

# The out-of-pocket costs of arthritis in Australia: a micro-costing approach

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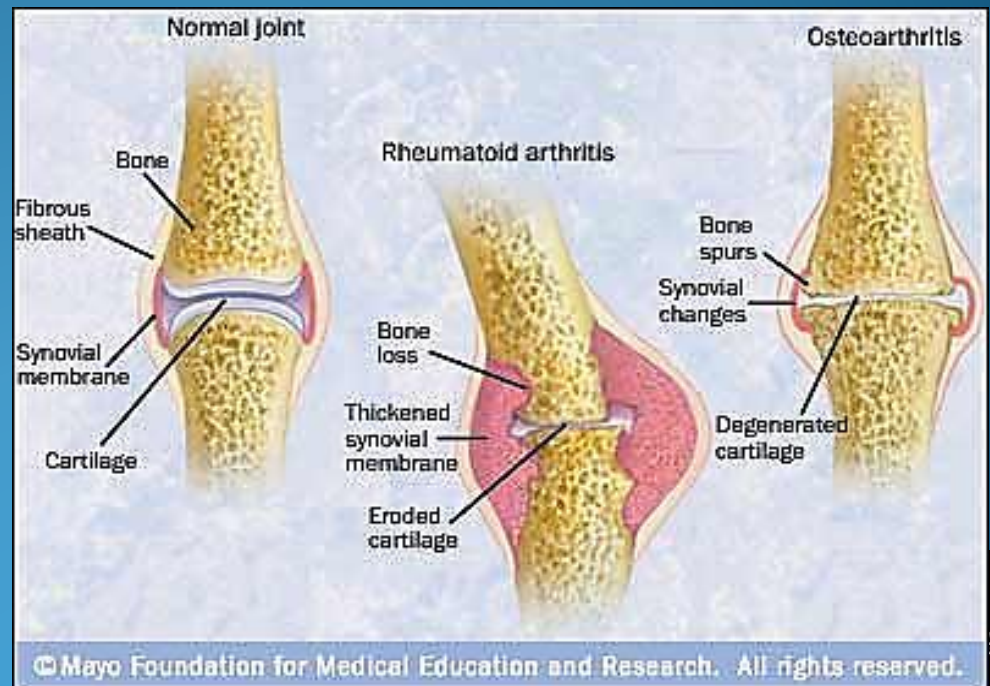
