Framework for Proposal Development for a Musculoskeletal Model of Care

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The Bone and Joint Decade
Promoting musculoskeletal health
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1. PREFACE

Limited information is currently available from across Canada on the extent of health care utilization and the economic burden related to the management of disability and pain associated with musculoskeletal disorders (MSDs) (1). Yet, the prevalence of MSDs is expected to rise due to an aging Canadian population (2). Compounding this expected increase in MSDs is the fact that MSDs inherently increase with advancing age, and are affected by lifestyle factors such as decreased physical activity and obesity; which is also increasing significantly among older Canadians (3, 4). An increase in health expenditures among older Canadians is evident from administrative databases (2) . These data clearly show that expenditures vary considerably both by province and by age (2, 5). Therefore, the anticipated clinical impact and cost to the provincial health care systems to manage MSDs will also vary in the coming years. In light of the anticipated increase in MSDs among older Canadians, and noted regional variations, we need to gain a deeper understanding of health care utilization for musculoskeletal conditions (5).

According to Canadian Institutes of Health Research (CIHR), in 2004-2005 musculoskeletal conditions accounted for 10.3% of the total economic burden of all illnesses in Canada, while the cost to manage arthritis and osteoporosis alone totaled $16.4 billion annually (6). Within Ontario, MacKay et al. (1) conducted a study using administrative databases to examine ambulatory care and hospital utilization specifically for people with MSDs in the fiscal year 2006-2007. They noted that 22.3% of the population (2.8 million persons) saw a physician within an ambulatory care setting for MSDs.

With respect to the pathophysiology of MSDs, they comprise a diverse range of conditions, however, they are linked anatomically, and by their association with pain and impairment of physical function (3). Evidence using adminstrative data clearly indicates there is a need to effectively manage the expected increase in disability and pain among Canadians with MSDs (2, 6, 7). To this end, a model of care is a type of framework that effectively supports health system and policy development to manage various medical conditions. This type of model describes a process by which health care services are organized and delivered and is used to optimize health care delivery and health human resources planning (1). Models of care can be applied at a unit level, an organization, regional or provincial level. However, musculoskeletal health care models to date have primarily focused on specific types of MSDs, such as arthritis, joint replacements and hip fractures. As most health care settings and their providers manage a broad range of MSDs, we need to develop a more comprehensive model that captures the total management of MSDs across the continuum of health care while making the best use of specialist resources and the skills of musculoskeletal health professionals (1, 8-10).

This document was developed to provide a framework for a MSD model of care that can be used to assist groups in the development of an individualized MSD model of care specific to a musculoskeletal condition or conditions at either the local, regional or provincial level. In general, there are several key factors that are integral elements in the development of a comprehensive model of care including: the target population(s) (e.g. age, density, socioeconomic status), the setting(s) (e.g. rural vs. urban; local vs. provincial), the type of condition(s), current evidence-based practice, and the local health human resources available (9, 10). Our framework addresses this broad range of factors, and outlines the key components within each factor needed to develop a MSD model of care.

2. INTRODUCTION

Definition of a Model of Care

A model of care is the way health care services are organized and delivered. The model can be at a unit level, organizational, regional or higher level and it can describe one facet of care or can describe a large part of the patient journey. A systematic review of models of care (11) described a model of care as follows:

> "A model of care is an overarching design for the provision of a particular type of health care service that is shaped by a theoretical basis, Evidence Based Practice and defined standards. It consists of defined core elements and principles and has a framework that provides the structure for the implementation and subsequent evaluation of care."[i]

New or re-designed models of care are often a response to crises or significant identified gaps in care provision within an existing system (9, 10). It is crucial that a comprehensive analysis of the issues and options take place before any solution is designed or implemented (10). This is done by identifying barriers at a system and clinical level, and modifying or providing a new way of moving patients through the system to address these barriers (8, 10). The model needs to focus on maximizing patient experience including removal of duplication and unnecessary steps as well as promoting patient independence in care through education and self-management principles (12).

The development of a robust model of care needs to be grounded in:

- best practices as identified by available evidence
- quality improvement methods
- health promotion components
- a disease management approach
- change management
- collaborative methodology
- key stages in model development, which are:
    - planning
    - development
    - implementation
    - evaluation

Models of care can be developed at a local, regional or provincial level. They maximize the utilization and effectiveness of resources that are available within the system (12). As such aspects of the model may differ between organizations or between regions for the same patient population based on available resources including the skill set of the health human resources.

