Report to Hunter New England Local Health District

Incorporating Patient Journey Modelling into the Osteoarthritis Chronic Care Program Trial

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The views expressed in this publication do not represent
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Executive Summary

Best practice guidelines recommend conservative, multidisciplinary management of individuals with osteoarthritis of the hip and knee. Unfortunately, evidence also suggests that clinical practice diverges from the guidelines and that current care is episodic, uncoordinated and often lacking in an evidence-base. As a result, many sufferers are referred for surgery in the first instance, rather than as a last resort. This causes unnecessary queues, inefficient use of resources and delayed treatments. The Hunter New England Local Health District (HNELHD) enlisted the assistance of the University of Western Sydney (UWS) research team to investigate the existing acute, primary and private non-surgical management pathways and show the relationship with the new Osteo-Arthritis Chronic Care Program (OACCP) in an effort to a) increase the use of evidence based care, b) enhance the quality of life of the OA patient and c) identify opportunities to better utilize primary and community based health resources. In addition, the UWS team was asked to list direct and indirect cost markers associated with the different service pathways, including costs to the provider and patient.

Using innovative healthcare improvement techniques in patient journey modelling, the UWS team collaborated with the local OACCP team and other involved stakeholders at HNELHD to illustrate current and potential future states of the OA patient journey as delivered in the acute care setting of the RNC, community-based services in the Greater Newcastle Sector and a “typical” private service pathway (See Appendix A). This provided for a detailed analysis of identified opportunities for improvement. In addition, the UWS team collated a directory of services currently available in the Newcastle area that can provide conservative treatment for the OA patient. From a comprehensive analysis of all facets, including the patient journey model and a comprehensive assessment of available measurement tools, the UWS made the following recommendations:

1. Provide a simple to access, online system that makes best-practice guidelines quickly and easily available to all care providers, particularly GPs and include direct access (or links) to:
• OA-specific GP chronic care management plans,
• A directory of available services
• Referral templates
• Care handover and referrer feedback templates
• Patient self management and education material
• Patient severity/QoL self assessment tools (see below)

2. Use common severity/quality of life (QOL) patient self-assessment tools across all care providers, including GPs. The MAPT and AQoL tools are suggested.

3. Online accessibility to a directory of conservative treatment service providers to promote the use of conservative treatment by GPs and other care providers.

4. Provide CAP access for all care providers.

5. Investigate extending the JHH Hip and Knee project outside of the acute care setting by exploring the implementation of dedicated OA care coordination facilities within the community. The service may include Individual home visits, Nurse practitioner-led OA clinics at relevant GP offices, OA clinics at major ‘hub’ sites or a virtual OA clinic.

6. Increase the utilisation/capacity of available community health services programs (database provided)

7. Simple electronic access to the OA specific GP Management Plan Template

8. Develop OA specific referral, feedback and care handover templates

9. Implement standard re-assessment intervals

10. Investigate procedures for increasing MBS visit limits

11. Introduce OA-specific dietetic clinics at JHH and in Community

Future research includes a comprehensive assessment of economic effects of adhering to existing best practice standards and an evaluation of current and future state to demonstrate advantages (including cost advantages) for the OA sufferer.
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1 Introduction

Osteoarthritis is the most common form of arthritis and is the 10th leading cause of non-fatal burden of disease worldwide. Its main symptoms are pain, swelling and joint stiffness and largely affects the weight bearing joints of the hips, knees and ankles but also those of the hands and spine. It is more common in females than males and is far more prevalent in later years of life and is typically associated with obesity and overweight (AIHW, 2010).

Figure 1: Age-specific prevalence of osteoarthritis, 2007-08 (AIHW, 2010)

In 2007-08, Australians living in areas of relatively low socioeconomic status (SES) had higher prevalence of arthritis than those living in high SES areas. People with arthritis often have other diseases and long-term conditions concurrently; mostly due to co-occurrence of age-related problems – high prevalence of back pain and disc disorders. It is recognised that arthritis limits physical functioning in everyday task, thus reducing the quality of life of those affected.

General Practitioners (GPs) are usually the first and most common point of contact for people with arthritis. In addition to providing assessments, prescriptions and referrals for specialists, they also help with self-management of their disease.
The management of advanced arthritis and associated complications, through surgical and other procedures mostly takes place in hospitals.

Allied health professionals, especially physical therapists play an important role in managing pain and improving mobility.

Primary and secondary prevention are both important in reducing the adverse impact of arthritis. Key primary prevention markers for OA include controlled weight and fitness management and joint protection. Secondary prevention involves early treatment and management of pain, inflammation and other symptoms helping to improve mobility as well as to reduce complications.

A recent study undertaken by Arthritis Australia of over 1000 people with arthritis across Australia found that about a third are coping quite well; 52% are doing fairly badly and 15% are doing badly. The study found that the worse someone is faring with their arthritis is associated with their perceived standard of care, the information made available to them, and access to associated care. It was not associated with the severity, length of time they have had it, their age, their income, private health insurance or other illnesses.

![Figure 2: Arthritis and activity restriction, 2007-08 (AIHW, 2010)](image)
Figure 2 shows that nearly twice as many in the most affected group were experiencing increasing pain, lack of mobility, poor sleep and being forced to stop work or study compared to the least affected.

Figure 3: Direct health expenditure for osteoarthritis, 2004-05 (AIHW, 2009b).

Figure 3 shows the division of direct health related OA expenditure for the 2004-5 year. Direct health expenditure in this period was $1.2 billion and was dominated by admitted patient services. But there are other costs that are neither direct health system costs nor intangible costs – such as the loss of health and wellbeing. These also include productivity losses resulting from absenteeism and reduced labour force participation, carer costs, out of pocket expenses, the deadweight efficiency losses from transfers and funeral costs.
2 Aim and Objectives of the Project

Many international, national and state guidelines report positive outcomes for the conservative, multidisciplinary management of individuals with osteoarthritis. Strategies for slowing disease progression, relieving pain and minimising disability are at the leading edge of conservative management of arthritic conditions. Unfortunately, evidence also suggests that clinical practice diverges from such guidelines and strategies and that current care is episodic, uncoordinated and often lacking in an evidence-base (Arthritis Australia. 2011; Fransen 2009).

To address the divergence between best practice and current clinical practice, the Agency for Clinical Innovation (ACI) is recommending a model of care for people with osteoarthritis using a chronic disease management plan (NSW Agency for Clinical Innovation. 2011). The Royal Newcastle Centre was selected as a pilot site to trial the NSW Osteoarthritis Chronic Care Program (NSW OACCP), to improve the coordination of care and the inter-disciplinary conservative (non-surgical) management of individuals with osteoarthritis. Central to this model is face to face participant access to clinical staff and health service resources. Movement to this model necessitated a review of the current system of care, identification of opportunities for improvement and implementation of identified best practice.

In conducting this work, Hunter New England Local Health District focused not only on the non-surgical management services available in the acute hospital environment, but also on community-based and private non-surgical management services.

