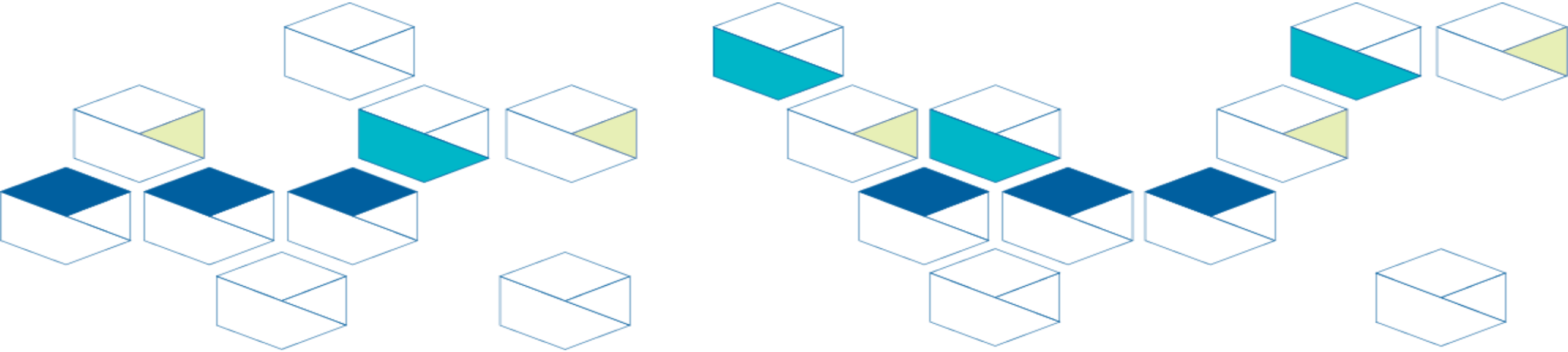
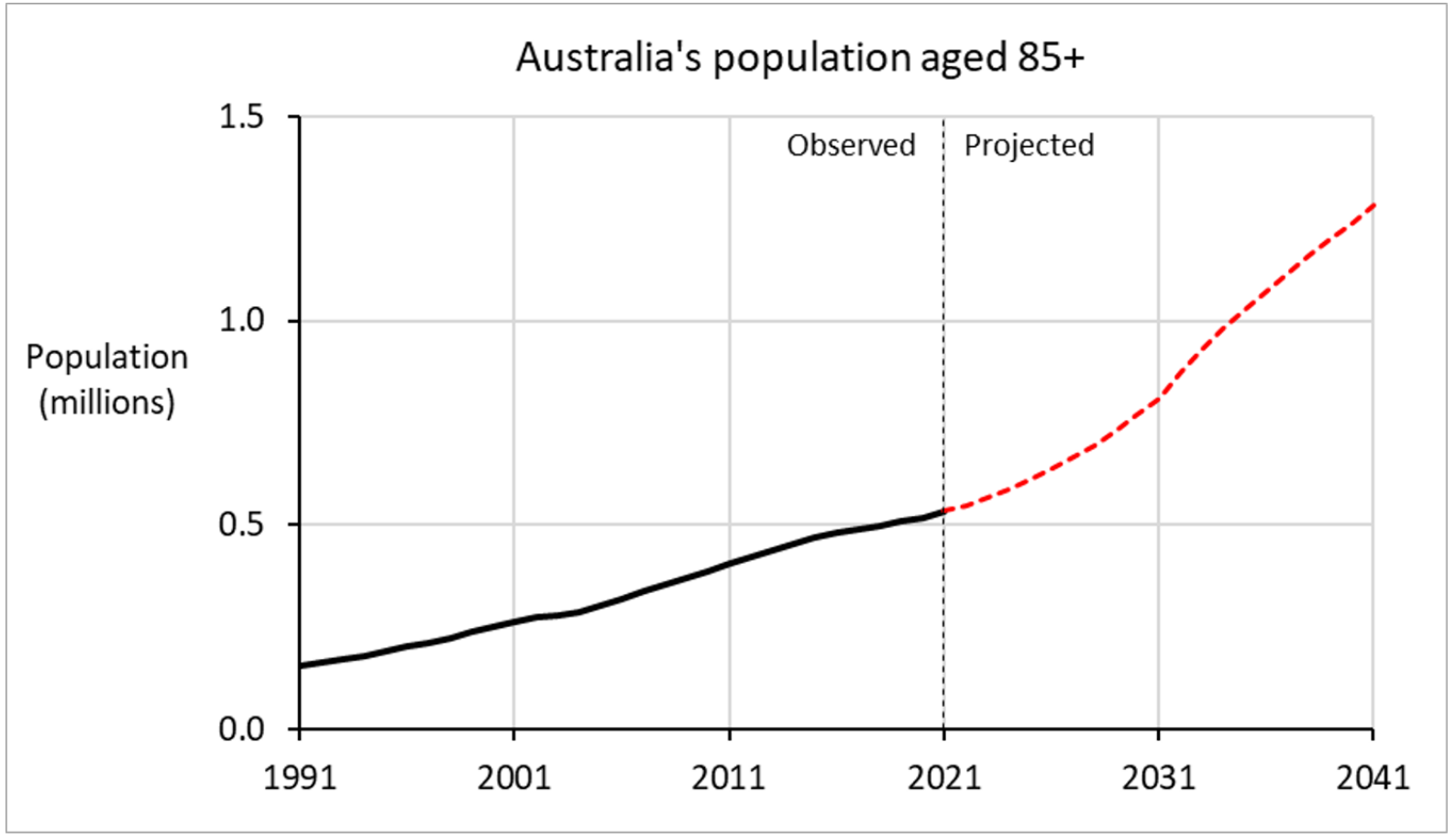
Government of Western Australia
South Metropolitan Health Service
Fiona Stanley Fremantle Hospitals Group

Surgery and the Geriatric Patient

Dr Chris Wilson | Orthogeriatrician | Fiona Stanley Hospital



Growing demand



Population aged 85+ in Australia, 1991-2041. Source of observed data: ABS. Wilson, Temple (2022)

