Dr. DeWalt added, before it can be optimized — and OA care is far from standardized. Multiple chronic illnesses are the rule, not the exception, making coordinated care according to the Chronic Care Model even more imperative. Finally, he concluded, guidelines are essential, but not sufficient. Learning models that give care teams a mechanism for making changes in practice and adjusting their implementation until they achieve a reliable level of consistency are key.

Lessons for OA from Diabetes. M. Sue Kirkman, MD, Professor of Medicine in the Division of Endocrinology and Metabolism at the University of North Carolina, drew on her prior experience at the American Diabetes Association, where she oversaw the Association’s development of clinical practice recommendations and consensus reports.

Diabetes, like OA, is common, costly, and causes a significant amount of disability. Dr. Kirkman explained how guidelines for managing diabetes have evolved over time and in response to a changing evidence base. Some features of diabetes care, such as the fact that it is largely self-managed by patients and requires multi-disciplinary teams, made it more naturally aligned with elements of the Chronic Care Model than some other diseases. Still, the evolution of a more patient-centered approach was gradual.

Gradually, diabetes guidelines have become far more nuanced, shifting from specific targets for the “ABCs” of diabetes care (**A**1C under 7percent, **b**lood pressure under 130/80, and **L**DL **c**holesterol under 100 mg/dl) to a conversation between providers and patients. Current recommendations, Dr. Kirkman said, are more consistent with the Chronic Care Model and patient-centered approaches, calling on providers and patients to decide together on A1C, blood pressure, and cholesterol goals and how best to reach them.

Dr. Kirkman summarized several similarities and differences between OA and diabetes, such as an increase in prevalence linked to age and obesity, the common occurrence of co-morbidities (particularly between these two chronic conditions), and a “Rodney Dangerfield” syndrome in which both diseases share a certain lack of respect and are not viewed as serious diseases by the public at large.

As they considered care guidelines and recommendations tied to a model of care, Dr. Kirkman cautioned COAMI participants to stay aligned with the available evidence and not move too far ahead of it.

Lessons from the Canadian Framework to Improve Arthritis Prevention and Care.

Gillian Hawker, MD, MSc, Professor of Medicine and Rheumatology at the University of Toronto and Physician-in-Chief of Medicine at Women’s College Hospital, shared with COAMI members the Canadian experience developing a strong national alliance and framework to improve arthritis prevention and care.

Since its formation in 2002, the Arthritis Alliance of Canada has issued a series of landmark reports promoting awareness of arthritis, detailing its economic and societal burden, making the business case for greater investments in prevention and treatment, outlining a research agenda to address gaps, and setting forth a comprehensive model of care and toolkit for its implementation across Canada.

At every juncture, the Alliance has sought out the participation and voices of patients with arthritis, which has been influential in setting the tone and language of discussions, as well as in setting priorities. One example is greater attention to pain management as a neglected area of research and practice.

The Canadian OA model of care has several key elements relevant to U.S. efforts to develop a similarly comprehensive approach, despite differences in the two health systems.

These include:

- incorporating OA prevention into primary care by identifying risk factors (such as weight and prior injury) earlier in the disease process;
- routinely identifying patients with musculoskeletal or joint complaints and noting the degree to which OA has affected their daily lives and activities;
- providing OA educational materials that are accessible and appealing to patients and match their needs;
- customizing approaches to therapy;

- assessing symptoms more accurately and systematically (including pain, fatigue, anxiety, and depression as well as function);
- using stepped decision aids; and
- monitoring response to therapy (especially regarding the symptoms of pain, fatigue, sleep quality, mood, and functional performance).

The tools to implement these elements are not fully developed, but are works in progress — and sources of optimism for Dr. Hawker that the Alliance’s achievements will continue.

Managing OA in Primary Care Settings. Kelli Allen, PhD, Associate Research Professor in the Department of Medicine at the Duke University Medical Center and Research Health Scientist at the Durham Veteran Administration (VA) Medical Center, is both a health services researcher and exercise physiologist. She summarized preliminary data from the ongoing Patient and Provider Interventions for Managing Osteoarthritis in Primary Care (PRIMO) studies in North Carolina, which are examining OA management in two settings: the VA Medical Center and Duke primary care clinics.

Dr. Allen noted that clinical practice often does not match recommendations — especially for the use of conservative, non-pharmacological strategies such as exercise, weight loss, addressing functional issues, or helping patients use assistive devices. A 2009 study found that among patients with symptomatic OA, only 11 percent had seen a physical therapist in the prior year — and the rates were even lower for minority patients and/or those with public or no insurance. Likewise, studies show low overall rates of weight loss counseling, physical activity counseling, and formal arthritis education by clinicians across all age groups of patients with OA, representing missed opportunities for secondary prevention.