Using innovative healthcare improvement techniques in patient journey modelling, the University of Western Sydney (UWS) collaborated with the local OACCP team at HNELHD and local care providers to illustrate existing acute, primary and private non-surgical management pathways and show how they can contribute to the new Chronic Care Program. UWS also analysed the cost markers associated with the 3 different service pathways, including costs to the provider and patient and costs to the health system at the state and national level.
This project is part of an overall suite of work that ultimately provides a review of all OA services within the HNELHD and identification of improved models of care that:

- Increases the use of evidence based care
- Enhances the quality of life for individuals with osteoarthritis.
- Identifies opportunities to better utilize primary and community health resources

The overall suite of work adopts a phased approach with outputs delivered progressively throughout the project life cycle. This report deals with stage 1 within this suite of work. Additional complementary projects were included as part of a NHMRC grant application submitted in May 2011. We have recently been notified that unfortunately, this application has been unsuccessful. Further discussions regarding possible further work are ongoing.

### 3 Research objectives

The goals of this research are to:

- Describe existing pathways for osteoarthritis care within the Royal Newcastle Centre and community-based and private services for non-surgical management of OA;
- Identify divergence between best-practice and current clinical practice;
- Analyse the costs to the system and patients of the different pathways.

Specific outputs include:

- Current state patient journey models of the existing model of care as delivered in the acute care setting of the RNC, community-based services in the Greater Newcastle Sector and a “typical” private service pathway (Appendix A);
- Detailed analysis of identified opportunities for improvement and solution recommendations;
- Describe the costs associated with each of the 3 pathways and consider economic measures that impact alternative models of care;
This approach ensured all stakeholders are fully cognisant of how the patient journey needs to evolve to meet the proposed new standards and what impact changes will have on incumbent workflow and costs and ultimately, patient outcomes.

4 Justification

The research is important because:

a) It provides the first comprehensive visualisation of the end-to-end osteoarthritis patient journey, both within the RNC and the community.

b) It generates new knowledge and dialogue about how current osteoarthritis care in the different environs, deviates from best-practice.

c) It provides graphical best-practice models for dissemination and discussion within the osteoarthritis community and health care funding decision makers, as such, provides opportunity for further research.

d) It generates new knowledge on how emerging healthcare improvement techniques can be integrated into existing healthcare innovation methodologies.

5 Research Background

The recognition of the growing burden of osteoarthritis and its related conditions, and the need for action to address the unsustainable growth in healthcare costs, has been recognised at an international, national and state level (AIHW 2010). Since 2000, the World Health Organisation, the Australian Government and a number of State level improvement projects have been conducted. In NSW, several individual sites have investigated a range of care models, all with varying outcomes. As such, no coordinated approach to address the recognised problems currently exists.

This suggests that there is a definite need for the integration of innovative healthcare improvement techniques into the care delivery review and development process.
Over recent years researchers at the University of Western Sydney have been working with a pioneering patient journey modelling technique that has been shown to produce significant results over incumbent techniques such as Lean Thinking Value Stream Maps.

This technique, known as Essomenic, uses colour-coding and specific shape syntax to produce models that are intuitive to healthcare staff and that promote communication and problem ownership across all levels of staff.

Most recently UWS has collaborated with the RNC ENT Ambulatory Care section to analyse opportunities for improvement in the referral and booking procedures. Reaction to and acceptance of the techniques has been overwhelmingly positive and management are currently considering the resulting project recommendations.

Application of Essomenic techniques to the current OACCP review process provided a number of significant benefits, including:

- Strong staff involvement;
- Easy to understand and intuitive models;
- Improved cross-discipline communication;
- Visualisation of the end-to-end journey
- Better understanding of the complete service delivery cycle and thus impact of changes;
- Easier identification of best-practice ‘gaps’;
- Ownership of problems and their solutions;
- Identification of critical IT touch points;
- Promotion of action plan development.

It is expected that outputs will be used to disseminate results to state and national bodies and to inform discussion on viable models of OA care.
6 Research design

The project used a participatory action research methodology as shown in Figure 4 and described as follows.

a) Development of a current state Patient Journey Model
   Involves:
   - Information Gathering in the acute, community and private service environments
   - Initial Model Development for each of the 3 patient journeys from diagnosis of osteoarthritis to completion of a non-surgical OA program
   - Validation/Verification of Models

b) Economic Analysis Considerations
   This activity involved consideration of the economic measures that impact the 3 current patient pathways, including a clear description of the direct costs to the health service provider AND direct costs to the patient. Although, as agreed, a full economic analysis was not conducted as part of this project it is vital that the research team identifies what economic data is relevant to the longer term suite of work. This is best done in parallel with Activity A (as outlined above). Areas of interest include staff costs, consumables, equipment used, overhead costs and capital costs.

c) Improvement Analysis
   This activity analysed the models for opportunities for improvement as they relate to the OACCP and worked with stakeholders to formulate a range of solution options.
The research utilised a very interactive approach, with UWS researchers undertaking close and frequent liaison with staff involved with the delivery and management of osteoarthritis care both within the RNC and with GPs and community based care services (private and public).

Researchers from UWS interacted with staff via a variety of mediums including face-to-face, telephone and email. All deliverables produced were validated with involved staff and communicated to interested parties as required by the HNELHD.

In carrying out this work, the UWS team participated on HNE’s Osteo-Arthritis Project Team and reported all findings at the regular project meetings.

7 Research Outputs

7.1 Patient Journey Models

Patient Journey Modelling is a diagrammatic technique for analysing and optimising the progress of patients through a given system of care. Using Patient Journey Modelling as a healthcare improvement tool promotes a more thorough understanding of the current system of care and helps healthcare stakeholders to identify opportunities for service improvement and required implementation action plans. Specific target areas include reduced patient movements, increased compliance to evidence-based best practice, elimination of excessive activities, removal of duplicate data collection and communications and provision of clear and concise information to care providers and the patient. The tool used for this project, Essomenic, is highly graphical and colour coded, and was easily understood by both clinical and non-clinical staff on the project.

Using workshops, semi-structured face-to-face and telephone interviews, with healthcare staff currently involved with the delivery of OA care, models of the current patient journey across multiple service delivery areas (inclusive of the acute, primary, community and private settings) were developed (as per Table 1).
Participation in the model development and validation process enabled healthcare staff to fully comprehend how patients moved across and between care providers within the system and what impacts current processes had on the patient and their outcomes. This process also enabled staff to voice their current concerns regarding actual and perceived barriers to the more effective and efficient delivery of best practice OA care.

Data was collected and analysed across multiple dimensions of the patient journey as shown in Table 2.

<table>
<thead>
<tr>
<th>DIMENSION</th>
<th>CONTENT DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Movement</td>
<td>Shows when, where and how many times a patient attends the service or is moved as part of their journey.</td>
</tr>
<tr>
<td>Staff Roles</td>
<td>Shows what role a staff member plays and when and how that role is involved in the patient journey.</td>
</tr>
<tr>
<td>Processes</td>
<td>Names and relates the processes involved in the patient journey.</td>
</tr>
<tr>
<td>Information Creation/ Movement</td>
<td>Shows the creation and flow of paperwork and information to systems that is required by the processes.</td>
</tr>
<tr>
<td>Patient Needs/ Clinical Guidelines/ Policies</td>
<td>Highlights the needs of patients at different points in the journey as well as specific policies/guidelines etc… that must be adhered to during the enactment of the processes.</td>
</tr>
<tr>
<td>Metrics</td>
<td>Details the measurements that are to be used to determine the effectiveness of the patient journey.</td>
</tr>
</tbody>
</table>

Table 2: Essomeric Model Dimensions
Each of the dimensions listed in Table 2 uses coloured icons and workflow shapes to represent information about the journey. As an example Patients are shown as red people icons at the top of the model with each type of staff role they interact with allocated a unique colour in the dimension immediately below. Table 3 below shows the most common icons/workflow shapes used during model development.

