The Impact of Rurality on the Standard of Care for Hip Fracture Patients; An ANZHFR Study

Dr Kate Hurst, Wagga Base Hospital & University of Notre Dame
A/Prof Kerin Fielding, Orthopaedic Surgeon & Immediate Past President RACS

ANZHFR data analysis 2018-2023

Authors & Acknowledgements

Co-Authors

Dr Alexa Seal, Saosan Hoque, A/Prof Chris Wall, Dr Rory Maguire

Institution

University of Notre Dame Australia

Data Source

ANZHFR (Australian & New Zealand Hip Fracture Registry)

Special thanks to all clinicians, data managers, and hospital teams who contribute to the ANZHFR—your contributions make this benchmarking possible.

Background

The Challenge

Hip fractures are serious, costly injuries in older adults, causing disability and increased mortality.

The ACSQHC Standard ensures consistent, evidence-based care across 7 domains.

Rural Reality

Rural hospitals face challenges: workforce shortages, transfer delays, and limited rehab access create care variability.

This study re-evaluates each domain using current ANZHFR data.

Objective

Primary Question

Do rural and remote hospitals adhere to the ACSQHC Hip Fracture Clinical Care Standard at rates comparable to metropolitan hospitals?

Focus on Process

We concentrated on care delivery processes, not outcomes like mortality, to identify directly influenceable aspects.

Methods

1

Study Design

Retrospective cohort study: 69,600 patients from ANZHFR (2018-2023)

2

Classification

Modified Monash Model: MMM 1 (metropolitan) vs MMM 2-7 (regional, rural, remote)

3

Analysis

Adherence to 7 quality domains (chi-square tests)

