

Evidence based care and prioritisation of people waiting for elective hip and knee replacement surgery: the new Victorian Management and Prioritisation system

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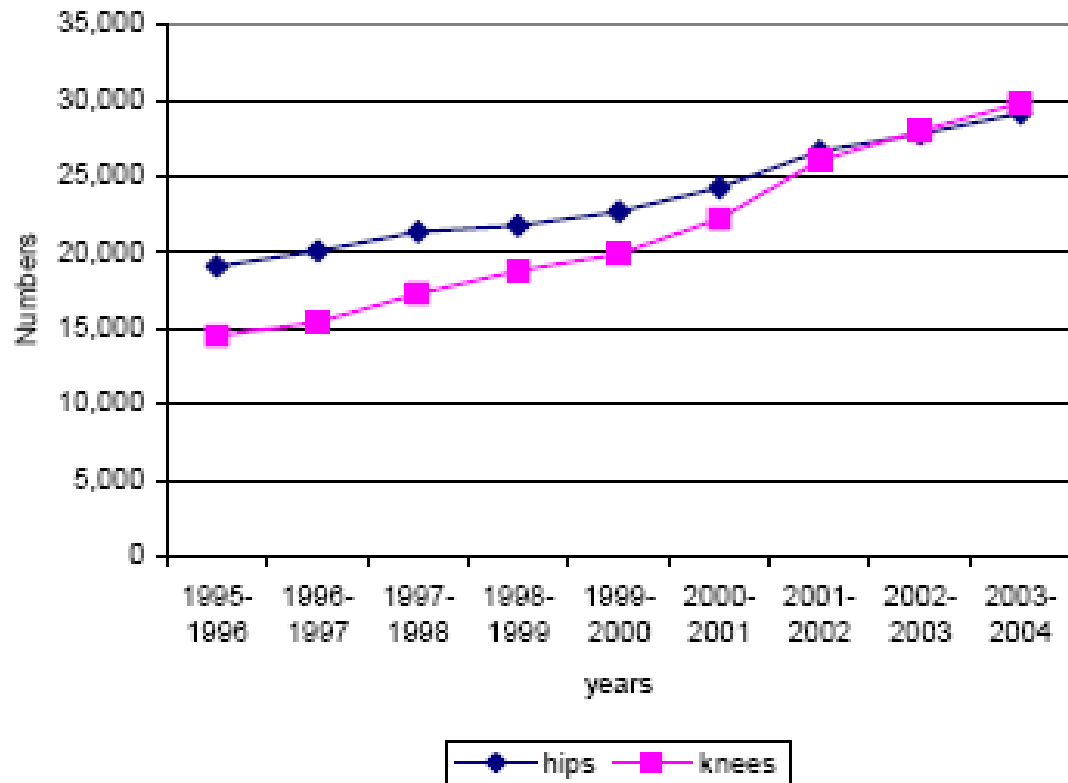


Background

- Total hip (THR) and knee replacements (TKR) are effective interventions for severe osteoarthritis (OA)
- Over 60,000 procedures performed annually (AOA 2005)
- \$1 billion in expenditure annually
- Rising demand for surgery expected in the future
 - ageing population
 - increasing risk factors for OA



Australian Orthopaedic Association National Joint Replacement Registry (2005)



- **Waiting**

- Lengthy waits for hip and knee joint replacement surgery
- Lengthy waits for orthopaedic assessment

- **Quality of Life**

- Physical function (de-conditioning)
- Psychosocial wellbeing

- **Management and monitoring**

- Currently no standardised **review** and **management** of people on orthopaedic waiting lists



Health-Related Quality of Life after entry to the OWL

Group	<i>n</i>	Mean AQoL score	SD
RMH orthopaedic waiting list	214	0.39	0.24
Recent stroke (Sturm et al 2002)	93	0.40	0.33
General population (Hawthorne & Osborne 2005)	2934	0.83	0.20

