The implementation and evaluation of the Osteoarthritis Hip and Knee Service and its impact in a regional setting

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Theo Kapakoulakis graduated from La Trobe University School of Physiotherapy 1989 with B. App. Sci Physio, and has completed postgraduate diplomas in both Sports Physiotherapy and Aquatic Therapy. He began working at Bendigo Health in 1995 as senior clinician in orthopaedics and is currently holding position of grade 4 musculoskeletal physiotherapist with a team leadership role within Bendigo Health orthopaedic services encompassing orthopaedic inpatients and outpatients, emergency department, fracture clinics and other primary access outpatient clinics.

Theo has a special interest in management of arthritis and the OA hip and knee replacement journey having not only been a clinician and clinical researcher in this area but also a happy recipient of a hip replacement in 2007.

Theo commenced the OA Hip Knee Service at Bendigo Health in July 2008 as musculoskeletal coordinator and principal clinician responsible for the management and development of the clinic as well as patient assessment, planning and review. In this time a number of initiatives have been completed resulting in service improvements across a broad sector relating to the management of OA hip knee patients.

Theo has presented at several conferences and co-authored a paper relating to the relationship of the OAHKS MAPT score to radiographic findings in patients referred for consideration for joint replacement surgery.

Introduction

The Osteoarthritis Hip and Knee Service (OAHKS) commenced at Bendigo Health in July 2008 as a stage 2 site for a Victorian Department of Health (DoH) project introduced to better manage osteoarthritis patients awaiting surgical assessment and treatment.

Prior to the introduction of OAHKS, patients could wait some time (up to 3 years) to see a surgeon and then a further period of time for their actual surgery. There is evidence to suggest that during this time the overall physical condition and psychosocial wellbeing deteriorated in this patient group. In assessing outpatient referrals and waiting lists there was also found to be a wide variation in the general practitioners decision to refer a patient for orthopaedic assessment with a tendency to refer prior to the actual need for surgery (Department of Health Victoria, 2008). This can be attributed to many factors including concern about the waiting times and to secure access to health services (Department of Health Victoria, 2008).

Some of the reasons for the introduction of the OAHKS program in Victoria were:

- increasing demand for hip and knee arthroplasty, particularly in recognition of an aging population
- identification of the wide variation in the use of non-operative measures for this patient group
- wide variation in waiting times for both seeing a surgeon and for operation across the state
- limitations of the Category system for patients awaiting this type of surgery
- variations in the use of that categorisation system across the state (Department of Health Victoria, 2008).

The OAHKS service provides an evidenced based prioritisation and management system for patients awaiting both orthopaedic assessment and surgery. The model developed and introduced, spans the continuum of care from initial referral for an orthopaedic opinion to joint replacement surgery. (Department of Health Victoria, 2008)

The ideals of this model are that care should:

- comprise timely and appropriate treatment
- be equitable and based on need

- be evidence based
- be consumer focused and support self management
- be multidisciplinary and support communication between care providers
- include regular monitoring.

As a part of the DoH's investigation for ways to manage waiting lists it was found that around 70–80% of patients referred for surgical assessment were not being well managed conservatively. There are many options available for successful management of this condition and they include the following;

- medical management (analgesia, NSAIDS, glucosamine, fish oils)
- intra-articular/extra articular injections (LA/steroid/viscosupplementation)
- non-medical pain management: TENS, heat/ice, topical creams
- exercise: hydrotherapy, Tai Chi, ST, FOAP, Nordic walking
- manual therapies, taping
- bracing, orthotics
- gait aid prescription
- weight loss (Australian Institute of Health and Welfare, 2010).

There have been studies performed in the past showing the uptake of conservative management for patients with OA by the Australian Institute of Health and Wellbeing (AIHW) and the results of this are included in Table 1. These results have not been contradicted with what was found for patients referred to Bendigo Health for an orthopaedic assessment for OA.

Table 1 Management actions taken for arthritis, 2004–05

Action	Per cent
Exercised most days	18.8
Strength or resistance training	5.5
Water therapy	3.7
Weight loss	5.2
Change of diet or eating pattern	3.5
Massage	6.3
Used physical aids	2.3
Used vitamin/mineral supplements	39.0
Used pharmaceutical medication	37.4
Visited a GP or specialist	10.8
Visited an allied health professional	4.4
Other actions	1.8
No action	29.5

Notes
1. Includes people that self-reported a doctor's or nurse's diagnosis of any form of arthritis. Data were not reliable enough to allow separation into specific types of arthritis.
2. More than one action may be reported.