<table>
<thead>
<tr>
<th>Icon/workflow shape</th>
<th>Name</th>
<th>Icon/workflow shape</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient</td>
<td>Patient</td>
<td>Multi-disciplinary</td>
<td>Different staff roles types</td>
</tr>
<tr>
<td>Interactions/processes</td>
<td>Interactions/processes</td>
<td>Signed Consent Form</td>
<td>paper-based information</td>
</tr>
<tr>
<td>Electronic information supported by ICT</td>
<td>Electronic information supported by ICT</td>
<td>Interpreter required?</td>
<td>Patient Need</td>
</tr>
<tr>
<td>Guidelines/policies</td>
<td>Guidelines/policies</td>
<td>tpt=20mins</td>
<td>Metrics (ie: total process time)</td>
</tr>
</tbody>
</table>

Table 3: Essomenic Icons

The models are read as vertical slices and then linked together to describe the journey as experienced by the average patient. The models clearly depicts where patients interact with staff and for what purpose, the information (in the form of paper based and electronic records) used as part of that interaction, the patient needs to be considered and the guidelines to be followed. Metrics for process timings, costs, compliance rates etc., are also depicted. Where further detail exists in the form of sub-processes a ‘+’ sign is added to the parent process (blue oblong).

The full set of current state models developed as part of the OA project, are included in Appendix A.

A list of participants contributing to model development and validation is included in Appendix B. The opportunities for improvement identified through the modelling activity are discussed in Section 8.
7.2 Severity Assessment/QoL Tool Evaluation

The issue of lengthy waiting lists for elective surgery, particularly for hip and knee replacement, are well recognised in countries with publicly funded health systems including Australia, New Zealand, the United Kingdom and Canada. As such the suggestion to introduce severity/Quality of Life assessment tools to assist in decision making regarding appropriate treatment pathways across care providers within HNE Health, is similar to activities that have been undertaken in other parts of Australia and internationally. This approach is also supported by the RACGP OA Guidelines as highlighted in Appendix E.

In reviewing the different instruments, it was identified that there were a large number of disease-specific and generic tools that can be used to assess disease progression and impact on patient Quality of Life. As a result of an intensive literature review and consultations with practitioners and other Australian researchers in this field, the following tools are considered candidates for use by all OA care providers across the HNELHD including GPs.


Assessing a patient’s disease progression, this instrument has been developed and validated in Australia to assist in the management of lengthy waiting lists for hip and knee joint replacement surgery in Australia.

The questionnaire measures the impact of a patient’s hip or knee OA and comprises a series of eleven questions that aim to assess:

- Pain - including the impact on sleep and while resting;
- Limitations to activities - including walking and self care;
- Psychological health - including psychological wellbeing and carer roles;
- Economic impact - including the ability to perform paid work; and
- Recent deterioration.

Aimed at helping to determine the need for joint replacement surgery and prioritising patients based on severity of disease, MAPT was developed in consultation with over
100 orthopaedic surgeons, as well as patients and a wide range of hospital clinicians and managers as part of Victoria Health’s OWL Project (2000).

In short each questionnaire answer is assigned a score and the higher the total assessment score (out of 100) the more severe the patient’s OA and the greater the need for surgery. This type of assessment and calculation of severity would be of significant assistance to care providers, particularly GPs, when making decisions on the most appropriate best-practice care for individual patients.

Identified instrument benefits are as follows:

- Simple to administer (2 page patient self-assessment)
- Free of charge and simply requires an application to Victoria Health for the right to use the instrument.
- Has been translated into 13 languages including English.
- Requires minimal training
- Has been recommended by the Royal Australian College of General Practitioners and is included in the RACGP guide to general practitioners, *Referral for joint replacement: A management guide for health providers* (The Australian College of General Practitioners, 2007).
- Based on a discrete choice experiment study undertaken by 96 arthroplasty surgeons.
- Widely used in Victoria and has been increasingly taken up in other Australian states, such as South Australia, Queensland and Tasmania.

Approval to use the MAPT tool includes the provision of supporting software facilitating data entry, computation and recording of information. The information recorded provides details of the most current MAPT score, any previous MAPT scores in chronological order, the MAPT change (mathematical difference between the current and the previous MAPT – known change – that is colour coded with green for positive and red for negative) and BMI details. Ongoing assessment and storage of such data allows disease degenerations/improvements to be tracked over time. Figure 5 shows the suggested application of the MAPT tool for assessment/reassessment across the patient journey.
2. The Assessment of Quality of Life (AQoL8D) Instrument

The research acknowledges that the MAPT instrument is a tool for measuring disease progression and is not a quality of life (QoL) assessment tool. As such it is suggested that the MAPT instrument be supplemented with the use of a specific QoL utility instrument, AQoL8D.

This tool enables the application of utility weights to different dimensions of health to obtain a single index of health related quality of life (QoL), or another way to interpret this - an index of the strength of a persons’ preference for this health state compared with full health and death. The AQoL instrument was selected as it weights the responses by relative importance using preference weights or utility and can be compared to equivalent measures across the Australian public.

The AQoL is a generic HRQoL utility instrument comprised of five dimensions (Independent Living, Social Relationships, Physical Senses, Psychological Well-Being, and Illness). Each scale provides weighted scores between 0.0 (scale worst health state) and 1.0 (scale best health scale). The utility score ranges from -0.04 (worst possible HRQoL state) to 0.00 (death equivalent HRQoL state) to 1.00 (full HRQoL), and is a weighted multiplicative model derived from the last four dimensions. The illness dimension is an indicator of healthcare resource consumption.
and is not used in the utility score. The AQoL questionnaire was designed to be used in the evaluation of a wide range of health interventions, from health promotion activities to medical and pharmacologic treatment (Osborne, et al., 2003).

The categorisation and structure of the AQoL8D instrument is shown in Figure 6.

A thorough literature review of the MAPT and the AQoL instruments along with research on a range of other multi-attribute instruments investigated, is provided in Appendix C. The review provided also includes information on historical developments, the uses by geographical regions and types of studies, and some critical analysis for completeness.
7.3 Services Directory

The development of a service directory took place in order to effectively document and categorise the available treatment services for osteoarthritis, in both the private and public sectors across the Greater Newcastle Cluster area. This directory will be of assistance particularly to primary care providers who have expressed concerns about their lack of knowledge regarding available conservative treatment services. Ideally this directory will be included as a link from within the Health Pathways portal.

Entries in the database included any type of treatment or service that could be helpful for patients suffering from osteoarthritis. Accordingly, in addition to standard practices such as physiotherapy and exercise classes, alternative treatments such as acupuncture and tai chi were included. Also included were services such as equipment hire services, and community-based programs.

In total, the database consisted of 357 entries, 42 of which were public sector services. A full listing is available on the accompanying CD (Appendix ??). The majority of the privately offered services were identified using online resources (such as www.whitepages.com.au), and communication with public health services helped to identify community-based treatment options.

