

ANNUAL REPORT 2020



ANZHF

Australian & New Zealand Hip Fracture Registry

ENHANCING OUTCOMES FOR OLDER PEOPLE

The ANZHFR would like to thank the clinical and administrative staff of the 77 hospitals (58 Australian and 19 New Zealand) and the 117 hospitals contributing to the Patient Level Report and the Facility Level Report, respectively. The ANZHFR acknowledges that without the support, dedication and energy of staff at Australian and New Zealand hospitals, this report would not be possible.

The ANZHFR has received funding from the Australian Government Department of Health, New Zealand Accident Compensation Corporation, Amgen, NSW Health Agency for Clinical Innovation, SA Health, WA Health and Queensland Health, and receives in-kind support from Neuroscience Research Australia, UNSW Sydney and the New Zealand Orthopaedic Association.



ABBREVIATIONS

ACEM	Australasian College of Emergency Medicine	HDU	High Dependency Unit
AFRM	Australasian Faculty of Rehabilitation Medicine	HFOCCS	Hip Fracture Care Clinical Care Standard
AIHW	Australian Institute of Health and Welfare	ICU	Intensive Care Unit
ANZ	Australia and New Zealand	MRI	Magnetic Resonance Imaging
ANZBMS	Australian and New Zealand Bone and Mineral Society	NDI	National Death Index
ANZCA	Australian and New Zealand College of Anaesthetists	NHFD	National Hip Fracture Database
ANZHFR	Australian and New Zealand Hip Fracture Registry	NHMRC	National Health and Medical Research Council
ANZONA	Australian New Zealand Orthopaedic Nurses Association	NZ	New Zealand
ANZSGM	Australian and New Zealand Society for Geriatric Medicine	NZOA	New Zealand Orthopaedic Association
AOA	Australian Orthopaedic Association	OA	Osteoporosis Australia
APA	Australian Physiotherapy Association	ONZ	Osteoporosis New Zealand
ASA	American Society of Anaesthesiologists	OT	Operating Theatre
AUS	Australia	RACP	Royal Australasian College of Physicians
CT	Computed Tomography	RACS	Royal Australasian College of Surgeons
ED	Emergency Department	VTE	Venous Thromboembolism
FLS	Fracture Liaison Service		
GP	General Practitioner		

NOTE: Rehabilitation – when used in the Figures, rehabilitation refers to inpatient rehabilitation at a public or private hospital. It does not include rehabilitation provided in the community or private residence.



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Additional copies of this report may be accessed at www.anzhr.org or can be requested from the ANZHFR. Extracts from this report may be reproduced provided the source of the extract is acknowledged.

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The ANZHFR would like to thank Barbara Toson, Biostatistician Flinders University SA, for the risk-adjusted mortality analysis.

Report Design: patterntwo creative studio patterntwo.com.au

Suggested citation: Australian and New Zealand Hip Fracture Registry Annual Report of Hip Fracture Care 2020. Australian and New Zealand Hip Fracture Registry, August 2020; Sydney.

ISBN: 978-0-7334-3937-7 | **EAN:** 9780733439377

CO-CHAIRS' FOREWORD

Welcome to the 2020 Annual Report which includes the fifth patient level report and the eighth facility level report. This year, 77 hospitals have contributed patient level data and 117 hospitals have provided facility level data to the report. We are enormously grateful to all of the teams working in our hospitals across Australia and New Zealand who give of their time to enter data to the Registry.

As always, we report against the Australian Commissions' Hip Fracture Care Clinical Care Standard and this year we can see improvements in a number of these indicators, including assessment and management of pain, use of nerve blocks and assessment and management of cognition. The number of procedures where a consultant surgeon is present continues to increase. Median and mean time to surgery has decreased this year and whilst we have a number of consistently high performing hospitals, it is pleasing to see substantial improvements this year in hospitals that have previously found themselves at the bottom of the table. A particular mention to the Wollongong Hospital team whose quality improvement activities have taken them well and truly off the bottom spot for 2020.

Areas requiring more work include access to theatres and delays relating to anticoagulation and medical stability. There is substantial variability across hospitals in what is causing delay and it is likely that timely medical assessment and protocols for managing anticoagulants could reduce some of this observed delay.

Debutant variables reported this year include assessment of nutrition and mortality data. The Registry data has been linked to the National Death Index allowing us to provide case mix adjusted 30 day and 1 year mortality for hip fracture patients entered in to the Registry over the past 3 years. This will be a regular feature in future reports providing an additional measure of outcome for hip fracture care and one that we can track over time.

The year 2020 is proving a year to be remembered, with the outbreak of the Covid-19 pandemic. It won't be until next year that we have data to objectively evaluate the impact the pandemic has had on hip fracture care in Australia and New Zealand. Anecdotal tales from sites across the two countries paint differing pictures – sudden drop in numbers of patients presenting with a hip fracture as restrictions were imposed, a rebound and possible overshoot in numbers as restrictions were initially lifted, delays in surgery due to requirements to test for Covid-19 in some sites, whilst others reporting a reduced time to surgery due to the reduction in elective surgery. And of course at the time of writing this piece, the pandemic is far from over.

Our annual Hip Fests have been a casualty of the pandemic given the restrictions on travel and need for social distancing. However we have developed our own YouTube channel and are now hosting a series of videos on topics ranging from management of anticoagulation to when not to operate. We are also keen to showcase success stories and recent additions to the collection include conversations with Nepean and Wollongong hospitals, both of which have seen improvements in their time to surgery.

We have always been cognizant of the need to keep data collection to a minimum and that remains our intent. However, over the years, a number of sites have requested the ability to collect additional items for their own quality improvement activities. This year we have introduced new custom fields which will enable sites to collect additional data fields of their own choosing. We would strongly encourage teams who are undertaking quality improvement projects to use this new feature. There are no limits to how many customizable fields can be added and they can be switched on and off by the site.



Whilst the focus of the Registry is using data to drive quality improvement, and ultimately improve outcomes for older hip fracture patients, it is important to remember that good quality care is underpinned by high quality research. The number of applications to use Hip Fracture Registry data for research is increasing and we hope to see a number of publications from these research activities in the not too distant future.

And finally, a sincere thanks to the people who run the Registries in Australia and New Zealand. Elizabeth Armstrong has been with us on this journey from the outset and has been a key figure in the success of the Registry. She is well known to all of the Australian sites having helped numerous people navigate the ethics approval processes required to enter data, as well as supporting sites in the day to day operational aspects of

the Registry. Thanks also to Stewart Fleming, our IT guru with his bright red boots, who has also been with us from the outset and who continues to help us maintain the Registry and also develop new functionality for our users. And not forgetting our colleagues across the Tasman – Roger Harris, Sarah Hurring and Nicola Ward – a sincere thanks for the work you do in running the New Zealand Hip Fracture Registry.

**Professor
Jacqueline Close
Geriatrician**

Co-Chair
Australian and New Zealand
Hip Fracture Registry

**Professor
Ian Harris AM
Orthopaedic Surgeon**

Co-Chair
Australian and New Zealand
Hip Fracture Registry

Patients with hip fractures often have complex problems requiring a multidisciplinary team approach, so it makes sense that registry activities also have a team approach.

Recently, both St. George and Sutherland Hospitals were struggling to make ends meet with their data. 'We discovered that our commitments to the Registry were being handled by a single individual from a single team. Our patients are never managed like that, so it wasn't surprising to discover that this approach failed' said Ms. Renee Tate, Nursing Unit Manager at St. George Hospital.

Since then, a local Hip Fracture Committee was set up at St. George Hospital, with representatives from the Nursing, Anaesthetic, Geriatric, and Orthopaedic teams. 'The committee was made up of a champion from each of the teams who has a special interest in improving care for these most vulnerable of patients' said Dr. Sam Adie, Orthopaedic Surgeon at St. George Hospital. Both St. George and Sutherland now have at least 98% data completeness and this allows the data to inform hip fracture care.

'We are using the power of the data to feedback to the broader stakeholders involved in hip fracture care, and have already noticed lots of improvements' said Dr. Ilana Delroy-Buelles, an Anaesthetist at St. George Hospital, 'but there is still a lot of work to be done'.



EXECUTIVE SUMMARY

The Australian and New Zealand Hip Fracture Registry (ANZHFR) is a clinician driven audit of hip fracture care in Australia and New Zealand. It is one of several global hip fracture audits developed with the purpose of improving the health care provided to older people admitted to hospital with a broken hip and their health outcomes.

The ANZHFR and its minimum data set was developed to allow hospitals to audit the care provided against the key markers of high quality and safe care described in the Australian and New Zealand Guideline for Hip Fracture Care in Adults, and the bi-national Hip Fracture Care Clinical Care Standard. This is the 5th report combining patient level and facility level data. It reports on 13,504 cases admitted between 1 January 2019 and 31 December 2019 at 77 hospitals, spread across two countries.

Since the first combined report in 2016, more than 50,000 records from 85 hospitals have contributed to the Registry. These 85 hospitals represent almost three-quarters of Australian and New Zealand public hospitals providing definitive management to older people sustaining this life-changing injury. Despite new hospitals being added each year, several aspects of care show improvement over the years of patient level reporting:

- Preoperative cognitive assessment
- Assessment of pain in the emergency department
- The use of nerve blocks for pain management
- The participation of a consultant surgeon in the operation
- The assessment of delirium

Conversely, there are still areas that show little change over the five years of patient level reporting and additional efforts are required to better understand the reasons for this. These areas include:

- Preoperative medical assessment
- Reasons for delay to surgery
- Weight bearing after surgery
- First day mobilisation

- Hospital acquired pressure injuries
- Active treatment for bone health at discharge

This year, for the first time, the ANZHFR has undertaken linkage of its Australian record data with the Australian Institute of Health and Welfare's (AIHW) National Death Index (NDI) to accurately understand patient survival after hip fracture. This allows a more comprehensive and accurate reporting of this important outcome.