The PRIMO studies are designed to assess whether patient and provider interventions for managing OA in primary care settings yield changes in outcomes — primarily pain, stiffness, and joint function, but also physical function, depressive symptoms, physical activity, diet, BMI, coping with pain, fatigue, sleep, and health care use and referrals. These are measured at baseline, and thereafter via brief telephone interviews at 6- and 12-month intervals in the VA studies, and also at 18- and 24-month intervals in the Duke clinics.

The patient intervention consists of telephone calls, materials, and self-management support focused on physical activity, weight management, and cognitive behavioral pain management skills. The provider intervention involves patient-specific treatment

recommendations, issued at the point of care (via EMR). These could range from physical therapy and knee braces to medications or surgical referrals, generated by an algorithm.

Although the study results are not complete, the research team is finding some intriguing differences between the two settings (VA and Duke primary care clinics). Of particular concern is a sharp drop-off between treatment recommendations issued to VA providers, and completed consults — especially for physical therapy recommendations (among the 47 percent who received a recommendation, only 14 percent received a consult). Exploring these discrepancies in greater detail is a next step in the analysis.

Building and Sustaining a Strong OA Coalition. Patience White, MD, MA, is Vice President of Public Health Policy and Advocacy at the Arthritis Foundation, and also a pediatrician and Professor of Medicine at the George Washington University School of Medicine and Health Sciences. She gave COAMI participants an overview of the OA Action Alliance (OAAA), which was launched in 2011 to focus on the public health and “community resources and policies” segment of the Chronic Care Model, strengthening linkages between community resources and clinical settings.

With support from the Centers for Disease Control and Prevention (CDC) and the Arthritis Foundation, OAAA collaborated with over 70 stakeholders to create the National Public Health Agenda for OA. The Agenda sets forth four key intervention strategies for OA — physical activity, weight management, self-management education, and injury prevention — and 10 specific recommendations designed to promote evidence-based interventions, form and strengthen strategic alliances, and initiate research leading to a better understanding of OA. In addition to the National Agenda, OAAA has worked with the Ad Council to communicate messages about opportunities for changing the course of arthritis — especially among Baby Boomers. The group also supports the development of medical decision-making and risk assessment tools.

More recently, OAAA has worked to recruit new members and to strengthen and sustain the coalition. As COAMI continues its complementary initiatives, Dr. White noted that these types of partnerships work best when they mobilize assets, respond to common opportunities, and develop integrated strategies. Encouraging COAMI members to continue to recruit and engage active organizations, diversify funding sources, and keep a tight focus on outcomes, Dr. White quoted Henry Ford: “Coming together is a beginning; keeping together is progress; working together is success.”

