Darling Downs Health

Trial Lower Limb OA model of care

Project ID 116905 NRER: EX/2025/QTDD/116905

Queensland Government

Darling Downs Health

I would like to acknowledge the traditional owners of the land on which we are meeting today. I would also like to pay my respects to the elders and valued persons who have contributed to Australia's reconciliation processes.

I recognise the strength and resilience that Aboriginal and Torres Strait Islander people and their ancestors have displayed in laying a strong foundation for the generations that will follow.

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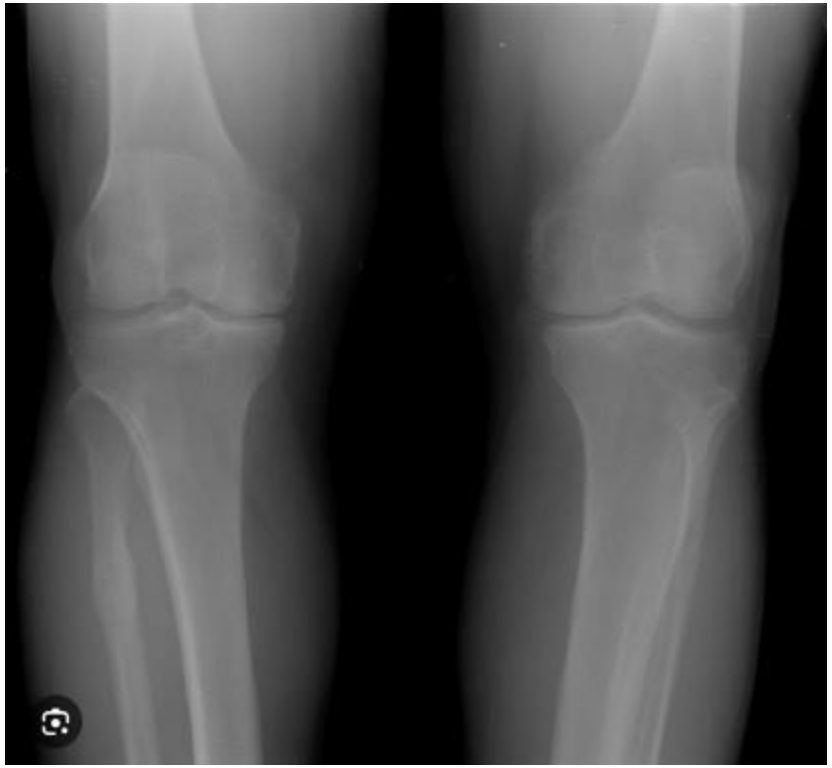
Objectives

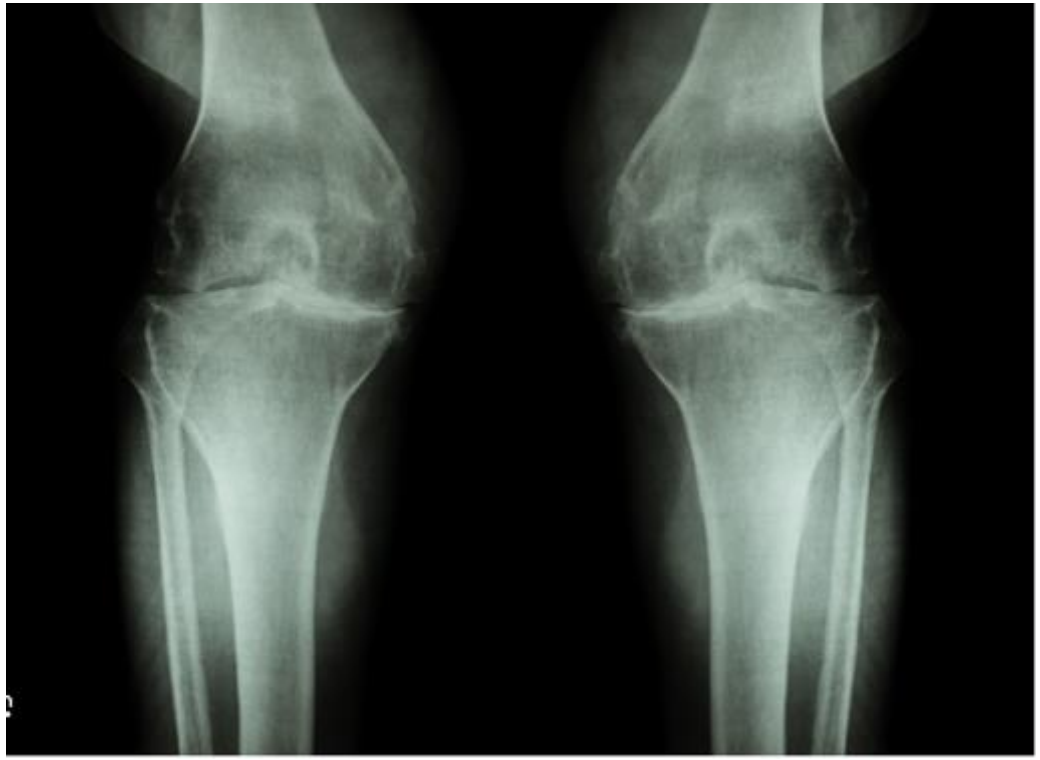
Introduction to referral and management pathways

Discussion of outcomes to date

Queensland Government

Who are we talking about? Referrals to orthopedics for management





Odds of poor response in tertiary setting increased with greater frontal plan varus alignment (OR 1.35) and Severe radiographic (compared to mild) changes (OR 3.11)(O'Leary, Raymer, Conroy et al. 2020)

Open access Original research

BMJ Open

Patient characteristics associated with a poor response to non-surgical multidisciplinary management of knee osteoarthritis: a multisite prospective longitudinal study in an advanced practice physiotherapist-led tertiary service

Shaun O'Leary ,[1,2] Maree Raymer,[2] Peter Window,[2] Patrick Swete Kelly,[2] Bula Elwell,[3] Ian McLoughlin,[3] Will O'Sullivan,[4] Ben Phillips,[4] Anneke Wake,[4] Andrew Ralph,[5] Helen O'Gorman,[6] Ellen Jang,[6] Karen Groves,[6] Andrew Hislop,[7] Darryl Lee,[2] Linda Garsden,[2] Michael Conroy,[8] Daniel Wickins,[9] Bill Vicenzino,[1] Tracy Comans,[10] Michelle Cottrell,[1,2] Asaduzzaman Khan,[1] Steven McPhail[11,12]