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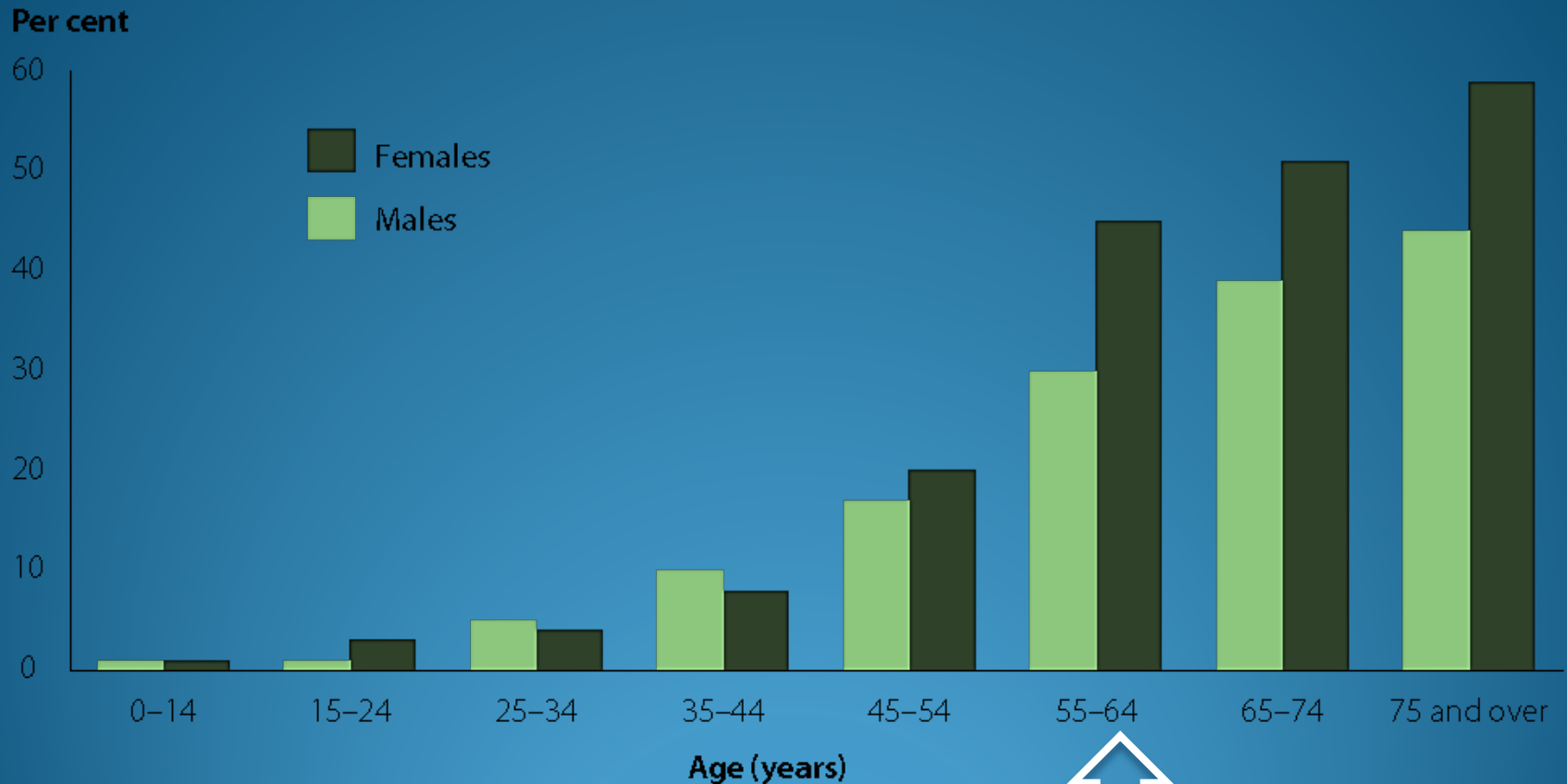
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## BACKGROUND: Arthritis

