The right people waiting in the right order for joint replacement surgery: Translation of evidence about best care and best assessment

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A multi-phase program

• Outpatients to surgery (Victorian Govt funding)
  – I. Development of a management and prioritisation system
    • 2.5 years
  – II. Development of statewide implementation plan
    • 1.5 years
  – III. Statewide implementation (14 Victorian hospitals)
    • 1.5 years
  – [IV. National diffusion of the innovation]
    • SA (2 years)
    • WA
    • Other

• GP referral to outpatients (Commonwealth Govt funding)
  – I. Development of guide (referral and prioritisation tool)
  – II. National consultation
  – III. Pilot implementation (SA, Vic)
  – [IV. Incorporation in to statewide electronic referral system, Vic]
Trends in Total Hip and Knee Replacement surgery

Source: National Joint Replacement Registry

RMH OWL cohort study:
Quality of life of people waiting for JRS

Trends in Total Hip and Knee Replacement surgery

JRS procedures per 100,000 population

Source: National Joint Replacement Registry

Currently

Referral → Orthopaedic Assessment → Surgery

Waiting:

- Adversely affects quality of life,
- Results in de-conditioning,
- Contributes to compromised patient outcomes,
- Lost productivity,
- etc

Rudd Government $600 million Elective Surgery Waiting List Reduction Plan
An evidence-based prioritisation and management system is required

Development of a Multi-Attribute Prioritisation Tool (MAPT)

- State-of-the-art patient consultation, psychometrics and clinimetrics
- Concept Mapping workshops
  - Groups facilitated to identify factors that should be considered when determining priority for JRS
  - 4 workshops with orthopaedic surgeons
  - 4 workshops with patients
- Aim
  - Ensure that the questionnaire is
    - Clinically relevant, endorsed and ‘owned’ by clinical groups
    - Appropriate across settings
    - Implementable
MAPT development

• Pre-testing draft questions
  – Consultation with surgeons and other experts
  – Development of draft questionnaire
  – Cognitive interviews with patients

Development of the prioritisation tool
  – 60 draft items
• Ready for translation (culturally and linguistically “generic”)
  – Completed by 600+ patients +/- on OWL

Type of questions

Guttman-like scales
  – Discrete health states in each response option
  – ‘Verifiable’ through a clinical interview
  – Attribution to the hip or knee

• Not Likert questions
WOMAC index  
Western Ontario & McMaster Osteoarthritis Index  
24 items

Think about the difficulty you had in doing the following daily physical activities due to your arthritis **during the last 48 hours**. By this we mean your ability to move around and look after yourself.

QUESTION: What degree of difficulty do you have?

<table>
<thead>
<tr>
<th>Activity</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
<th>Extreme</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Descending (going down) stairs</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>9. Ascending (going up) stairs</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>10. Rising from sitting</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>11. Standing</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>12. Bending to the floor</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Prioritisation domains generated from surgeons and patients

1. **Pain**
   - 1.1. Sleep disturbance
   - 1.2. Rest pain
   - 1.3. Pain related to movement

2. **Limitations to daily activities**
   - 2.1. Impairment of mobility
   - 2.2. Ability to self-care
   - 2.3. Level of domestic support
   - 2.4. Carer roles

3. **Psychosocial health impact**
   - 3.1. Psychological effect of disability
   - 3.2. Social effect of disability

4. **Economic impact**
   - 4.1. Interference with ability to work
   - 4.2. Financial provider for others

5. **Recent deterioration**
Weighting items

Some questions (symptoms) are more important than others

Discrete Choice Experiments

Surgeons asked to apply ‘clinical judgement’ to patient vignettes

Helps to appropriately weight clinical ‘red flags’

96 Victorian orthopaedic surgeons participated

Simple score

- 0 (no need for surgery)
- 100 (highest need for surgery)
Validation

- Administered to 1000+ patients
- Content validity
- Construct validity
  - Correlation with international standards
- Test re-test reliability
- Responsiveness to change
- “Implementability”
  - response rate (patient, health professional)
  - gaming and stoicism
- Clinical veracity
MAPT scores x time since surgery

<table>
<thead>
<tr>
<th>Weeks Since Surgery</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Currently on OWL</td>
<td>460</td>
<td>45.5</td>
<td>30.4</td>
</tr>
<tr>
<td>1 – 12</td>
<td>54</td>
<td>21.8</td>
<td>27.5</td>
</tr>
<tr>
<td>13 – 24</td>
<td>32</td>
<td>11.8</td>
<td>22.3</td>
</tr>
<tr>
<td>25 -104</td>
<td>118</td>
<td>6.8</td>
<td>15.4</td>
</tr>
</tbody>
</table>

Who should get surgery next?