Development of a Proposal for a Model of Care

The development of new models of care requires improved management with a new way of thinking, enhanced activities by health care professionals using best practices, new processes and new supporting infrastructure. As the model is being developed, stakeholder participation, is a very effective method of developing a common understanding of the new model, identifying any barriers and developing solutions.

The written document for a proposed model of care needs to be developed using a consensus approach with the recommendations supported by all relevant stakeholders. All stakeholders should have their organization's name or individual names on the document and have reviewed and approved it prior to submission for implementation or for funding thereby acknowledging the changes in operations required to successfully implement the new model.

3. BACKGROUND: PUBLIC NEED, THE CURRENT STATE AND EVIDENCE

In order to develop a model of care there needs to be an understanding of the current state of a health care process and why the current model does not optimally and efficiently meet patients' needs. Information on other models that are being used either nationally or internationally should be considered with information being evidence-based and reflecting Canadian factors wherever possible. The following areas should be addressed in defining the need for a new model of care:

Clinical Condition

Models of care tend to be created for the management of a specific clinical condition although for some models there may be key attributes that can be leveraged for a number of clinical groups. The model of care needs to clearly articulate the clinical conditions that can be managed including:

- description of the condition
- statistics on the prevalence of the condition
- all the treatment options available in the system and the effectiveness of each treatment option
    - Ensure that all treatments are considered including non-surgical, pharmacological and surgical.
    - Self-management principles including the role of education and self-management.
    - Describe the treatment effectiveness of each including work done internationally such as clinical practice guidelines.
    - Current capacity to manage patient volumes, including the strengths of current system, gaps in care and barriers to evidence-based treatments.

Lifestyle and Economic Issues

A model of care needs to consider a streamlined approach that improves care and outcomes for patients. As such, consideration of all costing information including the medical costs to the health care system for assessment, diagnostic imaging, and surgical costs, as well as for the patient including medications and other non-surgical treatment (physiotherapy, massage etc). The costs to society also need to be considered including disability and the loss of independence requiring additional supporting resources as well as the loss of productivity in the workplace for the patient.

Health Professionals

For the clinical management of patients there may be the requirement of specific health professionals to treat the conditions. Where access and the availability of these specialists is a limiting factor for care provision, innovative solutions should be utilized such as consultations with other centers, telemedicine opportunities, and reciprocal agreements across jurisdictions.

Current Program Limitations

The new model of care needs to address the limitations to the services currently in place including information from a local, regional and/or provincial perspective.

An analysis of any barriers to patient care also needs to be completed. This should include factors that limit patient access to treatment such as wait lists whether at a local, regional or provincial level. This should be supported with any data that are available including volumes, wait times and measurements within the quality domains of Accessibility, Acceptable, Appropriate, Effectiveness, Efficiency, Safety wherever possible (13).

Environmental Scan of Existing Alternative Approaches/Models

There may be a model of care being used to manage the same condition or a condition with similar needs. Review of these models should be completed and learnings should be leveraged (12). Local information should be referenced whenever possible, with information from across Canada and internationally also considered.

4. PROPOSED MODEL OF CARE

The model of care should provide an overview of the program including a diagram to visually demonstrate how patients move through the system. The proposed model should describe the following processes:

- access to the program
- assessment and triage services
- access to appropriate diagnostic imaging
- the type of treatment services available
- the provision of patient-centred educational information and self-management strategies
- services to meet ongoing individualized patient needs

Access

Patients can enter the healthcare system through a number of different methods, via the primary health care sector. Although this may involve a physician, patients may be seen through other health care professionals such as homecare, physiotherapy or chiropractic treatment clinics or through a nurse practitioner and, in some cases, may self refer. Once identified as requiring care, patients need to have access to the appropriate health care professional to manage their condition. There are many different factors that can affect a patient's access to care, with the biggest factor often being extended wait times and a limited numbers of health professionals with the necessary skills (7, 14). There are a number of examples of strategies focused on coordinating access that can minimize wait times. One example is the central intake process which puts all patients on one centralized wait list, thereby providing access to the first available assessor and preventing duplication by the patient being on multiple waiting lists (10). This approach can be managed at a local level, however on a regional or provincial level requires an information technology infrastructure.