Obstacles and Opportunities

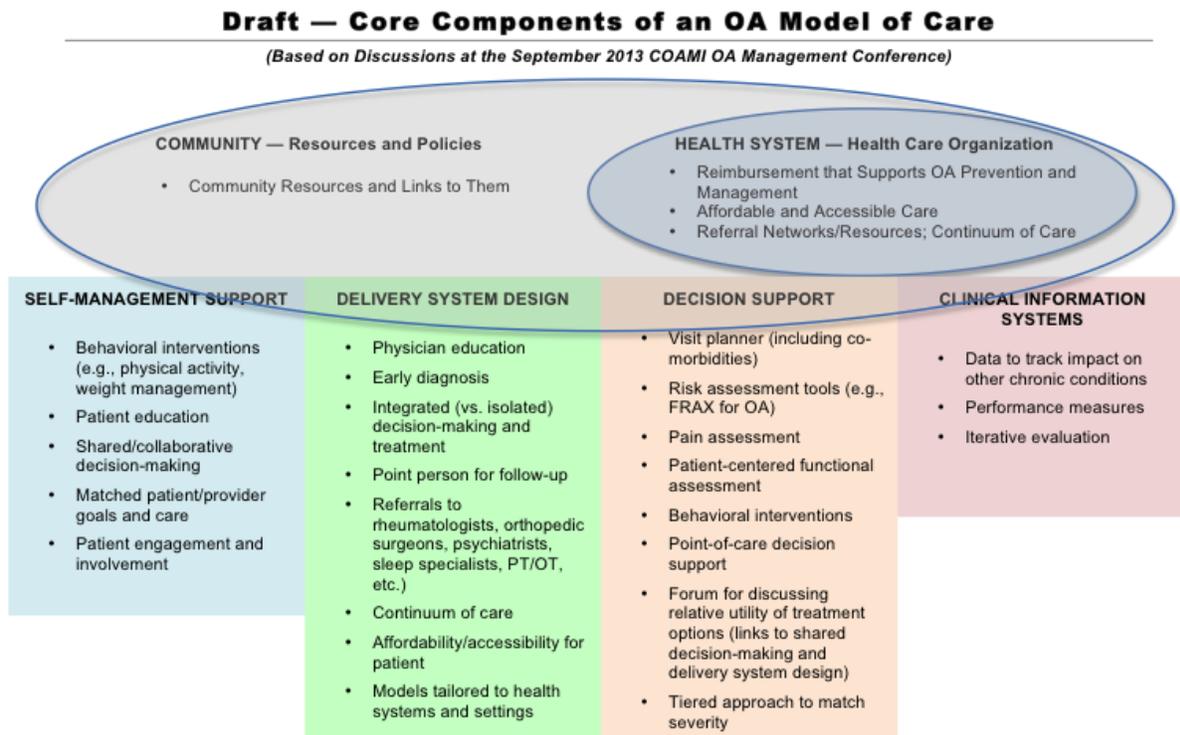
In small groups, COAMI meeting participants explored obstacles to a more coordinated approach to OA, as well as opportunities for addressing or circumventing these challenges. These challenges, while multiple and varied, could yield to a coordinated effort, many participants noted. COAMI could help identify, select, and endorse specific tools, some suggested, and offer CME-type modules (to be circulated through professional societies) that would improve skill sets of care team members likely to encounter patients with OA or at risk. The movements towards patient-centered medical homes and use of quality improvement metrics are seen as significant opportunities, as are linking with other partners — in areas such as obesity prevention, pain management, and injury prevention, and with pediatric and adolescent care providers and advocates — who could help reinforce messages about prevention and debunk myths about the inevitability of OA.

In response to the Chronic Care Model and its application to other chronic conditions, participants saw many commonalities that could be usefully applied to OA management. These included:

- Using algorithms and visit planners to elevate OA in discussions of symptoms.
- Making the case that better OA management (using a full team) frees up practice time.
- Using all members of a care team, not just physicians, to strengthen OA management; delineating individual roles to play to each team member's strengths and benefit the patient.
- Linking to public health, health educators, and other community resources.
- Integrating common interventions (such as physical activity and weight management) that address multiple co-morbidities.
- Standardizing care but allowing for customization.
- Starting with non-pharmaceutical interventions (as in Canada).
- Developing better tools for informed decision-making.
- Boosting patient engagement and investing in training for care teams geared to patient engagement.

Towards an OA Model of Care

Building on these insights and suggestions, COAMI participants identified core components of an OA model of care, which is provided in draft form on the following page. Many of the elements described are “placeholders” and require more detail and work, but the outlines of a model of care for OA — and the tools and resources that could move providers, patients, communities and health systems closer to a more effective ideal — received support from COAMI participants.



Next steps for COAMI members will include continuing to refine the consensus guidelines and recommendations summarized by Dr. Jordan and her colleagues, reviewing currently available risk assessment tools, developing new tools (such as a visit planner template for OA, in the context of common co-morbidities such as diabetes and heart disease), reviewing and recommending obesity guidelines appropriate for OA, reviewing pharmacologic treatment guidelines, developing a related CME activity, proposing a variety of training modules to disseminate current guidelines and a more complete version of the OA model of care, and

identifying best practices and recommendations related to linking clinical settings to community resources.

As progress continues in each of these areas, we can envision a far different encounter between our hypothetical patient and physician. Long before he had given up many daily activities because of knee pain, the patient would have been asked about prior injuries, family history of joint conditions, and joint pain as part of a routine visit, prompted by a visit planner or other tool in use at his primary care or endocrinologist's office. Just as with his stellar diabetes care, his care team would work with him and others — such as physical therapists — to craft a course of action that addressed symptoms early, avoided further joint degeneration, and addressed risk factors such as weight gain using proven, effective methods, including accessible community resources and a full range of care team members.

Neither the patient nor his care team would assume that his OA — or anyone else's — is inevitable. The death and replacement of his knee joints could, in all likelihood, be prevented — along with the pain, fatigue, resignation, and distress that accompanied the progression from health and well-being to disability.

This latter scenario is not only possible, but probable for millions of patients — and can be accelerated if an OA model of care becomes routine instead of rare.

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