In New Zealand, date of death is available in hospital information systems within a few days. This provides reasonable confidence that the New Zealand data on survival after hip fracture, collected in this way, is correct. Linking with the National Mortality Collection within the NZ Ministry of Health would ensure accuracy of the survival data and this is being investigated for future reporting.

As in previous years, throughout this report, case studies highlight use of the ANZHFR data where clinicians have undertaken quality improvement activities in areas highlighted by ANZHFR data as opportunities for improvement. The ANZHFR does not change hip fracture care simply by storing the data submitted. To improve care for older people, clinicians and administrative staff are required to use the data to monitor, implement and assess change. Summaries of these initiatives and innovations may encourage others to undertake similar activities in their health services. Alternatively, these summaries facilitate peer to peer communication between sites that identify similar challenges to the improvement of hip fracture care. In this way, the ANZHFR provides an important mechanism to improve the management of this significant injury.

2019 SNAPSHOT

CALENDAR YEAR

ANZ PATIENT LEVEL REPORT

60%

of patients had a documented assessment of pain within 30 minutes of arrival at the ED



13,504
RECORDS

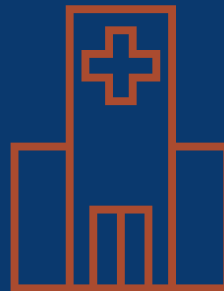


57%

of patients had a preoperative assessment of cognition

77

ANZ
HOSPITALS



76%

of patients had a nerve block to manage pain before surgery



27%

of patients were on active treatment for osteoporosis at discharge from hospital



81%

of patients had surgery within 48 hours

95%

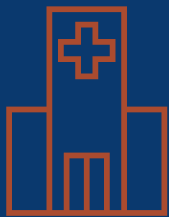
of patients are allowed to full weight bear after surgery



90%

of patients were given the opportunity to mobilise on the day of or day after surgery

ANZ FACILITY LEVEL DATA



117

ANZ HOSPITALS

46%

of hospitals had planned operating lists for hip fracture patients



26%

of hospitals routinely provide individualised written information on the prevention of future falls and fractures



84%

of hospitals use a pain protocol for hip fracture patients at presentation to ED

28%

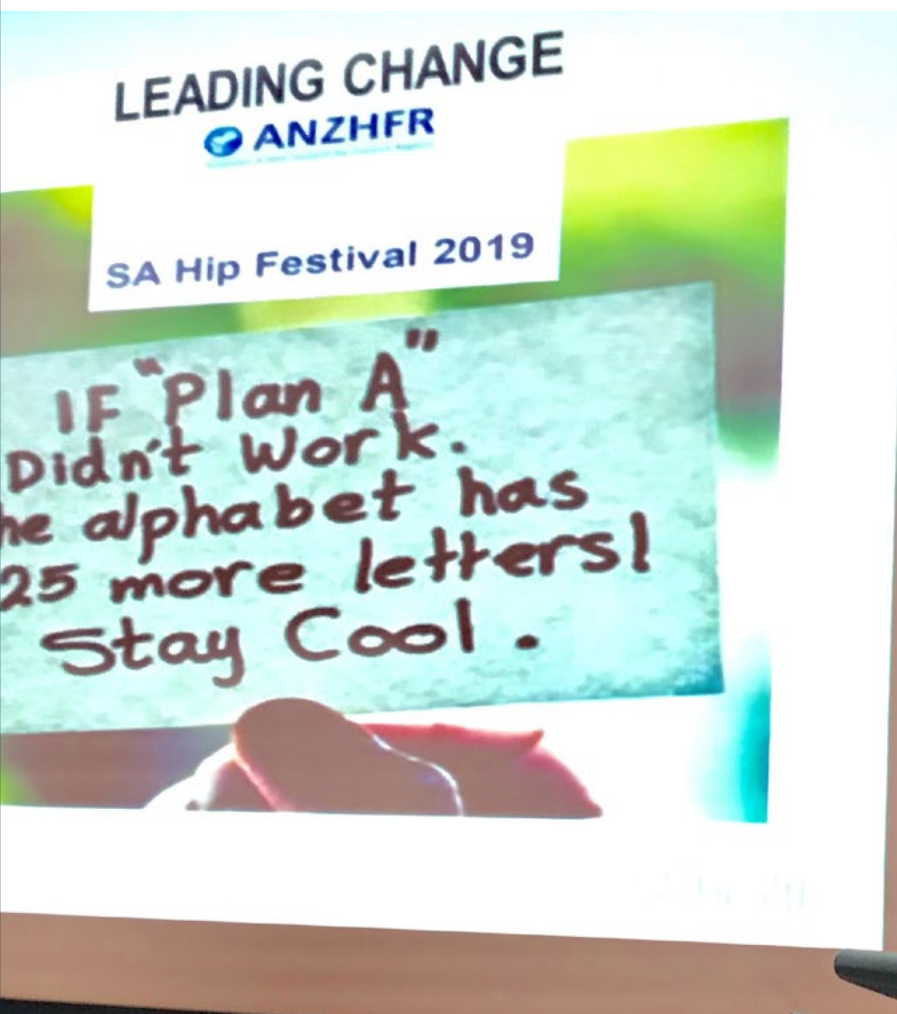
of hospitals utilise an orthopaedic/geriatric medicine shared care service model



KEY RECOMMENDATIONS

Utilising the data from the 2020 annual report, it is possible to identify several areas that may benefit from future initiatives for improving hip fracture care. These areas include:

- Acute hospital care may be reviewed with a 'whole of pathway' approach to ensure prehospital and post-discharge services are integrated to achieve the aims of the Hip Fracture Care Clinical Care Standard
- Investigation of the reasons for persistently low rates of prescribing treatments for osteoporosis
- Follow up after hospital discharge is encouraged as outcome after discharge from hospital care is an important consideration in this cohort and it may provide information that is useful for improving aspects of acute care
- Regular use by sites of aggregated ANZHFR data to facilitate hospital-wide review and monitoring of care, which will also encourage a culture of continuous quality improvement
- Ensuring data collected is of high quality and therefore useful for informing quality improvement initiatives
- Where no local document exists, hospitals are encouraged to utilise the ANZHFR Hip Fracture Care Guide (English language and translated versions) to facilitate communication between patients, families and clinical staff



INTRODUCTION





The Australian and New Zealand Hip Fracture Registry (ANZHFR) is managed by the Falls, Balance and Injury Research Centre at Neuroscience Research Australia, a medical research institute affiliated with the UNSW Sydney Faculty of Medicine. In New Zealand, the Registry is supported by the New Zealand Orthopaedic Association. From the beginning, the ANZHFR has been guided by a multidisciplinary advisory group consisting of representatives of key clinical stakeholder and consumer organisations. Since inception, this advisory group has been chaired by both a Geriatrician and an Orthopaedic Surgeon, reflecting the ideal, shared approach to high quality hip fracture care in the 21st century.

The development of the ANZHFR commenced in 2011/2012 as a clinician-driven initiative with the aim of improving hip fracture care for older people. At the beginning, the ANZHFR Steering Group developed the ANZ Guideline for Hip Fracture Care in Adults (2014), a guideline adapted for the Australian and New Zealand context from the National Institute for Health and Care Excellence (NICE) clinical guideline 124: the Management of Hip Fracture in Adults (2011). This was followed by the development of the bi-national Hip Fracture Care Clinical Care Standard, an initiative of the Australian Commission for Safety and Quality in Health Care, in partnership with the Quality and Safety

Commission New Zealand. The ANZHFR Steering Group then developed the Hip Fracture Registry and its minimum dataset, intentionally aligned with the Hip Fracture Care Clinical Care Standard and Clinical Practice Guideline.

This year is the 5th year of the ANZHFR Annual Report and it includes the 5th patient level report and the 8th facility level report. These annual reports provide a rich source of documentation of the collaboration between clinicians and health departments, between professional groups and consumer organisations, as well as the multidisciplinary teams providing health care to older people who have sustained this common and serious injury.

The ANZHFR is pleased to present this 2020 Annual Report of hip fracture care using data from 77 hospitals for patients admitted in 2019. Once again, this report provides data reporting the two countries individually against the seven quality statements of the Hip Fracture Care Clinical Care Standard. The ANZHFR acknowledges the commitment of all those in New Zealand and Australia providing high quality health care at this challenging time. The ANZHFR extends its sincere thanks to local hip fracture teams for their continued dedication to collecting and submitting data, and using the data to improve hip fracture care.

HIP FRACTURE TYPES AND SURGERY

The term 'hip fracture' is used to describe different types of fracture of the proximal (upper) femur. A hip fracture is an injury to the proximal femur and is more common in older people. The injury is often a result of a slip, trip or fall combined with decreasing bone strength due to osteopenia or osteoporosis. In many cases, it is a life-changing injury. Classification of the type of hip fracture is important, as it will determine the most appropriate management of the fracture. The majority of people who sustain a hip fracture will undergo surgical intervention. The goals of surgery are primarily to relieve pain and give people the chance to walk again. In a very small number of people, surgery may be judged unlikely to provide benefit for a person and they will be treated without surgery (Figure 18, page 38). The types of hip fracture are classified by the location, or zone, of the fracture. See Image 1 for the terms used to identify the zones of hip fracture.