- Lowest priority
- Middle priority
- Highest priority

Surgery ‘later’ but not forgotten

Surgery ‘now’
Hip and Knee Questionnaire
Multi-Attribute Prioritisation Tool (MAPT)

designed to support a

Service Delivery Model
(Osteoarthritis Hip and Knee Service)

Clear agreed principals

Features - OA Hip and Knee Service

1. Workforce role redesign including Musculoskeletal Coordinator operating within a multidisciplinary team
2. Triage to identify patients suited to the service
3. Early comprehensive assessment by the Musculoskeletal Coordinator
4. Conservative management and referral to appropriate services
5. Monitoring for deterioration
6. Prioritisation for surgery

Support Systems
- Decision support systems (Hip and Knee Questionnaire / MAPT, Protocols)
- Data systems
- Communication systems
Musculoskeletal Coordinator supports (& is supported by) a multidisciplinary team

The model of care…
The OA Hip and Knee Service

(usual practice)

Referral

Orthopaedic Outpatients

Orthopaedic Surgery

OA Hip and Knee Clinic

Assessment & Referral

MSC

Hip & Knee Questionnaire / MAPT Score

Initial assessment / Monitoring / Prioritisation Tool

Fast tracked

Conservative management

GP, allied health, rheumatologist, self management

Six guiding principles:

1. Workforce role redesign (multidisciplinary team)
2. Triage
3. Comprehensive assessment
4. Conservative management and referrals
5. Monitoring
6. Prioritization
Patient outcomes following OA Hip and Knee Service and implications of Orthopaedic Outpatient Clinic and other services

**Assessment at OA Hip & Knee Service**

- Requires surgery in near future
- May need surgery eventually but not in near future
- Will not need/want surgery or not suitable for surgery

**Action**

- Refer for orthopaedic assessment (fast track if urgent)
  Offer conservative management and monitor
- Defer from surgery
  Monitor for deterioration
  Manage conservatively
- Discharge to GP
  Advise/refer for conservative management
Impact of OA Hip and Knee Service on outpatient clinic

<table>
<thead>
<tr>
<th></th>
<th>Site 1*</th>
<th>Site 2</th>
<th>Site 3</th>
<th>Site 4</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total patients seen at OA Hip and Knee Service</td>
<td>211</td>
<td>185</td>
<td>114</td>
<td>210</td>
<td>720</td>
</tr>
<tr>
<td>Number (%) fast tracked from OA Hip and Knee Service for early assessment by surgeon</td>
<td>0 (0%)</td>
<td>18 (10%)</td>
<td>13 (11%)</td>
<td>44 (20%)</td>
<td>75 (13%)</td>
</tr>
<tr>
<td>Number (%) deferred by OA Hip and Knee Service from surgeon assessment</td>
<td>24 (44%)</td>
<td>0</td>
<td>87 (76%)</td>
<td>0</td>
<td>111 (20%)</td>
</tr>
<tr>
<td>Number (%) not requiring surgery or choosing not to consider surgery in the future (discharged)</td>
<td>0 (1.6%)</td>
<td>3 (12%)</td>
<td>14 (5%)</td>
<td>10 (5%)</td>
<td>27 (5%)</td>
</tr>
</tbody>
</table>

* Excludes data from community based clinics

\( \downarrow \) Includes 2 patients fast tracked directly to the elective surgery waiting list (in consultation with the surgeon)

OWL Phase II in Victoria: a system change occurred

- **Strong evidence**
  - Triage in outpatients
  - Patients were fast tracked
  - ‘Equivalent’ information was obtained from several language groups
  - Clinical decisions supported by a ‘common metric’
- **Indirect evidence**
  - Better use of resources
  - More equitable service
- **Upcoming processes / evidence gathering**
  - Publication / distribution of performance indicators across sites
  - Advanced psychometric / clinimetric studies
  - Mandatory use of MAPT for access to elective surgical lists
  - MAPT reporting, population ‘shifts’, equity tracking
  - Evidence informed distribution of resources
Planned use of the Hip and Knee MAPT