4

Ethics

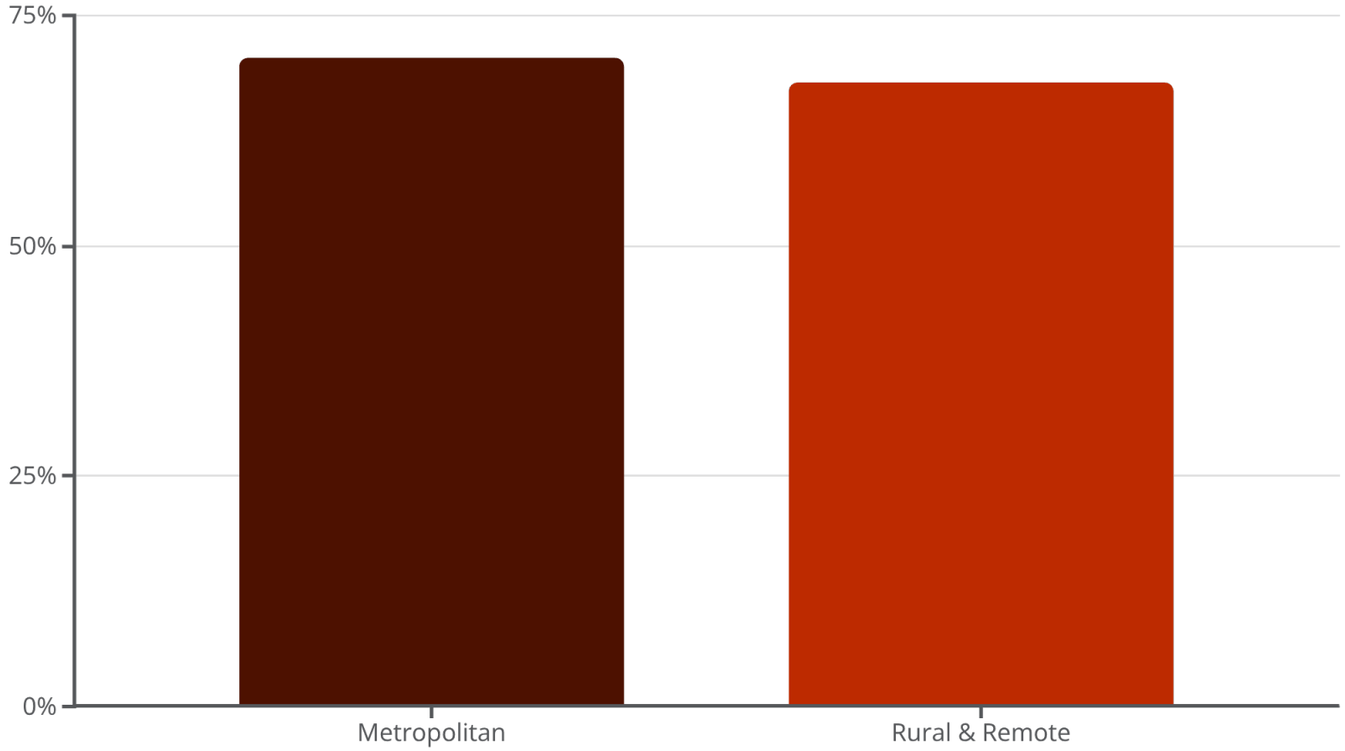
De-identified data, HREC approved

ACSQHC Domains vs ANZHFR Variables

Clinical Care Standard domains are assessed via ANZHFR variables.

Care at Presentation	`cogassess`: Cognitive assessment (assessed/not).
Effective Pain Management	`painmanage`: Analgesia < 30 min (Y/N). `analgesia`: Nerve block (Y/N).
Orthogeriatric Model of Care	`frailty`: Pre-injury frailty (assessed/missing). `delassess`: Delirium (assessed/not).
Timing of Surgery	`delay`: Surgery < 48 hrs (Y/delayed).
Early Mobilisation and Weight Bearing	`mobil`: Mobilisation < 24 hrs post-op (Y/missing).
Secondary Fracture Prevention	`dbonemed1`: Bone protection meds on discharge (Y/N).
Shared Care Planning and Goals	`wdest`: Discharge location known/patient died.

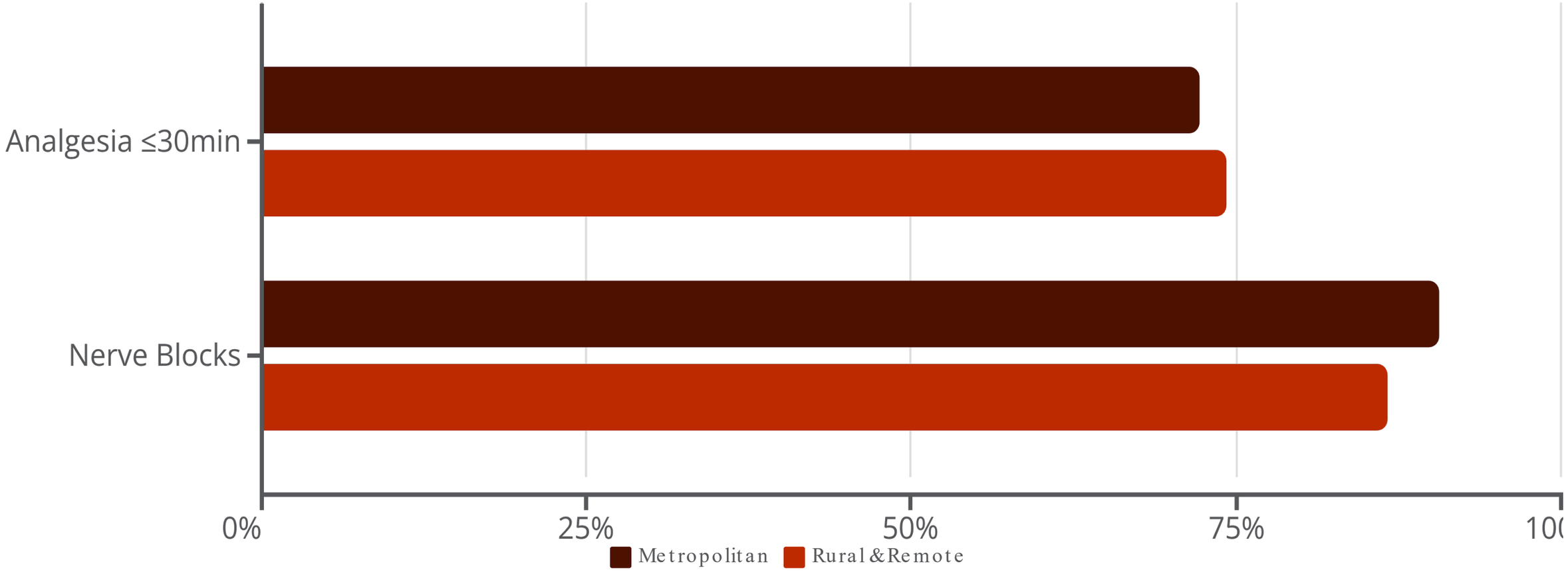
Care at Presentation: Cognitive Assessment



Key Finding

Rural patients are significantly more likely to miss cognitive checks ($p < 0.001$), with 1 in 3 missing them compared to 1 in 4 in metro hospitals.