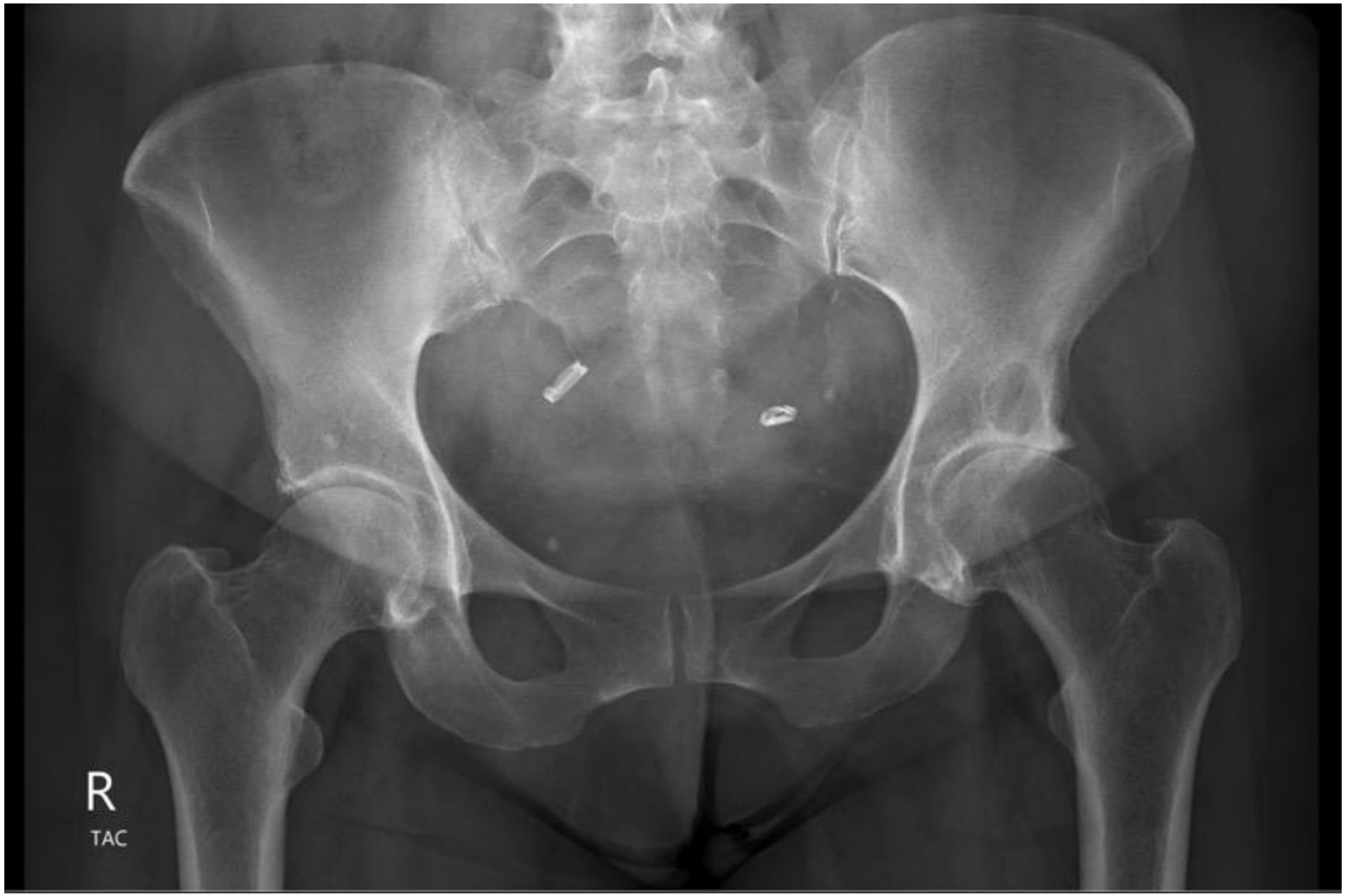
O'Leary, S., Raymer, M., Window, P et al.(2020). Patient characteristics associated with a poor response to non-surgical multidisciplinary management of knee osteoarthritis: a multisite prospective longitudinal study in an advanced practice physiotherapist-led tertiary service. BMJ Open, 10(10), e037070. https://doi.org/10.1136/bmjopen-2020-037070

114/238 participants recorded a poor response to non-surgical treatment

Odds of **poor response decreased** with:

- Higher expectations of benefit (OR 0.74)
- Higher self reported knee function (0.67)

What are the metrics of success?



Email from Ortho GP

Coexisting CLBP, knee pain, neuropathic leg pain, depression, social stressors

OPSC – 4 x physio, 3 x OT, 2 x psych, social worker review pending

GP workup for diabetes, peripheral oedema Mx (via OT)

Patient functional/coping much better : ‘’not sure on arthroplasty yet’’

GP Ortho - ‘’patient centre, coordinate care to manage a complex patient, fantastic system”

Healthcare problem (not unique to OA)

Ackerman et al. BMC Musculoskeletal Disorders (2019) 20:90
https://doi.org/10.1186/s12891-019-2411-9

BMC Musculoskeletal Disorders

RESEARCH ARTICLE Open Access

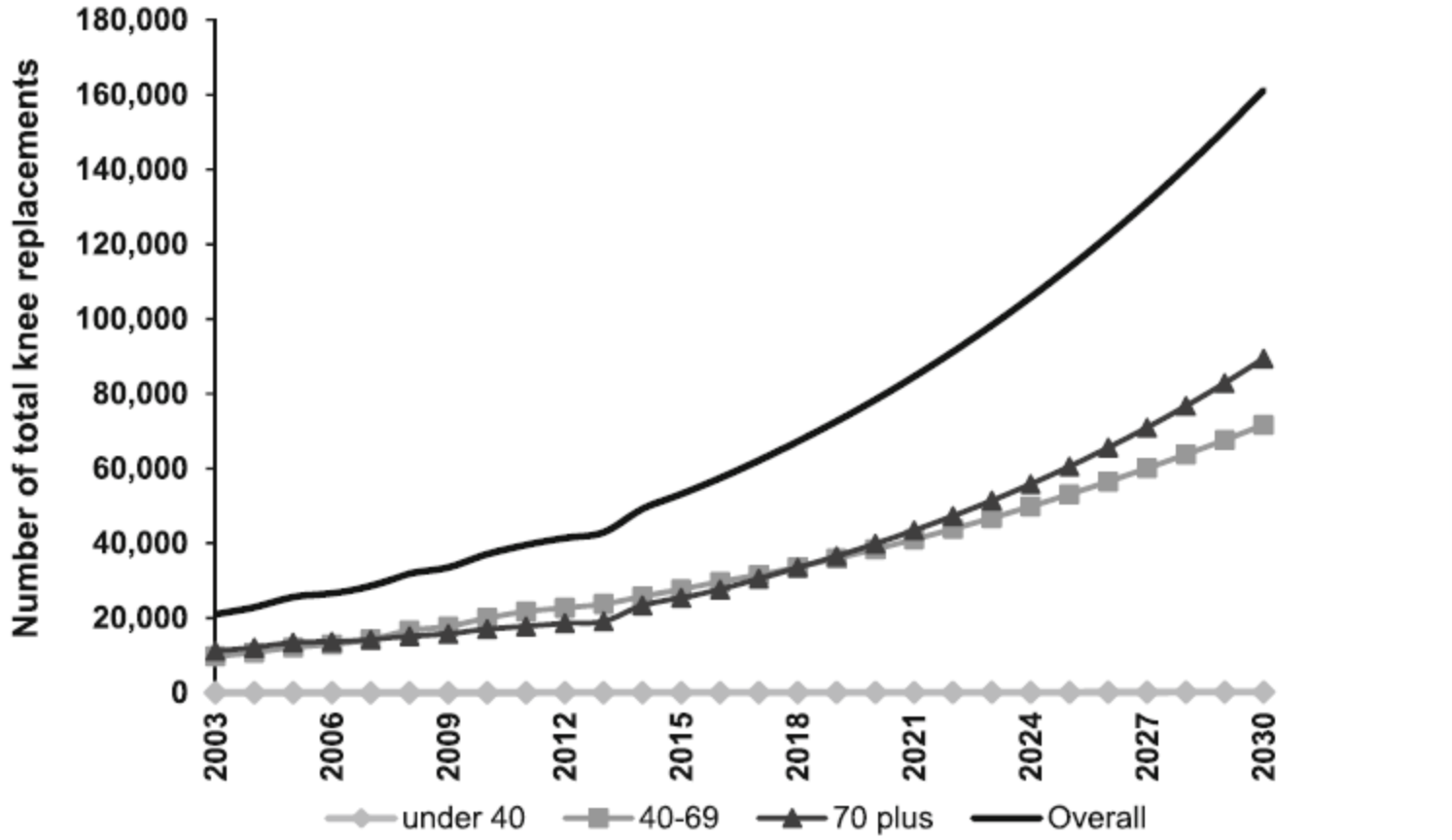
The projected burden of primary total knee and hip replacement for osteoarthritis in Australia to the year 2030