- ‘arthron’ means joint, ‘itis’ means inflammation
- > 100 different forms of arthritis
- Swelling, stiffness, and pain in the affected joints



# Arthritis is common



Adopted from: A snapshot of arthritis in Australia 2010. AIHW 2010.



# Medication is a main form of treatment:

- Analgesics

- Non-steroidal anti-inflammatory drugs (NSAIDs) – aspirin, ibuprofen
- Non-anti-inflammatory – acetaminophen/paracetamol
- Neuropathic pain
- Semi-synthetic opioids, narcotics

## Medication is a main form of treatment:

- Disease-modifying anti-rheumatic drugs (DMARDs)
- Supplements
  - Bone/joints – calcium, glucosamine
  - Polyunsaturated fatty acids – fish oil, krill oil
  - Other – garlic extract, blueberry punch, kelp tablets

## Pharmaceutical Benefits Scheme (PBS):

- Co-payments
- Off-schedule medicines
- Over-the-counter (OTC) drugs

## Out-of-pocket (OOP) expenses:

- Patients' financial burden
- USA: \$1,379 – \$1,798
- Australia?

## STUDY OBJECTIVE:

- Australian
- Arthritis-related medicines use and OOP costs
- Examine
  - Types of medicines
  - Variations

## METHODS:

- A pilot study in 2012
- HMRI Research Register
- Hunter Region, NSW
- Women  $\geq$  60 years



## Self-administered postal surveys:

- Diseases & conditions
  - Arthritis
  - Comorbid conditions
- Arthritis severity
  - Western Ontario and McMaster Universities Arthritis Index (WOMAC)
- Quality of life
  - Short Form 36 (SF-36)
- Disability measure
  - Health Assessment Questionnaire (HAQ-DI)
- Healthcare utilisation

## RESULTS:

- N = 84
- 57% self-reported arthritis (95% CI: 45.8-67.8%)

## Table: Health characteristics of participants

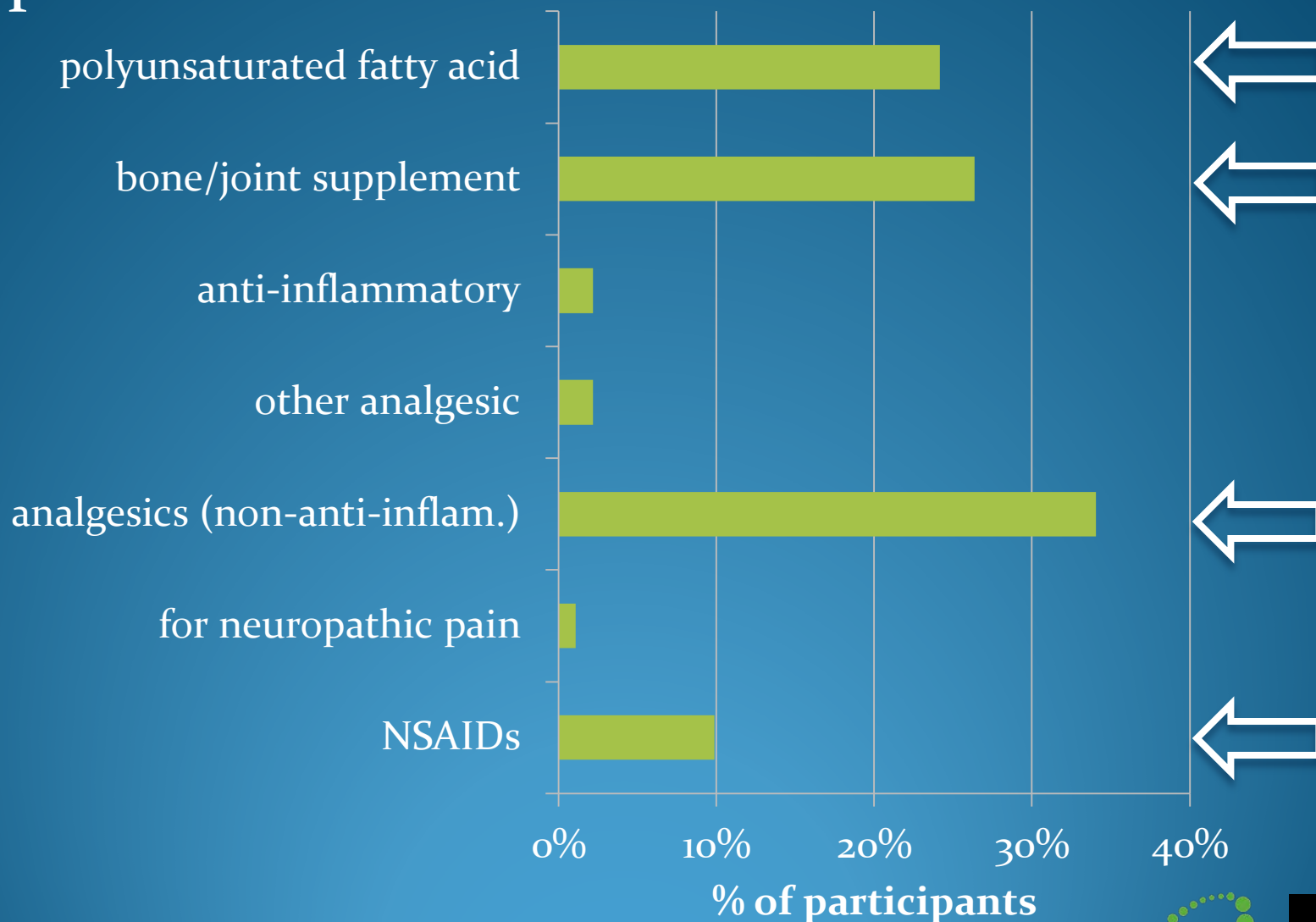
	With arthritis (n=48)	Without arthritis (n=36)
SF-36 sectional scores (mean [SD])		
Physical Component Score	40.4 [9.06]	48.0 [9.12]
HAQ Disability Index (mean [SD])	0.63 [0.51]	0.21 [0.31]
WOMAC Index (mean [SD])	26.9 [16.42]	15.9 [16.88]