The directory enables services to be quickly arranged and viewed according to a range search of criteria, including service type, public or private sector and suburb. The directory also provides the business name (if applicable), an indication of specific services offered, and the address, contact number, and website of each service listed.

7.4 Economic Markers

The treatment of osteoarthritis conditions with orthodox and/or non-orthodox (alternative) medicine, leads to both direct and indirect costs for patients, their carers and the community. The direct costs have been compiled into the table below with descriptions of the mode of treatment, costs to the patient, detail of effectiveness and reference to the literature providing the evidence.
<table>
<thead>
<tr>
<th><strong>Options</strong></th>
<th><strong>Description</strong></th>
<th><strong>Direct Costs to Patients</strong></th>
<th><strong>Effectiveness</strong></th>
<th><strong>Reference</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Physiotherapy</td>
<td>8 week physiotherapy treatment (Enhanced Primary Care Management Plan item no. 10960)</td>
<td>$460.40</td>
<td>Significant improvement in terms of level of pain, physical function and quality of life</td>
<td>Deyle G. D. et al. (2000), Gremion, G., Gaillard, D., Leyvraz, Jolles (2009), Pisters et al. (2010), French et al. (2010)</td>
</tr>
<tr>
<td>Exercise</td>
<td>strengthening exercises, general exercises (strengthening, flexibility and aerobic exercise), and manual therapy</td>
<td>$80.00 per month for membership or casual entry into gym or aquatic centre</td>
<td>There is high quality evidence that exercise reduces pain and improves physical function in patients with knee osteoarthritis. Behavioral graded activity and usual exercise treatments were shown to beneficial within-groups in the long-term.</td>
<td>Jamtvedt, G, Dahm, K.T., et al. (2008), Jansen, Viechtbauer, et al. (2011), Pisters et al. (2010), Sevick, et al. (2009)</td>
</tr>
<tr>
<td>Options</td>
<td>Description</td>
<td>Direct Costs to Patients</td>
<td>Effectiveness</td>
<td>Reference</td>
</tr>
<tr>
<td>------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Home Physiotherapy</strong></td>
<td>Exercise and physical therapy for seniors and those with a disability to help improve balance, strength and stamina at home. The program consists of gentle exercises that suit all levels of ability.</td>
<td>Initial consultation $110 and standard visit is $90. Pensioner rate is $80 both; Health care reimbursement $40 - $60</td>
<td>Significant improvement in terms of level of pain, physical function and quality of life. Behavioral graded activity and usual exercise treatments were shown to beneficial within-groups in the long-term. All pain, physical function and muscle strength measures showed significantly greater improvement in the strengthening group with knee osteoarthritis.</td>
<td>Deyle G. D. et al. (2000), Gremion, G., Gaillard, D., Leyvraz, Jolles (2009), Pisters et al. (2010), French et al. (2010), Bennell, et al. (2010), Sevick, et al. (2009)</td>
</tr>
<tr>
<td><strong>Pulse signal therapy</strong></td>
<td>Recommendation is for 9 session (Enhanced Primary Care Management Plan item no. 10960)</td>
<td>$518.00 for 9 session if under Care Management Plan; or Pension rate of $720 (no health care card)</td>
<td>Significant improvement in terms of level of pain and physical function and delay the need for total joint replacement</td>
<td>Gremion, G., Gaillard, D., Leyvraz, Jolles (2009)</td>
</tr>
<tr>
<td>Options</td>
<td>Description</td>
<td>Direct Costs to Patients</td>
<td>Effectiveness</td>
<td>Reference</td>
</tr>
<tr>
<td>-------------</td>
<td>------------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Dietetics</td>
<td>Teaching lifestyle modifications and advice on weight management</td>
<td>No charge if part of the Enhanced Primary Care Management; $70 per session for between 3 to 5 sessions (reimbursement paid by most health fund - if they have)</td>
<td>Continuous reinforcement of a weight loss programme can be successful over a year in obese knee osteoarthritis patients. The clinical benefits of the intervention on health recommended weight loss in this group of patients</td>
<td>Bliddal, et al. (2011), Richmond, et al. (2009), Riecke et al. (2010), Sevick, et al. (2009)</td>
</tr>
<tr>
<td>Acupuncture</td>
<td>Acupuncture, western style, for 6 weeks. Most undertake 8 or 10 sessions</td>
<td>Cost from $25 to $80 includes diagnosis and treatment. Medicare rebate of $21.45 for each session and can be claimed if practitioner is a medical doctor and is covered by most health funds.</td>
<td>At 7 weeks, there was 10% reduction using the Oxford Knee Score questionnaire; acupuncture found to have clinically irrelevant short-term improvements in pain and function</td>
<td>Williamson, Wyatt, Yein and Melton (2007); Ezzo, Hadhazy, Birch et al. (2001), Manheimer, et al. (2007)</td>
</tr>
<tr>
<td>Options</td>
<td>Description</td>
<td>Direct Costs to Patients</td>
<td>Effectiveness</td>
<td>Reference</td>
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<tr>
<td><strong>Medicine - First Line in WHO ladder</strong></td>
<td>Treatment with oral paracetamol such as Panadol and Panamex</td>
<td>Panamex: Pensioner $5.60 for 3 boxes (300 tablets); non-pensioner $2.50 (100 tab); PanOsteo Pensioner $5.60 2 boxes (192 tab); $5.95 (96 tab)</td>
<td>Has been identified to be most effective for the majority if taken &quot;by the dosage/by the hour&quot; in having symptomatic effects; Paracetamol is effective and well-tolerated.</td>
<td>Bjordal, et al. (2007), Scott, et al. (2000), Courtney et al. (2009)</td>
</tr>
<tr>
<td><strong>Medicine - First Line in WHO ladder</strong></td>
<td>Treatment with glucosamine sulphate; chondroitin sulphate; fish-oil</td>
<td>$20 for 200 capsules (1.5 gms/day); Fish oil $10 for 200 capsules (8-12 capsules/day).</td>
<td>glucosamine sulphate and chondroitin sulphate - highly significant efficacy of glucosamine on all outcomes. Have been claimed to exert their effect by modifying cartilage structure and thereby slowing disease progression.</td>
<td>Bruyere et al. (2004), Richy, et al. (2003)</td>
</tr>
<tr>
<td>Options</td>
<td>Description</td>
<td>Direct Costs to Patients</td>
<td>Effectiveness</td>
<td>Reference</td>
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<td><strong>Medicine - 2nd step in WHO ladder</strong></td>
<td>Treatment with non-steriodal anti-inflammatory drugs (NSAIDs) - Voltaran, Nurofen, Naprosen; cyclooxygenase 2 (Cox) inhibitors - Celebrex; stronger pain killers such as digesic</td>
<td>Nurofen, Nurofen, Mobic: Pensioner $5.60 per box; non-pensioner $34.20 per box.</td>
<td>NSAID are well proven if taken in conjunction with Paracetemol but can have adverse side effects of GIT; Cox inhibitors taken as 1 tablet per day have less side effects. Found to be effective compared to placebo.</td>
<td>Gremion, G., Gaillard, D., Leyvraz, Jolles (2009), Sharma, R. (2010), Bjordal, et al. (2007), Bjordal, et al. (2004), Richmond, et al. (2009), Courtney et. al. (2009)</td>
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<tr>
<td><strong>Medicine - 3rd step in WHO ladder</strong></td>
<td>Treatment with Opioids such as patches, Endone, Norsban</td>
<td>Pensioner $5.60 per box; non-pensioner $34.20 per box.</td>
<td>Found to be effective compared to placebo. Mild- to moderate-strength opioids may achieve additive symptomatic benefit for osteoarthritis patients when combined with paracetamol. Stronger opioid drugs, including morphine, may occasionally be considered in the short term for individual patients who do not achieve adequate pain relief from</td>
<td>Bjordal, et al. (2007), Courtney et al. (2009), Goodwin, et al. (2009)</td>
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nonpharmacological modalities, other systemic analgesics or intraarticular therapy. Transdermal opioids are popular with patients and may be used for uncontrolled pain.