There are different types of fracture with subtrochanteric fractures making up 5% to 10% of all hip fractures and the remainder (90-95%) being fairly evenly divided between intertrochanteric and intracapsular (subcapital) fractures. See Figure 27 (page 46) for the types of fracture reported. Different fracture types are generally treated by different surgical techniques. Fractures occurring in the intracapsular area (femoral neck) usually undergo an arthroplasty (replacement). Hemiarthroplasty involves removing the head of the femur (ball of the hip joint) that has broken away from the shaft of the bone and replacing it with an artificial (metal) ball that is held in place by a connected stem that sits inside the upper end of the femur (thigh bone). A total hip arthroplasty involves the same procedure, but also involves replacing the socket of the hip joint with a metal and plastic cup. Fractures that occur in the extracapsular region (trochanteric) generally undergo internal fixation with an intramedullary nail or a sliding hip screw and plate.

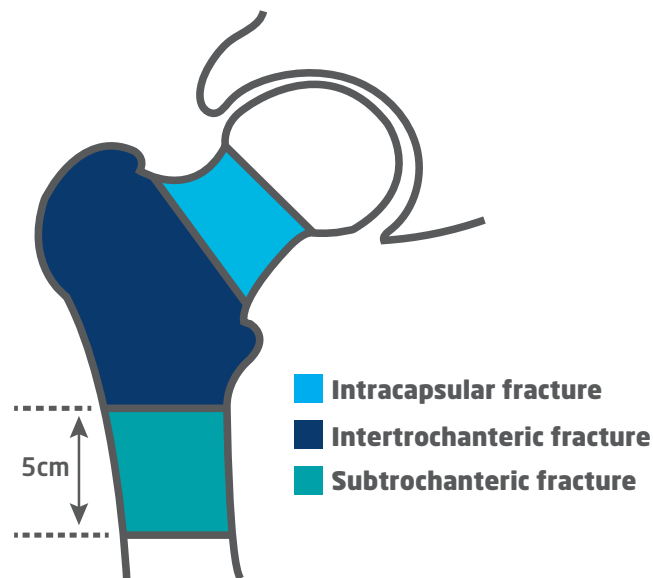
Figures 28 and 29 (pages 47 and 48) show the proportions of intracapsular fractures (femoral neck or subcapital fractures) treated with various techniques, reported separately for undisplaced and displaced fractures. Undisplaced fractures (Figure 28) may be treated by inserting screws across the fracture rather than replacing the broken part of the bone (arthroplasty). Although the proportion of displaced femoral neck fractures treated with total hip arthroplasty is increasing, hemiarthroplasty remains the most common treatment for this fracture type.

Intertrochanteric fractures are usually treated by internally securing the fractures using metallic devices, rather than replacing the broken part (arthroplasty). There is variation in the use of the two most common types of implant:

a sliding hip screw and an intra-medullary nail (Figure 30 on page 49). The ANZHFR does not distinguish between simple and comminuted or unstable fracture types and this may influence the choice of implant. For subtrochanteric fractures, intramedullary fixation is recommended (Figure 31 on page 50).

The ANZ Guideline for Hip Fracture Care recommends the use of cemented stems for hip arthroplasty. Figures 32 and 33 show the rates of cement use reported by sites for both hemiarthroplasty and total hip arthroplasty.

Image 1: Zones of hip fracture



ANZHFR PARTICIPATION

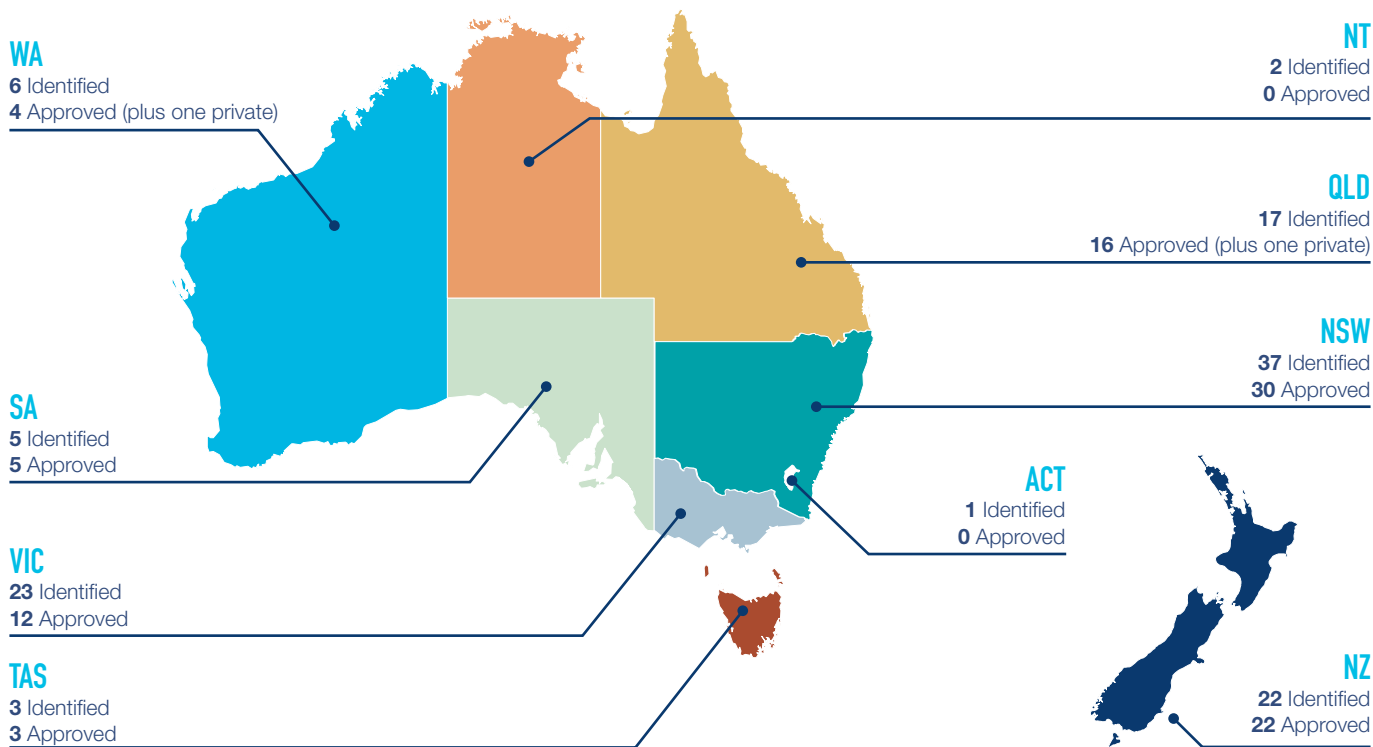
Participation in the ANZHFR has increased each year and continues to grow. Some jurisdictions have complete registration of public hospitals, whilst challenges remain for gaining approvals in others. In New Zealand, all hip fracture care is provided in the public sector. In Australia, the majority of hip fracture care is provided in the public hospital sector with a small proportion (approximately 15%) provided by private sector hospitals. Full participation of public sector hospitals and increased participation of private sector hospitals (in Australia) are future aims of the ANZHFR.

The governance requirements for individual hospitals to participate are approval by a Human Research Ethics Committee (HREC) in the relevant jurisdiction and then site specific governance approval at the level of the relevant health district. Whilst the ANZHFR provides administrative assistance to individual hospitals to gain the necessary approvals, limited resourcing and duplication of processes can lead to delays between sites identifying resources for data collection and submission, and the requisite approvals to contribute data to the ANZHFR.

Since 2016, the proportion of hospitals eligible to be reported in the annual report has increased from 21% of ANZ hospitals to 66% in 2020. Not all approved hospitals are contributing data to the ANZHFR and efforts continue to support those sites approved but not contributing to identify sustainable processes for participation.

At the time of this report, 100% of New Zealand hospitals and 76% of Australian hospitals have approval to contribute data. Image 2 shows public hospital participation by Australian state and territory and New Zealand. In addition to the public hospitals, two private hospitals contributed data to the ANZHFR in 2019; one in Western Australia and one in Queensland.

Image 2: Public sector hospital participation New Zealand and Australian at June 2020



ANZHFR DEVELOPMENT 2019/2020

The ANZHFR Dashboard has been well received by Registry users and is utilised for its reporting of aggregated data specific to many of the Hip Fracture Care Clinical Care Standard quality statements and indicators. The ANZHFR is receptive to requests from users for additional features and depending on availability of resources the Registry is willing to develop those features that have broad support. As a result of repeated requests for an assessment of health-related quality of life, at the beginning of 2020, the ANZHFR made available the EuroQol EQ-5D-5L¹ as optional fields for collection at 120 days.

This year, the ANZHFR has developed the additional feature of customisable fields. That is, individual hospitals are able to create site specific fields for local collection that can be used for local quality improvement initiatives. These fields will not be used or reported by the ANZHFR, but will provide a mechanism for context specific

initiatives to be undertaken by local clinicians familiar with the needs of their setting and community. Utilising the same functionality, the ANZHFR has developed the ability to run 'sprint audits'. These are defined, additional fields, collected for a specific time period to collect additional information about specific aspects of care. These are planned to commence in 2021.

The very successful Hip Fests have continued in 2020 although in a very different form. The preferred face to face format of these events has been affected by COVID-19 and instead moved online. The ANZHFR has utilised the online space to create a series of lectures on specific aspects of clinical care or change initiatives. These can be viewed via the ANZHFR website @ www.anzhfr.org

¹ The EuroQol Group (1990). EuroQol-a new facility for the measurement of health-related quality of life. Health Policy 16(3):199-208.

HIP FRACTURE CARE CLINICAL CARE STANDARD

The Hip Fracture Care Clinical Care Standard was released in 2016 by the Australian Commission on Safety and Quality in Health Care, in collaboration with the Health Quality and Safety Commission New Zealand. The Care Standard plays a role in ensuring the delivery of appropriate hip fracture care by describing the components of care that ought to be provided to older people admitted with a hip fracture.

