Te Whatu Ora
Health New Zealand
Te Toka Tumai Auckland

ANZHFR
Australian & New Zealand Hip Fracture Registry

Audit on Dual Orthogeriatric Models of Care at Te Toka Tumai

Mana Awhi Older Peoples' Health
Te Toka Tumai Auckland City Hospital
Hip Fest, 16 September 2024, Christchurch

Investigators

- Himali Aickin – SMO, OPH
- Hannah Watkin-Brown – Allied health consultant, OPH
- Deanne Bell-Hardy – Advanced trainee, OPH
- Lachlan Parlane – House officer, OPH
- Jane Walton – Clinical Director, OPH
- Mark Wright –Orthopaedic Surgery, Chair of NZHFR trust, NZOA

Orthogeriatric models

- Consult liaison model
- Primary geriatrician care with specialist inter-disciplinary team

Benefits to direct geriatrician and specialist IDT care

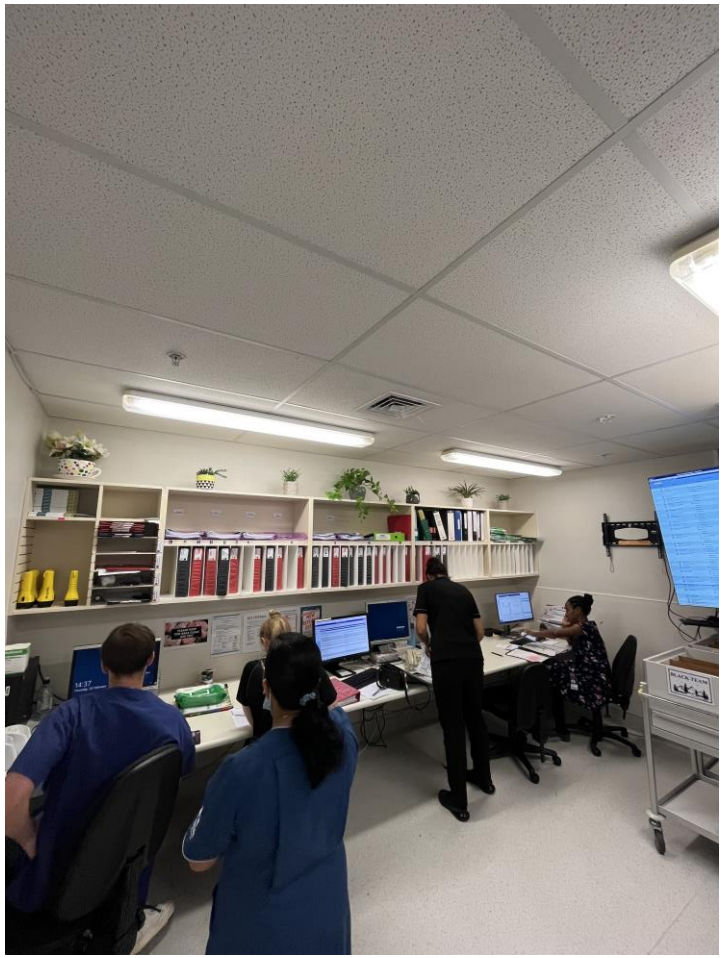
- Less team changes
- Less ward transfers
- Immediate physician care from time of admission
- Early attention to potential medical and social barriers to discharge
- Specialist review within 24 hours of admission including pre-op delirium assessment

Inherent structure issues with the consult liaison model

- Multiple changes in care
- Increased risk with information transfer
- Need to re-establish rapport with patient and family by new team
- Increased risk of delirium due to multiple changes in environment
- Potential for non-uniform practice between teams

Te Toka Tumai Auckland City Hospital

- Rangitoto ward “Neck of Femur/NOF ward” opened May 2023
- The Hip Fracture Pathway and nursing careplan was developed concurrently for use on the new Rangitoto ward
- Established the second orthogeriatric model of care at Te Toka Tumai



Dual Orthogeriatric Models at One Institution

- Is there a difference in our length of stay?
- Is there a difference in our rates of discharge to aged residential care?
- Is there a difference in 6 month readmission rates?
- Is there a difference in 6 month mortality rates?