| Arthroscopic surgery Basic | Basic procedure debridement, osteoplasty or chondroplasty (item no. 49558) | $ 252.15 | 80% excellent or good results using VAS scale for pain assessment, at the end of 2 years follow-up. The success rate is inversely related to the grade of osteoarthritis and the duration after the lavage. | Kirkley, A., Birmingham, T. B. et al. (2008), Sharma, R. (2010) |
| Arthroscopic surgery Complex | Reconstructive surgery (item no. 49542) | $ 1,217.50 | |

1 Dr. Tannous attended the Australian Health Economist conference at which she consulted extensively with other researchers in this area including the research team at Monash University who are the authors and managers of QoL tools (Professor Jeff Richardson and Angelo Iezzi); Professor Harris (Deputy Director of the Centre for Health Economics) who is currently part of the team that is conducting a study into Efficacy of physiotherapy for rotator cuff: a randomised control trial, with K Bennell, S Green and R Buchbinder; and researchers in the Health Economics Unit at Deakin University.
There are a number of other expenses (indirect and intangible) that sufferers with OA also may incur. These have been investigated using a study conducted by Access Economics (2007) with the cost figures adjusted to current value using the inflation rate from June 2007 to June 2011. For most cost items, the per-person cost was calculated based on the computed total cost divided by the number of persons with osteoarthritis.

People living with osteoarthritis may purchase different aids to maintain their independence and quality of life. Examples include wheelchairs, walking frames and kitchen gadgets. They may also make modifications to their house such as installing rails, monkey bars, and adding a shower chair. The cost for such aids and equipment is estimated at $64 per person. In addition, home modifications can range from $30 and $200 for showering and toileting aids to $7,500 for home modifications (Access Economics, 2007).

As well, they and/or their carers may seek support from psychologists or counsellors to assist them in dealing with the daily pain, stress and fatigue that can lead to anger and depression (Access Economics, 2007).

There are a number of other financial costs that may be incurred by sufferers, carers and general community (Victorian Department of Health, 2011; March and Bagga, 2004; Gupta, et al. 2005). Carers are people who provide informal care to individuals who are suffering with osteoarthritis. For example, carers may take time off work to accompany people with osteoarthritis to medical appointments, stay with them in hospital or care for them at home. Most informal carers are family or friends of the person receiving care. According to the Survey of Disability, Ageing and Carers (Australian Bureau of Statistics), primary carers provided on average 25 – 30 hours per week and those who are non-primary carer of a person with arthritis is estimated at around 5 hours caring for the person. This is equated to $296 per person with osteoarthritis in 2011.

Individual sufferers with osteoarthritis and/or their carers may also incur additional travel expenses as a result of their condition. These costs can be particularly onerous for regional and remote individuals who need to undertake significant travel for
treatment. Costs includes petrol, road tolls, additional car maintenance, tax, train, bus and air fares, accommodation costs, and additional meal costs. This is estimated at $32 for every person with osteoarthritis.

For the sufferers and the general community the other costs of osteoarthritis are:

- Productivity losses – costs of temporary work absences plus the discounted stream of lifetime earnings lost due to early retirement from the workforce, reduced working hours (part-time rather than full-time) and premature mortality. The employment rate was determined to be less for osteoarthritis sufferers by 5.5% for men and 3.75% for women (Access Economics, 2007).

- Increased absenteeism due to common pain condition, such as osteoarthritis, is estimated to be on average 0.7 hours per worker per week, assuming an 8-hour day and a 48 week working year, this equates to 4.2 working days per year (Stewart, et al., 2003).

- Premature death – osteoarthritis is a disease of low mortality and most death result from complications and co-morbidities. This was estimated, for people aged 15-64 with osteoarthritis, estimated annual cost due to lost productivity from premature death is $2.0 million. As well, additional search and hiring costs for replacement workers estimated at $20,800 for people with osteoarthritis.

- Reduced taxation income and consumption tax from foregone income and lower consumption of goods and services. This was estimated to be $624 million of potential taxation revenue due will be lost due to reduced participation of people with osteoarthritis in paid workforce in Australia.

Additional costs of programs to support people with osteoarthritis as they age and disabled to support them in conducting their daily lives. These include programs such as Extended Aged Care at Home (EACH) packages, the Home and Community Care Program (HACC) and Community Aged Care Packages (CACP). The cost of the government programs attributable to osteoarthritis is estimated at $75 per person.
8 Findings and recommendations

The following data was provided by the musculoskeletal coordinator at JHH as part of work required for the OACCP.

8.1 General Findings

- There are currently 5 surgeons who see patients with OA hip & knee at JHH. (NB: these surgeons see people with other conditions as well).
- There are currently 1429 patients waiting for an appointment with these surgeons.
- There are no methods for the specific identification of OA hip & knee referrals.
- A survey of patients at the orthopaedic peri-operative clinic indicated that less than 50% of patients had tried conservative OA management. Many commented it had not ever been offered.
  (NB: Referrals don’t indicate if conservative management has been tried)
- An audit of 75 new pts following their first visit to an orthopaedic surgeon showed that 30 patients (40%) did not require surgery
- In general, orthopaedic surgeons recommended conservative management interventions for this group and they were referred back to their GP.
- Many of these patients had waited an extended time for an appointment with the orthopaedic surgeon, up to 12-18 months.
- Conservative management interventions could have been arranged while patients were waiting for orthopaedic surgeon appointment
8.2 Opportunities for Improvement

Using the patient journey models as a common communication medium, UWS researchers and involved stakeholders analysed the current state of OA care to identify a number of areas in which substantial improvement can be realised if services and IT support were redesigned/reorganised.