Source: AIHW analysis of the 2004–05 NHS CURF. (Australian Institute of Health and Wellbeing, 2008)

Aim

The overall aim of the OAHKS service is to ensure that optimal care for people with Osteoarthritis is achieved in a timely manner (Department of Health Victoria, 2008).

Background

Bendigo Health is the major referral centre for the Loddon Mallee Region (LMR). The LMR itself covers 60,000 square kilometres and takes up around 25% of geographical Victoria. There are approximately 300, 000 residents across the region, which measures around 600 Km from north to the south with Bendigo Health located in the Southern section. (Department of Human Services Victoria, 2010)

There are ten local government areas (LGAs) across the LMR and OAHKS sees patients from all these areas as well as some that cross the NSW state border, although the vast majority of patients seen in our service come from the City of Greater Bendigo.

In the Victorian Burden of Disease Study (2005) Osteoarthritis (OA) ranks ninth in the LMR under years lived with a disability. It is well recognised that OA is a disease that affects you as you age and from Department of Sustainability and Environment (DSE) population predictions for this region and particularly the City of Greater Bendigo a steep rise in the population of those over the age of 50 years is predicted.

The prevalence of Osteoarthritis has also been found to be highest in inner regional areas of Australia which the whole of the LMR is considered to be. There is also an increased prevalence of Osteoarthritis in Aboriginal and Torres Strait Islanders (ATSI) of which there is a proportion throughout the region. The LMR as a whole is also recognised as having a lower socioeconomic status and therefore the added problems and incidence of arthritis associated with this are an influencing factor on the population serviced by Bendigo Health. The other major factor to consider is the presence of co-morbidities in this particular patient group. (Australian Institute of Health and Welfare, 2010).

There is a wide variation in the actual OAHKS services across the state of Victoria. This is dependent on a number of factors which are currently being analysed through the DoH as a part of the whole project. Results of this are not yet available.

OAHKS at Bendigo Health

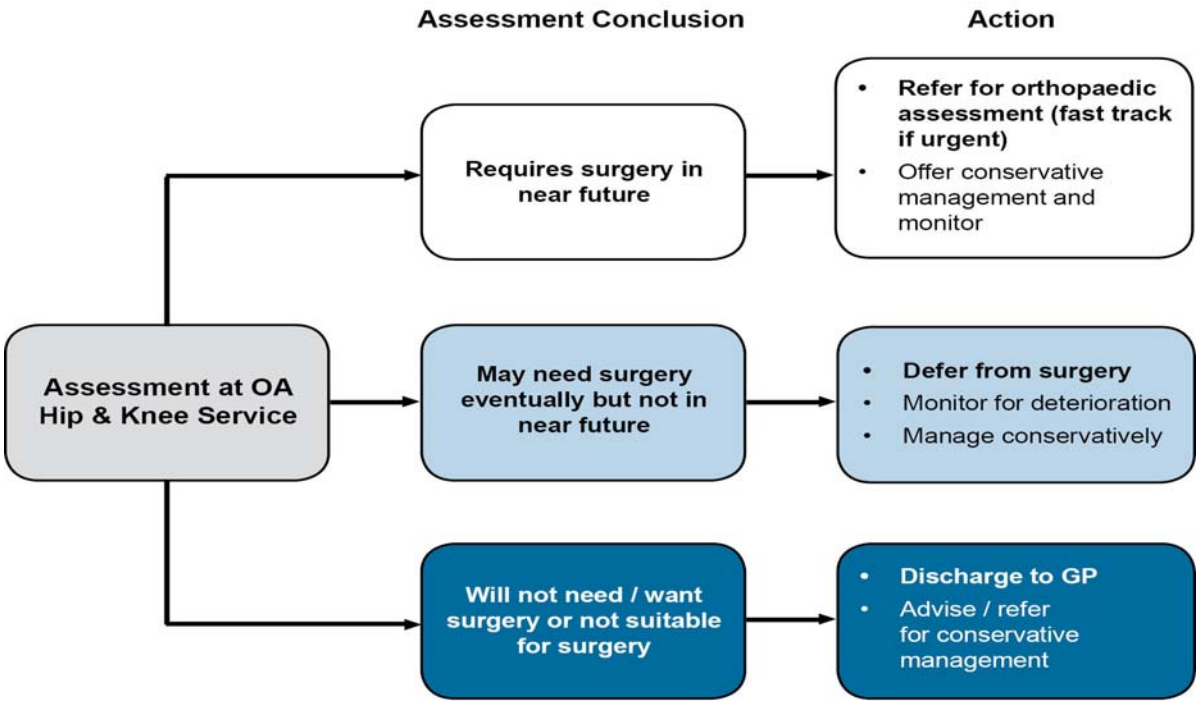
The OAHKS at Bendigo Health is a relatively small service comprising a Musculo-Skeletal Coordinator (MSC) 0.4 EFT, an administration assistant 0.2 EFT and a project officer 0.2 EFT. The service commenced after an initial assessment of the available services across the region and their capacity to support referred patients was performed. This helped with ensuring that patients were referred to an area and service that they could readily access within their own area to prevent the potential barrier to uptake of the recommendations from the initial assessment.