Audit of dual orthogeriatric models at our institution

- Retrospective audit
- Hip fracture patients admitted to Te Toka Tumai
- June and July 2023
- All patients had 6 month follow-up data
- Exempt from full ethics approval

Groups

Direct admission to Rangitoto ward

- Under the care of a geriatrician primarily
- Specialist OPH interdisciplinary team care
- Perioperative support by the Orthopaedic team

Direct admission to Orthopaedics

- Under the care of an orthopaedic surgeon primarily
- Consult liaison support by an OPH person (registrar, SMO or SMO alone)
- Followed by delayed transfer to Rangitoto ward

Groups compared

- A third group, who did not come to OPH ultimately. Numbers very small.

Outcomes analysed

- Length of stay
- 6 month readmission rate
- 6 month mortality rate

Other data collected

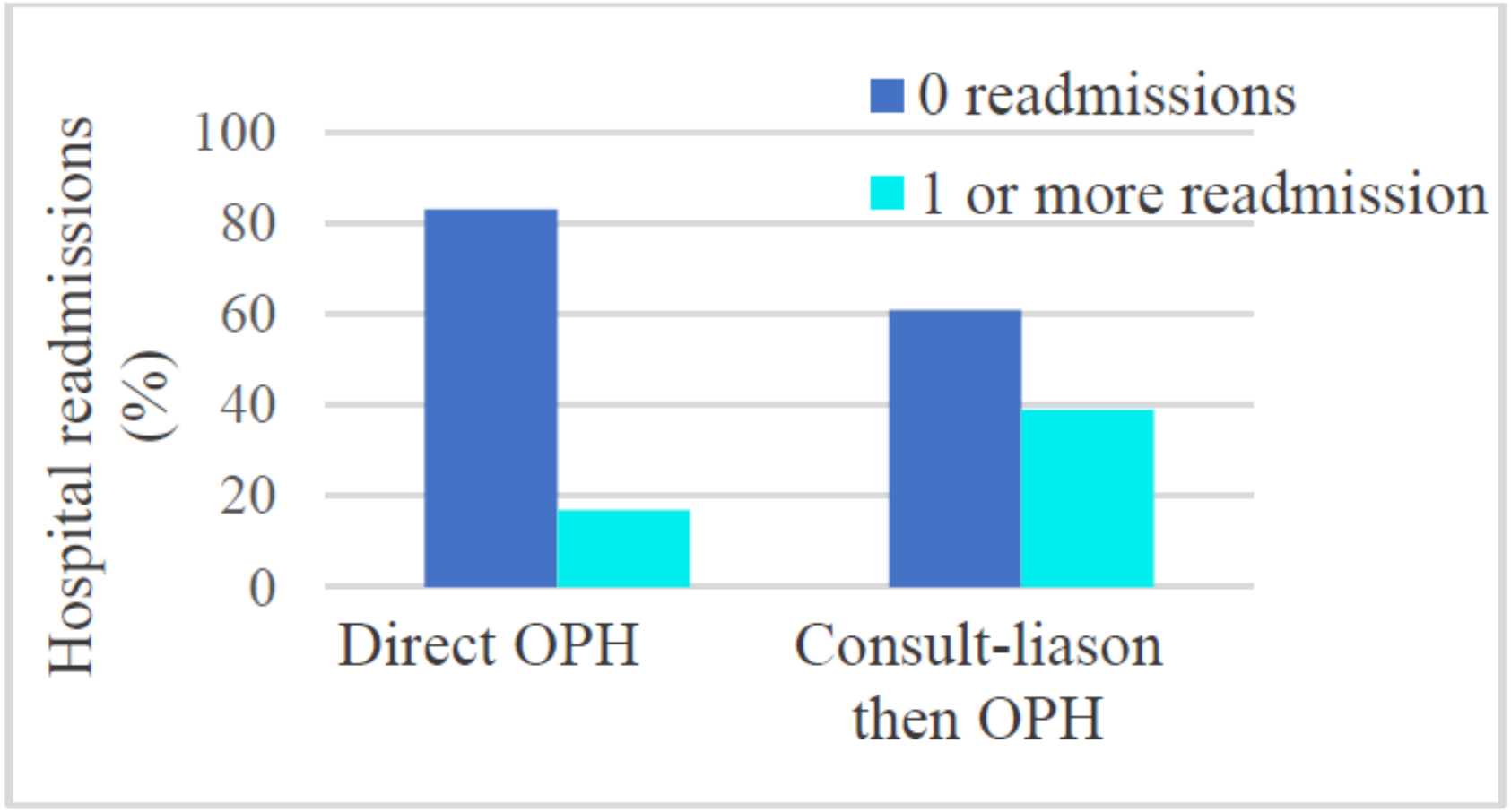
- Demographic data
- Discharge to aged residential care
- Time to surgery
- Bed-days of readmissions