Ackerman et al (2005) *Arthritis Care and Research*



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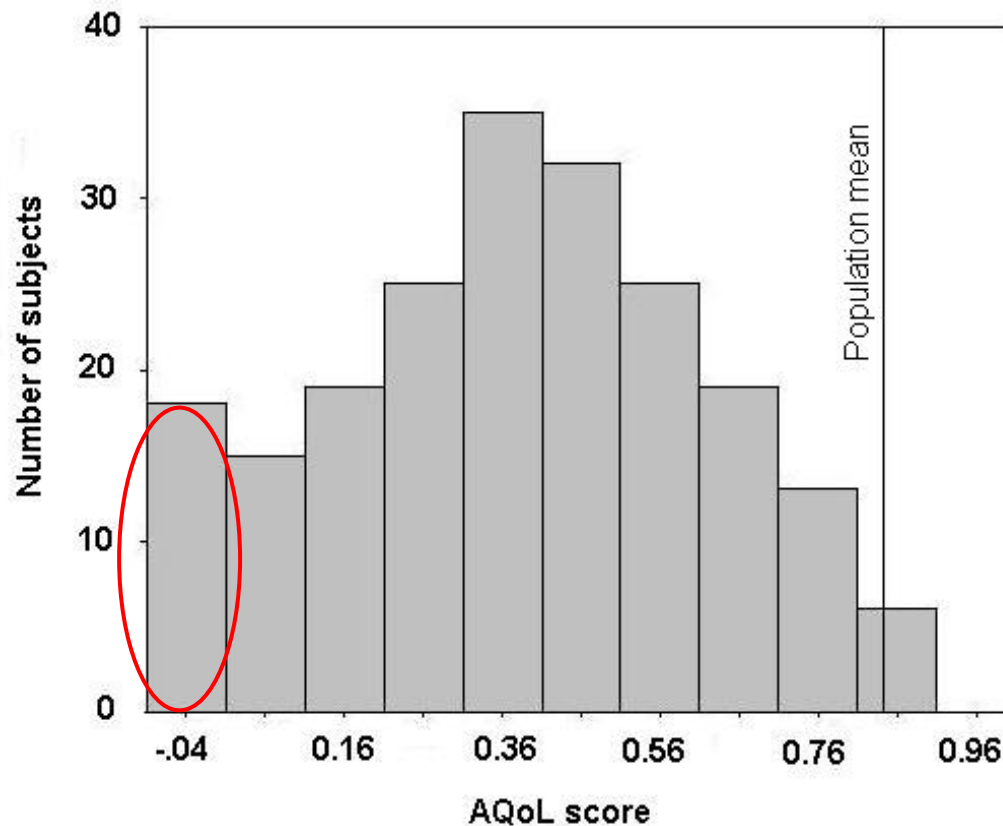
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Health-Related Quality of Life after entry to the OWL

FIGURE 1. Distribution of Health-Related Quality of Life scores



The OWL Project

- State-wide elective surgery program, DHS Victoria
- Recognised the need to improve the management of people awaiting joint replacement surgery
- In particular to improve prioritisation of orthopaedic surgery waiting lists



Aims of the OWL Project

Phase I

- To develop a tool that **prioritises** people with hip or knee joint disease for surgery.

Phase II

- To develop and pilot a service delivery model that uses the prioritisation tool to **facilitate optimal management** of people who may require JRS.



PHASE I

Development of the Hip and Knee Questionnaire (MAPT)

- The ideal prioritisation tool should:
 - Provide accurate information on urgency for surgery
 - Be able to be monitored to identify deterioration
 - Be endorsed by clinical, administrative and government groups



Development of the Hip and Knee Questionnaire

- A rigorous systematic approach was undertaken. This involved:
 - Concept mapping and item generation
 - Construction of the questionnaire
 - Weighting of questionnaire items
 - Validation against known standards



Concept Mapping

- To identify the key factors determining priority for surgery. This involved:
 - 4 workshops with orthopaedic surgeons
 - 4 workshops with patients



Concept mapping and item generation

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

6. Conservative treatment



Concept mapping and

- Substantial agreement between surgeons and patients
- Different emphasis

1. Pain

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5. Recent deterioration

6. Conservative treatment



Concept mapping and item generation

- Draft questionnaire items were generated from the from the 6 domains
- The type of items generated were Guttman items
- Chosen over the more common type of item Likert items
- Thought that Guttman items would be less prone to gaming and stoicism



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?