Pain Management



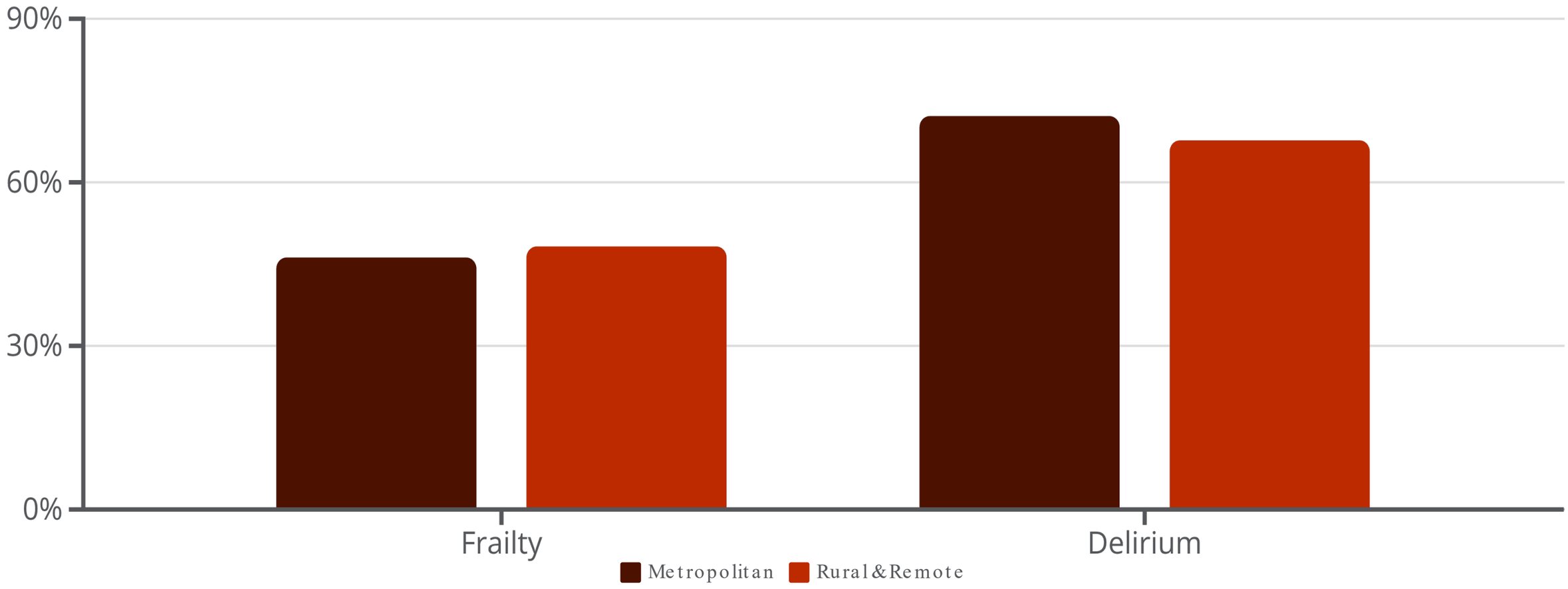
Timely Analgesia

Rural hospitals slightly outperformed metro ($p < 0.001$).

Nerve Blocks

Metro hospitals had higher rates ($p < 0.001$), likely due to better access to procedural staff.