Lowest priority
Middle priority
Highest priority

Orthopaedic Surgical Waiting List MAPT scores versus length of time waited

Surgery ‘later’ but not forgotten
Surgery ‘now’
The OA Hip and Knee Service

**Hip & Knee Questionnaire / MAPT Score**
Initial assessment / Monitoring / Prioritisation Tool

- **Conservative management**
  - GP, allied health, rheumatologist, self management

**Six guiding principles:**
1. Workforce role redesign (multidisciplinary team)
2. Triage
3. Comprehensive assessment
4. Conservative management and referrals
5. Monitoring
6. Prioritization

What about GP-land?
"So, Mr. Jones, I'm going to put you on a waiting list to go onto the waiting list."
A multi-phase program

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Pilot Management Flowchart (Part 1)

Patient consults GP

On arrival as part of pre-consult assessment give patient MAPT and score it on spreadsheet/algorithm. This score becomes part of assessment

Score < 20

- Initiate Management Plan.
- Individual MAPT questions inform strategies for conservative management.
- Administer MAPT 3 monthly or as needed
- If deterioration occurs (20 units decline) over 3 month period, initiate alternative pathway (see overleaf)

ALERT
GPs and consultants have discretion for referral / placing on OWL. MAPT score changes are indicators of need for surgery but are not intended to be the only criteria.

>20... refer to specialist
Dear Doctor,

Thank you for seeing <<Patient Demographics:First Name>> <<Patient Demographics:Surname>>, age <<Patient Demographics:Age>>

Past History:
<<Clinical Details:History List>>

Allergies:
<<Clinical Details:Allergies>>

Current Medications
<<Clinical Details:Medication List>>

Social History
<<Clinical Details:Social History>>

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**GP Referral to Orthopedic Outpatient Department (OWL) - Page 2**

**Additional information required for orthopaedic assessment**

<table>
<thead>
<tr>
<th>Patient's expectation of referral outcome: &lt;&lt;Patient’s expectation of referral outcome&gt;&gt;</th>
<th>History of conservative management (tick only those that are relevant to referral):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main site affected: &lt;&lt;Diagnosis?&gt;&gt;</td>
<td>Simple analgesics</td>
</tr>
<tr>
<td>Diagnosis:</td>
<td>Non-selective NSAIDs</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>Cox-2 inhibitors</td>
</tr>
<tr>
<td>Rheumatoid arthritis</td>
<td>Disease Modifying Anti-Rheumatic Drugs (DMARDs)</td>
</tr>
<tr>
<td>Other</td>
<td>Intra-articular injections (Corticosteroid)</td>
</tr>
<tr>
<td>Diagnosis unclear</td>
<td>Intra-articular injections (Hyaluronic)</td>
</tr>
<tr>
<td>Basis of diagnosis:</td>
<td>Prednisolone</td>
</tr>
<tr>
<td>Clinical only</td>
<td>Opioid analgesia</td>
</tr>
<tr>
<td>X-ray - date:</td>
<td>Tramadol</td>
</tr>
<tr>
<td>Report attached (include weight-bearing views)</td>
<td>Physiotherapy</td>
</tr>
<tr>
<td>Other (Blood results?)</td>
<td>Nutritional assessment</td>
</tr>
<tr>
<td></td>
<td>Occupational therapy (Activity of Daily Living Assessment)</td>
</tr>
<tr>
<td></td>
<td>Pediatrics / Orthotics</td>
</tr>
<tr>
<td></td>
<td>Formal self-management education program</td>
</tr>
<tr>
<td></td>
<td>Arthritis SA</td>
</tr>
<tr>
<td></td>
<td>Home Support Services</td>
</tr>
<tr>
<td></td>
<td>Other:</td>
</tr>
</tbody>
</table>

Falls:
Number in last 12 months:

Relevant comorbidities & risks:
- BMI
- Other surgical risks:

Additional relevant information
(e.g. blood borne viruses, and psychological considerations):
Suggested Management of Patients with Osteoarthritis

Suggested stages for initiating GP Management Plan +/- Team Care Arrangements to improve patient access to conservative management and monitor patient progress.