	None	Mild	Moderate	Severe	Extreme
8. Descending (going down) stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Ascending (going up) stairs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Rising from sitting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Standing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Bending to the floor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

1. Pain

Do you have hip or knee pain when you first go to bed at night **that stops you going to sleep?**

1. No or rarely
2. I have pain that sometimes stops me going to sleep
3. I have pain that often stops me going to sleep
4. I have pain that stops me going to sleep most of the time
5. I have pain that stops me going to sleep all the time



Construction phase

- Over 50 draft items were generated and pre-tested
- 38 survived and were further tested
- Questionnaires were mailed to 1061 participants from 5 hospitals
- 606 surveys were completed and returned (response rate 57.1%)
- Data analysed (state of the art techniques) to determine smallest set of items that captured the breadth of issues
- 11 final MAPT items remained



Weighting of items

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



Weighting of items

Weighting items

- Some questions (symptoms) are more important than others
- Discrete Choice Experiments
 - Surgeon's 'judgement' to patient
 - Helps to appropriately weight clinical 'red flags'
 - 96 Victorian orthopaedic surgeons participated

This must be a world record?



Orthopaedic Waiting List Project Discrete Choice Experiments

Please indicate whether you are a consultant or registrar:

Consultant

Registrar

1 (1.1)

Patient A	Patient B
I do not look after, or experience no difficulty looking after, dependents.	It is moderately difficult looking after dependents.
I have pain that stops me going to sleep most of the time.	I have pain that stops me going to sleep all of the time.
It does not affect, or causes little affect to, my enjoyment of life.	It makes it moderately or very difficult for me to enjoy my life.
I do not get enough help with looking after myself.	I do not get enough help with looking after myself.
It makes it moderately difficult for my household to manage financially.	It does not affect my household finances or it makes it slightly difficult for my household to manage financially.

Higher priority: Patient A

Patient B

Orthopaedic Waiting List Project Discrete Choice Experiments

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Higher priority: Patient A

1%

Patient B

99%

Validation against known standards

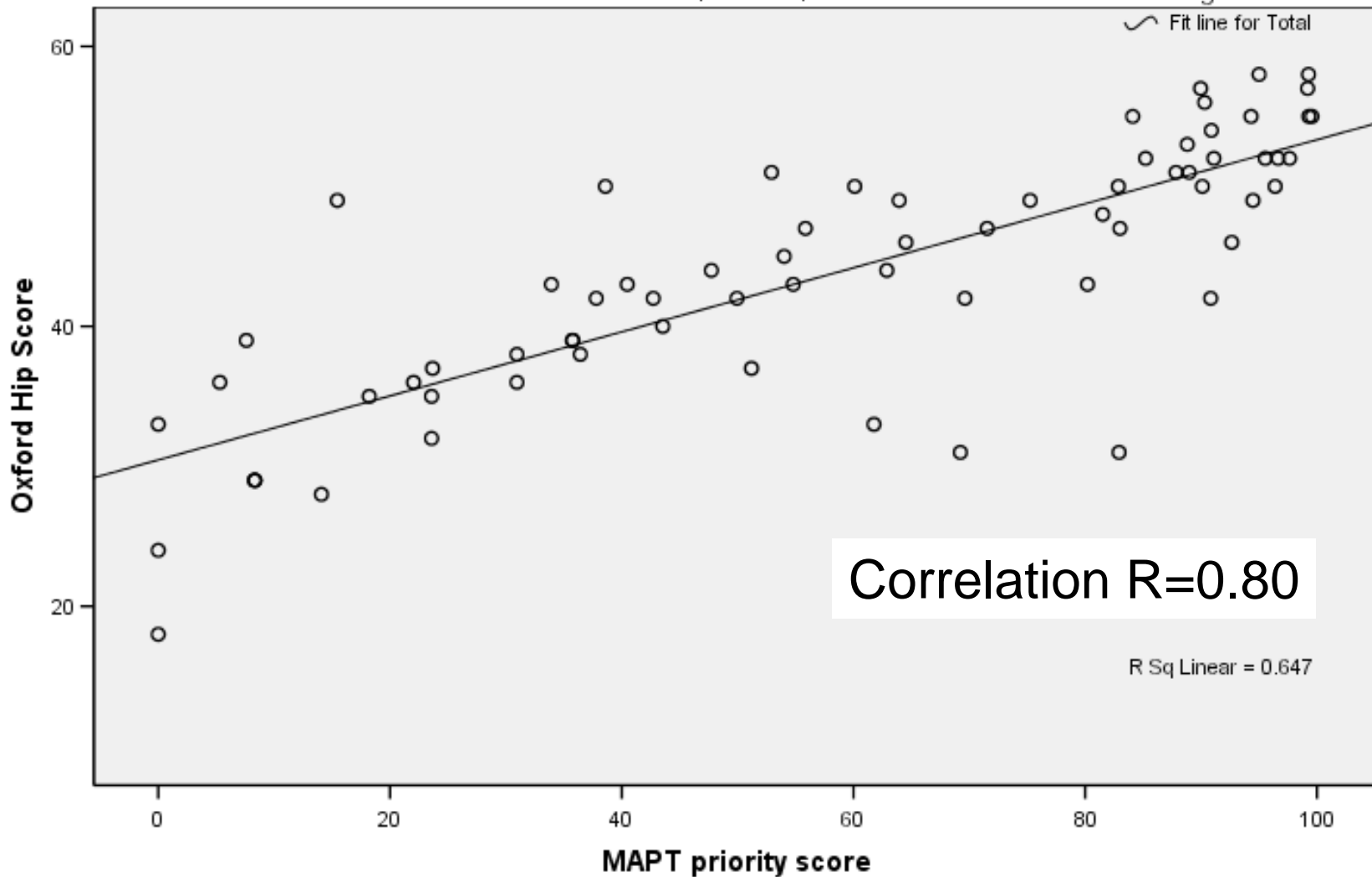
- Validation
 - Administered to approx 1076 patients
 - Correlation with other standardised questionnaires
 - Correlation with musculoskeletal coordinator and surgeon assessment
- Results show that the questionnaire is highly correlated with like scales