Orthogeriatric Assessment



Frailty Screening

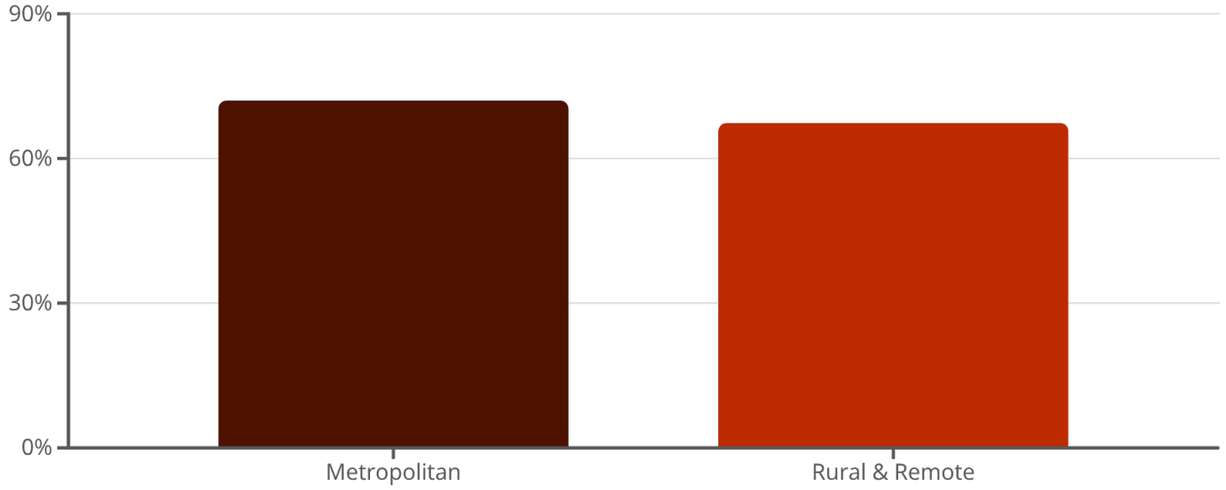
Rural areas showed slightly higher rates.

Delirium Assessment

Metro hospitals performed better.

Rural clinicians demonstrate strong holistic care, often without dedicated orthogeriatric teams.

Timing of Surgery

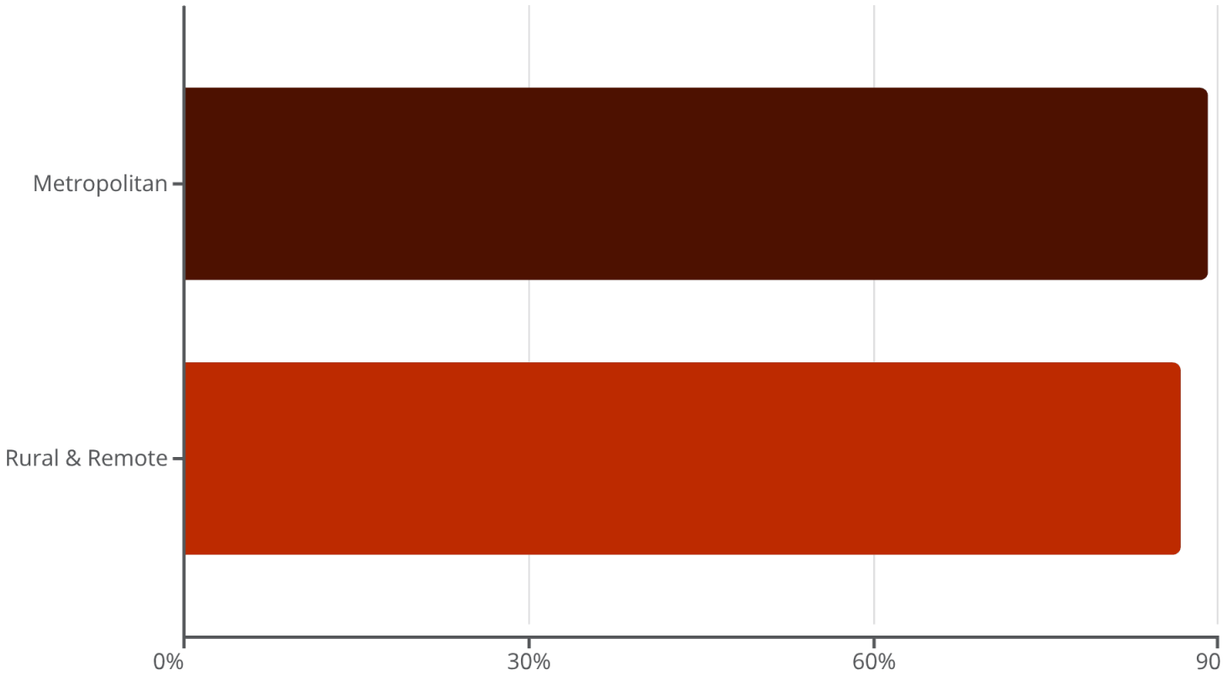


Clinically Relevant Gap

71.86% metro vs 67.50% rural ($p < 0.001$)