$P \leq 0.05$

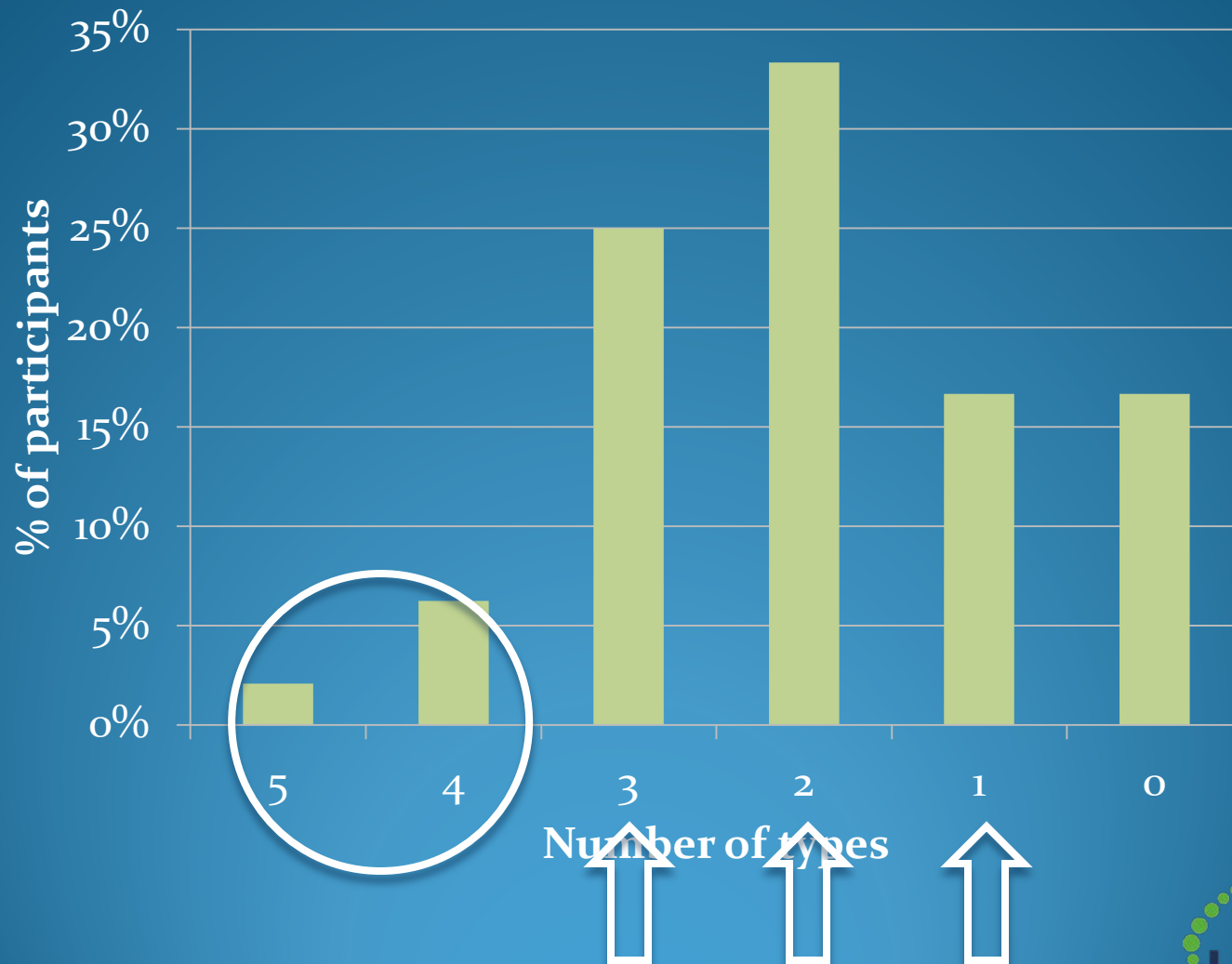
## Variations of medicines use: prescription vs. non-prescription