Joint to be repaired: Hip

Legend

Fit line for Total



Correlation $R=0.80$

R^2 Linear = 0.647



The Hip and Knee Questionnaire – in summary

- a patient-administered 11 item questionnaire
- excellent psychometric qualities, high clinical and statistical validity
- high level input from clinical and hospital management groups particularly orthopaedics - widely endorsed
- ranks patients requiring JRS on a 0-100 point scale
- supports standardised equitable prioritisation
- can be applied at regular intervals to identify clinically and socially relevant deterioration and subsequent reprioritisation



PHASE II

A New Service Delivery Model



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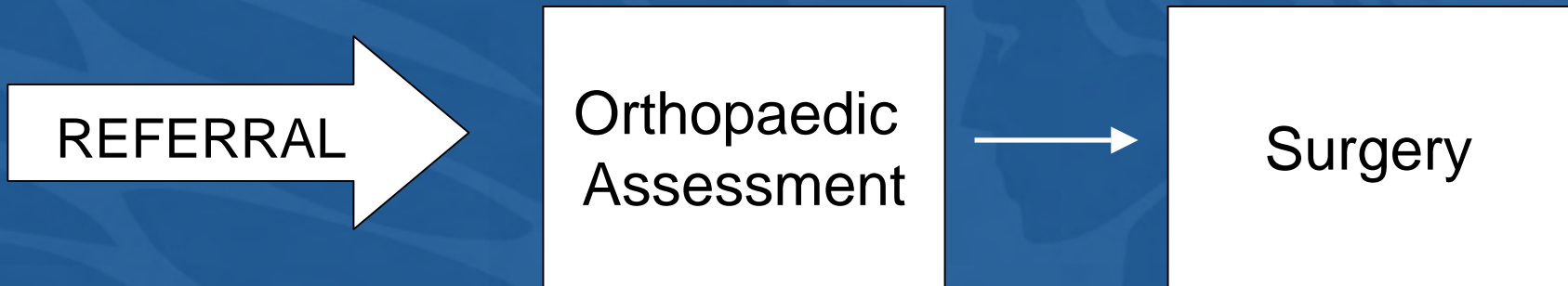
The Royal Melbourne Hospital

Why a NEW service delivery model?

- Required care unlikely to be achieved within the current service model which:
 - is largely dependent on limited specialist resources
 - has limited ability to prioritise service access based on patient need
 - does not adequately facilitate conservative management
 - does not adequately support self-management
 - does not adequately coordinate efforts of a multidisciplinary team



Currently.....



WAITING.....

- Limited prioritisation system
- Lack of monitoring
- Lack of conservative management
- Poor quality referrals

WAITING

- Limited prioritisation system
- Lack of monitoring
- Lack of conservative management



“You can't solve a problem using the thinking that caused the problem in the first place.”