Assessment and triage

Models of care need to develop comprehensive assessment programs that can streamline a patient's experience creating a "seamless system" (9). The triage component of the model is focused on the assessment of patients with MSDs in order to refer them to the most appropriate surgical consultation and/or disease management services (10, 15). Within triage, there is a role for extended scope practitioners such as physiotherapists, and primary care physicians with an interest in orthopaedics (10, 15, 16). Also referred to as advance practice practitioners (APP), these health care providers bring an advanced level of expertise to the improvement of assessment processes, enhancing education across the continuum of care and improving the coordination and delivery of services (15, 16). Other health care practitioners can provide this assessment and triage within their area of expertise including occupational

therapists, nursing and chiropractors. Practitioners require additional skills and training in the model and the additional clinical and administrative responsibilities to meet the needs of the patients. The assessment session must be of sufficient duration to allow for patient education and answering their questions.

The standardization of best practices throughout the continuum of care is vital to optimize patient flow throughout the health care system (15, 17). The model therefore needs to be designed based on best practices and to minimize the differences in clinical decision making between different providers as well as the duplication that often occurs for patients undergoing multiple assessments.

Specialist Assessment

Where patients are identified as needing a specialist consultation the model of care needs to be designed to access the consultation in a timely manner (15). For all patients, sufficient time needs to be built into the assessment for the risks and benefit of recommended treatments specifically medication or surgical treatment as well as to complete the necessary consent process.

Diagnostic Imaging

For many patients diagnosis requires the use of diagnostic imaging. Furthermore, the severity of some musculoskeletal conditions such as rheumatoid arthritis increase with a person's age requiring more sensitive and specific diagnostic investigations (18). The model of care should therefore be developed to consider both the clinical need for the test as well as the ability to access the test. Wherever tests are required, for the model to be effective, a system must be developed to ensure the testing is available in a timely manner. In the development of the model there may be opportunities to refine the use of medical and diagnostic testing. For example, magnetic resonance imaging (MRI) is commonly used in the diagnosis of a range of musculoskeletal conditions however is often unnecessary. It should therefore be limited to those patients for whom it is medically necessary and these patients should have access whether residing in rural or urban settings.

Educational Information and Self-management Strategies for Patients

An important consideration in the development of a model of care for any musculoskeletal condition is the patients' ability to understand their condition and manage their symptoms independently wherever possible. As such targeted and evidence-based patient education information is required which includes self-management strategies and indicators for when additional care must be sought.

Self-management refers to the concept of an individual increasing their "ability to manage the symptoms, treatment, physical and psychosocial consequences and lifestyle changes inherent in living with a chronic condition" (19). As such, it is important that health care providers are trained to educate patients about their condition, offer advice on self-management, and facilitate the utilization of self-management strategies within clinical settings (19). The assessment process also needs to identify the person's apparent learning ability and ensure that treatment recommendations are made if further follow-up on self-management techniques are required.

Ongoing Care

Many musculoskeletal conditions require ongoing management or follow-up, such as inflammatory conditions where ongoing disease status and medication monitoring are required (e.g. hip or knee replacement, rheumatoid arthritis). Ongoing care can take place both in the community through home care services, ambulatory clinics and follow-up appointments with family physicians and nurse practitioners. Treatments in the form of exercise or passive care such as modalities of manipulation may

be required, and the referral needs to be provided to appropriate therapy services so patients can access the care. There needs to be an understanding that there may be associated costs as many treatment modalities are not available through the public system. Some care may be required on a pre-planned basis and some may be related to deterioration of a clinical condition. As such, the model of care needs to include access to community resources, to identify the types of ongoing services that may be required and to ensure there is a system for the patients to re-access care as required (9, 10). Where possible formal linkages to the relevant organizations should be made to ensure there is a streamlined approach to transition and to facilitate patient uptake of local programs.

The promotion of musculoskeletal health is critical within community care settings (18). Examples of general strategies related to the promotion of musculoskeletal health include reducing the risk factors, (e.g. smoking), promoting healthy behaviours (e.g. physical activity, weight management, stress management), and increasing community awareness about the importance of health environments (18).

System Re-entry

Patient's presenting with MSDs experience changes to their condition in the form of exacerbations, remissions which often result in longer term deterioration. In fact, the prevalence of many MSDs increase markedly with age (3). As the patient's condition may change over time they may wish to return for further assessment and require further treatment or modifications (15). Therefore, a re-entry system should also be part of a MSD model of care to provide additional treatment options for patients as their condition changes over time.