The Hip Fracture Care Clinical Care Standard contains seven quality statements and 16 indicators. The quality statements and indicators enable the calculation of a quantitative measure of care processes, structures, or outcomes. They are used by clinicians or health providers to identify areas of high quality care, or areas that may require review or redevelopment.



QUALITY STATEMENT 1: CARE AT PRESENTATION

A patient presenting to hospital with a suspected hip fracture receives care guided by timely assessment and management of medical conditions, including diagnostic imaging, pain assessment and cognitive assessment.

- 90% of hospitals reported having a hip fracture pathway: 60% across the whole acute patient journey and 30% in the emergency department only
- 54% of hospitals reported the presence of a protocol for Computed Tomography (CT) / Magnetic Resonance Imaging (MRI) if plain imaging of a suspected hip fracture is inconclusive
- 59% of patients in New Zealand and 60% of patients in Australia were documented as having no cognitive issues prior to admission
- 42% and 63% of patients in New Zealand and Australia, respectively, had a documented assessment of cognition using a validated tool prior to surgery



QUALITY STATEMENT 2: PAIN MANAGEMENT

A patient with a hip fracture is assessed for pain at the time of presentation and regularly throughout their hospital stay, and receives pain management including the use of multimodal analgesia, if clinically appropriate.

- 84% of hospitals had a pathway for pain management in hip fracture patients: 48% across the whole acute patient journey and 36% in the emergency department only
- 58% and 61% of patients in New Zealand and Australia, respectively, had a documented assessment of pain within 30 minutes of presentation to the emergency department
- 58% and 71% of patients in New Zealand and Australia, respectively, received analgesia in transit or within 30 minutes of presentation to the emergency department
- 67% and 79% of patients in New Zealand and Australia, respectively, received a nerve block before surgery



QUALITY STATEMENT 3: ORTHOGERIATRIC MODEL OF CARE

A patient with a hip fracture is offered treatment based on an orthogeriatric model of care as defined in the Australian and New Zealand Guideline for Hip Fracture Care.

- 75% of hospitals had an orthogeriatric service for older hip fracture patients: 28% utilising a shared-care arrangement with orthopaedics; 31% utilising a daily week-day geriatric medicine liaison service; and 16% an alternative orthogeriatric service model.
- 32% and 61% of patients in New Zealand and Australia, respectively, were assessed by a geriatrician prior to surgery



QUALITY STATEMENT 4: TIMING OF SURGERY

A patient presenting to hospital with a hip fracture, or sustaining a hip fracture while in hospital, receives surgery within 48 hours, if no clinical contraindication exists and the patient prefers surgery.

- 84% and 80% of patients in New Zealand and Australia, respectively, were operated on within 48 hours of presentation to hospital
- 35 hours in New Zealand and 36 hours in Australia was the average time to surgery for patients presenting directly to the operating hospital
- 40 hours in New Zealand and 47 hours in Australia was the average time to surgery for patients transferred to the operating hospital from another hospital



QUALITY STATEMENT 5: MOBILISATION AND WEIGHT-BEARING

A patient with a hip fracture is offered mobilisation without restrictions on weight bearing the day after surgery and at least once a day thereafter, depending on the patient's clinical condition and agreed goals of care.

- 94% and 95% of patients in New Zealand and Australia, respectively, had unrestricted weight-bearing immediately after hip fracture surgery
- 85% and 91% of patients in New Zealand and Australia, respectively, were offered the opportunity to mobilise on the first day after surgery
- 4% of hip fracture patients in both countries were reported as experiencing a new stage II or higher pressure injury of the skin during their hospital stay
- 81% of patients in New Zealand and 51% of patients in Australia were followed up at 120 days after presentation to hospital: of those followed up, 51% and 35% of patients in New Zealand and Australia, respectively, were reported as having returned to their preadmission mobility at 120 days after presentation to hospital



QUALITY STATEMENT 6: MINIMISING RISK OF ANOTHER FRACTURE

Before a patient with a hip fracture leaves hospital, they are offered a falls and bone health assessment, and a management plan based on this assessment, to reduce the risk of another fracture.

- 76% and 72% of patients in New Zealand and Australia, respectively, had undergone a fall-risk assessment during their inpatient stay
- 31% and 25% of patients in New Zealand and Australia, respectively, were receiving bone protection medication at discharge from hospital
- Of those followed up at 120 days after presentation to hospital, 45% and 38% of patients in New Zealand and Australia, respectively, were receiving bone protection medication to reduce the risk of another fracture



QUALITY STATEMENT 7: TRANSITION FROM HOSPITAL CARE

Before a patient leaves hospital, the patient and their carer are involved in the development of an individualised care plan that describes the patient's ongoing care and goals of care after they leave hospital. The plan is developed collaboratively with the patient's general practitioner. The plan identifies any changes in medicines, any new medicines, and equipment and contact details for rehabilitation services they may require. It also describes mobilisation activities, wound care and function post-injury. The plan is provided to the patient before discharge and to their general practitioner and other ongoing clinical providers within 48 hours of discharge.

- 23% and 26% of hospitals in New Zealand and Australia, respectively, reported providing written, individualised information on discharge that describes ongoing care, goals of care and recommendations for prevention of future falls and fractures
- Of those who lived at home prior to injury and were followed up at 120 days after presentation to hospital, 80% and 62% of patients in New Zealand and Australia, respectively, have returned to their own home at 120 days

PARTICIPATION 2020

PATIENT LEVEL AUDIT

NEW ZEALAND HOSPITALS

	REPORT ID	N		REPORT ID	N
Auckland City Hospital	ACH	283	Rotorua Hospital	ROT	-
Christchurch Hospital	CHC	484	Southland Hospital	INV	88
Dunedin Hospital	DUN	209	Tauranga Hospital	TGA	209
Gisborne Hospital	GIS	39	Timaru Hospital	TIU	70
Hawkes Bay Hospital	HKB	138	Waikato Hospital	WKO	316
Hutt Valley Hospital	HUT	113	Wairau Hospital (Blenheim)	BHE	38
Middlemore Hospital	MMH	261	Wellington Hospital	WLG	119
Nelson Hospital	NSN	107	Whakatane Hospital	WHK	33
North Shore Hospital	NSH	414	Whanganui Hospital	WAG	57
Palmerston North Hospital	PMR	161	Whangarei Hospital	WRE	140

AUSTRALIAN HOSPITALS

	REPORT ID	N		REPORT ID	N
Albany Hospital	ABA	43	Nepean Hospital	NEP	209
Armidale Hospital	ARM	57	Orange Health Service Hospital	OHS	173
Austin Hospital	###	42	Port Macquarie Base Hospital	PMB	57
Bankstown / Lidcombe Hospital	BKL	155	Prince Charles Hospital	PCH	342
Blacktown Hospital	###	153	Prince of Wales hospital	POW	188
Box Hill Hospital	BOX	266	Princess Alexandra Hospital	PAH	184
Cairns Hospital	CNS	181	QEI Hospital	QII	136
Campbelltown Hospital	CAM	99	Queen Elizabeth Hospital	QEH	127
Coffs Harbour Base Hospital	CFS	96	Redcliffe Hospital	RED	165
Concord Hospital	CRG	138	Robina Hospital	ROB	285
Dandenong Hospital	DDH	359	Rockhampton Hospital	ROK	91
Fiona Stanley Hospital	FSH	528	Royal Hobart Hospital	###	35
Flinders Medical Centre	FMC	181	Royal North Shore Hospital	RNS	198
Footscray Hospital	FOO	399	Royal Perth Hospital	RPH	381
Frankston Hospital	FRA	76	Royal Prince Alfred Hospital	RPA	108
Geelong Hospital	GUH	156	Ryde Hospital	RYD	67
Gold Coast University Hospital	GCH	13	Sir Charles Gairdner Hospital	SCG	286
Gosford Hospital	GOS	319	St George Hospital	STG	249
Hornsby Ku-ring-gai Hospital	HKH	37	St Vincent's Hospital Darlinghurst	SVD	159
Ipswich Hospital	IPS	118	St Vincent's Hospital Melbourne	###	43
John Hunter Hospital	JHH	421	Sunshine Coast University Hospital	SCU	223
Joondalup Hospital	JHC	166	Tamworth Hospital	TAM	99
Launceston Hospital	LGH	105	The Alfred	TAH	119
Liverpool Hospital	LIV	291	The Northern Hospital	TNH	219
Logan Hospital	LOG	89	The Sutherland Hospital	TSH	161
Lyell McEwin Hospital	LMH	296	Toowoomba Hospital	TWB	160
Maroondah Hospital	MAR	228	Townsville Hospital	TSV	159
Mater Hospital	MSB	128	Westmead Hospital	WMD	237
Nambour Hospital	NBR	-	Wollongong Hospital	TWH	225

For this 2020 report, 77 hospitals contributed at least 10 records in 2019 and they have been included in the patient level report. Seventy-three hospitals have chosen to be identified. For the facility level report, 117 hospitals completed the audit for 2019.

The total number of hospitals eligible for both patient and facility audits may vary each year as public health system services are reconfigured, or private hospitals increase their participation in the ANZHFR.