Group demographics

- 70 patients, mean age 84 years
- 71% female
- 4% Māori, 96% non-Māori
- 33% directly admitted to Rangitoto

		Gender		Ethnicity	
	n (%)	Male	Female	Māori	Non-Māori
Direct OPH	23 (33)	4 (17)	19 (83)	2 (8)	21 (92)
Consult -liaison	36 (51)	13 (64)	23 (36)	0	36 (100)
No OPH	11 (16)	3(27)	8 (73)	1 (9)	10 (91)
Total	**70**	**20 (29)**	**50 (71)**	**3 (4)**	**67 (96)**

Readmission rates



Mortality, LOS not meaningfully different

Mortality at 6 months

- Direct OPH group 26%
- Delayed (via ortho) 28%

Median length of stay

- Direct OPH group 20 days
- Delayed (via ortho) 19 days

Level of support on discharge, higher in the direct OPH group

Direct to OPH group

- 60% discharge to new private hospital level of care

Delayed (via ortho)

- 17% discharge to new private hospital level of care

Abstract and poster

An audit comparing dual orthogeriatric models at one hospital

Health New Zealand
Te Whatu Ora

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Background

Hip fractures are a significant health event for older adults with existence of varying models of orthogeriatric care[1]. This audit aims to compare two orthogeriatric models of care running concurrently at one institution.

Materials and Methods

A retrospective audit of hip fracture patients admitted to our institution from June-July 2023 with 6-month follow-up completed. Patients admitted directly under the care of a geriatrician and specialist multidisciplinary team on Older Peoples' Health (OPH) ward with perioperative support by the orthopaedic service ('Direct OPH'), versus admission under orthopaedic service with OPH consult-liaison support with subsequent transfer at any time post-operatively to the OPH ward ('Consult-liaison then OPH'). Another group also admitted under orthopaedic with OPH consult-liaison model but not ultimately transferred to an OPH ward ('No OPH') was excluded from outcome analysis due to small patient numbers. Outcomes of Length of Stay (LOS), six-month readmissions and mortality rates were compared. Fisher's Exact Test was used to examine association between admission groups and readmissions within six months.

Table 1: Demographic characteristics

		Gender		Ethnicity	
	n (%)	Male	Female	Māori	Non-Māori
Direct OPH	23 (33)	4 (17)	19 (83)	2 (8)	21 (92)
Consult-liaison	36 (51)	13 (64)	23 (36)	0	36 (100)
No OPH	11 (16)	3 (27)	8 (73)	1 (9)	10 (91)
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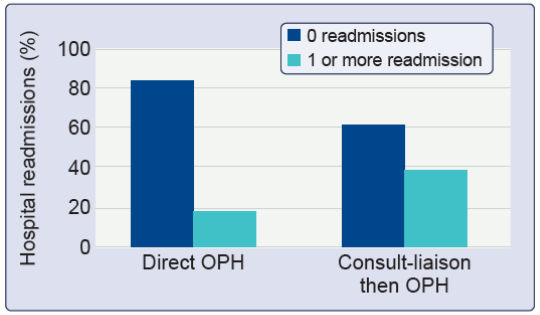
Figure 1: Readmission rates