5. MODEL OF CARE PLANNING GUIDELINE

The development of a model of care requires a coordinated approach to planning that includes information and feedback from stakeholders. The following outlines some of the factors that should be considered in the development of a new model of care:

Goals, Aims and Guiding Principles

There needs to be a clearly articulated goal and aim for the model of care. This needs to be supported by guiding principles that address system issues from a patient and system perspective.

Health Human Resources

The qualifications and skills of the health professionals who will provide each of the components of the program should be identified, with consideration for any additional training required to acquire the skills to support care within the model. There needs to be clear articulation of how training and ongoing evaluation of skills will occur. Health professional legislation and scope of practice need to be reviewed and considered as part of determining the health human resources supporting the model. Additional documentation such as medical directives is an method of ensuring clinical staff is working under designated authority. Therefore these directives need to be developed as a key component in the process of setting up of the model of care.

Evaluation Framework

The model needs to include an ongoing evaluation framework that will measure the patient experience using the accepted quality dimensions (13):

- Accessibility
- Acceptable
- Appropriate
- Effectiveness
- Efficiency
- Safety

The model of care needs to provide information on using available data whenever possible. Where gaps in data exist, data elements and processes of data capture and management need to be developed to measure system improvements. There are many considerations in data collection processes such as how data are collected, the frequency of data collection, reporting methods, accuracy, and how measurement of performance across the continuum of care. A reporting system for the data also needs to be considered to ensure that the data can be analyzed, improvements to the system can be made, and improvements to data capture can be implemented quickly and effectively.

Patient feedback on the model of care is also important to inform practice and ensure the model evolves as needed to improve the patient experience.

Synergies with Other Strategies

Many programs interact with other initiatives. Where there are synergies with other local, regional or provincial strategies, the model of care should be designed to maximize opportunities for linkages with community resources, policy-makers and health planners (9).

Implementation Strategies and Activities

The development of a model of care needs to consider both the theoretical framework for the model as well as how the model can be operationalized. The detailed information that needs to be considered to support the implementation of the new model includes:

- Location(s) of new model
    - Rationale for this/these location(s)
    - Modifications to space
- Resources required
    - Equipment etc
- Hiring and training of staff
    - Job descriptions and clear accountabilities
    - Where and how training will be completed
- Development of materials including operational documents and standardized assessment and patient educational information
    - Who will complete and how long this will take
- Implementation plans and timelines
- Data measurement and reporting
    - Consider process and outcome indicators wherever possible
    - Consider the dimensions of quality
    - What data elements are available

- How and how often will they be reported
- Any additional information technology development needs

Program Governance and Accountability

An effective implementation plan requires a well coordinated governance structure that includes input from all the relevant stakeholders. Depending on the scope of the new model of care this may be at a local level, or include a number of health care organizations. Whatever the scope of the new model, and the activities that need to be included within the governance structure, there needs to be an oversight body responsible for the deliverables of the project (Steering Committee), stakeholder consensus (16), and working groups to take on local operational tasks. Completion of activities should coordinated using a project management approach. Tasks that should be considered are the development of standard processes and materials, communication strategy, data tracking and reporting.

Timelines and meeting structures for each committee and working group should be considered, as well as general deliverables for each. A pictorial representation is a good way to demonstrate how groups interrelate.

Communication Strategy

The impact of the implementation of a new model of care needs to consider the perspective of all the key stakeholders including health care professionals working with the program, primary care or health care professionals who will be referring into the program, and patients as well as their families/care givers. The effectiveness of a multidisciplinary team within a model of care depends upon the close cooperation and communication between members (18). Communication and messaging needs to be developed that is relevant and accurate (15). This information may include verbal messaging and written materials such as marketing materials which needs to be disseminated through a coordinated strategy.

Plan and Timelines

If the model of care is new or there is significant change to the operations then a graphical representation of the implementation plan should include timelines (such as a GANTT chart).

Budget

A budget which defines how the funding will be used to implement the new model needs to be developed. Budgetary information including ongoing costs and one time development costs need to be considered.

6. EXPANSION OF THE MODEL

In many cases a model of care is initially designed at a local level and often as a onetime funded pilot project. Data need to be collected to understand the effectiveness of the model in meeting its goals and deliverables and consideration needs to be given to what aspects of the model would be effective in the managing patients in other regions or another patient population. Outcome indicators therefore need to be established at the start of model of care development, to support ongoing research funding allocation and further improvements to the model of care (8). Furthermore, a knowledge translation strategy needs to be built into the model of care to ensure its implementation and maintenance, as well as to assist collaborators in their planning and communication (20).

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