FACILITY LEVEL AUDIT

New Zealand Hospitals

Auckland City Hospital	Rotorua Hospital	Taranaki Base Hospital	Whanganui Hospital
Christchurch Hospital	Middlemore Hospital	Tauranga Hospital	Wellington Regional Hospital
Dunedin Hospital	Nelson Hospital	Timaru Hospital	Whakatane Hospital
Gisborne Hospital	North Shore Hospital	Waikato Hospital	Whangarei Base Hospital
Hawkes Bay Hospital	Palmerston North Hospital	Wairarapa Hospital	
Hutt Valley Hospital	Southland Hospital	Wairau Hospital	

Australian Hospitals

NEW SOUTH WALES

Armidale Hospital
Bankstown-Lidcombe Hospital
Bathurst Base Hospital
Bega District Hospital
Blacktown Hospital
Bowral and District Hospital
Campbelltown Hospital
Canterbury Hospital
Coffs Harbour Base Hospital
Concord Hospital
Dubbo Base Hospital
Gosford Hospital
Goulburn Base Hospital
Grafton Hospital
Hornsby Ku-ring-gai Hospital
John Hunter Hospital
Lismore Base Hospital
Liverpool Hospital
Maitland Hospital
Manning Base Hospital
Nepean Hospital
Northern Beaches Hospital
Orange Health Service
Port Macquarie Base Hospital
Prince of Wales Hospital
Royal North Shore Hospital
Royal Prince Alfred Hospital
Ryde Hospital
Shoalhaven and District Hospital
St George Hospital
St Vincent's Hospital
Darlinghurst
Tamworth Base Hospital

The Sutherland Hospital
The Tweed Hospital
The Wollongong Hospital
Wagga Wagga Base Hospital
Westmead Hospital

VICTORIA

Albury Wodonga Health
Ballarat Health Service
Bendigo Hospital
Box Hill Hospital
Dandenong Hospital
Frankston Hospital
Geelong Hospital
Goulburn Valley Health (Shepparton)
Latrobe Regional Hospital
Maroondah Hospital
Mildura Base Hospital
Northeast Health Wangaratta
Royal Melbourne Hospital
Sandringham Hospital
South West Healthcare (Warrnambool)
St Vincent's Hospital Melbourne
The Alfred
The Austin Hospital
The Northern Hospital
West Gippsland Healthcare Group (Warragul)
Western District Health Service Hamilton
Western Health (Footscray)
Wimmera Health Care Group (Horsham)

QUEENSLAND

Bundaberg Hospital
Cairns Base Hospital
Gold Coast University Hospital
Hervey Bay Hospital
Ipswich Hospital
Logan Hospital
Mackay Base Hospital
Mater South Brisbane
Princess Alexandra Hospital
QEII Jubilee Hospital
Redcliffe Hospital
Robina Hospital
Rockhampton Base Hospital
Sunshine Coast University Hospital
The Prince Charles Hospital
Toowoomba Hospital
Townsville Hospital

SOUTH AUSTRALIA

Albany Hospital
Bunbury Hospital
Fiona Stanley Hospital
Geraldton Hospital
Joondalup Health Campus
Royal Perth Hospital
Sir Charles Gairdner Hospital

WESTERN AUSTRALIA

Flinders Medical Centre
Lyll McEwin Health Service
Mount Gambier
Royal Adelaide Hospital
The Queen Elizabeth Hospital

TASMANIA

Launceston General Hospital
North West Regional Hospital (Burnie)
Royal Hobart Hospital

NORTHERN TERRITORY

Alice Springs Hospital
Royal Darwin Hospital

AUSTRALIAN CAPITAL TERRITORY

Canberra Hospital

DATA QUALITY, CAVEATS AND LIMITATIONS

The patient level report includes data from 77 hospitals. In 2019, 13,504 records were contributed for the calendar year 1 January 2019 to 31 December 2019: 10,225 records from 58 Australian hospitals and 3,279 records from 19 New Zealand hospitals. The level of completeness from all 77 hospitals was 98% (Figure 1, page 19). The facility level report includes aggregated data from 117 hospitals invited to participate.

CAVEATS

- The figures in this report include data from Australia and New Zealand for all records with an Emergency Department Arrival, In Hospital Fracture, or Transfer date, from midnight 1st January 2019 to midnight on 31st December 2019.
- Figures in the patient level report only include records where data is available.
- Hospitals must have contributed at least 10 patient records during the relevant calendar year to be included in the patient level report.
- All figures adhere strictly to a minimum 10 records required rule other than Follow-ups where at least 10 records and a follow up rate of more than 80% is required for inclusion in the figure.
- Where the figure has featured in previous years, average bars from the previous reports are included for comparison.
- New Zealand has elected to identify all hospitals with a hospital specific code. In Australia, a hospital specific code is used where local principle investigators and their hospital executive have elected to opt-in to identified reporting. Four Australian hospitals have elected not to opt-in and have been randomly assigned a number that has been used consistently throughout this report. The number has been provided to the listed principle investigator for each hospital.
- The mortality analysis has been adjusted for age, sex, pre-morbid level of function (mobility), fracture type, residence type and ASA.

CORRECTNESS

Correctness refers to the accuracy of the data entered into each individual data field. The ANZHFR utilises data validation rules and inbuilt date/time sequence checks to reduce the possibility of incorrect data being entered. Warning pop-ups alert users if the data falls outside any of the limits specified and this assists users to identify potentially wrong temporal data. This helps with data accuracy. Date and time variables that use these warnings include ED arrival and discharge, time to surgery and length of stay.

The ANZHFR piloted a methodology for participating sites to audit the quality of their data entered into the ANZHFR². Data completeness was very high, and agreement between the Registry data set and a replicated data collection was 82%. The information generated by this study resulted in the ANZHFR adding further explanatory text to the online database, data collection form and data dictionary, as well as introducing an additional mobilisation variable in January 2020 to better collect this important variable. The methodology piloted by Tan et al (2019) has subsequently been replicated in New Zealand and identified additional opportunities to improve the quality of data held by the ANZHFR.

CAPTURE/ASCERTAINMENT

Capture/Ascertainment refers to the proportion of eligible patients that are captured by the Registry. High levels of capture allow the findings of the ANZHFR to be generalised to the whole population. If the capture rate is low, selection bias may be introduced whereby patients included or excluded are systematically different from each other.

In New Zealand, the number of hip fracture cases in the registry can be compared with the discharge coding from the National Minimum Data Set (NMDS). The numbers are extracted in March for the previous calendar year during which the data collection took place. There is minimal change in the numbers after this date and this provides a good comparator with which to judge ascertainment. In the 2017 report, ascertainment was 20%, in 2018 60%, in 2019 70% and in 2020, has reached 86%. This improvement reflects both increasing hospitals collecting data as well as more resilient data collection systems.

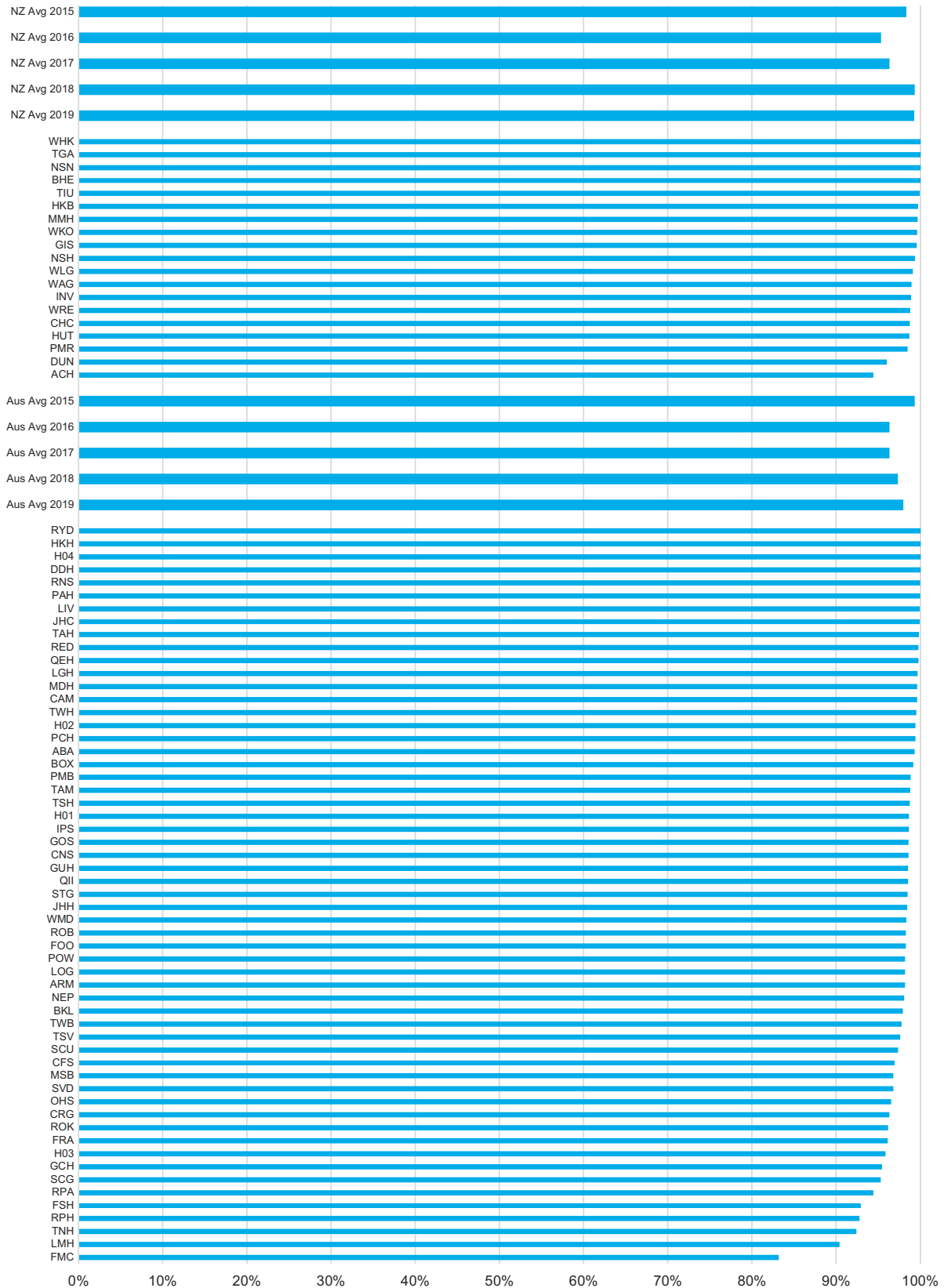
In Australia, ascertainment is difficult to source due to jurisdictional differences in the collection and reporting of data, although similar trends are likely to be seen in the Australian context. The ANZHFR is investigating resource efficient ways to be able to report this information for Australia in future reports.