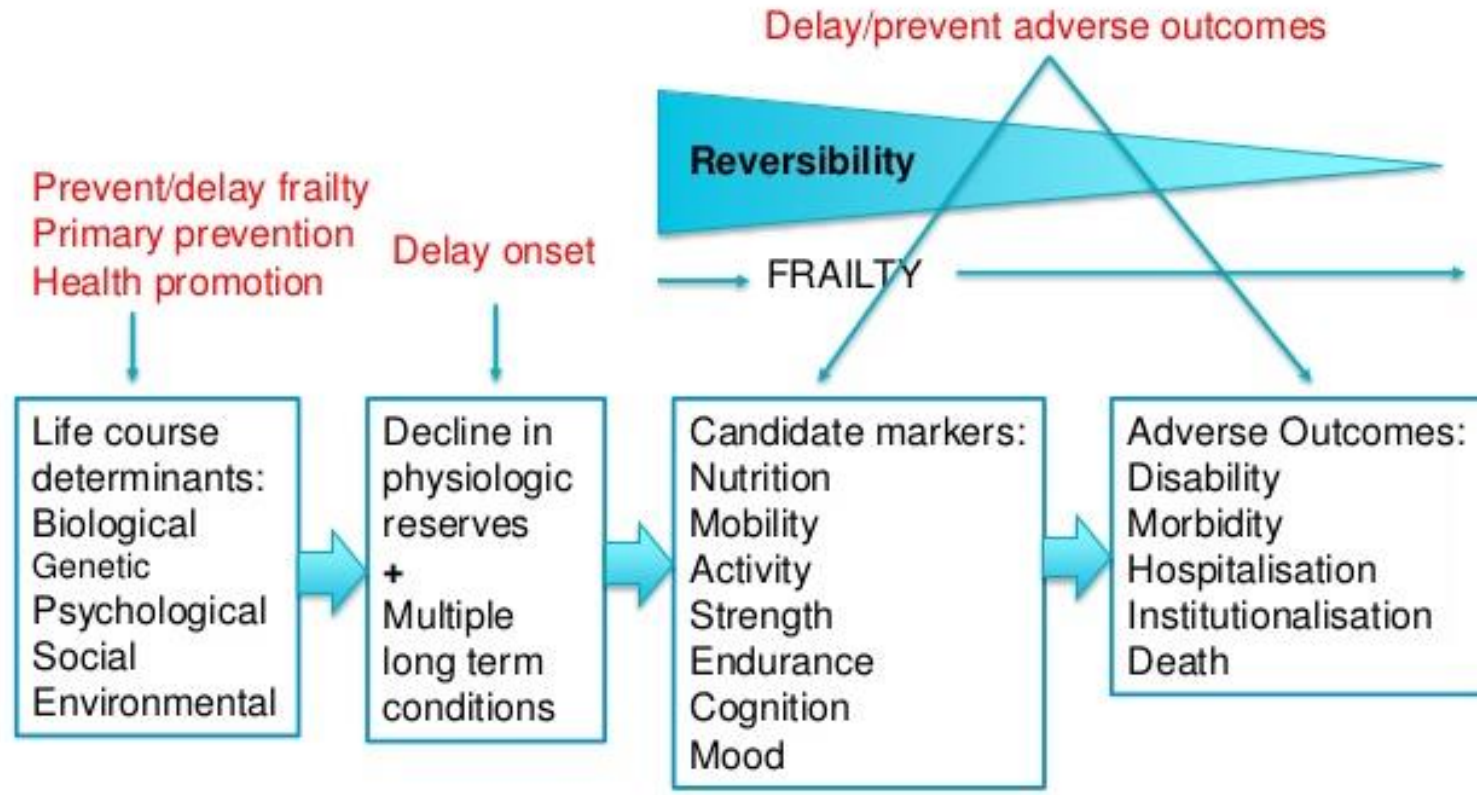
Growing complexity

Older adults with surgical issues have:

- Accumulated medical morbidity.
- Geriatric syndromes, such as
  - Frailty
  - Polypharmacy
  - Cognitive Impairment

→ All require simultaneous management alongside surgical pathology.

Increased understanding of frailty and its implications



Rodriguez-Mañas L, **Fried** LP. **Frailty** in the clinical scenario. **Lancet**. **2014** Nov 6

Clinical Frailty Scale

Clinical Frailty Scale*

1 **Very Fit** – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.

2 **Well** – People who have **no active disease symptoms** but are less fit than category 1. Often, they exercise or are very **active occasionally**, e.g. seasonally.

3 **Managing Well** – People whose **medical problems are well controlled,** but are **not regularly active** beyond routine walking.

4 **Vulnerable** – While **not dependent** on others for daily help, often **symptoms limit activities.** A common complaint is being "slowed up", and/or being tired during the day.

5 **Mildly Frail** – These people often have **more evident slowing,** and need help in **high order IADLs** (finances, transportation, heavy housework, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.

6 **Moderately Frail** – People need help with **all outside activities** and with **keeping house**. Inside, they often have problems with stairs and need **help with bathing** and might need minimal assistance (cuing, standby) with dressing.

7 **Severely Frail** – **Completely dependent for personal care**, from whatever cause (physical or cognitive). Even so, they seem stable and not at high risk of dying (within ~ 6 months).

8 **Very Severely Frail** – Completely dependent, approaching the end of life. Typically, they could not recover even from a minor illness.

9. **Terminally Ill** - Approaching the end of life. This category applies to people with **a life expectancy <6 months**, who are **not otherwise evidently frail.**

Scoring frailty in people with dementia

The degree of frailty corresponds to the degree of dementia. Common **symptoms in mild dementia** include forgetting the details of a recent event, though still remembering the event itself, repeating the same question/story and social withdrawal.