Results

Seventy patients total were admitted in the study period with a mean age of 84 ± 8.3 years. The majority (71%) were female, 96% non-Māori; 33% direct OPH admission and 67% consult-liaison model (Table 1). Six-month readmission rates were lower in the direct OPH admission group (83% with zero readmissions vs 61% consult-liaison group) (Figure 1); mortality rates were also marginally lower in direct OPH admission (26% vs 28%). Median LOS was one day longer in the direct OPH admission group (20 days vs 19 days). No results reached statistical significance.

Discussion

Direct admission to OPH demonstrated reduced readmission and mortality rates at six months. Statistical significance was not achieved due to small sample size. Further large audit is planned.

Conclusion

Direct OPH admission under the care of a physician and specialist multidisciplinary team appears to reduce readmission rates at six-months. This translates into a significant economic benefit for the health system in reducing hospital bed-days by reduced rates of readmission.

References:
1. Middleton M et al., Improving hip fracture outcomes with integrated orthogeriatric care: a comparison between two accepted orthogeriatric models. Age and Ageing 2017; 46: 465-470.

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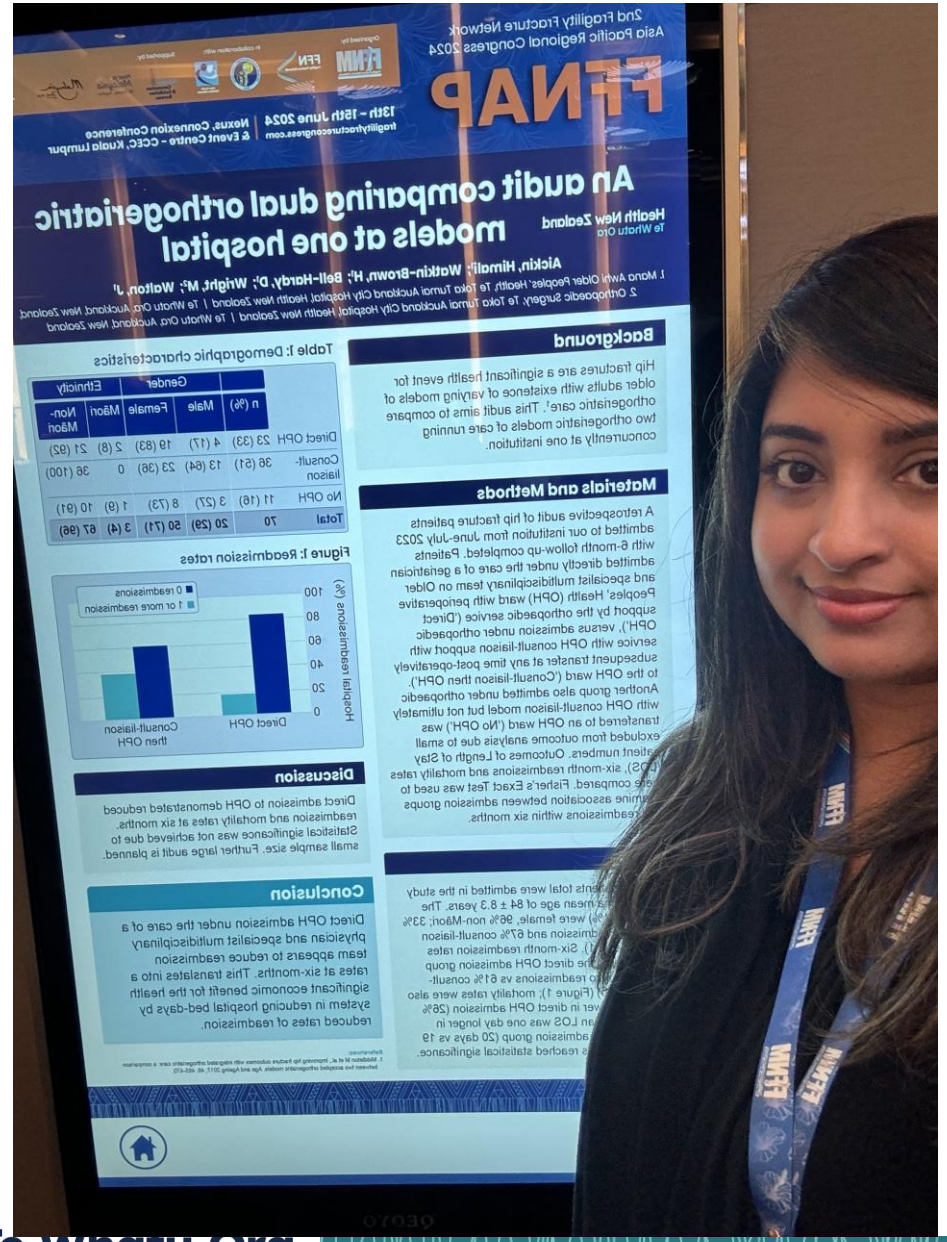