Ilana N. Ackerman[1,2*], Megan A. Bohensky[2], Ella Zomer[1], Mark Tacey[1,3,4], Alexandra Gorelik[2,5], Caroline A. Brand[1] and Richard de Steiger[6,7]

Cost of replacement Increase - $19k to $30K

Obesity and ageing populations

Increase obesity rates account for additional 25,000 additional TKRs by 2030



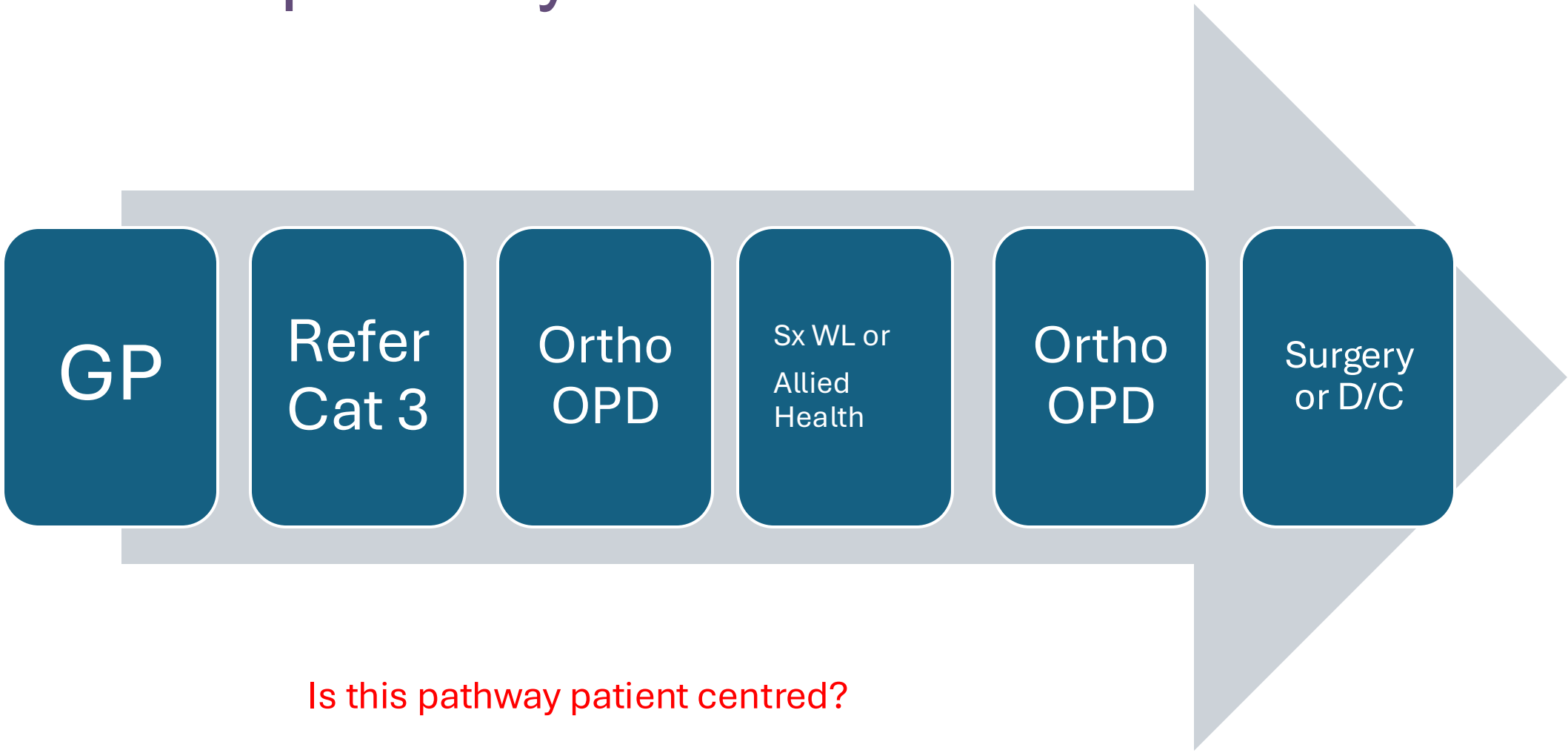
Local Problem

35% decline in public hospital elective surgery since COVID (Wall, Vertullo et al. 2024)

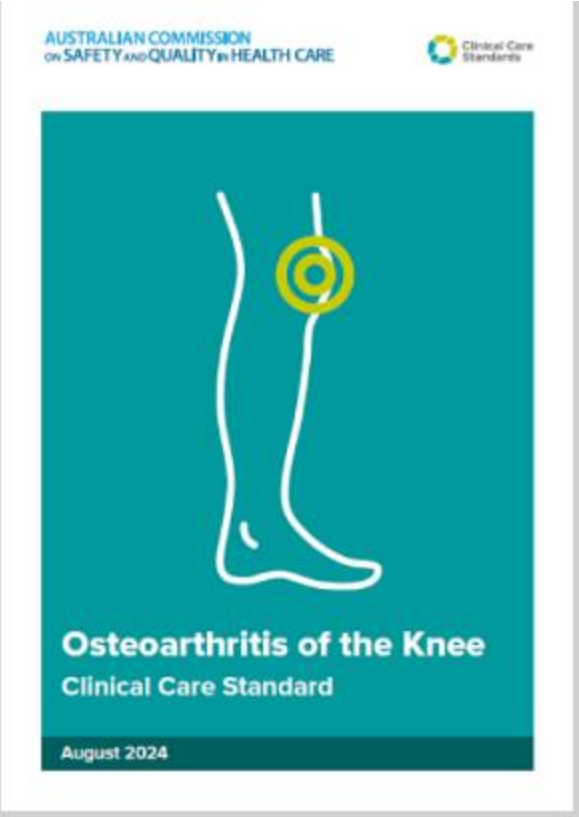
Only 2% of patients experience clinical meaningful weight loss prior to surgery at DDH despite attempts(Wall, Lee et al. 2024)

Longer surgical waiting times increases the personal burden of pain and disability, reduce quality of life (QOL), and worsen post-operative outcomes(Lingard 2004)

Previous pathway



Is this pathway patient centred?



[Osteoarthritis of the Knee Clinical Care Standard (2024) | Australian Commission on Safety and Quality in Health Care]

''In 2013, the Commission established the Clinical Care Standards program to support clinical experts and consumers develop Clinical Care Standards on health conditions that would benefit from a national coordinated approach.''