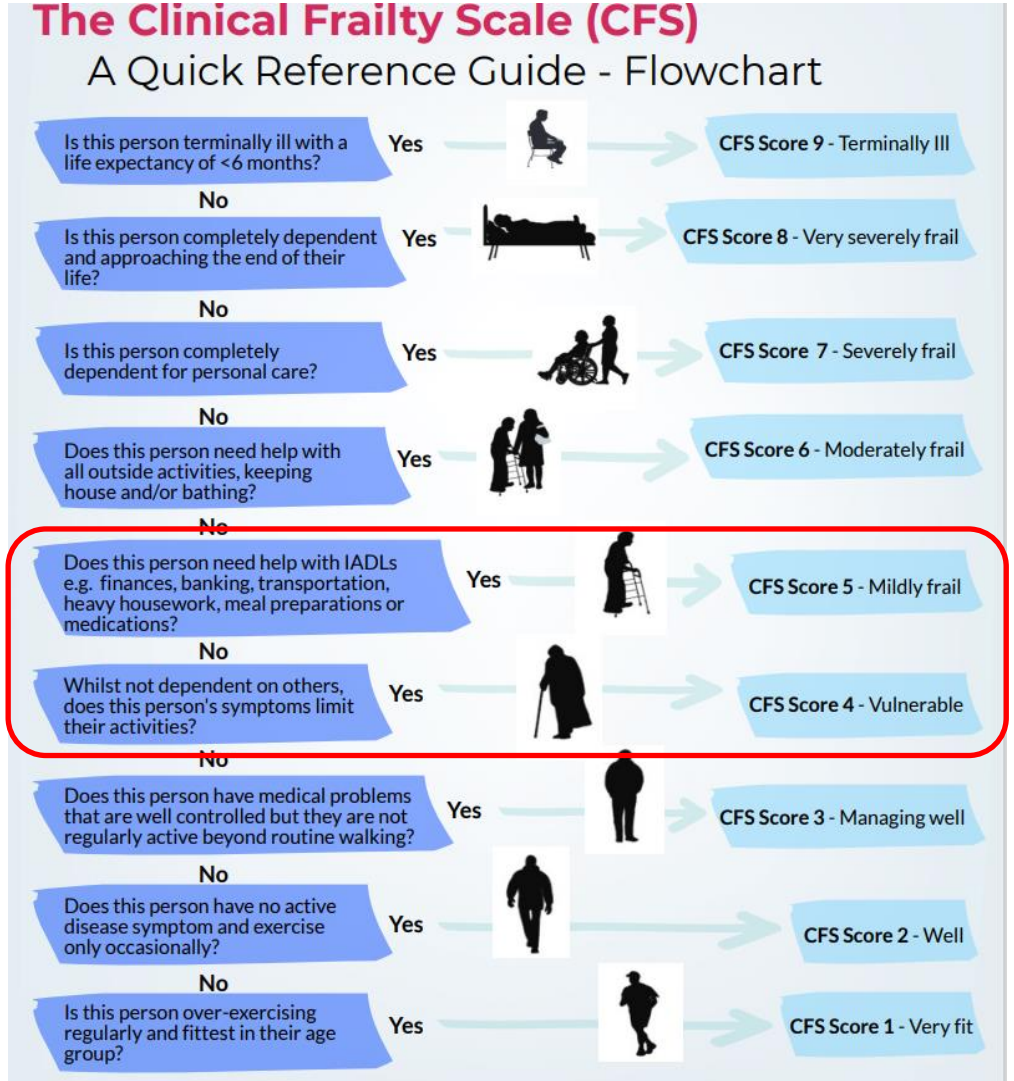
In **moderate dementia**, recent memory is very impaired, even though they seemingly can remember their past life events well. They can do personal care with prompting.

In **severe dementia**, they cannot do personal care without help.

* 1. Canadian Study on Health & Aging, Revised 2008.
2. K. Rockwood et al. A global clinical measure of fitness and frailty in elderly people. CMAJ 2005;173:489-495.

DALHOUSIE UNIVERSITY *Inspiring Minds*

Rockwood, K., et al Cmaj, 2005. 173(5): p. 489-95.
Surkan, M., et al.,. Can Geriatr J, 2020. 23(3): p. 235-241.
Nissen, S.K., et alBMC Geriatrics, 2020. 20(1): p. 443.



https://apps.nhslothian.scot/files/sites/2/Clinical-Frailty-Score.pdf

CFS 7-9 (Severe Frailty)

Supportive care Vs cure
Advance care planning

CFS 6 (Moderate Frailty)

Actively seek out and manage frailty syndromes e.g. falls, fragility fractures, cognitive impairment, continence and/or polypharmacy issues.

CFS 4-5 (Vulnerable – Mild Frailty)

Address **reversible issues** such as sarcopenia and nutrition.
Avoid precipitating factors for ***decline***.
Consider social prescribing and where relevant "alternative" pathways, e.g. elective care, make a plan for "prehabilitation"/ optimisation.

CFS 1-3 (Fit):

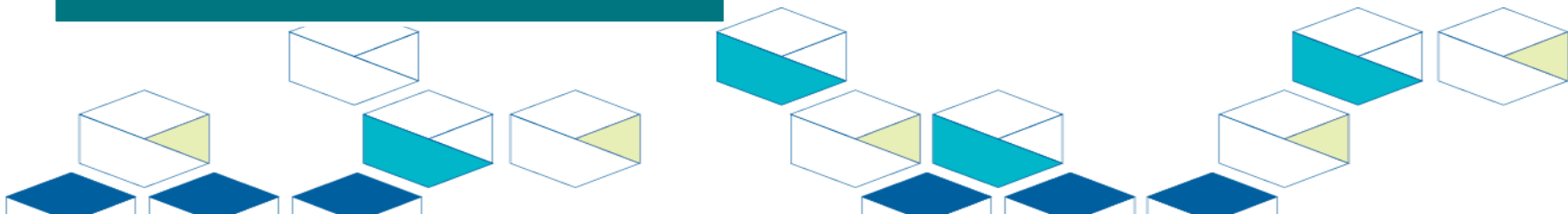
Care as "usual"