Albert Einstein



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The Royal Melbourne Hospital

Productivity Commission report “Australia’s Health Workforce, 2005” recommends:

- Changes to workforce roles are required to better meet changing health care needs;
- Services should be delivered by staff with the most cost-effective training and qualifications to provide safe, quality care;
- There should be a realignment of existing health workforce roles, or the creation of new roles, to make optimal use of skills and ensure best health outcomes.

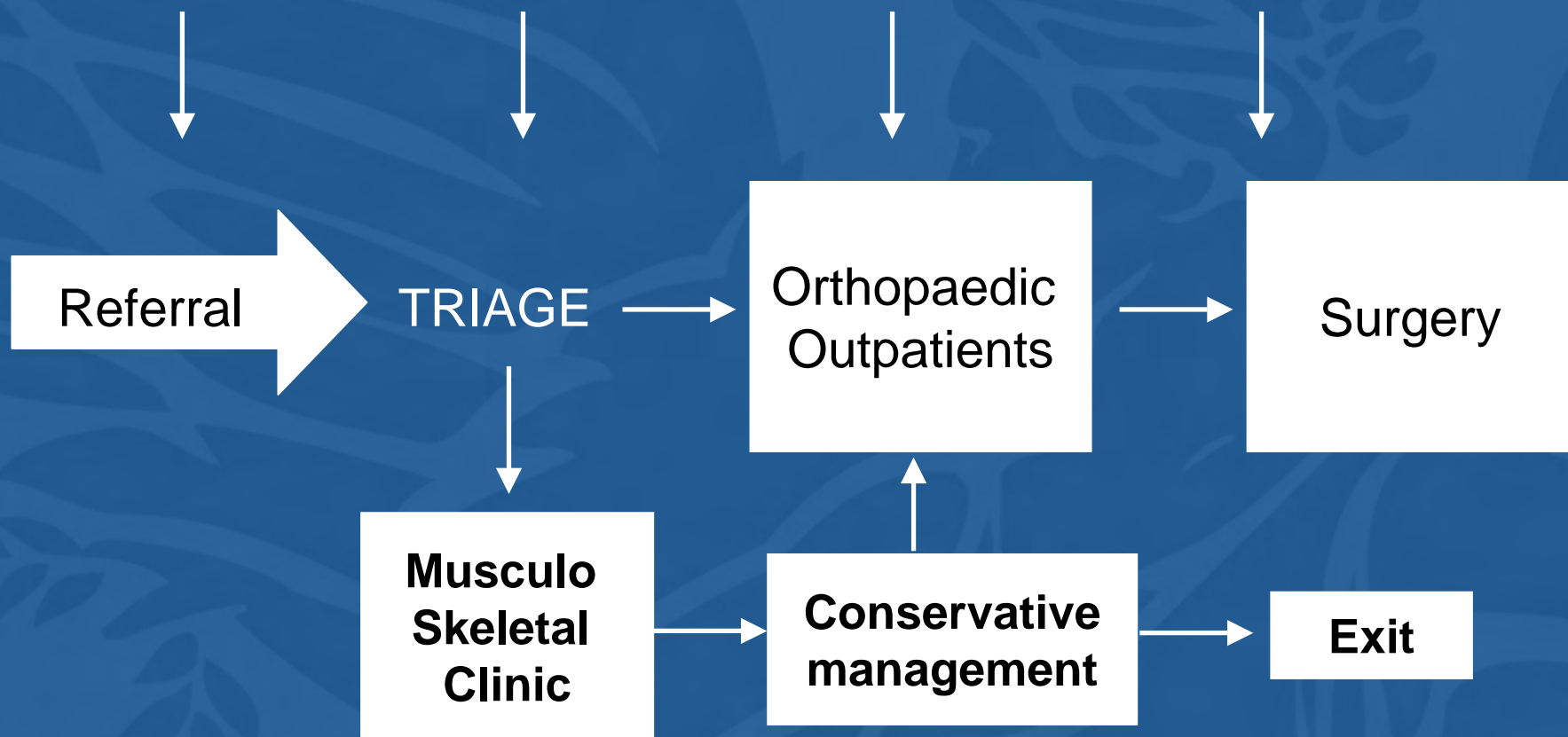


Features of the new model

- System of initial triage based on Hip and Knee Questionnaire
- Musculoskeletal Clinic to provide early assessment and referral for conservative management
- Ongoing monitoring based on the Hip and Knee Questionnaire
- Prioritisation for surgery based on the Hip and Knee Questionnaire and other considerations



Prioritisation Tool (H&K Questionnaire)



What will the new model hope to achieve?