<table>
<thead>
<tr>
<th>OPPORTUNITIES FOR IMPROVEMENT</th>
<th>RATIONALE/BARRIERS</th>
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<tbody>
<tr>
<td>1. When conducting consultations with a patient who is suspected of/has been diagnosed with OA, many GPs are not adhering to “best practice guidelines”.</td>
<td>GPs indicated that the guidelines are difficult to locate and excessive time is needed to filter available information. This results in treatment plans that rely on the GPs best recollection of the guideline and fails to take into account ‘forgotten’ or more recent improvements in clinical treatments that easy access to guidelines would provide.</td>
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<tr>
<td>2. Lack of common language/ assessment tools around severity and effect on treatment priority</td>
<td>There is very little commonality across the care provider groups as to the language and tools used to assess a patients’ QoL and the related severity of OA. This inhibits discussion and decision regarding appropriate treatment pathways for patients, particularly for GPs.</td>
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Related to:
Severity assessments not available to primary care providers to guide decisions on appropriate care pathways

Where assessment tools are in use within HNE Health, they are not available to GPs. To aid the decision making process on appropriate care pathways GPs require access to such tools to help them assess a patients initial OA severity and the need for different levels of treatment including the immediacy of the need for surgery or the lack thereof. In addition if a common tool was used across all care providers, the patients disease progression could be easily tracked over time.
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<tr>
<td>3. There is a general lack of knowledge by GPs regarding the range/type/location of community and allied health services within the HNE area.</td>
<td>During the development of the current state models there were several comments by the GP representatives that they and their colleagues did not know and could not easily locate details about available conservative treatments provided by either public or private services. Examples of this are the Community Services programs around falls prevention, physio and hydrotherapy services. This lack of knowledge inhibits the GPs ability to readily advise patients of potential conservative treatments and relevant providers.</td>
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<tr>
<td>4. Complete patient diagnostic and treatment histories not available to all care providers involved in the OA patient journey</td>
<td>The majority of care providers within the acute and community health areas have access to the Clinical Access Portal (CAP) and as such ready access to electronic information regarding patient health records including test results, diagnosis, hospital admissions and treatment histories. CAP however is not accessible to GPs and other primary care providers. This restriction on important information can inhibit primary care decision making and may result in duplicate testing and conflicting treatment recommendations.</td>
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<td>5. A hip and knee physiotherapy project has been initiated within John Hunter but is only available once a patient is referred for surgical consult</td>
<td>A relatively new OA specific hip and knee physiotherapy project has been established as part of the JHH physio services unit. Based on research-led best practice the project is currently collecting their 6 month patient outcome results and although it is still quite early in the assessment process, results have been very encouraging in reducing patient BMI, improving self-reported pain levels and QoL. Patients are referred to this program as part of the triage process by the musculoskeletal coordinator at JHH which means the patient must have already been referred to JHH for a surgical consult to arrive at this point in their journey.</td>
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<td>OPPORTUNITIES FOR IMPROVEMENT</td>
<td>RATIONALE/BARRIERS</td>
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<tr>
<td><strong>6.</strong> Leverage existing experience in the OA hip and knee project and other similar projects to reduce demand on acute care facilities and improve convenience for patients</td>
<td>Encouraging results from the JHH Hip and Knee project and other similar dedicated OA projects (ie: in Victoria and South Australia) provide excellent opportunities to reduce the demand for acute services by initiating similar services outside of the acute care setting. This might involve community health-managed programs or acute care staff running physiotherapy projects within a community setting.</td>
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<tr>
<td><strong>7.</strong> Many patients attending for a surgical consult have not undertaken any conservative treatment whilst on the wait list</td>
<td>An excessive number of surgical consults result in the patient being referred back to their GP, effectively restarting their journey. Surveys conducted by the musculoskeletal co-ordinator at JHH indicated that less than 50% of patients had undertaken conservative OA treatment prior to their attendance at the orthopaedic peri-operative clinic. Many also commented that other treatment had not been recommended. Surgeons commented many patients attending for a surgical consult at John Hunter are not ready/suitable for surgery and as a result are sent back to their GP. This may be for a variety of reasons including excessive co morbidities or weight problems, lack of OA severity necessitating surgery at this point in time and/or other more appropriate treatments that should be attempted prior to surgery. The net effect on the patient is that they may have waited for up to 12 months for a consult only to be told that their GP could/should manage them. This is not only very frustrating to the patient but also impacts their quality of life and pain levels during their wait period.</td>
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- 35 -
### OPPORTUNITIES FOR IMPROVEMENT | RATIONALE/BARRIERS
---|---
#### 8.
*GPs are referring patients for a surgical consult irrespective of whether evidence exists to support such referrals.*

**Related to:**

*Lengthy delays for referred patients to see surgeon or rheumatologist for OA*

As it is well recognised that there are extensive delays for surgical consults in the public system, evidence collected by the musculoskeletal co-ordinator at JHH suggest that excessive numbers of GPs refer patients for a surgical consult without adequate evidence or trial of conservative treatment regimes, ‘just in case’ it is needed or to ensure a timely appoint is available ‘when’ needed. This was also confirmed by the GPs participating in the project.

As in point 1 above GPs lack ready access to guidelines and tools that can help them to make decisions regarding appropriateness of referrals. Therefore excessive inappropriate referrals are being made and this increases the numbers on the wait list and thus time to appointment.

#### 9.
*Improve patient access to dedicated OA care*

A patient-centric OA care model would see the majority of care devolved from the acute care setting. This may involve new models of care that authorise nurse practitioners within GP offices to deliver dedicated OA care or the establishment of dedicated community-based OA clinics. Such models would improve the overall quality of care delivered as resources would be current with best practice and leading edge OA treatments. GPs would refer a patient to such a service once OA diagnosis was confirmed. In a clinic scenario, clinics may be physically attached to GP offices, centrally located at a major hub or provided virtually.

Such clinics would have the resources to create GP Management Plans and refer/recommend patients for all required tests/services/specialists. The clinic would act as a coordination point for patients and be responsible for communications with relevant primary, community, private and acute care providers. Such initiatives would be more convenient to patients and negate the need for them to negotiate the busy JHH campus.
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<tr>
<td><strong>10. GP Management Plan templates for OA are not easily accessible to GPs</strong></td>
<td>The RACGP currently provides templates for GP Management Plans (GPMP) for primary care providers. The templates include questions/data components for a wide variety of ‘chronic’ conditions and require an excessive amount of filtering when being completed for an OA patients. Although an OA GPMP template does exist it is buried within the paper-based guideline. This significantly increases the time taken to complete such plans and in some cases means GPs do not prepare GPMPs for candidate patients. This impacts patients, as without a GPMP they are not entitled to a range of additional services through the MBS items (see later point).</td>
</tr>
<tr>
<td><strong>11. Number of MBS visits permitted is inadequate.</strong></td>
<td>As the MBS program covers visits for a wide variety of services ranging from podiatry to dietetics to physiotherapy there are not enough reimbursed visits available to cover OA treatments and other associated co-morbidities. For example the Hip and Knee Physiotherapy project at John Hunter runs for 6 classes which means if a patient was to undertake a similar program through a MBS approved scheme, patients would have completely exhausted their MBS visits on just this type of program. This is a barrier to the ongoing use of conservative treatment as patients would be hesitant to use all of their allocated quota for only one issue.</td>
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<td><strong>12. Improved feedback to referrers in standardized formats</strong></td>
<td>If a patient is referred to another provider, for example allied health, there are no standard feedback mechanisms currently in place. Specific cases were cited regarding Dietetics where feedback is currently highly variable. Some referrers indicated that in some cases they did not receive feedback at all or when they did the feedback was provided in a variety of formats and depth. Standard and consistent feedback to referrers should be included as part of the patient journey as lack of quality information inhibits provider decision making.</td>
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<td>RATIONALE/BARRIERS</td>
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<td>13. Implementation of a dedicated dietetic outpatient clinics at JHH and the community</td>
<td>Research literature indicates that being overweight is one of the key factors affecting OA patient pain and mobility. Currently the only option for outpatient dietetic support for OA patients is attendance at a weekly 2 hour ‘general’ dietetic clinic at JHH. Opportunity exists for improving availability of dietetic support by providing dedicated OA dietetic outpatient services both at JHH and in the community. Community clinics would provide greater patient satisfaction and reduce congestion at JHH campus. Such services will improve patient pain and mobility potentially lessening a patient’s need for surgery or increasing a patient’s suitability for surgery (if that option is recommended).</td>
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8.3 **Recommendations**