70% of patients referred to a public hospital for surgical opinion have not undergone an appropriate trial of conservative care

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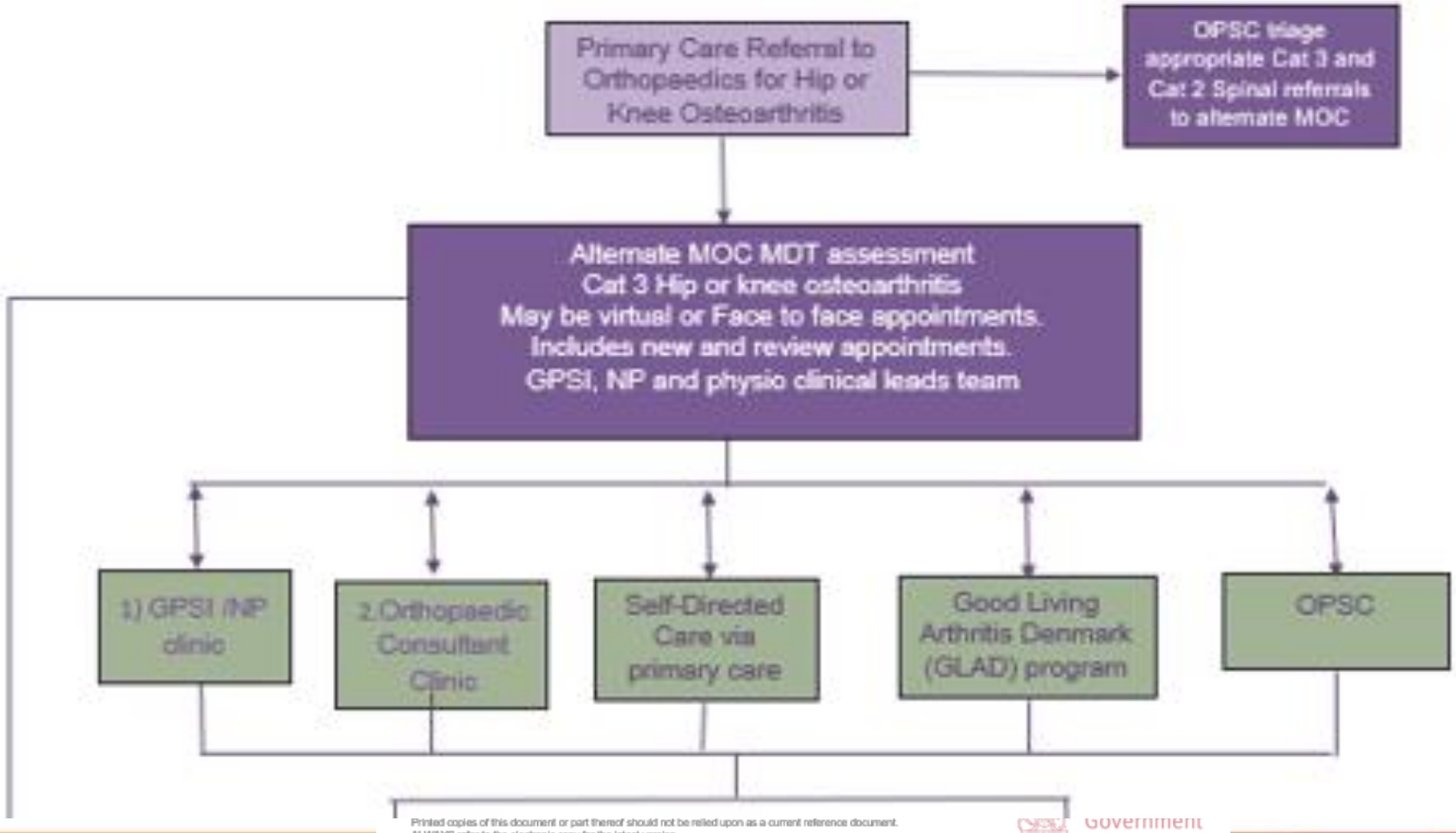
Lower Limb Osteoarthritis Pathway



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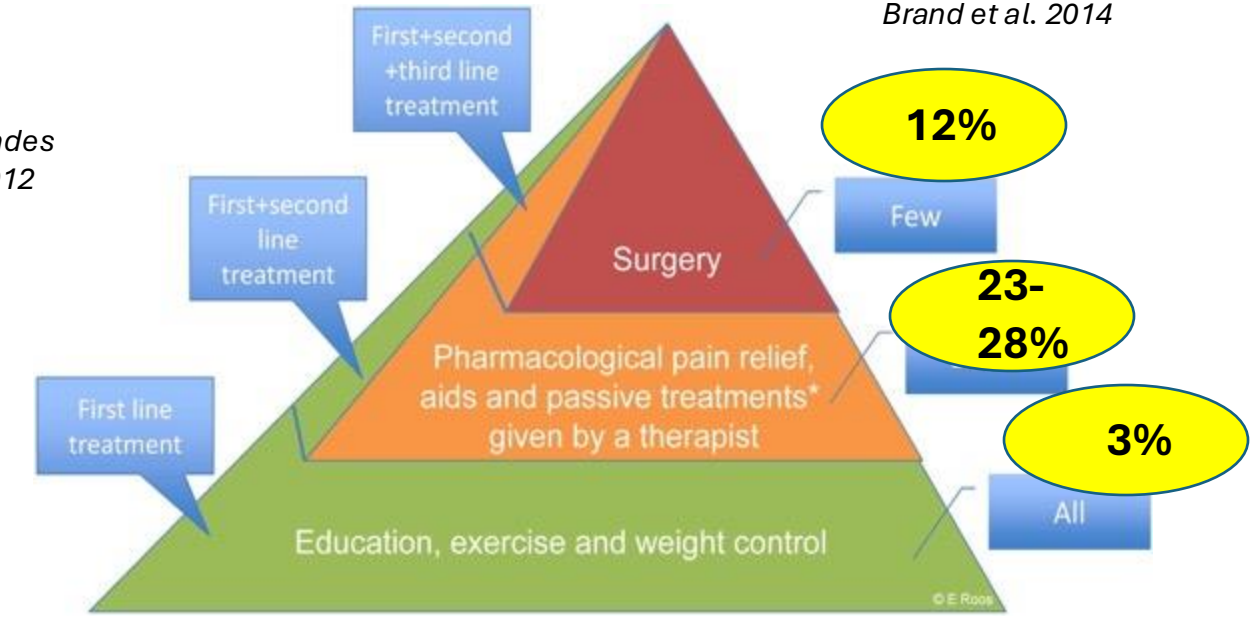
Treatment recommendations

- A combined early intervention of education, exercise and weight control is recommended both nationally and internationally as first line treatment

Hunter 2011; Carr et al. 2012; Fernandes et al. 2013; Zhang et al. 2008; SST 2012