- Timely and appropriate care
- Equitable access
- Consumer-focused care supportive of self-management
- Appropriate conservative management and regular monitoring
- Multidisciplinary care with effective communication between care providers
- Evidence based practice



Timely and appropriate care

CURRENTLY:

- Long waiting times to first orthopaedic appointment.
- 10-40% of new referrals to orthopaedic outpatients don't need a surgical opinion.
- Some patients don't want to have surgery.
- Referral of patients at different stages of disease progression (sometimes because of perceived long waiting times) means that not all patients require surgery at the time of referral.



Timely and appropriate care

NEW MODEL:

- Triage to ensure patients see most appropriate health care provider/s.
- Innovative approach to health workforce design.
- Free up limited specialist services for those patients who require a surgical opinion.
- Reduce waiting time to first appointment.



Equitable

CURRENTLY:

- Inequitable waiting as a result of the insensitivity of the current prioritisation system to identify those with most need.



Equitable

NEW MODEL:

- Access to care based on urgency not just time waited.
- Regular monitoring will be able to detect deterioration and need for re-prioritisation.
- System will remain sensitive to duration of waiting time so that non-urgent cases are still seen within reasonable timeframes.



Consumer-focused and supportive of self-management

CURRENTLY:

- Inadequate referral to support services.
- Poor focus on self-management in outpatient clinics.



Consumer-focused and supportive of self-management

NEW MODEL:

- Consumer resources to support understanding of processes and self-care options.
- Shared decision making through the use of goal setting care plans.
- Questionnaire translated into twelve different languages.
- New model supports “minimal handling” and “minimal waste” where waste includes inappropriate waiting.
- Emphasis on referral to self management courses.



Conservative management and regular monitoring

CURRENTLY:

- Little evidence of conservative treatment being considered (being referred to the waiting list is considered treatment)
- Inadequate referral to support services.
- Currently no monitoring (except for time waited) of people awaiting an outpatient appointment or surgery



Conservative management and regular monitoring

NEW MODEL:

- Comprehensive assessment and coordination of services according to need
- Referral to support services
- Optimise management while waiting.
- MAPT provides a mechanism for regular monitoring.



Multidisciplinary with effective communication between care providers

CURRENTLY:

- All patients booked to see surgeon regardless of appropriateness or stage of disease progression.
- Communication between acute and primary care is ad hoc and unstructured.
- Documentation
 - Variable quality of referral letters
 - High illegibility consultation notes
 - Poor documentation medications, conditions



Multidisciplinary with effective communication between care providers

NEW MODEL:

- Musculoskeletal coordinator is the key patient contact. There should be appropriate access to medical expertise. This access may need to be defined through protocols.
- Processes for communication with patient's GP will be incorporated into new service.



Based on best available evidence

CURRENTLY:

- The current system has not made the most of evidence developments



Pharmacological	Level of evidence	Non Pharmacological	Level of evidence
Simple Analgesia	I	Physiotherapy	I
NSAID	I	Bracing	I
Cox NSAID	I	Patellar taping	II
Tramadol	II	Tai Chi	II
OPIOIDS	I	Hydrotherapy	II
Topical NSAID	I	Gait aids	III
Capsaicin	I	Weight loss	II
I/A steroids	I	Thermotherapy	I
V/Supplementation	I (?)	Psychoeducational	I
Glucosamine	I (-)	Telephone support	I
Diacerein	II	TENS	I
		Acupuncture	II
		Electromagnetic	I