Perioperative Geriatric Services at FSFHG

Geriatric Perioperative Clinic

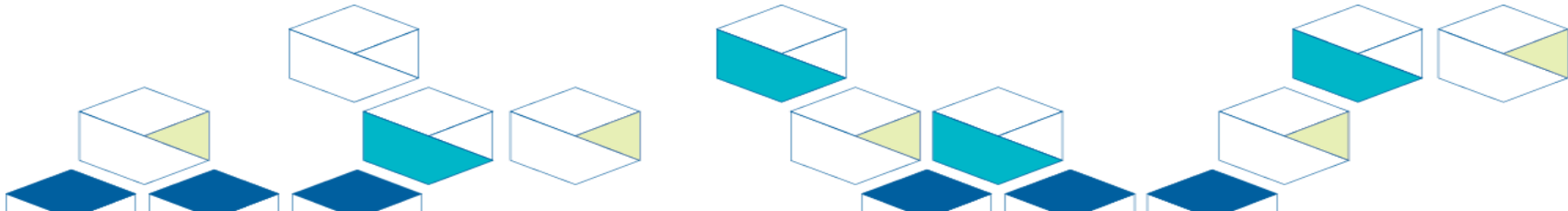
Older Adult Surgical Inpatient Service (OASIS)

Orthogeriatrics



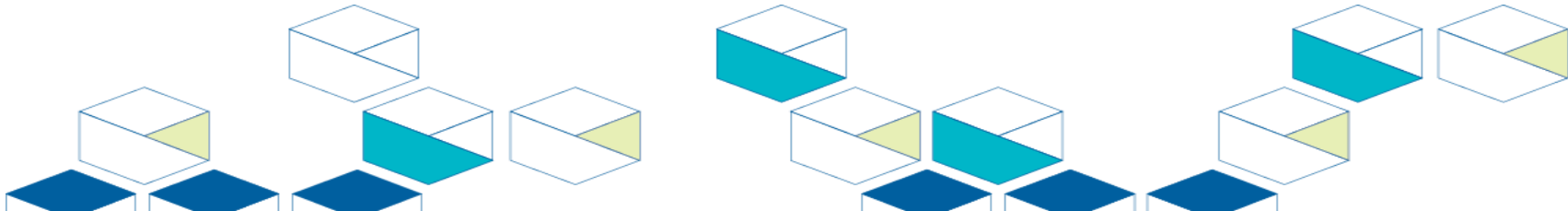
Perioperative clinic

- Weekly clinic at Fremantle Hospital with nurse and geriatrician review.
- Comprehensive Geriatric Assessment (CGA) for patients with geriatric syndromes
  - assess risk,
  - coordinate preoperative optimisation of their medical, physical, and psychological health
  - post-operative follow up.
- Aim to help anticipate, prevent and manage postoperative complications.



Perioperative clinic - referrals

- Referrals from GPs, Anaesthetists, Surgeons, NPs, Allied Health…
- Patients who are considered for surgery with any of the following risk factors:
  - systemic comorbidities including one major organ involvement
  - poor nutritional status
  - 2 or more falls in the past year
  - significant memory problems, history of delirium/confusion, or known dementia
  - inadequate pain management
  - polypharmacy
  - anticipated to require prolonged post-operative recovery
  - alcohol or substance abuse/dependence
  - frailty.



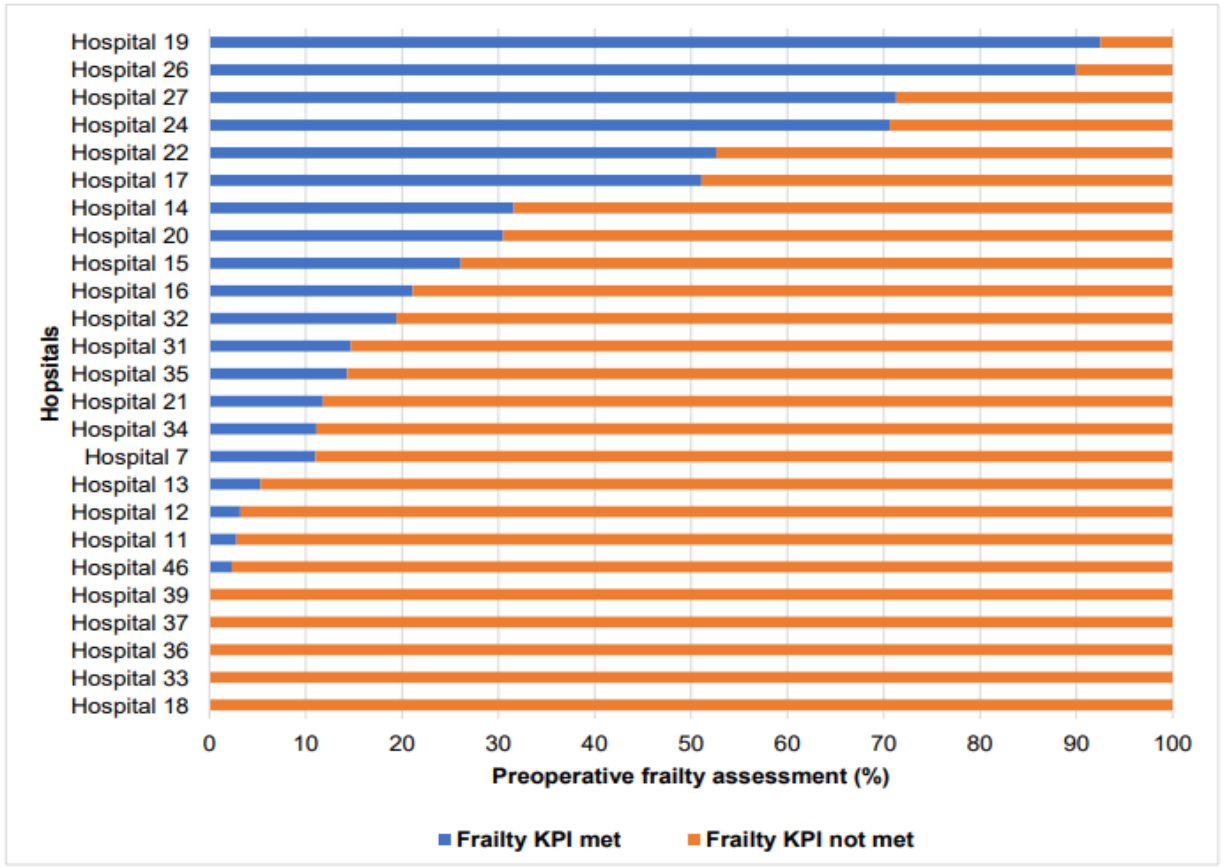
Older Adult Surgical Inpatient Service

- Geriatrician integrated into Acute Surgical Unit
- CGA-based approach to care of frail older adults
- Linking with other geriatric services

ANZ Emergency Laparotomy Audit (ANZELA)

- PRE 4 – Preoperative frailty assessment performed for patients age ≥65 years
  - Frailty recognised as a major determinant of outcome after emergency laparotomy.
  - Frailty assessment now forms part of ANZELA-QI monthly reporting.