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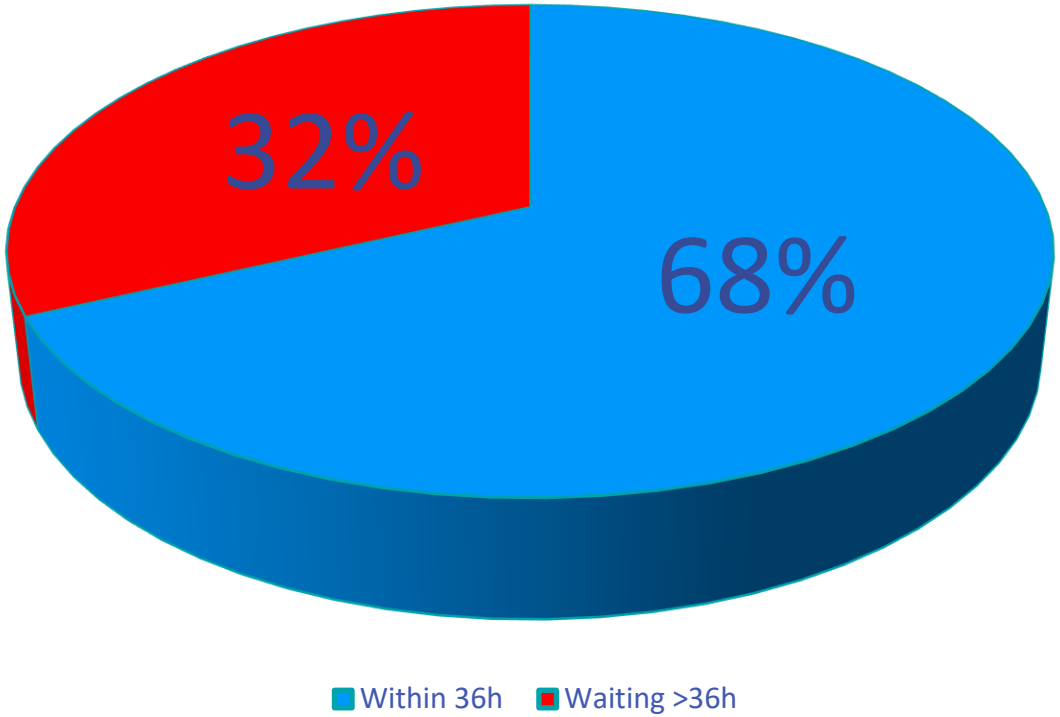
Cost in terms of bed-days due to readmissions

- Direct OPH admission – 63 extra bed days
- Delayed (via ortho) group – 136 extra bed days