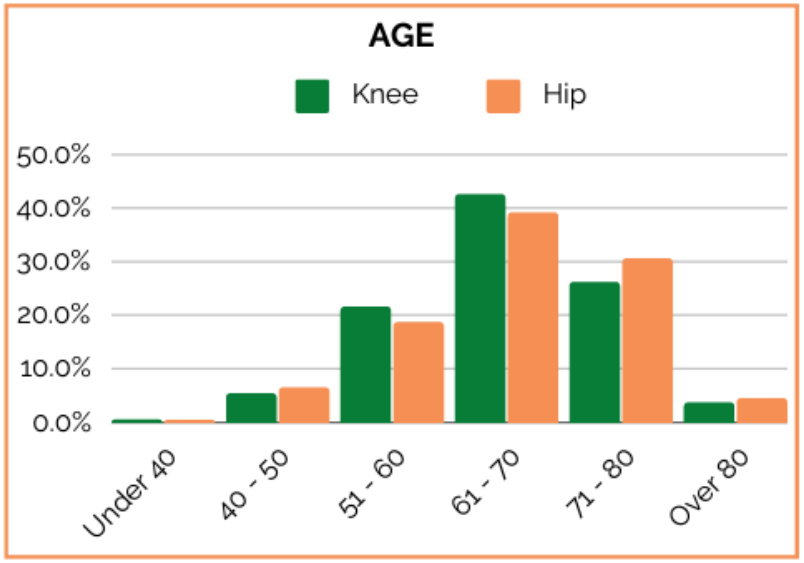
Brand et al. 2014



Lots of barriers

Australian Outcomes: 2023

	KNEE	HIP
Pain	- 29%	- 25%
Medication	- 46%	- 39%
Quality of life	+ 29%	+ 17%
Walking speed	+ 16%	+ 14%



87% of the participants were **satisfied or very satisfied** with the GLA:D® Program

90% of the participants use what they have learned in GLA:D® at **least once a week**

From: GLA:D® Australia Hip and Knee
Annual Report 2023

GLA:D® changes surgery intentions

"Do you have so much trouble and pain from your knee that you want to have surgery?"

- 294/1159 said yes at baseline – 25.4% (changed to 50/336 = 14.9% at 3 months)

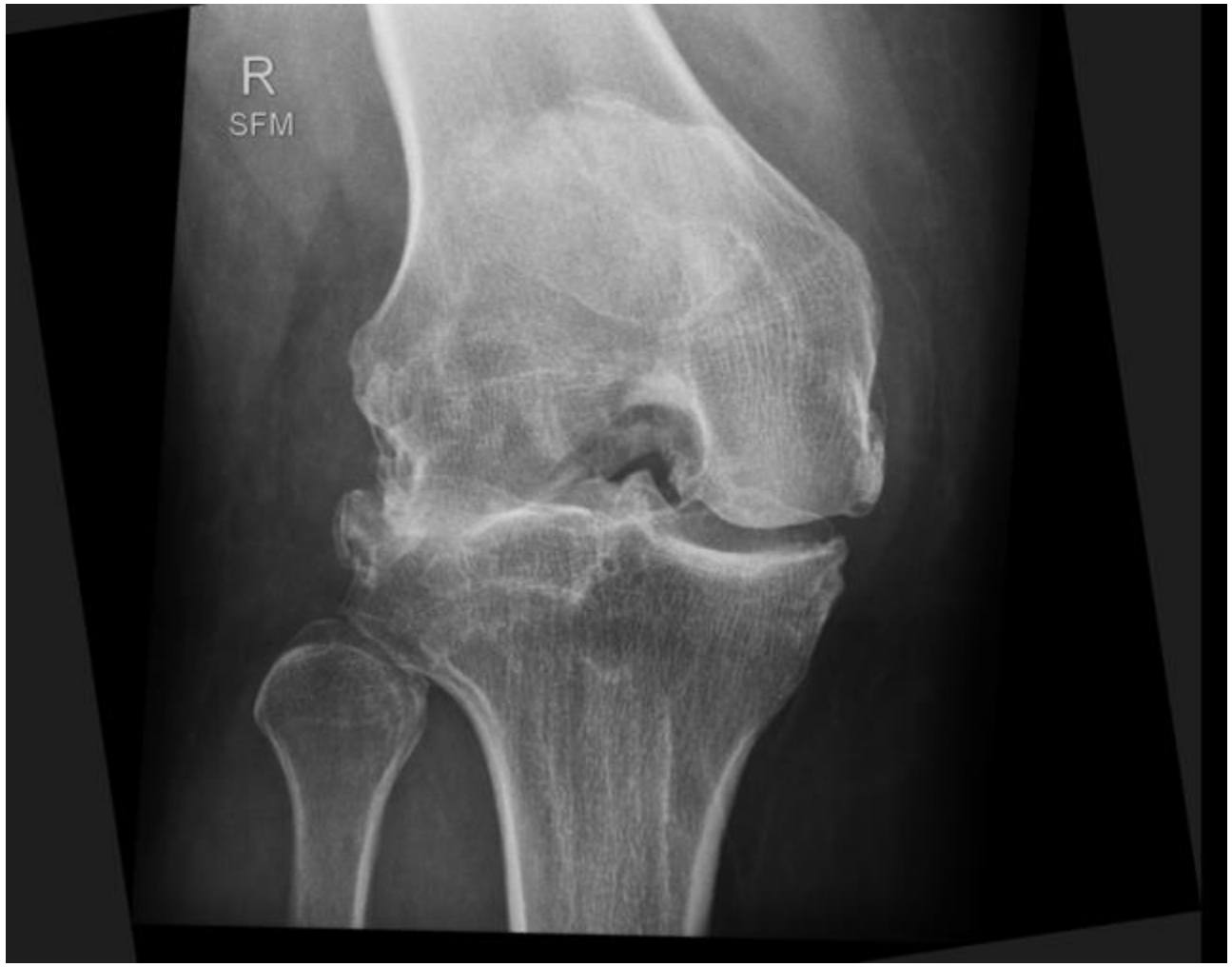
Improving Patient Flow and optimising engagement → outcomes surgically and non-surgically