² Tan AC, Armstrong E, Close J, et al Data quality audit of a clinical quality registry: a generic framework and case study of the Australian and New Zealand Hip Fracture Registry. *BMJ Open Quality* 2019;8:e000490. doi: 10.1136/bmjopen-2018-000490

COMPLETENESS

Completeness refers to the number of variables completed per record over the number of variables eligible to be completed for that patient. The Registry utilises automated and manual data completeness checks for each record. When logged into the Registry users can view the percentage of variables complete per record. Figure 1 shows the average completeness of all data for each patient record in 2019, shown as an average for each site, and for each country. There is no clear threshold for ‘satisfactory’ completeness and 100% completeness is not always possible as some data may not be available for some patients or from some sites.

FIGURE 1 DATA COMPLETENESS





R



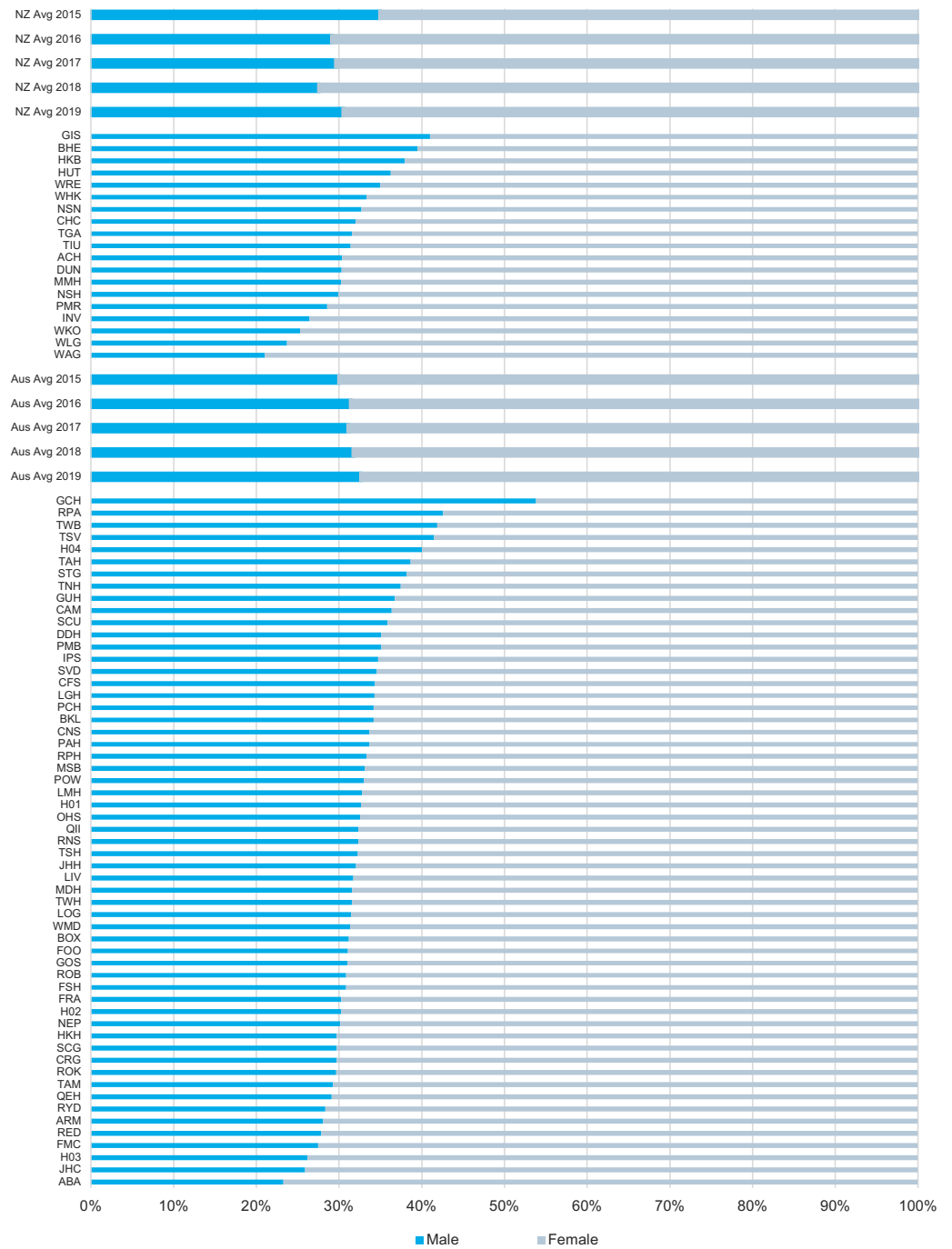


PATIENT LEVEL AUDIT

SECTION I: DEMOGRAPHIC INFORMATION

FIGURE 2 SEX

Females comprised 69% and 67% of the New Zealand and Australian hip fracture patients in 2018, respectively.





After working in health for many years I can see many improvements but not everything has changed. I find it helpful in stressful times to be positive, so, can something be done to address the negative connotations expressed by health workers as soon as they see you are over 60 years old?.”

MICHAEL / AGE 68 / AUSTRALIA

FIGURE 3 AGE AT ADMISSION

The average age of hip fracture patients is 82 years in both New Zealand and Australia. In both countries, the median age of men is 83 years, and in women the median age is 84 years. Figure 3 shows the distribution of hip fracture patients by 10-year age bands. People aged >90 years make up 25% of hip fracture patients in both Australia and New Zealand and the proportion of people aged <80 years presenting with a hip fracture has increased.