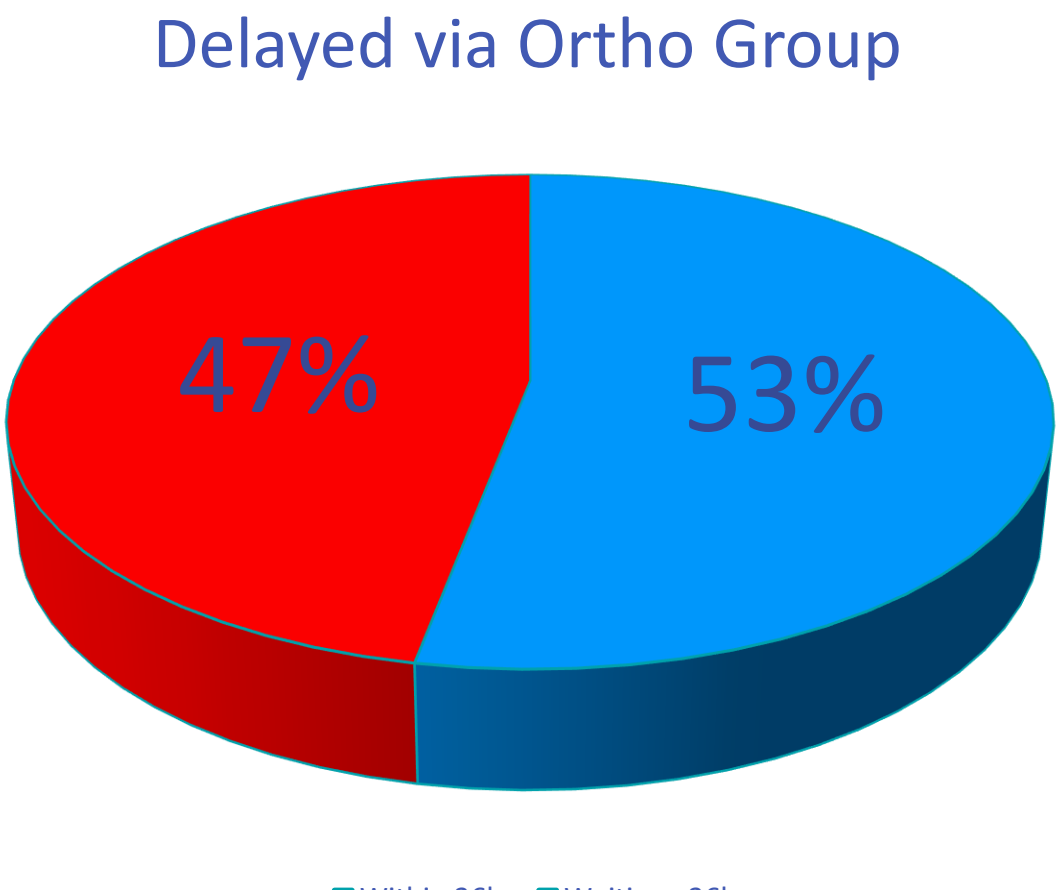
Time to surgery within 36h

Direct OPH Group



- Direct to OPH group get to theatre within 36 hours 68% of the time
- 1/3 of our patients waiting over 36 hours

Time to surgery within 36h



- Delayed (via ortho) group get to theatre within 36 hours 53% of the time
- Therefore almost half are waiting >36h for surgery

Summary

- Ward transfers and team transfers whilst pre-op prolongs time to surgery in 60% of these patients
- Those that go to Ortho first due to being bed-blocked on Rangi by medical outliers have delayed transfer to us and seem to wait longer for surgery
- This further supports the plan to reserve at least 1 bed at all times for a pre-op NOF patient

Next steps at Te Toka Tumai…

- Aim to establish more seamless flow between the two models
- Sip til send is on the horizon
- Further large audits are being planned

Thanks to

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- Jane Walton
- Mark Wright
- Ian Dittmer