To address the backlog of patients, clinics were initially held three times a week. Now, there is only a need for two clinics a week although, on occasions, this is increased if there has been an increase in the number of referrals and to keep the wait time for initial assessment no longer than 6-8 weeks wherever possible.

Outcomes

There have been over 800 patients assessed through the service in this way. Any patients needing to see a surgeon after their assessment only wait up to 8 weeks, at the most, with many actually seeing the surgeon on the day of their OAHKS appointment as these clinics are run concurrently with the Orthopaedic outpatient's clinics.

There are three possible outcomes to the initial assessment for patients as shown in Figure 1.



(Department of Health Victoria, 2008)

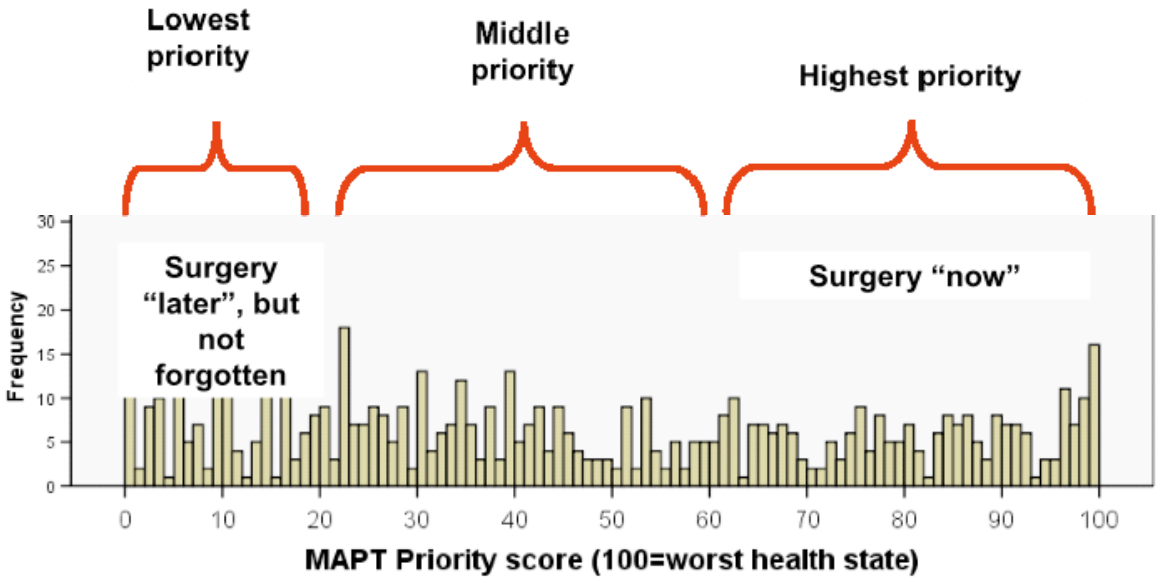
Figure 1 OAHKS assessment process

After the first six months of the service patient outcomes were investigated to assess the impact of the clinic on the overall orthopaedic service. It was found that from 108 patients, 20 (18%) were discharged from the service, 38 (35%) were deferred from surgery and 51 (47%) referred for a surgical assessment. This has ensured that the surgeons are actually seeing the patients that need their assessment and valuable outpatient clinic time is being better utilised. Diverting the patients from the outpatient clinics also had a positive impact on the outpatient waiting list by reducing the numbers by just under half.

Assessment

The actual assessment includes a full physical assessment as well as the patient's responses on the Multi Attribute Prioritisation Tool (MAPT) questionnaire. The questions in this tool are weighted to provide a score which can then be used to provide a baseline for the patient and also to assist with the decision making for that patient. The time spent with the patient during their initial assessment is around forty minutes during which time they receive a full explanation of their disease and how best to deal with it. From this assessment various referrals for the patient are generated.