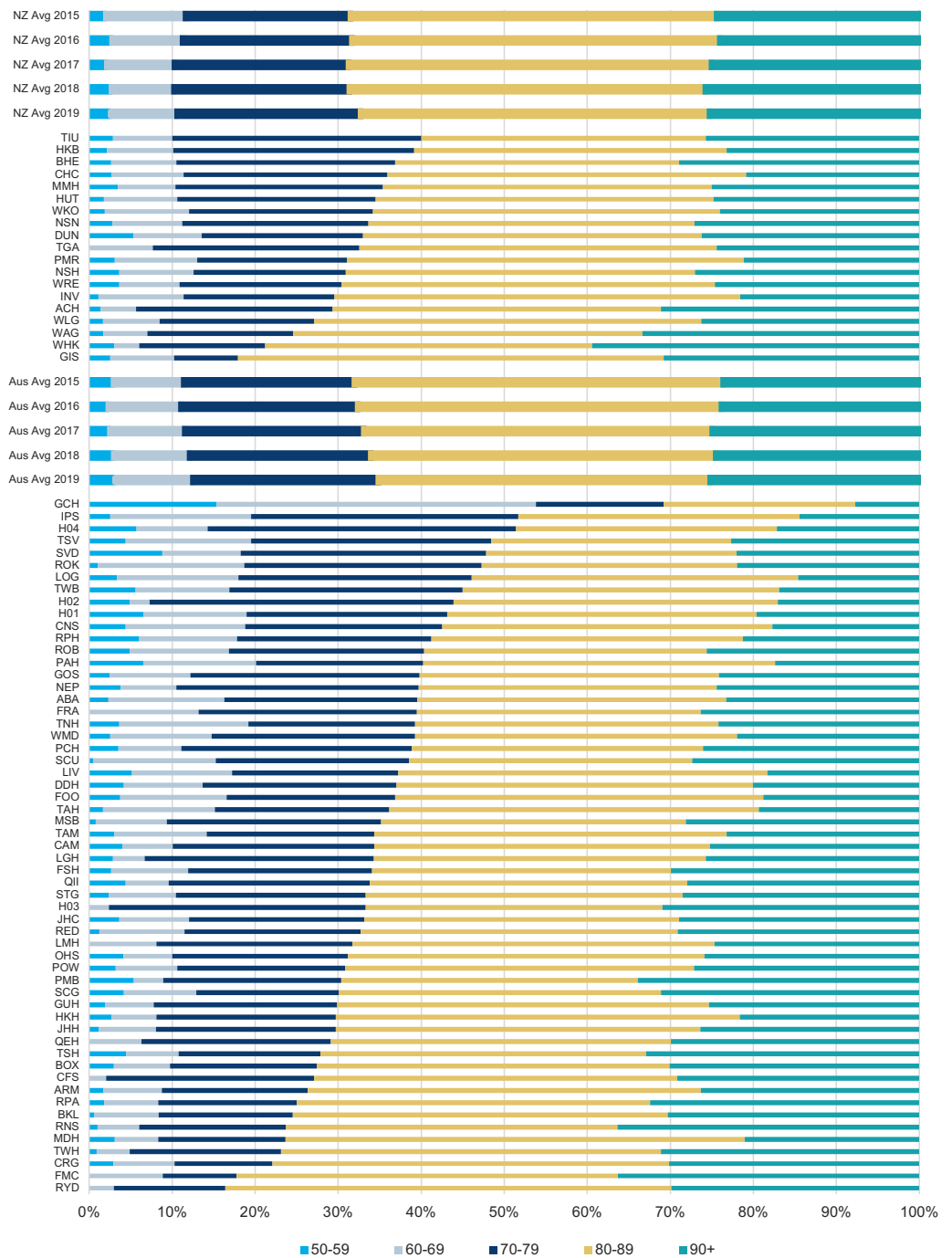
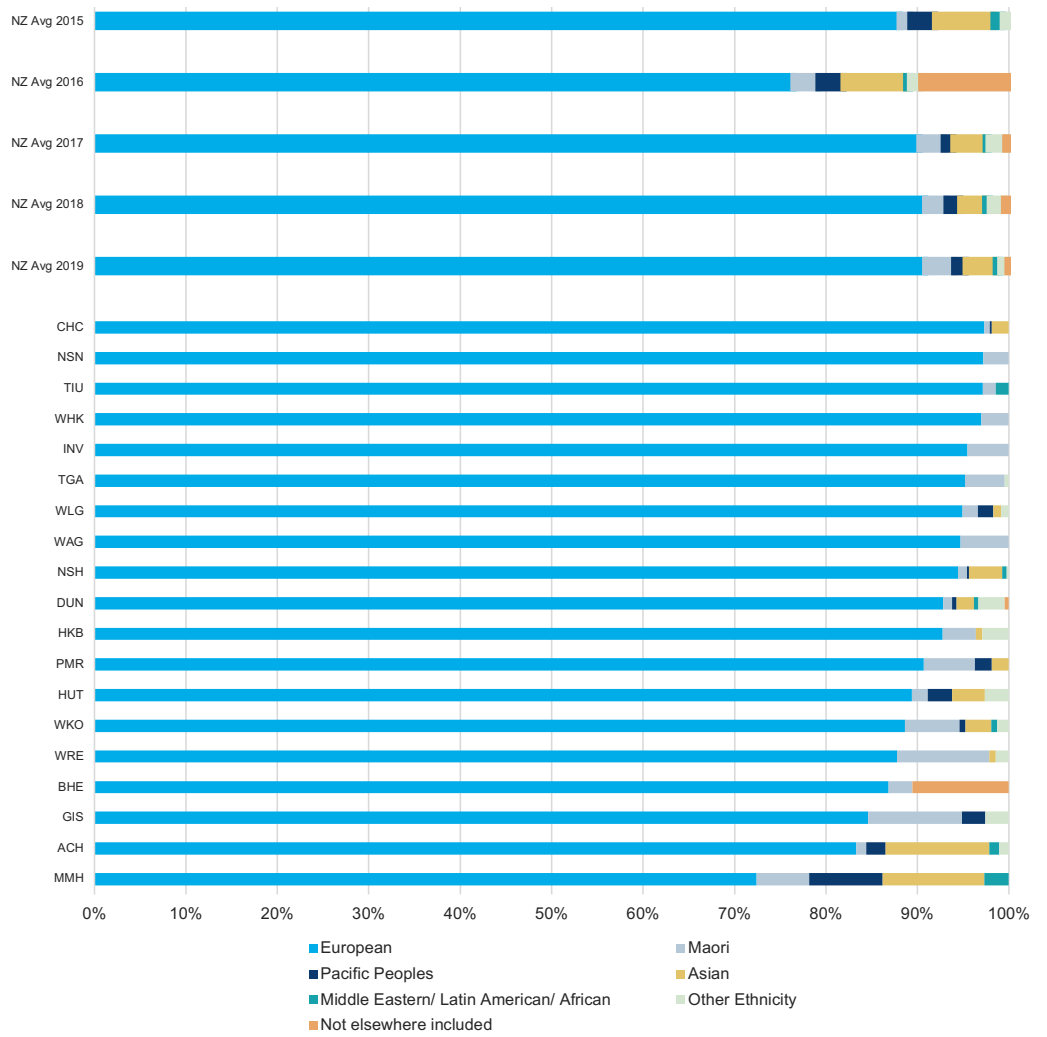




FIGURE 4 NEW ZEALAND ETHNICITY

Maori and Pacific Peoples made up 4.4% of the New Zealand reported data. The majority of New Zealand hip fracture patients report being of European origin. Equivalent data are not reported for Australia and accuracy in reporting of Indigenous status is known to be variable.



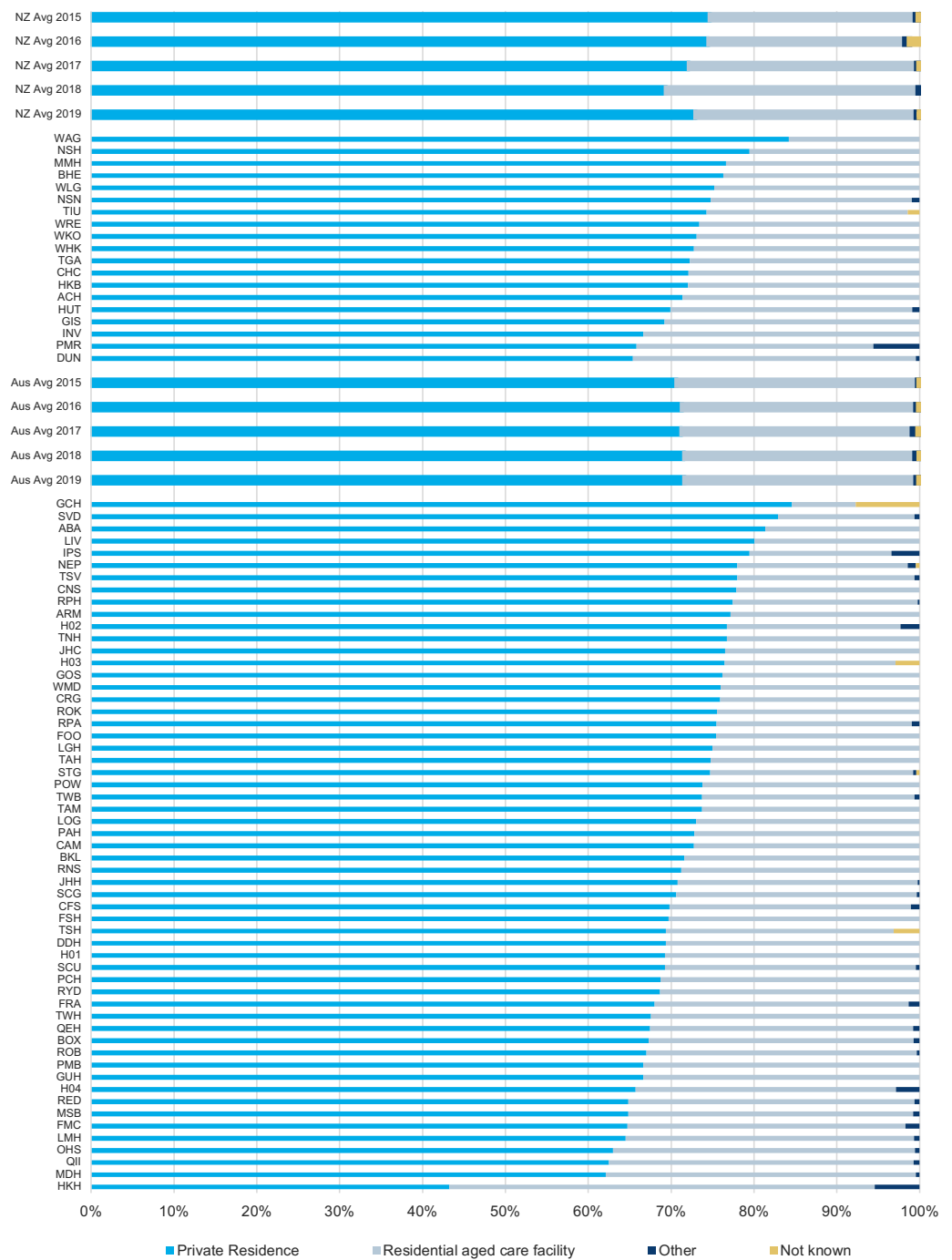


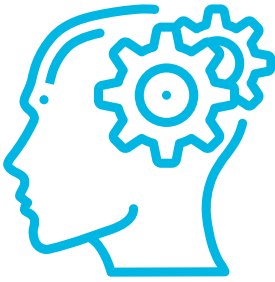
I am 73 years old and fit and lean. Everything has been fabulous since my surgery and I am very impressed I am getting a call to see how I am doing. Please let the staff know how fantastic they were: the ward staff, Physio, hydrotherapy etc.”

MARGARET / AGE 73 / AUSTRALIA

FIGURE 5 USUAL PLACE OF RESIDENCE

The majority of people admitted to hospital with a hip fracture live at home: 73% of New Zealand patients and 72% of Australian patients. People from residential aged care facilities make up 28% of those admitted, a finding that is expected and consistent with national and international literature. The variation seen between hospitals reflects the make-up of the local population including the number of residential aged care facilities.





37% of hip fracture patients had impaired cognition or known dementia at presentation

FIGURE 6 PREADMISSION COGNITIVE STATUS

Fifty nine percent of patients in New Zealand and 60% of patients in Australia had no reported cognitive issues prior to admission. However, 36% of patients in New Zealand and 37% of patients hospitalised in Australia had impaired cognition or known dementia. Cognitive status prior to admission is not known for 5% of patients in New Zealand and 3% of patients in Australia.