Taking the preceding opportunities for improvement into account, the relevant stakeholders (both physical and virtual) were considered in light of what factors should be considered as drivers for potential solutions. In short the improved patient journey should provide integrated, seamless delivery of osteoarthritis care that:

- improves patient Quality of Life (QoL);
- promotes and supports the use of best practice across the continuum of care by all involved care providers
- provides the right information to the right people at the right time
- sees community and allied health as an integral part of the patient journey
- promotes timely surgical referrals and
- is convenient and timely for the patient to access

Specific recommendations are as follows:

1. **Provide a simple to access, online system that makes best-practice guidelines quickly and easily available to all care providers, particularly GPs.**
   
   Such a system should include simple search features to help users rapidly locate relevant information and provide links to additional support. A web-based system would be an ideal platform for such a system and should include direct access (or links) to:
   
   - OA-specific chronic care management plans,
   - A directory of available services
   - Referral templates
   - Care handover and feedback templates
   - Patient self management and education material
   - Patient severity/QoL self assessment tools (see below)

   *This solution will promote and encourage the use of best practice guidelines across the system of care and improve the overall quality of care delivered to patients. It is critical that all required information is readily available through the same medium or user acceptance of the system will be significantly reduced.*

   NB: Requirements gathering currently underway with Graeme McGeoch from the Canterbury Initiative should strongly consider making the suggested items listed above, available within the new Health Pathways project.
2. **Use a common severity/quality of life (QoL) patient self-assessment tool across all care providers, including GPs.**

Severity/QoL assessment tools can assist in the evaluation of a patient’s disease status and progression and provide important data for inclusion in the decision making process regarding the most appropriate best practice treatment pathways. Currently, a variety of severity assessment/scoring systems are used by different care providers within HNE Health but none of these are available to GPs. Formal measurement tools to aid in the assessment of a patient’s clinical status, are recommended as part of the RACGP guidelines, with an included link to the Victorian OWL project. It is suggested that agreement is reached on a common tool that can be simply used by all providers across the entire journey. This would range from initial patient assessment by a GP, to allied/community health assessment to specialist assessment to patient re-assessment as part of treatment effectiveness evaluations. The tool should utilise patient self-assessments to determine an overall score indicating a patient’s OA severity. The tool recommended to assess severity/disease progression is the MAPT tool. This is the tool is used by the Victorian OWL project and is already in use by some HNE providers (JHH physio project). It is also recommended that the MAPT tool be used in conjunction with AQoL8D to assess the impact on the patient’s QoL.

Such tools would provide critical support for improved GP decision making regarding initial patient assessment and the most suitable best practice treatment pathway for individual patients. In short the lower the assessed MAPT score the less severe the condition and the better the patients quality of life and the more likely that the patient will benefit from conservative treatment and does not require an immediate surgical consult.

The MAPT tool can also be used during the surgical consult process to rank and prioritise surgical patients.

The same tool should also be used for any re-assessments conducted throughout the patient journey. This would include Physio/dietetics assessments and pre and
post surgical reviews. This will allow disease progression to be tracked over time and improvements/degenerations to be simply identified.

Consideration should also be given to the introduction of a minimum ‘severity score’ and confirmation of conservative treatments attempted prior to referral, as a condition of acceptance of surgical consult referrals at JHH.

*With access to tools for assessing patient severity/QoL, GPs will have data on which to make more informed decisions regarding best-practice treatment pathways. This should promote more timely surgical referrals thus reducing the numbers of superfluous referrals and total wait times thus helping to ensure that the most appropriate patients are on the wait list and potentially reducing wait times.*

*This tool would ideally be accessible from the Health Pathways portal.*

*This solution would also result in a common language being used to discuss a patient’s condition across care providers. This would improve inter-disciplinary communications and treatment decisions and evaluations.*

3. **Online accessibility to a directory of conservative treatment service providers.**

To promote the use of conservative treatment by GPs and other care providers, simple online access to a service directory (including community and private) should be readily available. If conservative treatment, based on the severity of the patient’s condition, is recommended by the guidelines, then GPs need to be able to quickly access those services that are appropriate and conveniently located for the patient.

A directory of services for the Greater Newcastle Cluster has been developed by UWS as part of this project and it is recommended that this directory be included as an easily accessible link through the new Health Pathways portal. The provided directory is searchable by service type, location, and provider type.
(public/private). Consideration should also be given to extending this directory to cover the complete HNELHD.

NB: The directory of services created by UWS as part of this project will be included on a CD accompanying this report.

*This solution would promote the use of conservative treatment options through the provision of required supporting information. If the directory was included in the Health Pathways portal the information would be provided at the precise point it is needed: when GPs are being advised to prescribe conservative treatment.*

*Although of most benefit to GPs other care providers would also benefit from access to this information as they can easily identify additional resources that may be required to deal with patient ‘overflows’.*

4. **Provide CAP access for all care providers**

To increase the quality of decisions made, care providers need to be provided with the right information at the right time. Currently GPs do not have access to the Clinical Access Portal (CAP) and as such do not possess all of the information required to make informed decisions regarding their patients. Increased availability to the right information could be provided via GP access to CAP.

*Increased access to complete information will provide improved opportunities for enhanced decision making by care providers.*

5. **Investigate extending the JHH Hip and Knee project outside of the acute care setting.**

Initial patient outcomes from the JHH Hip and Knee project are encouraging and consideration should be given to devolving such a project to a community setting. This would make the program more convenient to patients and leverage the good work completed to date. The service should also be available for GP referrals as part of the treatment guideline for conservative management planning (not just once a surgical consult is made).
This solution would promote the use of best practice conservative treatment options prior to surgical consult, move patients away from the congested JHH campus and thus make treatment availability more convenient to patients.

6. Explore the implementation of dedicated OA care coordination facilities within the community

Improved quality of OA care would be provided through the introduction of dedicated OA care coordination facilities within a community setting. Following diagnosis and referral by a GP, this service would control and coordinate all episodes of care for OA patients including GPMP development, test ordering, referrals for conservative treatment or surgical consults and treatment evaluation assessments. Where possible treatments would also be delivered in-situ. The service may take many forms and resource structures including but not limited to:

- **Individual home visits.**
- **Nurse practitioner-led OA clinics at relevant GP offices** (ie: in aged population areas).
- **OA clinics at major ‘hub’ sites.** Such clinics would be located in an area (‘hub’) that has a high percentage of potential OA patients (ie: in aged population areas). The clinic may be located at a larger GP office or in dedicated space either within an existing community health facility or a private site. Such facilities may also provide conservative treatment options on-site.
- **Virtual OA clinic.** This set-up requires no physical patient attendance and involves communication with patients and care providers via electronic and hard copy information and telephone. Such a service would
  - Send assessment questionnaires & follow up (post/fax/online/phone)
  - Evaluate returned assessments
  - Conduct triaging and reassessments, prepare referrals
  - Liaise with patients and all care providers and ensure feedback is delivered as required.
  - May link in with home visits
This is a highly patient centric solution that not only improves quality and timeliness of care delivered but will be more convenient for the patient whilst also reducing the number of visitors to the JHH campus.