- 59% prescription medicines
- 37% non-Rx, OTC
- 13% both Rx and OTC

# Types of medicine:



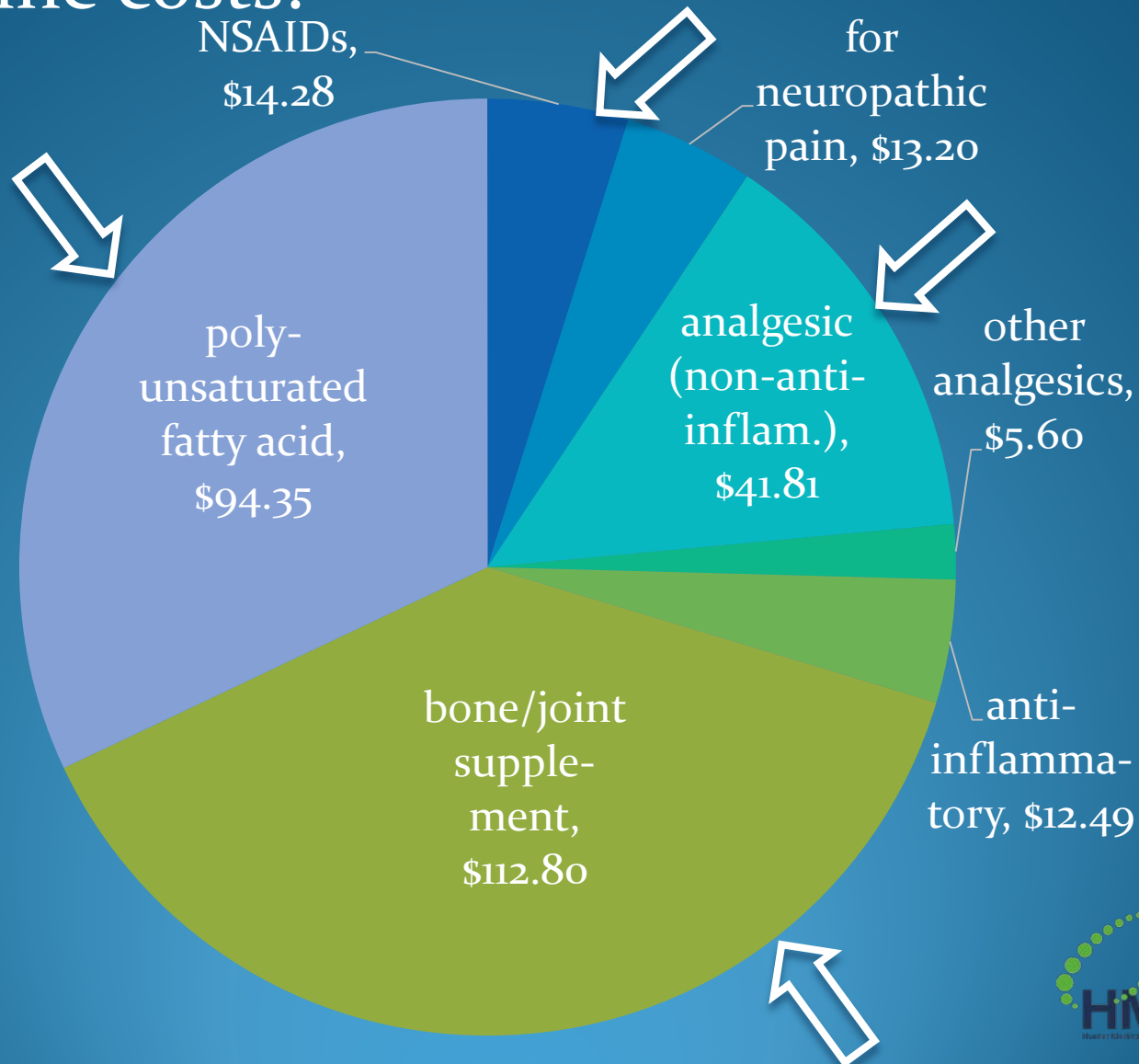
# Number of types of medicines:



## Medicine costs:

- Mean total medicine (OOP) cost = \$294.51 per patient per year
- Median medicine cost = \$195.36
- 25<sup>th</sup> & 75<sup>th</sup> percentiles
  - \$34.00
  - \$455.46

# Medicine costs:



# Factors associated with high cost ( $\geq 75$ th percentile) from univariate regression analysis

Variable	Odds ratio	<i>P</i>	(95% CI)
<b>SF-36 subscales</b>			
Physical functioning	1.04	0.087	(0.99-1.08)
Role-physical	1.02	0.081	(1.00-1.04)
Pain index	1.03	0.248	(0.98-1.08)
General health perceptions	1.06	0.065	(1.00-1.12)
Vitality	1.01	0.586	(0.97-1.05)
Social functioning	1.01	0.679	(0.97-1.04)
Role-emotional	0.99	0.287	(0.97-1.01)
Mental health	1.04	0.248	(0.98-1.10)

# Factors associated with high cost ( $\geq 75$ th percentile) from univariate regression analysis

Variable	Odds ratio	<i>P</i>	(95% CI)
HAQ-Disability	0.41	0.300	(0.08-2.19)
<b>WOMAC subscales</b>			
Pain	0.71	0.204	(0.41-1.21)
Stiffness	0.78	0.554	(0.35-1.75)
Physical functioning	0.79	0.140	(0.58-1.08)
<b>Number of comorbidities</b>	0.90	0.739	(0.50-1.65)

# Factors associated with high cost ( $\geq 75$ th percentile) from univariate regression analysis

Variable	Odds ratio	<i>P</i>	(95% CI)
<b>Use of medicine</b>			
Prescription drugs (Y/N)	0.65	0.537	(0.16-2.57)
Over-the-counter drugs (Y/N)	5.87	0.023 *	(1.28-26.90)
<b>Use of health services</b>			
General practitioner (Y/N)	5.24	0.137	(0.59-46.39)
Specialist or consultant (Y/N)	0.43	0.464	(0.05-4.07)
Physiotherapist (Y/N)	1.09	0.905	(0.26-4.55)
Chiropractor (Y/N)	1.50	0.751	(0.12-18.36)
Massage therapist (Y/N)	0.67	0.646	(0.12-3.75)
Osteopath (Y/N)	0.97	0.978	(0.09-10.39)
Naturopath/herbalist (Y/N)	6.89	0.132	(0.56-84.98)

\* $P \leq 0.05$

## DISCUSSION:

- OOP costs of arthritis
  - Australian
  - Cost components
  - Variation in use and costs
- Micro-costing approach
  - Self-administered questionnaires
  - Recall bias??
  - Sample too small/selection bias??
  - Underestimation??

## Future research:

- Bigger sample
- Nation wide
- Other direct costs
  - Health services
  - Equipment
- Predictors of high cost and/or economic hardship
  - Socio-demographics

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