An example of how the MAPT score can be used for patients can be seen in Figure 2.



Source: Department of Health Victoria, 2008.

Figure 2 MAPT score usage

The patients that were already on the surgical waiting list at Bendigo Health were all sent a MAPT Questionnaire at the commencement of the project. This found that a large proportion of patients (40%) had a low MAPT score. After the clinic had been running for a year the surgical waiting list MAPT scores were reassessed and the resulting change in distribution can be seen in the following graph. (Figure 3). This means that patients most in need of surgery are actually getting to see a surgeon and have their surgery faster than they previously would have done. Those able to have their surgery delayed are being treated conservatively and referred for surgical assessment at a later stage.

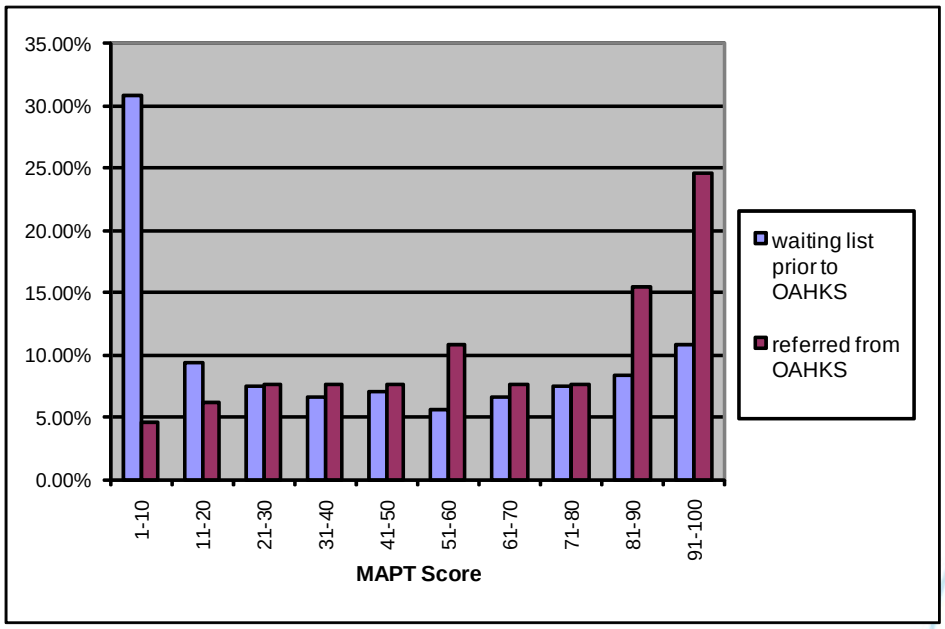


Figure 3 Distribution of MAPT score at Bendigo Health pre and post introduction of OAHKS

As a part of the assessment of our service and MAPT scores, a study of the correlation between MAPT and clinical (radiographic) assessment was performed. Interestingly the results of this showed that patients with severe OA on x-ray had a lower MAPT score than those with mild OA.

Outcomes—patient

The deferred patients comprise about 34%-50% of the people seen. They are reviewed at 3-6 months with the six months being the more usual timeframe. The shorter review period is used for those that perhaps should see a surgeon but are not yet ready to do so.

For the review appointment patients are sent a MAPT questionnaire to fill in and return. The changes to this are recorded and reviewed and depending on the results of this and the patient's preferences they are then given the option for discharge without assessment, a phone review or a clinic appointment.

All patients are aware that they can recontact the clinic staff regarding any issues and there is often discussion between the MSC and Allied Health staff responsible for the care of the patient. General practitioners in the area are also becoming more aware of the service and are referring directly to it or calling if they wish to discus a patient.

The outcomes for the patient post review can be divided into the following:

- improved or stable OA adequately managed which means they are discharge to their GP for follow up
- deteriorated, need surgical evaluation and so they are referred to surgeon with priority
- unsure → adjust Conservative Management, enable compliance, repeat review cycle.

St Vincent's Hospital, which was one of the pilot sites, found that 26% of the conservative management or review group eventually had surgery. The results at Bendigo appear to be trending in the same direction.

Those patients referred for orthopaedic opinion are about 50% of the patients through the clinic. An initial audit of 17 of these patients was done to assess the accuracy of the prediction from the MSC against surgical diagnosis. This was to reassure everyone that decisions being made at the clinic are reliable. It also served to allay any fears that the clinic was not accurately managing patients. The accuracy of the prediction of the MSC was found to be 94% reinforcing the decisions and benefits of this clinic.