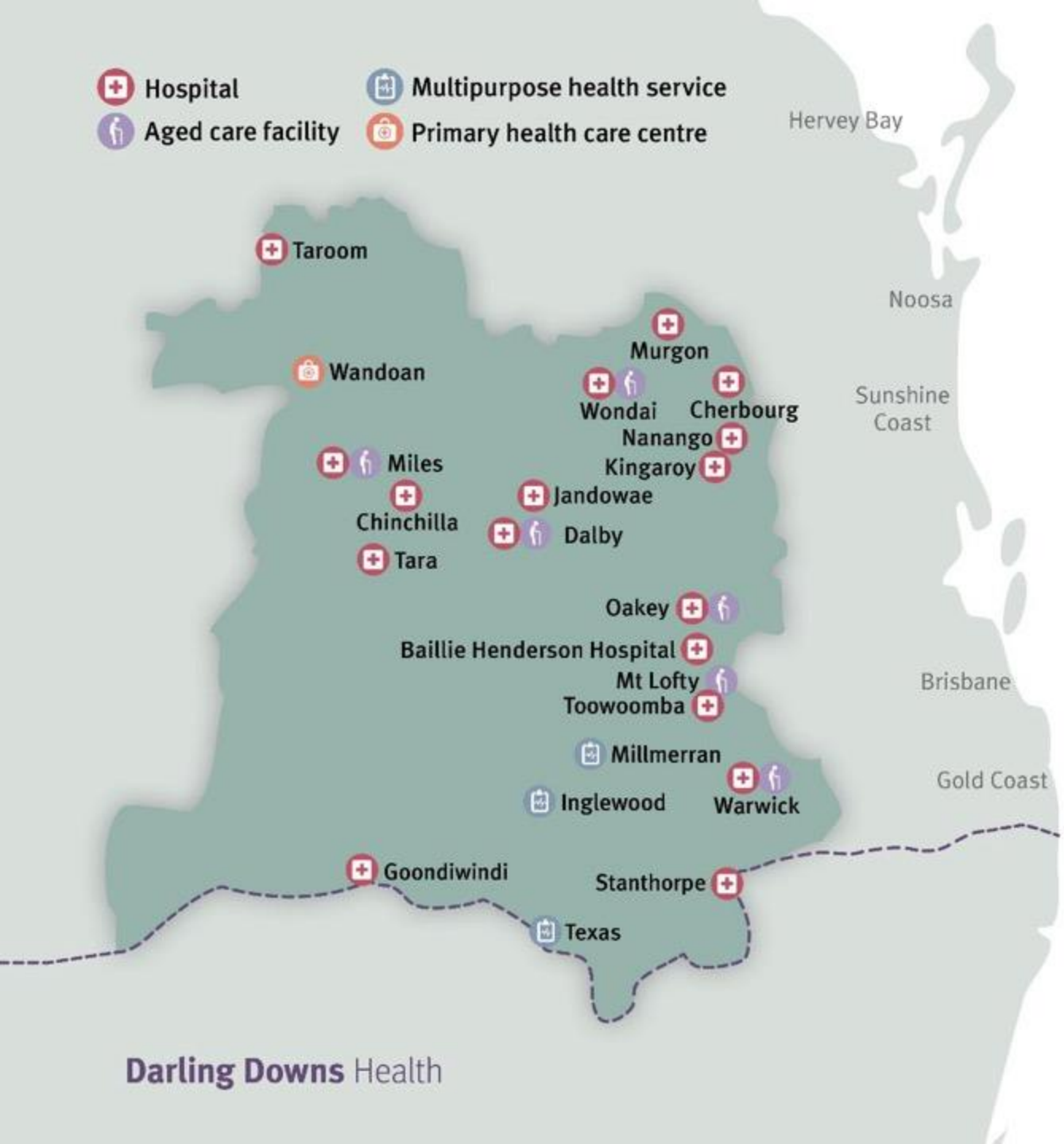
52M

BMI48
Primary carer for son with disability
Rugby injury in teens
Lives in South Burnett

Left work in 2022
Advised to delay surgery in 2019 secondary to age and weight. Had steroid injections (short term relief). Seen physio in Kingaroy x 1, simple exercises – not much benefit

Re-referred in 2024
VLCD + Telehealth Physio: WL >20kgs, walking >3kms days, low pain
Nb: May still have arthroplasty secondary to valgus




Hospital
Multipurpose health service
Aged care facility
Primary health care centre
Hervey Bay
Noosa
Sunshine Coast
Brisbane
Gold Coast
Taroom
Murgon
Wandoan
Wondai
Cherbourg
Nanango
Kingaroy
Miles
Jandowae
Chinchilla
Dalby
Tara
Oakey
Baillie Henderson Hospital
Mt Lofty
Toowoomba
Millmerran
Inglewood
Warwick
Goondiwindi
Stanthorpe
Texas
Darling Downs Health

What the GPSI clinic looks like

- Initial assessment 100% virtual
  - VC or phone
  - Designed to avoid unnecessary patient travel and increase access
  - 15 minute chart review with 30 minute phone consultation
    - Physical chart review
    - Images reviewed
    - Referrals reviewed
    - Viewer used for pharmacy history, hospital presentations, pathology, etc.

What the GPSI clinic looks like

- Purpose of the program is explained to patient;
  - Holistic approach to care
  - Does not replace, but works with regular GP
- Open ended questions to patients;
  - “What is happening with your joint in your words, and what would you like to see happen”
  - All kinds of answers to this question

What the GPSI clinic looks like

- History of illness
- Medical history and screening
- Discussion of conservative mgmt.
- Plan developed with the patient moving forward

Essentially, going through the PHN pathway with the patient

First 7 months of Data

Initial Pathway	#	%
Deceased	4	1.23%
FTA - removed	8	2.46%
GPSI	207	63.69%
OPSC	59	18.15%
Surgical	26	8.00%
Pt declined review	21	6.46%
Grand Total	325	

First 7 months of Data

GPSI	207
Discharged	17
GPSI	38
OPSC	66
Surgical opinion	86
OPSC	59
Discharged	6
GPSI	2
OPSC	31
Surgical opinion	20
ORSC	26
Discharged	4
OPSC	1
Surgical opinion	21

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First 7 months of Data

Outcomes from Surgical Review	#	%
Discharged	13	9.70%
ESWL	84	62.69%
FTA - discharged	2	1.49%
GPSI for optimisation	18	13.43%
Not OA - further investigations	9	6.72%
OPSC	8	5.97%
Grand Total	134	

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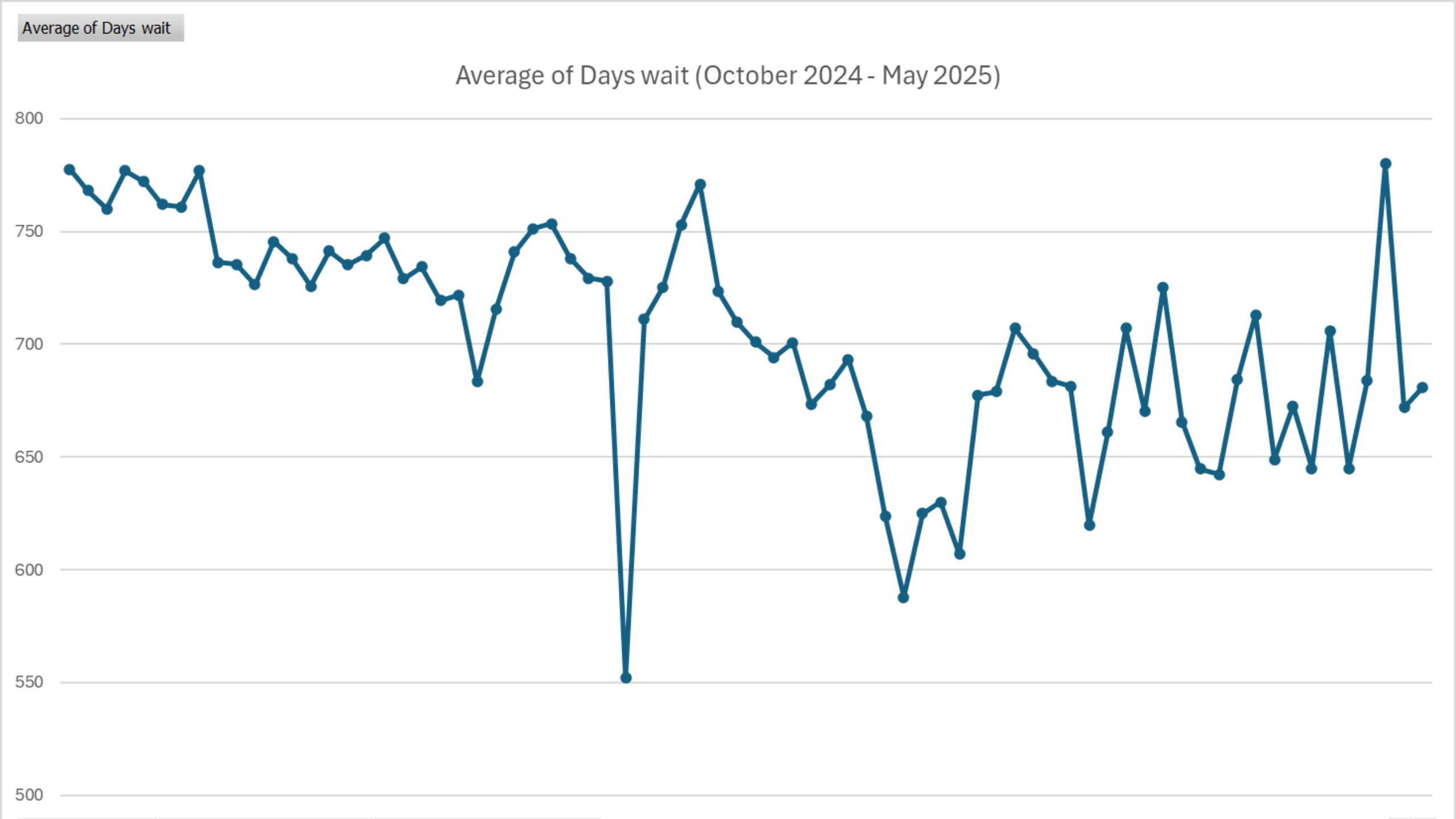
First 7 months of Data