<table>
<thead>
<tr>
<th>PROCESS</th>
<th>FEE</th>
<th>MBS REBATE</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>GP Consultation</td>
<td>$52.00 (approx.)</td>
<td>$32.10</td>
<td>$32.10</td>
</tr>
<tr>
<td>GP consult to review X-ray and calculate MAPT score using Excel spreadsheet</td>
<td>$52.00 (approx.)</td>
<td>$32.10</td>
<td>$32.10</td>
</tr>
<tr>
<td>PN reviews patient three months later to repeat MAPT, GP initiates GPMP +/- TCA with support of PN</td>
<td>$124.95</td>
<td>$93.75</td>
<td>$93.75</td>
</tr>
<tr>
<td>PN reviews every three months to repeat MAPT and review GPMP +/- TCA with GP</td>
<td>$98.95</td>
<td>$74.25</td>
<td>$74.25</td>
</tr>
<tr>
<td>GPMP rev725 (can be reviewed 3 monthly)</td>
<td>$62.50</td>
<td>$46.90 x 3</td>
<td>$140.70</td>
</tr>
<tr>
<td>TCA rev727 (can be reviewed 3 monthly)</td>
<td>$62.50</td>
<td>$46.90 x 3</td>
<td>$140.70</td>
</tr>
<tr>
<td>PN Support Item 10997 - PN monitors and supports patients with chronic condition (up to five times per year), Advice to pt re: chronic disease self-management, medication management etc.</td>
<td>$10.60</td>
<td>$10.80 x5</td>
<td>$53.00</td>
</tr>
<tr>
<td>TOTAL PER ANNUM</td>
<td></td>
<td></td>
<td>$566.60 (More if gap charged)</td>
</tr>
</tbody>
</table>

Management of patient is guided by MAPT score, however GP has discretion to override score and refer based on his clinical decision.
1.1. General

<table>
<thead>
<tr>
<th>Patient understanding of arthritis</th>
<th>Review annually or as condition changes</th>
<th>GP/Practice nurse/Arthritis SA/Rheumatologist/Orthopaedic Surgeon</th>
</tr>
</thead>
</table>

1. Arthritis Management

<table>
<thead>
<tr>
<th>Pain management</th>
<th>Optimal pain management</th>
<th>Pain management appropriate to patient needs</th>
<th>GP/Patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimising function/mobility</td>
<td>Optimal function and mobility</td>
<td>Home aids/modification. Review of footwear</td>
<td>GP/Podiatrist/OT</td>
</tr>
<tr>
<td>Medication</td>
<td>Ensure appropriate use of medications and minimise side-effects</td>
<td>Review regularly</td>
<td>GP/Home Medications review/other specialist</td>
</tr>
<tr>
<td>Complementary therapy</td>
<td>Identify and review use of complementary medication</td>
<td>Review regularly</td>
<td>GP</td>
</tr>
<tr>
<td>Specific joint problems</td>
<td>Minimise specific joint problems</td>
<td>Joint specific therapy</td>
<td>GP/Rheumatologist/Orthopaedic surgeon</td>
</tr>
<tr>
<td>Surgical intervention</td>
<td>Improve mobility and reduce pain</td>
<td>Assess suitability for surgical intervention including joint replacement therapy MAPT Score:</td>
<td>GP/Rheumatologist/Orthopaedic Surgeon</td>
</tr>
<tr>
<td>Physical activity</td>
<td>Your target: Ideal: Moderate physical activity for 30 mins per day most days of the week</td>
<td>Patient education Exercise regime</td>
<td>GP/practice nurse to monitor Chronic Disease Self Management Programs/Physio Activity program/ Exercise group</td>
</tr>
</tbody>
</table>
Concluding comments:
Acceptability, uptake and diffusion of innovation

- The OWL system is more complex than the original but the relative advantage is large and obvious
- Very well defined core tools (MAPT, model of care)
- Victoria
  - Clinicians designed and “own” the MAPT questions
  - Patients generally have no trouble with questions
  - Sites consistently surprised with high return rates (>>80%)
  - MAPT scores are used to organise and prioritise care
  - Clinicians need to ‘develop a relationship’ with MAPT score
  - MAPT delivers usual/important clinical information “on a platter”
  - Strong link between capacity to benefit and outcomes measurement
- Other Australian States
  - SA, WA, etc
- Federal Government
  - Supportive

Thank you

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