Figure 7: Preoperative frailty assessment for patients age ≥65 years by hospital



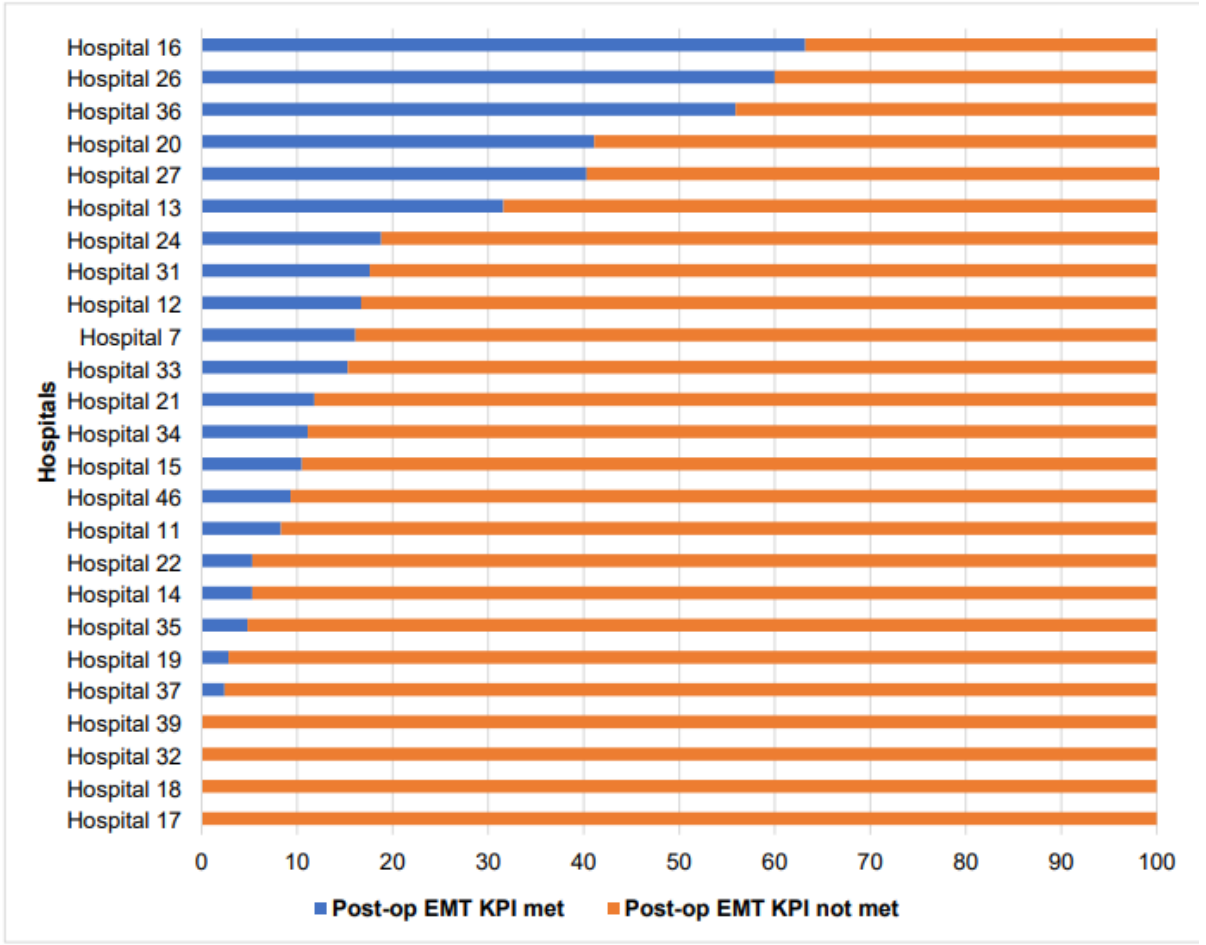
Abbreviations
KPI = key performance standard

Australian and New Zealand Emergency Laparotomy Audit – Quality Improvement. 2022.

ANZ Emergency Laparotomy Audit (ANZELA)

- POST OP 2 – Proportion of patients age ≥ 65 years who were assessed by a specialist in elderly medicine
  - Multiple studies that show elderly patients will benefit from pre-emptive multidisciplinary care, including from a specialist in gerontology.