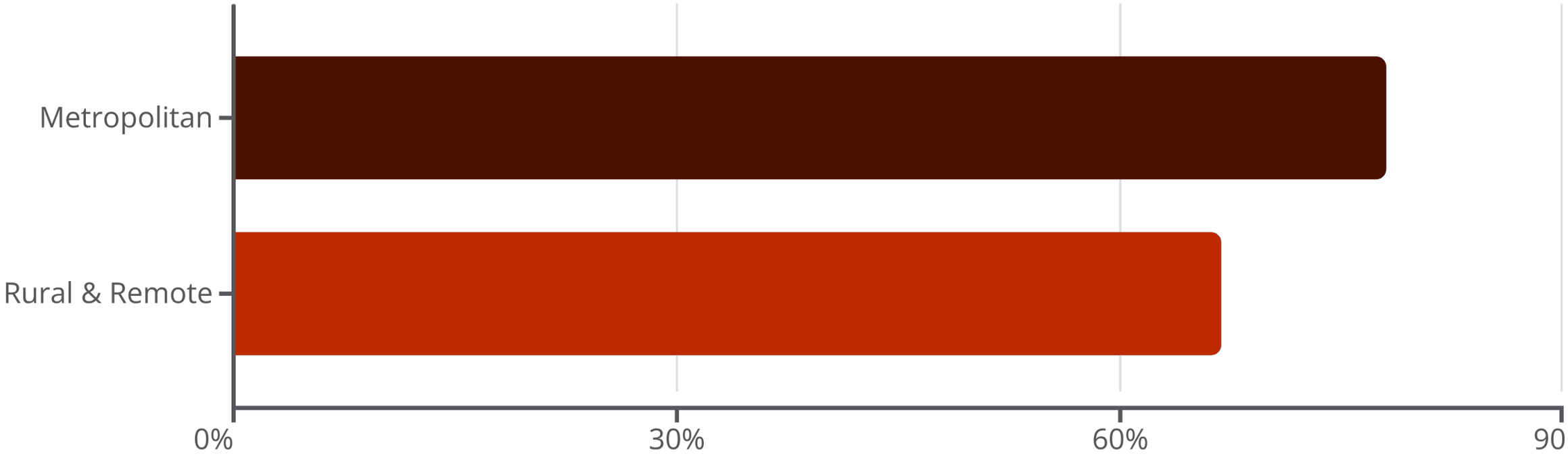
Despite significant challenges (theatre scheduling, anaesthetic cover, transport), this is an extraordinary achievement, paving the way for further delay reduction.

Early Mobilisation



- Early mobilisation is vital for recovery. A small but significant gap ($p < 0.001$) highlights challenges with allied health coverage, particularly on weekends, limiting same-day mobilisation.