Barriers Identified	#	%
Weight loss	36	11.11%
HBA1c	12	3.70%
Smoking	20	6.17%
Skin condition	7	2.16%
Other medical condition	22	6.79%
Needs conservative management trial	116	35.80%
Illicit substance use	2	0.62%
Dental	3	0.93%
No barriers	106	32.72%
Total	324	


Average of Days wait
Average of Days wait (October 2024 - May 2025)
800
750
700
650
600
550
500

Pathways and discharge

- Pathways are not mutually exclusive
  - Many patients will be seeing OPSC, while still under GPSI for other medical conditions, while being discussed with ORSC
  - Patients are discharged only as part of joint decision making
  - Those requiring coaching and frequent input are reviewed monthly, occasionally more frequently

What doesn’t happen as part of the clinic

- Medicare item numbers are not billed, including CCMPs, etc
- Medications which require frequent follow up with usual GP are not commenced in the clinic
- Medical conditions outside of the scope of the clinic are not managed in this space

Clinical Guidelines

- Developed through the PHN in discussion with Director Orthopaedics, Physiotherapy and key stakeholders working in this space
  - **Knee Osteoarthritis (OA)**
  - **Hip and Knee Joint Replacement**
    - **https://darlingdownsdraft.communityhealthpathways.org/14146.htm**
    - **https://darlingdownsdraft.communityhealthpathways.org/16195.htm**

Knee Osteoarthritis (OA)

See also Osteoarthritis.

Background

About knee osteoarthritis (OA)

About knee osteoarthritis (OA)

- Very common degenerative disease causing significant pain, stiffness, and disability, reducing the quality of life.
- The knee is the most common joint affected with OA, which is often bilateral.
- Knee pain can be referred from the hip, lower back, and ankle.
- Knee pain in patients aged > 45 years is most likely caused by knee osteoarthritis and not other associated conditions e.g., degenerative meniscal tears.
- Aboriginal and Torres Strait Islander people are 1.5 times more likely than non-indigenous people to have osteoarthritis, and can develop it at a younger age. [1]

Assessment

1. Ask about:
    - common arthritis symptoms ^.

      > **Symptoms**
      >
      > - Pain aggravated by movement
      > - Aching pain which may be generalised
      > - Joint stiffness in the morning or after rest
      > - Reduced function and walking distance
      > - In advanced disease, may get rest and night pain
      > - Mechanical symptoms e.g., clicking, catching, locking

    - pain and document a pain assessment:
        - Location
        - Type (character) – stabbing, sharp, dull, aching, or throbbing. Presence of any tingling, burning, or numbness suggestive of neuropathic pain.
        - Aggravating or relieving factors
        - Onset (acute or gradual)
        - Severity – use a visual analogue scale (VAS) or Numerical Rating Scale (NRS)

Concerning symptoms

- Sudden onset acute pain
- Pain following trauma
- Pain not improved by rest
- Inability to weight bear
- Joint effusion without trauma, with fever, and patient systemically unwell

- impact on functioning ^.

Impact on functioning

- Activities of daily living
- Ability to exercise or participates in physical activity
- Work, including unpaid work (household or caring responsibilities)
- Leisure activities and hobbies
- Use of mobility aids and home set-up (including stairs and accessibility)

- impact on quality of life ^.

Impact on quality of life

- Sleep
- Emotional and social support network, including relationships and social activities
- Mood, anxiety, or depressive symptoms
- Alcohol and other drug use
- Geographical factors, including accessible transportation and access to appointments and programs.
- Language and cultural needs
- Health literacy and health beliefs

Consider use of a validated assessment tool:

- Knee Disability and Osteoarthritis Outcome Score (KOOS)
- Workplace Activity Limitations Scale
- Assessment of Quality of Life

1. Arrange acute orthopaedic referral if suspected or confirmed:
    - joint infection.
    - malignancy.
    - fracture.
2. Develop a General Practice Chronic Conditions Management Plan (GPCCMP) to access allied health services to provide multidisciplinary care to optimise patient function.

Patient function

Arrange:

- physiotherapy referral for strengthening and range of movement exercises, with or without hydrotherapy.
- occupational referral for home or work to assess suitable occupation and work related joint loading.
- exercise physiology referral for an individualised exercise program.
- dietitian referral for optimisation of diet and weight management as required.
- psychology referral if required for chronic pain management strategies.

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3. Explore patient understanding of osteoarthritis and:
    - provide patient information.
    - consider impact of condition on functioning, quality of life, geographical factors, health literacy, and health beliefs.
    - address unhelpful beliefs about osteoarthritis.

    > **Unhelpful beliefs about osteoarthritis**
    >
    > - Reinforce that guidelines recommend non-surgical management for patients at all stages of disease.
    > - Avoid unhelpful language when discussing osteoarthritis such as "degenerative", "wear and tear", or "bone-on-bone", which often reinforces avoidance of physical activity and belief that surgery is the only solution.
    > - See also Australian Commission on Safety and Quality in Health Care – Effective Communication for Knee Osteoarthritis.

4. If the patient is overweight or obese, manage weight loss.
5. Develop an exercise plan.
6. Manage psychosocial aspects – encourage social connectedness.

7. Develop a pain management plan:
    - Discuss with patient strategies to self-manage pain.
    - Provide information about dealing with pain.
    - Consider non-pharmacological strategies.
    - Consider pharmacological strategies.
8. Do not offer treatments with no demonstrated effectiveness for kn
9. Optimise management of co-morbid conditions.
10. Consider joint replacement surgery for patients who:
    - have undertaken 12 weeks of optimal non-surgical managemer
    - are not getting adequate pain relief and functional improvemer
    - have symptoms that are having a significant effect on their qua
    - are fit to undergo surgery and would agree to surgical manager
11. If pain is present in joint that has been replaced, irrespective of whe

Hip and Knee Joint Replacement

Caution: This page is currently under review.
This version has not been signed off for release in HealthPathways yet.