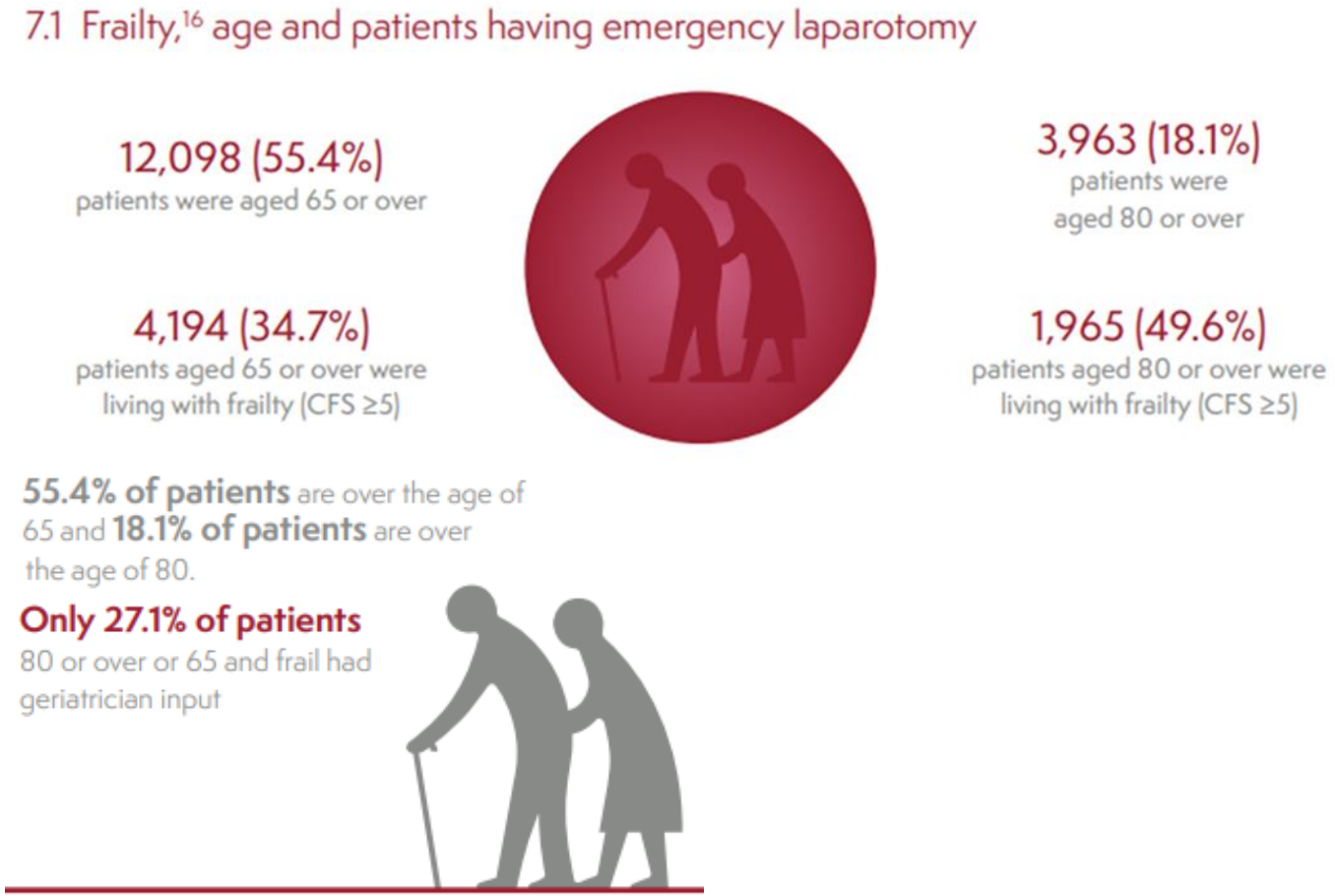
Figure 17: Proportion of patients age ≥65 years assessed after surgery by a specialist in gerontology or a gerontology team, by hospital



Abbreviations
EMT = elderly medicine team, **KPI** = key performance indicator

Australian and New Zealand Emergency Laparotomy Audit – Quality Improvement. 2022.

UK National Emergency Laparotomy Audit (NELA) 7th Edition 2021



- Significant adverse events in the older adult population are often the result of medical complications, rather than surgical factors.
- Comprehensive Geriatric Assessment (CGA) is a recognised tool for the modification of risk in the hospitalised older adult.

NELA, Seventh Patient Report of the National Emergency Laparotomy Audit, NELA, Editor. 2021, NELA: London.
Aitken, R.M., et al. Age and Ageing, 2020. 49(4): p. 656-663.
Peden, C.J., et al. World J Surg, 2021. 45(5): p. 1272-1290.
Khadaroo, R.G., et al. JAMA Surg, 2020. 155(4): p. e196021.
Baquero, G.A. and M.W. Rich. Journal of geriatric cardiology : JGC, 2015. 12(5): p. 465-469.
Ellis, G., et al. BMJ, 2011. 343: p. d6553.

UK NELA 7th Edition 2021

Figure 7.1.1 Comparison of 30-day mortality in patients over the age of 65 years and patients under the age of 65 years