Based on best available evidence

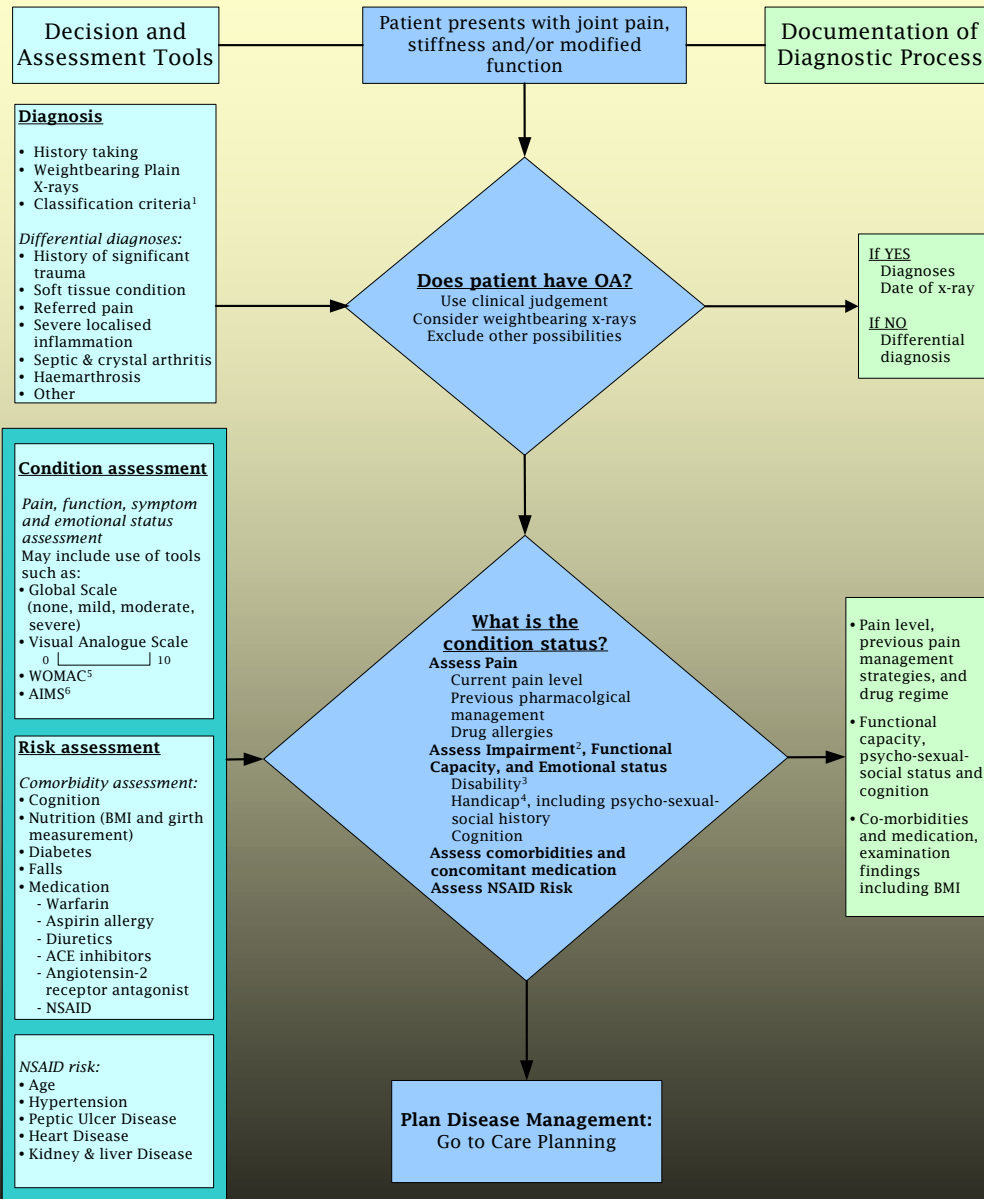
NEW MODEL:

- Use evidence based OA pathway to guide management
 - Comprehensive summary of effective interventions
 - Considered all quality domains
 - Could be implemented by a variety of health care professionals
 - Covered the continuum of care
 - Could be used as an integrative tool to implement evidence based recommendations for OA care
 - Reduce variation in practice



OA Clinical Pathway Model of Care

Diagnosis and Assessment



¹ American College of Rheumatology Osteoarthritis diagnostic criteria

² Impairment - Dysfunction resulting from pathological changes in a system, eg. impaired movement.

³ Disability - Consequence of impairment in terms of functional performance (ie. disturbance at the level of the person).