STYLE-ALIGNED
DRAFT PHASE
First

See also:

- Hip and Knee Joint Replacement Complications
- Hip and Knee Surgery Follow-up
- Hip Osteoarthritis (OA)
- Knee Osteoarthritis (OA)

Assessment

1. Ensure optimal non-surgical management for patients at all stages of hip osteoarthritis (OA) and knee OA has been undertaken before considering joint replacement.
2. Determine level of impairment:
    - Consider using a validated tool:
        - Knee Injury and Osteoarthritis Outcome Score (KOOS)
        - Harris Hip Score (HHS)

3. Provide information about the procedure, including risks, benefits, and what to expect:
    - Total Hip Replacement
    - Total Knee Replacement
4. Assess whether patient is willing and fit for surgery:
    - Check whether the patient wants to have surgery.
    - Look for co-morbidities that may affect fitness for surgery e.g.:
        - Active or chronic oral infection
        - Local skin infections or chronic wounds, including skin cancers requiring management (this includes locat the operative limb)
        - Anaemia
        - Poorly controlled diabetes, cardiac conditions, respiratory conditions, hypertension
        - Smoking or vaping
        - Cognitive impairment
        - Recurrent urinary tract infection (UTI) in men or women
        - Falls
    - Check height, weight, and body mass index (BMI) .

Management

Initial management

1. Manage any co-morbidities which are exclusion criteria for major joint replacement in the public health system, including:
    - current smoking or vaping.
    - inadequate diabetes control (i.e., HbA1c > 8.5).
    - BMI – Toowoomba Hospital will not reject referrals for patients with BMI ≥ 40, however, BMI ≥ 40 remains a relative contraindication for joint replacement surgery. See also Adult Obesity Management.
2. Arrange non-acute orthopaedic referral for joint replacement surgery if the patient meets all of the following criteria:
    - Has had optimal non-surgical management
    - Has severe functional limitations
    - Will consider and is fit for surgery
3. Continue to optimise non-surgical management of osteoarthritis while awaiting orthopaedic review.

Management while awaiting elective joint replacement surgery

1. Optimise any identified co-morbidities that may affect fitness for surgery. If these are identified in the orthopaedic clinic before surgery, surgery may be postponed to allow time for these conditions to be managed. This includes:
    - active or chronic oral infection – encourage the patient to have dental review before surgery.
    - local skin infections or chronic wounds, including skin cancers requiring management.
    - adult obesity management – increased BMI is associated with increased risk of surgical complications. Weight loss is recommended in all patients with elevated BMI.
    - diabetes.
        - Optimise diabetes management.
        - If HbA1c > 8.5 despite optimal management in primary care, arrange diabetes service referral. Indicate in the referral that this is a barrier to surgery.
    - anaemia, heart disease, or chronic respiratory disease.
    - cognitive impairment. Patients having elective surgery must participate in rehabilitation and follow precautions (e.g., hip precautions) after surgery.
        - Optimise any conditions that might be contributing to cognitive impairment. See Cognitive Impairment and Delirium.
        - Investigate any suspected sensory impairment issues – consider optometry and audiology referral.
        - If Mini-Mental State Examination (MMSE) score < 20, arrange GARSS Memory and Cognition Clinic or private geriatrician referral. Include "Waiting for elective orthopaedic surgery" on the referral.

- falls risk – suggest strategies to reduce risk of falls at home. Arrange falls clinic assessment (include "Waiting for elective orthopaedic surgery" on the referral) if:
  - one or more falls in the last 6 months, especially if unknown cause.
  - falls that have resulted in injuries requiring medical attention.
- foot disease – arrange podiatry review or high-risk foot assessment referral if any foot symptoms, pre-existing diabetes, peripheral vascular disease, or peripheral neuropathy.
- sensory impairment – arrange optometry review and/or audiology review of any new or pre-existing impairment.

2. Review community supports in place for after surgery.
3. Promote readiness for post-operative recovery and rehabilitation:
   - Encourage the patient to read the information booklet supplied by public hospital or private surgeon – Total Hip Replacement or Total Knee Replacement.
   - Educate about the need for:
     - new hip precautions or new knee precautions.
     - deep breathing and coughing exercises.
     - circulation exercises.
4. In the months before elective surgery, arrange pre-operative physiotherapy referral in the public system, or in the private system as part of a General Practice Chronic Conditions Management Plan (GPCCMP) (private orthopaedic surgeons may have already arranged this referral as part of their service).

5. Discuss expectations after joint replacement:
    - Admission to the inpatient rehabilitation unit is rarely required and only in the event of a complication (e.g., intra operative fracture or cardiac event) when early mobilisation cannot be achieved. This decision will be made by the inpatient multi-disciplinary team.
    - Recovery from joint replacement is a marathon, not a sprint. Mobility is only one component, and muscle strength and gait retraining may take longer to achieve. Common recovery times for uncomplicated joint replacement:
        - Total hip replacement – 6 to 9 months
        - Total knee replacement – 9 to 12 months
    - Life after joint replacement
6. Ensure up-to-date advance care planning, including:
    - Statement of Choices Form
    - Advance Health Directive
    - Enduring Power of Attorney
    - Queensland Health Acute Resuscitation Plan
7. Advise the patient that if declined by the orthopaedic surgeon at any stage, they may be referred back to general practice for further optimisation or conservative management.

Referral

- Arrange non-acute orthopaedic referral for joint replacement surgery if the patient meets all of the following criteria:
  - Has had optimal non-surgical management
  - Has severe functional limitations
  - Will consider and is fit for surgery
- Arrange referral relevant to co-morbidities while waiting for elective orthopaedic surgery:
  - Diabetes and HbA1c > 8.5 despite optimal management in primary care – arrange diabetes service referral. Indicate in the referral that this is a barrier to surgery.
  - Cognitive impairment and MMSE score < 20:
    - Arrange GARSS Memory and Cognition Clinic or private geriatrician referral.
    - Include "Waiting for elective orthopaedic surgery" on the referral.
  - Falls risk – arrange falls clinic referral (write "Waiting for orthopaedic surgical opinion" on the referral) if:
    - one or more falls in the last 6 months, especially if unknown cause.
    - falls that have resulted in injuries requiring medical attention.
  - Foot disease – arrange podiatry review or high-risk foot assessment referral if any foot symptoms, pre-existing diabetes, peripheral vascular disease, or peripheral neuropathy.
  - New or pre-existing sensory impairment – arrange optometry referral and/or audiology referral.
  - Dental review.

- Arrange referral for access to necessary homes services and equipment:
  - Aged care assessment for all patients aged ≥ 65 years, or aged ≥ 50 years if Aboriginal and Torres Strait Islander.
  - Occupational therapy referral to ensure appropriate home set-up before surgery.
  - Help at home referral for access to pre-cooked meals.
- Arrange pre-operative physiotherapy referral (private orthopaedic surgeons may have already arranged this referral as part of their service).

Patient experience

- Vast majority of patients are just happy to have contact and information
- Very rarely there is the patient who refuses to engage; will talk to a surgeon only
- Full spectrum of patient health knowledge. Some will be “fixed” with self-initiated conservative management, some their health will have massively declined

Patient comments

- Deny any knowledge of smoking cessation
  - “When I had my last knee done, the nurse used to wheel me down and we had a smoke together”
- Expectation that a hip or knee replacement is a 100% cure
  - Reflected by the significant number of patients who go on to decline surgery
- That it is the only possible path
  - Bone on bone
  - Completely worn out
  - Needs replacing the same as a worn out part in a car

Where to

- To keep up with increasing service demand and to improve waiting times for review, intent is to at least double FTE
- Methods to improve information to the patient early in the journey
- Research into patient centred outcomes and clinical outcomes
- Work with General Practitioners and Allied Health services both public and private to achieve best conservative management