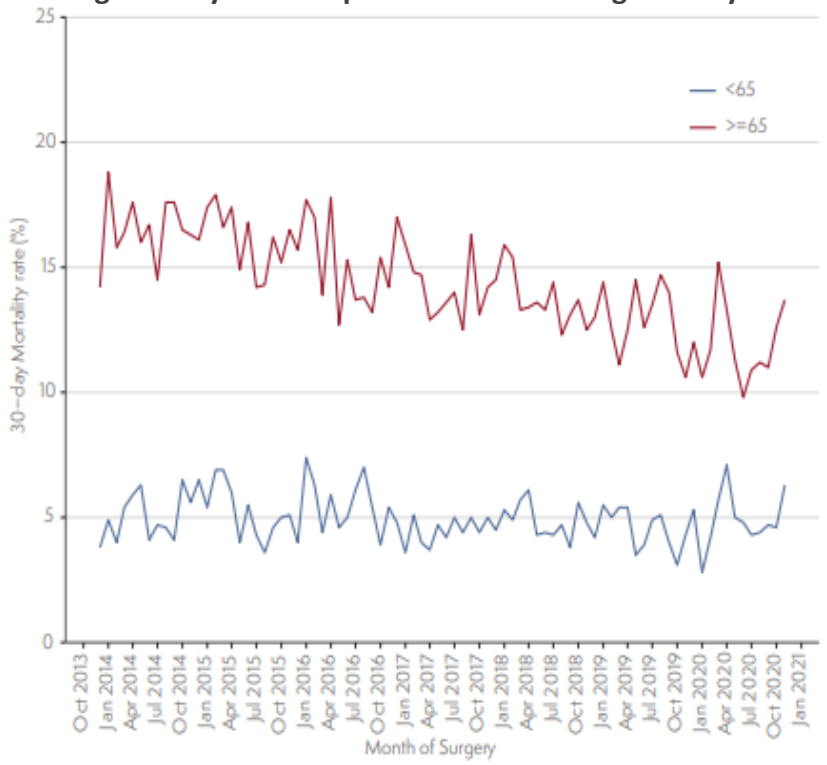
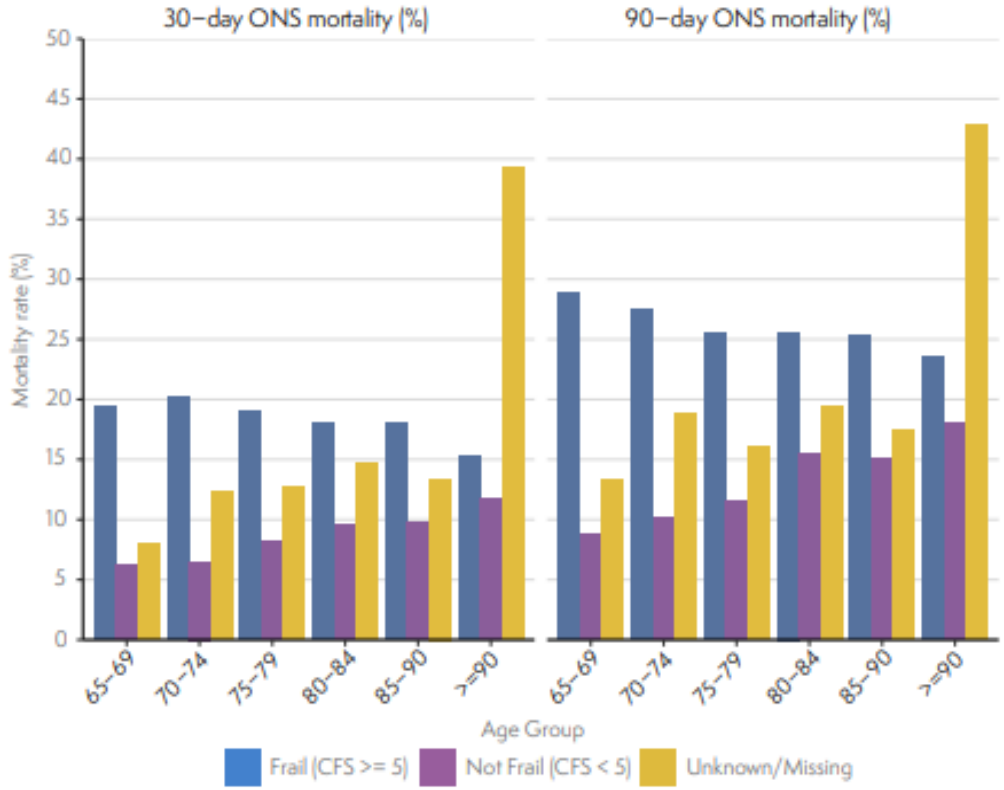


Figure 7.1.3 30-day and 90-day ONS mortality, by age and frailty assessment



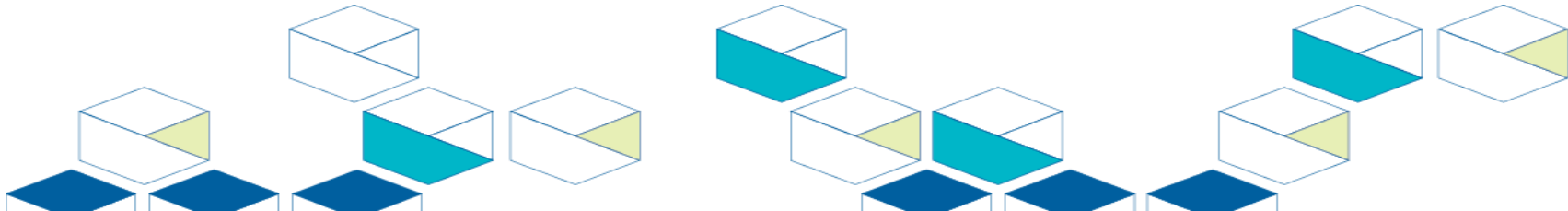
- Of patients aged ≥65, those that are frail have worse outcomes from emergency surgery.
- Patients ≥65 years undergoing laparotomy have a longer length of hospital stay and higher 30-day and 90-day mortality.

NELA, Seventh Patient Report of the National Emergency Laparotomy Audit, NELA, Editor. 2021, NELA: London.

OASIS scoping work

FSH Acute Surgical Unit

- Identified older adults
- Assessed for frailty using CFS
- Looked at outcomes



Patient Outcomes (non-frail CFS ≤ 4 versus frail CFS ≥ 5)

Outcome	CFS ≤ 4 (n=307)	CFS ≥ 5 (n=195)	p-value
Procedure category			
Non-operative	138 (45.0%)	100 (51.3%)	0.030
Endoscopic/Percutaneous	82 (26.7%)	60 (30.8%)	
Major Open or Laparoscopic	87 (28.3%)	35 (17.9%)	
Hospital Acquired Complication (total)	20 (6.5%)	25 (12.8%)	0.024
Emergency readmission ≤ 28 days	78 (25.4%)	56 (28.7%)	0.469
Length of Stay (LoS)			
Median (IQR)			
Acute Surgical Unit (days)	2.3 (1.3, 4.0)	2.8 (1.5, 4.2)	0.113
Total	3.8 (2.1, 6.8)	4.7 (2.9, 11.0)	<0.001
Fremantle Hospital LoS > 14 days	7 (2.2%)	16 (8.3%)	0.003
Fremantle Hospital LoS > 30 days	1 (0.3%)	1 (0.5%)	1.000
Total LoS > 14 days	27 (8.8%)	34 (17.6%)	0.005
Total LoS > 30 days	8 (2.6%)	17 (8.8%)	0.003

The above was collected for a college project and has not been published. The author has permitted use in this context.