7. Increase the utilisation/capacity of available community health services programs

A number of high quality community health service programs, which would be of benefit to OA patients, are already available. Some of these programs are already at full capacity and consideration needs to be given to their expansion (ie: Stepping On and Otago), whilst others are under-utilized due to a lack of publicity (ie: JHH Hydrotherapy).

Although the Stepping On and Otago programs* are already at full capacity they are not well known to Primary Care providers with the majority of current referrals occurring through word of mouth. Outcome results for these programs have been very encouraging and a request for ongoing funding has been recently submitted. Such funding should not only maintain current service levels but look to increase service capacity. (*these programs are not OA specific but can be of significant benefit to OA patients.)

The hydrotherapy service at JHH campus is currently running at 75% capacity. Such services have the potential to improve patient pain and mobility levels and decrease BMI. Again this service is not well known by primary care providers and increased publicity of this service via the Health Pathways service directory would be beneficial. It should be noted that although this service is located on the JHH campus it has dedicated free parking although there is a small fee for each class.

Inclusion of all available CHS programs within the service directory will increase primary care knowledge of their existence, increase utilization and increased demand will help to justify current and ongoing funding requests.
8. Provide online access to the OA specific GP Management Plan Template

To enable faster creation of GPMPs for OA patients it is suggested that an online version of the current RACGP paper-based OA GPMP template be created. A link to this ‘online’ version can then be provided through the Health Pathways portal.

*Improve speed of creation of OA GPMPs and reduces GP frustration levels due improved access to electronic documentation through a single interface.*

9. Develop OA specific referral, feedback and care handover templates

In line with the previous point and to further improve the effectiveness of available resources it is suggested that OA specific versions of certain commonly used documents be created and made available through the Health Pathways portal. This should include but is not limited to:

- referrals for diagnostic tests
- referrals for allied/community health services
- referrals for surgical consults
- referrer feedback templates
- care handover templates

Stakeholders should be further consulted over document designs and content.

*Online availability of specifically designed documents will increase the accuracy of documentation completion and reduce the need to confer back with the referrer over missing or erroneous data. This will also improve the effectiveness of the referral and care handover process increasing patient safety and provider satisfaction.*

10. Implement standard re-assessment intervals

In a bid to continue to reduce the variability in the OA care process, standard patient re-assessment intervals should be set and patients notified when they are due for a re-assessment. Decisions on interval settings should follow existing best
practice guidelines or recent published evidence (ie: JHH H&N project - 3, 6, 9 months).

The responsibility for notifying patients and conducting re-assessments should ideally sit with the central care coordination facility discussed above.

This solution would enable the progress of patients with OA to be consistently monitored and tracked over time ensuring that changes in disease status (both good and bad) are identified in a timely manner and that treatments plans are continued or amended as appropriate.

12. Investigate procedures for increasing MBS visit limits

To enable more effective conservative treatment plans to be recommended consideration needs to be given to increasing the number of MBS visits OA patients are entitled to. Currently the ceiling is set at 5, irrespective of the number of co-morbidities a patient has. Stakeholders advised that this number is inadequate as a standard physio program recommends a 6 class program which exceeds the base limit and would leave no additional visits for other services such as podiatry or dietetics.

This solution would encourage care providers to recommended and patients to undertake, conservative treatment programs as it would help to ensure minimal costs are incurred for the patient and that they can still access other services under the MBS program.

13. Investigate the introduction of OA-specific dietetic clinics in the Community

Significant pain and mobility improvements for OA patients are possible with good weight management. Service availability for outpatient dietetic services at JHH is very limited with no dedicated OA clinics currently in place. To overcome this it is recommended that OA-specific outpatient dietetic services be made available ideally at community based clinics. If community-based clinics are not possible then an OA-specific clinic at JHH should be considered.
This solution will provide opportunities to improve patient symptoms and in relation to community-based clinics reduce congestion on the JHH campus.

8.4 Future State

Although developing future state designs was not a part of this project brief, any future service redesign should accommodate the following system of care activities. NB: The processes listed are not specific to a particular role.

• Perform Consultation
• Arrange diagnostic testing
• Patient self-assessment
• Confirm diagnosis
• Calculate severity score
• Determine appropriate treatment pathway based on severity
• Creation and maintenance of GPMP
• Referral creation (do all need a doctor?)
• Patient undertakes recommended care/treatments
• Primary care notifications of treatment outcomes
• Notify patient re-assessment is due
• Conduct patient self-reassessment
• Evaluate treatment pathway
• Confirm/revise treatment plan

9 Future Work

This report provides comprehensive information on a number of recommended OA service improvements primarily identified through the patient journey modelling activities conducted with OA stakeholders. Ongoing work is required to analyse associated implementation issues and to develop implementation action plans. Items requiring additional attention include:

• Confirmation of the best practice pathway to be included in the Health Pathways portal
• Confirmation of information links to be included in the portal
• Review of provided research literature and agreement on common severity/QoL assessment tools for all care providers including GPs
• Availability of CAP to all OA care providers
• Further research on the economic effects of adhering to best practice standards
• Analysis and agreement on key performance indicators to be used to measure the impact of implemented changes
• Development of online templates for standard referrals, GPMP, care handovers and referrer feedback letters
• Investigation of dedicated OA-specific dietetic clinics in community
• Training in new procedures and systems for all involved stakeholders
• Agreement on frequency of patient re-assessments (3/6 mths etc…)
• Agreement regarding the ongoing responsibility for modifications and additions to the provided service directory
• Ongoing evaluation of the future state for the purposes of confirming proposed advantages (including cost advantages) for the OA sufferer.
10 Conclusion

Work undertaken during this project confirms that significant opportunities exist to improve the delivery of OA care within the HNELHD.

Implementation of the recommendations would improve the patient journey and support integrated, seamless delivery of osteoarthritis care that:

- improves patient Quality of Life (QoL);
- promotes and supports the use of best practice across the continuum of care by all involved care providers
- provides the right information to the right people at the right time
- sees community and allied health as an integral part of the patient journey
- promotes timely surgical referrals and
- is convenient and timely for the patient to access

Following implementation of the recommendations contained herein, specific plans must be put in place to conduct formal patient journey evaluations to ensure expected improvements have been realised.

The UWS research team would like to take this opportunity to thank the involved stakeholders for their time and dedication to the project.
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3 Dr. Tannous attended the Australian Health Economist conference at which she consulted extensively with other researchers in this area including the research team at Monash University who are the authors and managers of QoL tools (Professor Jeff Richardson and Angelo Iezzi); Professor Harris (Deputy Director of the Centre for Health Economics) who is currently part of the team that is conducting a study into Efficacy of physiotherapy for rotator cuff: a randomised control trial, with K Bennell, S Green and R Buchbinder; and researchers in the Health Economics Unit at Deakin University.