The MSC was also able to optimise conservative care for patients and better prepare them for their surgery, providing them with realistic goals for their surgical outcome and being able to spend the time with them that they needed to assist with their own decision making process. The surgeons found that the full assessment performed by the MSC and his recommendations also assisted them in their review of the patient. The patients, themselves, expressed greater satisfaction and felt better cared for by the organisation as they had someone who they felt took the time with them and understood their disease process.

At the preadmission clinic, for those having joint replacement surgery, a further study was performed, the results of which showed an increase in the use of exercise therapy and other forms of treatment in the OAHKS patients compared to those who had not been through the clinic. The other point of interest from this study was the decrease in the MAPT score that was noted in the OAHKS patients prior to their admission although the reasons behind this would require more study to draw accurate conclusions.

The benefits from this clinic to the patient are; decreased waiting times to assessment, increased access to conservative care, to provide them with an improvement of their overall heath, and realistic expectations of their disease process and joint replacement surgery.

A patient satisfaction survey was performed twice within the first 18 months of this service to ensure that the patients remained happy with the service and their outcomes. It was also used as an attempt to assess patient's uptake of services and any barriers that may exist to that uptake. It was sent out to a total of 528 patients who were seen through the service and responses were received from 254 of those giving a 48% response rate. The outcome of this was positive with many of the patients expressing their appreciation of the service and the time spent with them as a part of this. A comments section was included and suggestions looked at to see if any could be used to improve the service offered.

Outcomes—medical staff

The benefits of this service for general practitioners (GP) are as follows:

- prompt assessment of referred patients and communication of outcomes
- improved education on management of OA?
- facilitation to use Enhanced Primary Care Model for chronic disease management
- participation in GP Professional Development programs
- establishment of networks with direct links to orthopaedic service.

GP's in the area now often refer patients directly to this service for assessment rather than to orthopaedic outpatients. The MSC has also spoken at some seminars for GP's in the area to raise awareness of the service.

The surgeons now only see those patients that are ready for and need surgery and the patients are maintained in a better health status which leads to improved surgical outcomes. No assessment on patient destinations and overall length of stay has been able to be performed as many other changes have been introduced which could influence this and so no definitive conclusions can be drawn.

Outcomes—regional

The service has also improved the education and implementation of OA interventions across the region and ensures prioritised access for patients. There is improved communication between the surgeons and allied health staff regarding patients and better communication throughout the region's various care centres. The MSC is available for contact and discussion regarding a patient and will reassess anyone who it is felt needs this done. Some patients in the outlying areas can now be assessed by their own therapists with discussion as the travel can difficult and so they only need to come to Bendigo for a surgical assessment if needed rather than travel the distance several times.

Outcomes—community

The Bendigo community too, has benefited from the introduction of this service. Bendigo Arthritic club was given a presentation by the MSC and, from this a joint funding application was put to Bendigo Council to commence a Nordic Pole Walking Group in Bendigo. This was successful and has since started. There have also been several local newspaper articles about OA and ways to live with it that have been generated through the service. The Rural Health Education Program also featured Bendigo Health's service in a web presentation on conservative management of knee OA in early 2010.

Discussion

There are several reasons for the success of this project and many of them centre on the support and buy in from staff at all levels of the organisation and within the various disciplines and departments involved. It also needs to be acknowledged that the support of the other health services contributed to the successes at Bendigo of this service.

The use of concurrent clinics has played a major role in the rapid assessment of those in particular need or those who travel large distances for assessment and this too is facilitated by the interdepartmental relationships that allow this type of thing to occur. Engagement of relevant stakeholders early in the project has allowed for participation and understanding and assisted in the education and support from Allied Health providers across the region to contribute to the ongoing care of these patients.

The funding for this project from the Department of Health ceases in July 2011 and we are currently putting forward a business case to support the ongoing running of this program and investigating what changes will need to be made to the current model to support this. The clinic, itself runs as an Allied Health VACS funded service which will continue but this funding does not support the total costs involved in the service.

This service has been a valuable service for Bendigo Health and has encouraged staff to look at other clinics to treat certain patient groups that can be managed in similar programs.

Our recommendation would be to continue this service at Bendigo Health in a close approximation of its current format as it has a proven record.

For those that do not have a service like this:

- Investigate its introduction and relevance to your health care setting as the benefits of it have been many and positive.

- Engagement and buy in from all stakeholders is essential for the success of any venture but particularly of one like this that can affect so many areas both within and outside the particular health service.

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