Discharge Destination (non-frail CFS ≤ 4 versus frail CFS ≥ 5)

Discharge Destination	CFS ≤ 4 (n=307)	CFS ≥ 5 (n=195)	p-value
From Fiona Stanley Hospital			
Directly Home	256 (83.4%)	109 (56%)	<0.001
Fremantle Hospital	19 (6.2%)	29 (14.9%)	
Another Institution	0 (0.0%)	22 (11.3%)	
Another Hospital	26 (8.5%)	27 (13.8%)	
Other	4 (1.3%)	5 (2.6%)	
Inpatient deaths	2 (0.7%)	3 (1.5%)	
From Fremantle Hospital			
Home	11 (57.9%)	15 (51.7%)	0.487
Another Institution	5 (26.3%)	4 (13.8%)	
Another Hospital	3 (15.7%)	9 (31.0%)	
Inpatient death	0 (0.0%)	1 (3.4%)	

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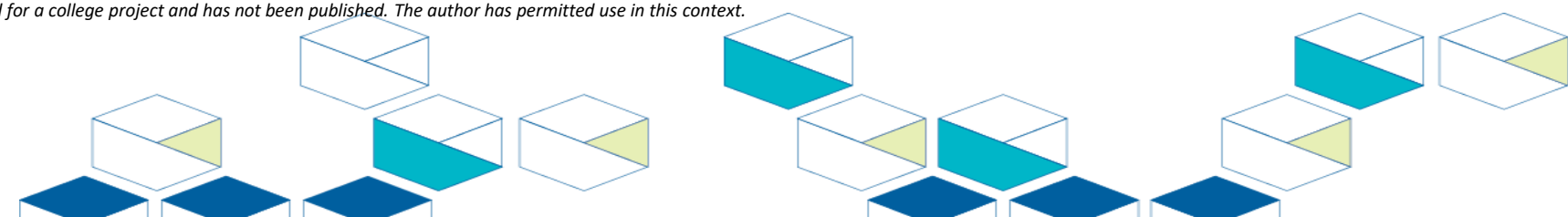
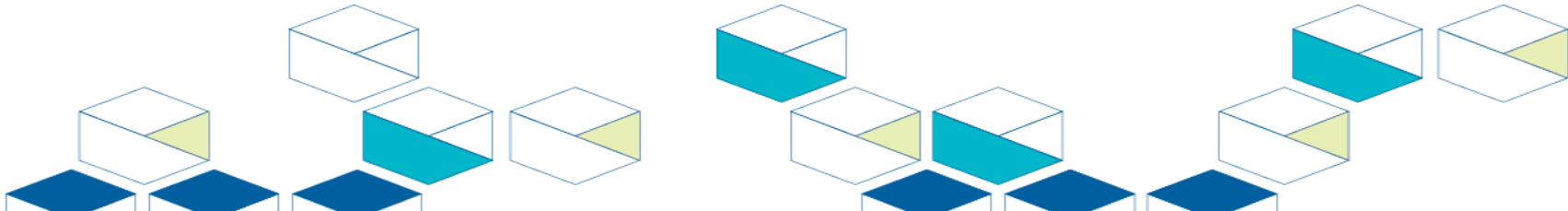


Patient outcomes (age <80 versus ≥80)

Outcome	<80 (n=278)	≥80 (n=224)	p-value
Procedure category			
Non-operative	125 (45.0%)	113 (50.4%)	0.264
Endoscopic/Percutaneous	78 (28.1%)	64 (28.6%)	
Major Open or Laparoscopic	75 (27.0%)	47 (21.0%)	
Hospital Acquired Complication (total)	25 (9.0%)	20 (9.0%)	1.000
Emergency readmission ≤ 28 days	83 (29.9%)	51 (22.8%)	0.085
Length of Stay (LoS)			
Median (IQR)			
Acute Surgical Unit (days)	2.2 (1.1, 4.0)	2.8 (1.6, 4.2)	0.078
Total	4.1 (2.2, 8.0)	4.2 (2.6, 8.0)	0.580
FH LoS > 14 days	12 (4.3%)	11 (4.9%)	0.831
Total LoS > 14 days	34 (12.3%)	27 (12.1%)	1.000
FH LoS > 30 days	1 (0.4%)	1 (0.4%)	1.000
Total LoS > 30 days	18 (6.5%)	7 (3.1%)	0.101

The above was collected for a college project and has not been published. The author has permitted use in this context.



FSH Orthogeriatrics

- FSH is the largest NoF Fracture centre in Australia
  - 572 NoF fractures in 2022 → 668 NoF fractures in 2023
  - >100 other femur fractures 2023
  - Growing number of joint infections

ANNUAL REPORT 2023

SUMMARY OF KEY RESULTS

ANZHFR
Australian & New Zealand Hip Fracture Registry

ANZHFR 2023 Annual Report Summary of Key Results)

DEMOGRAPHIC INFORMATION

AUSTRALIA

13,016
Total number of hip fractures reported

SEX

- Females comprised **66%** of Australian hip fracture patients

USUAL PLACE OF RESIDENCE

- **73%** of people admitted with a hip fracture lived at home prior to their injury.
- **26%** of people were admitted from residential care

AGE AT ADMISSION

- The average age of hip fracture patients in Australia was **82 years**
- People aged **90 years** and older made up **25%** of hip fracture patients

PREADMISSION COGNITIVE STATUS

- **38%** of patients had pre-existing impaired cognition or known dementia

PREADMISSION WALKING ABILITY

- **44%** of hip fracture patients walked without a walking aid prior to their injury

ANZHFR 2023 Annual Report Summary of Key Results)

HIP FRACTURE CARE CLINICAL CARE STANDARD

- The Hip Fracture Care Clinical Care Standard contains seven quality statements and 16 indicators.
- The next sections of this report detail results from both the patient and facility level audits against the Hip Fracture Care Clinical Care Standard quality indicators.
- The quality statements and indicators enable the calculation of a quantitative measure of care processes, structures, or outcomes.
- For the first time, the ANZHFR also reports on outliers against 14 indicators, which can be used by clinicians or health providers to identify areas of high quality care, or areas that may require review.

ANZHFR 2023 Annual Report Summary of Key Results)

With thanks

- Dr Hannah Seymour, Orthogeriatrician
- Dr Panchi Kumarasinghe, OASIS lead
- Dr Afsana Habib, Geriatric Perioperative Clinic lead