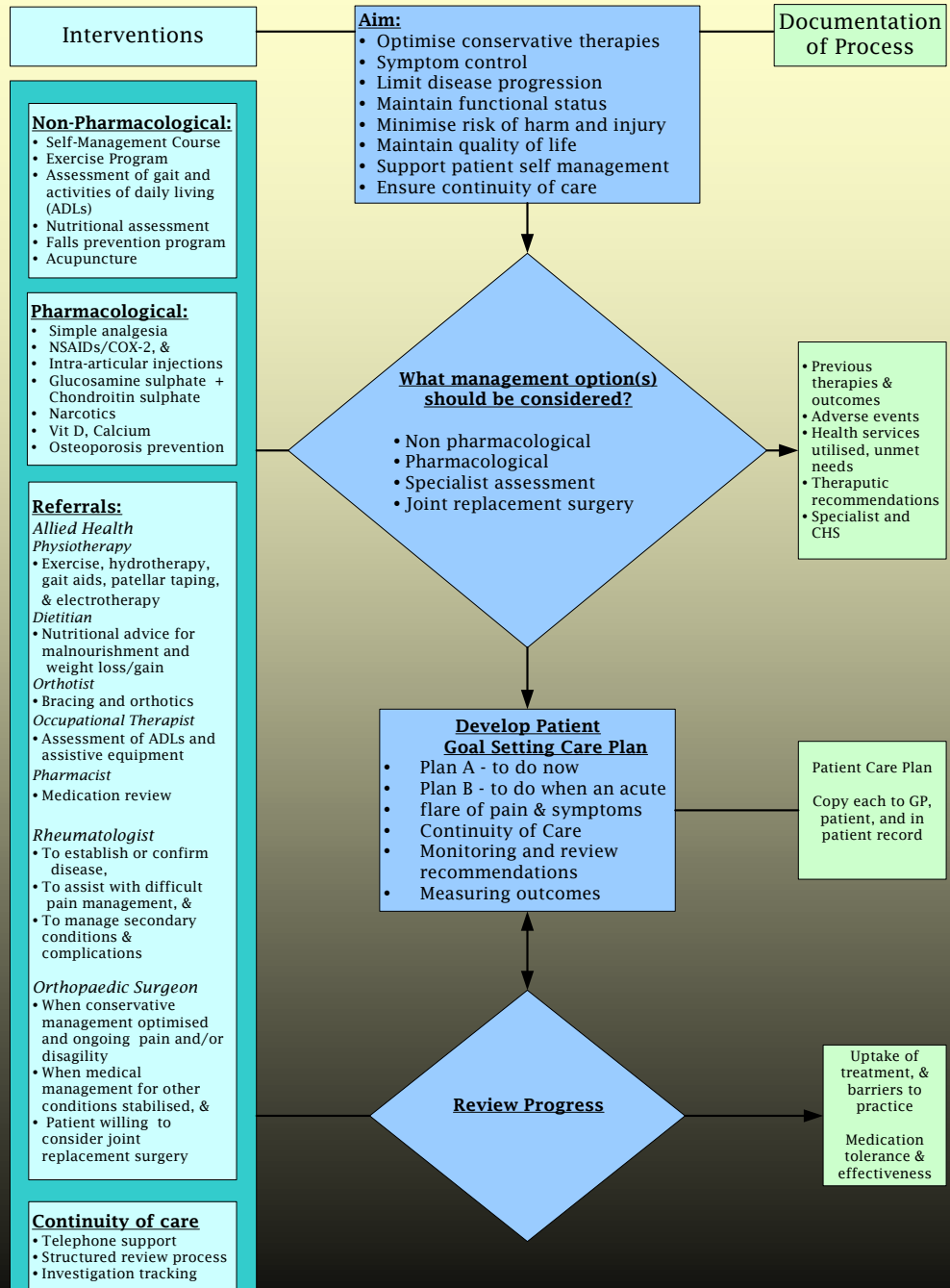
⁴ Handicap - Disadvantages experienced by the individual as a result of impairment and disabilities. This reflects the interaction and adaptation to the individual's surroundings. (www.nsc.nhs.uk/glossary/glossary_main.htm)

⁵ WOMAC Osteoarthritis Index

⁶ Arthritis Impact Measurement Scale



OA Clinical Pathway Model of Care Care Planning



What is the role of the Hip and Knee Questionnaire?

- Can be used as a relative indicator of priority for surgery
- Can be used as a guide to assessment of OA?
- Can be used as an indicator of individual deterioration or improvement



What is the role of the Hip and Knee Questionnaire?

- Cannot be used as an indicator for appropriateness for surgery
- Does not have “cut off” scores
- Should be used in conjunction with clinical assessment and decision making



Important issues

- Role of the Musculoskeletal Coordinator
- Nature of the multidisciplinary team and management of interfaces
- Capacity of the Musculoskeletal Clinic
- Nature of processes, procedures
- Need for protocols
- Need for change interventions
- Need for support from coordinating team



Project Structure



Thank you

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