Secondary Fracture Prevention

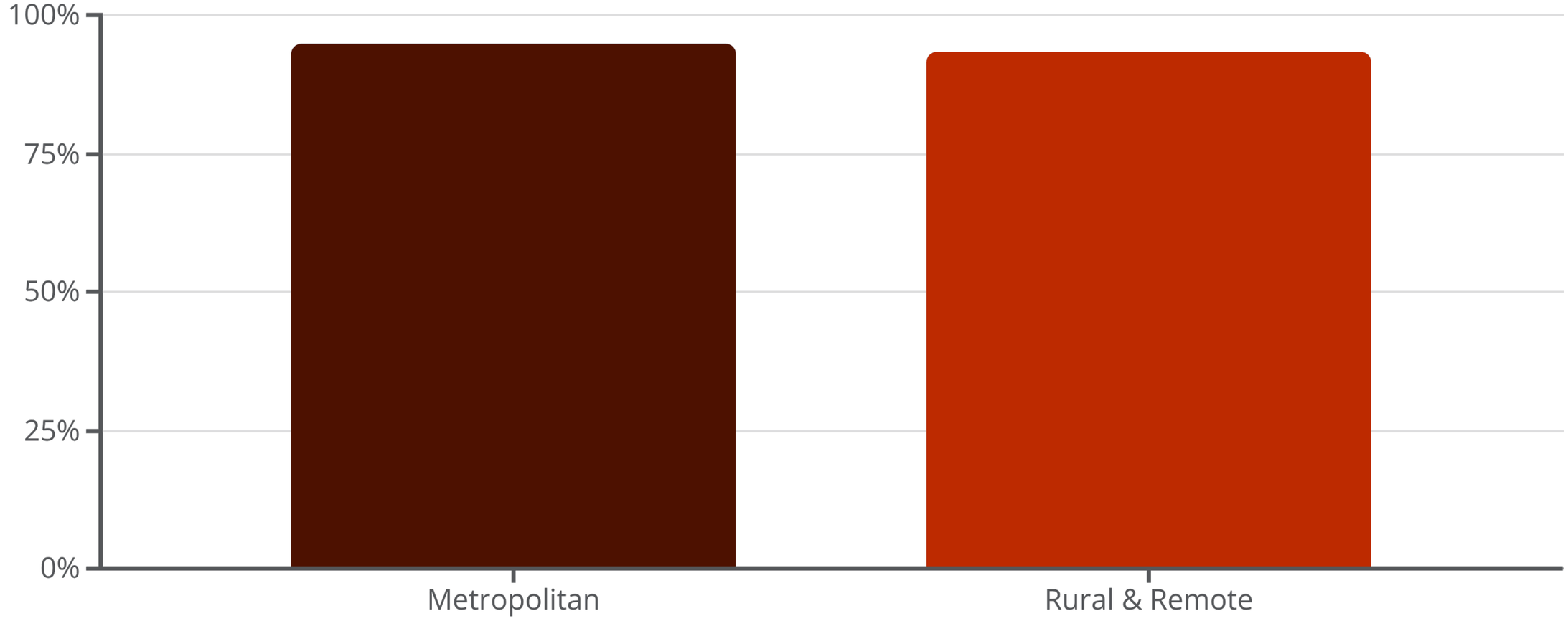


This domain revealed the most significant disparity in care observed in the study, with an 11.21% absolute gap in patients discharged on bone-protection medication ($p < 0.001$). This highlights a critical inequity in care.

- This substantial difference points to challenges in inpatient orthogeriatric services and inadequate access to follow-up and outpatient care for secondary fracture prevention in rural and remote settings.

Shared Discharge Planning

Strong performance across all hospital types reflects effective multidisciplinary coordination.



A 1.26% difference ($p < 0.001$) shows near parity in discharge planning, highlighting strong collaborative efforts and structured processes across all hospital types.

Overall Trends

High Adherence & Rural Strength

Rural hospitals often matched or exceeded metro performance.

Identified Systemic Challenges

Challenges in surgery timing, delirium screening, early mobilisation, & secondary prevention.

Exceptional Rural Care

High-quality care delivered by rural teams despite constraints.

Why the Gaps Exist

These disparities are rooted in unique challenges faced by rural and remote healthcare systems:

Infrastructure & Staffing

- Longer patient transfer times
- Scarcity of specialist staff
- Limited weekend service availability

Outpatient Continuity

- Geographical distance
- Socioeconomic barriers
- Reduced access to follow-up care

Rural Resilience

- Despite hurdles, rural clinicians exhibit remarkable innovation, adaptability, and multitasking, ensuring high-quality care

Policy Implications

To translate this evidence into policy, we propose the following strategic initiatives:

- → Strengthen Regional Networks
- → Expand Telehealth Programmes
- → Boost Allied Health Coverage
- → Integrate Fracture Liaison Services
- → Develop Rural ANZHFR Dashboards

These initiatives transform registry data into actionable equity strategies, improving hip fracture care across Australia.

Practical Implications for Clinicians

Our findings guide frontline clinicians in both metropolitan and rural settings:

Reinforce Strengths

Champion early cognitive screening, proactive pain control, and early mobilisation.

Enhance Delirium Screening

Integrate structured delirium assessments for early detection and management.

Prioritise Fracture Prevention

Discharge patients on anti-resorptive medications to prevent secondary fractures, especially in rural areas.

Future Directions

Actionable next steps to translate insights into improved care delivery:

Quantify Impact

Measure real-world impact by linking adherence data with patient outcomes.

Economic Analysis

Evaluate financial benefits of innovative models via cost-effectiveness studies.

Co-Design Solutions

Collaborate with rural clinicians to implement context-specific improvements.

Our goal: practical, context-specific improvements for meaningful change.

Key Takeaways

To summarise, our analysis highlights several critical insights into hip fracture care in Australia:

1

High Adherence: Overall adherence to the Hip Fracture Standard is high across all hospital types.

2

Rural Resilience: Rural clinicians provide comparable care despite challenging conditions and resource constraints.

3

Systemic Gaps: Care differences are primarily systemic (infrastructure, workforce, access), not individual clinician performance.

4

Improvement Opportunities: Enhance equity via secondary fracture prevention and timely surgical intervention, especially in rural areas.

5

Strategic Investment: Targeted investment in workforce, connectivity, and rural infrastructure will achieve equitable hip fracture care.

Rurality matters, but it doesn't define quality. Our rural clinicians are already doing incredible work; we just need systems that support them equally to provide high quality hip fracture care, no matter the postcode.

Thank You

Questions?