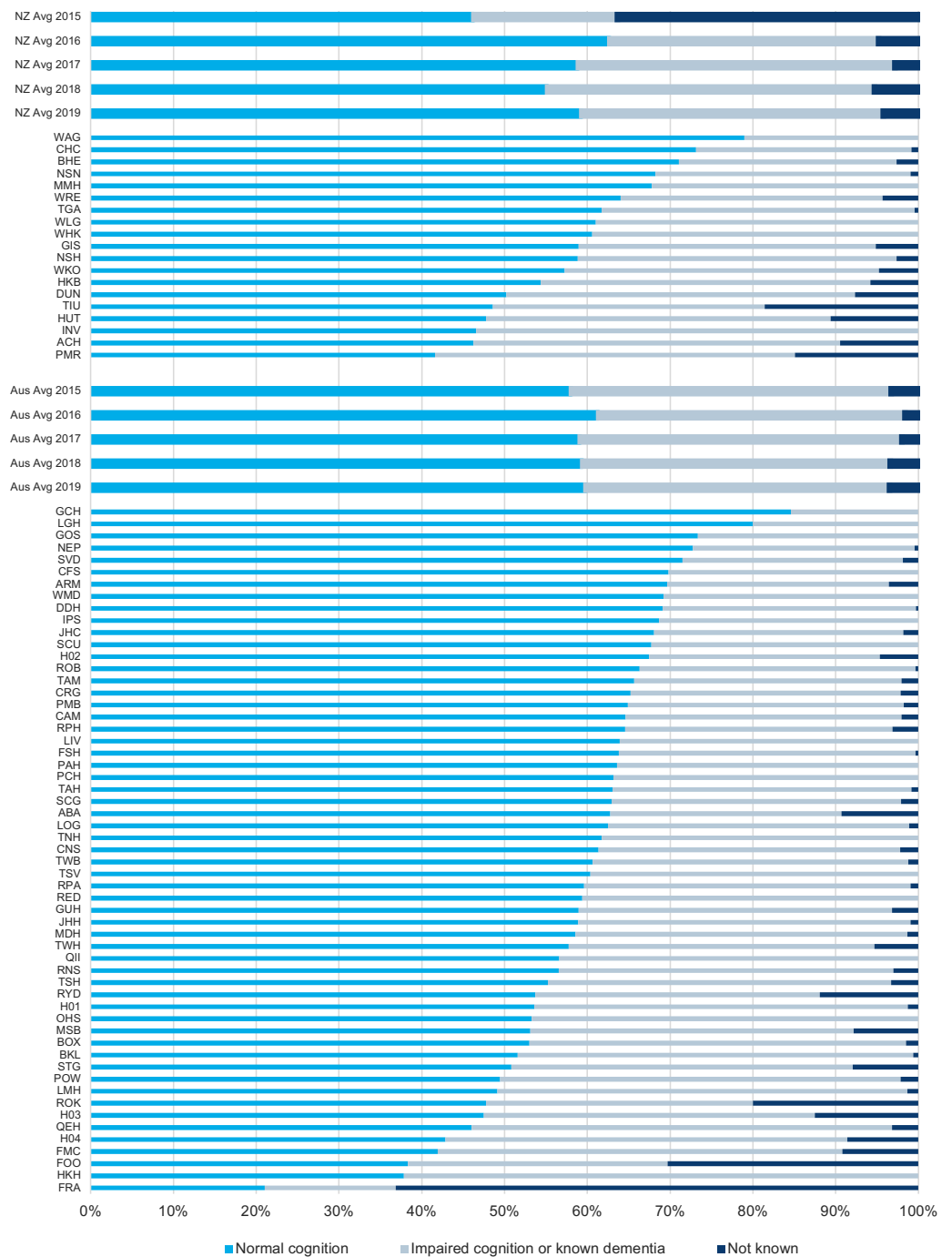




FIGURE 7 PREADMISSION WALKING ABILITY

In New Zealand and Australia, 45% and 46% of hip fracture patients, respectively, walked without any assistive device prior to hospitalisation. This is important information as it provides baseline data to inform discussions with patients and families about a person's post-injury goals of treatment. There is variation seen between hospitals, which is likely to reflect the make-up of the local population.

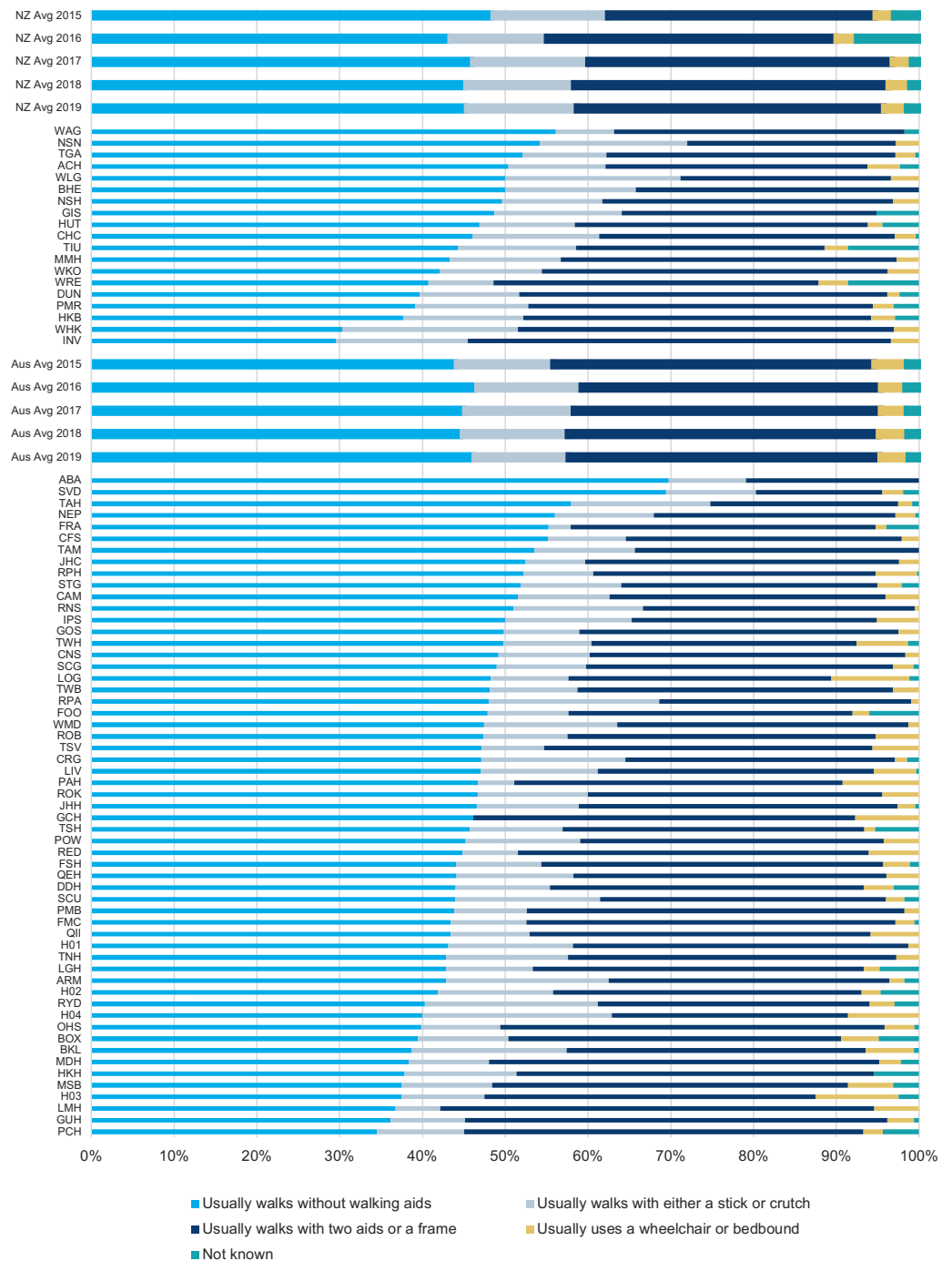


FIGURE 8 ASA KNOWN

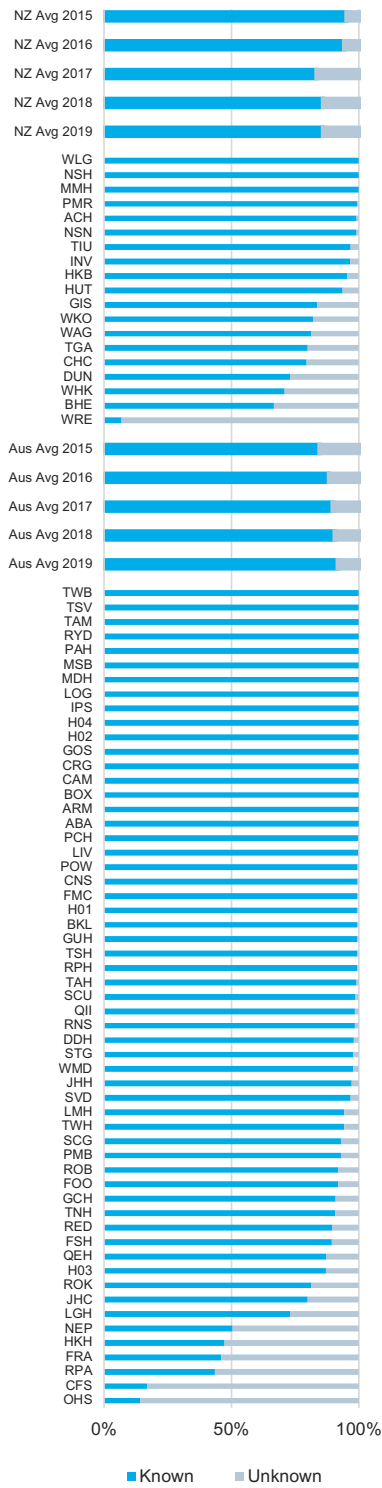
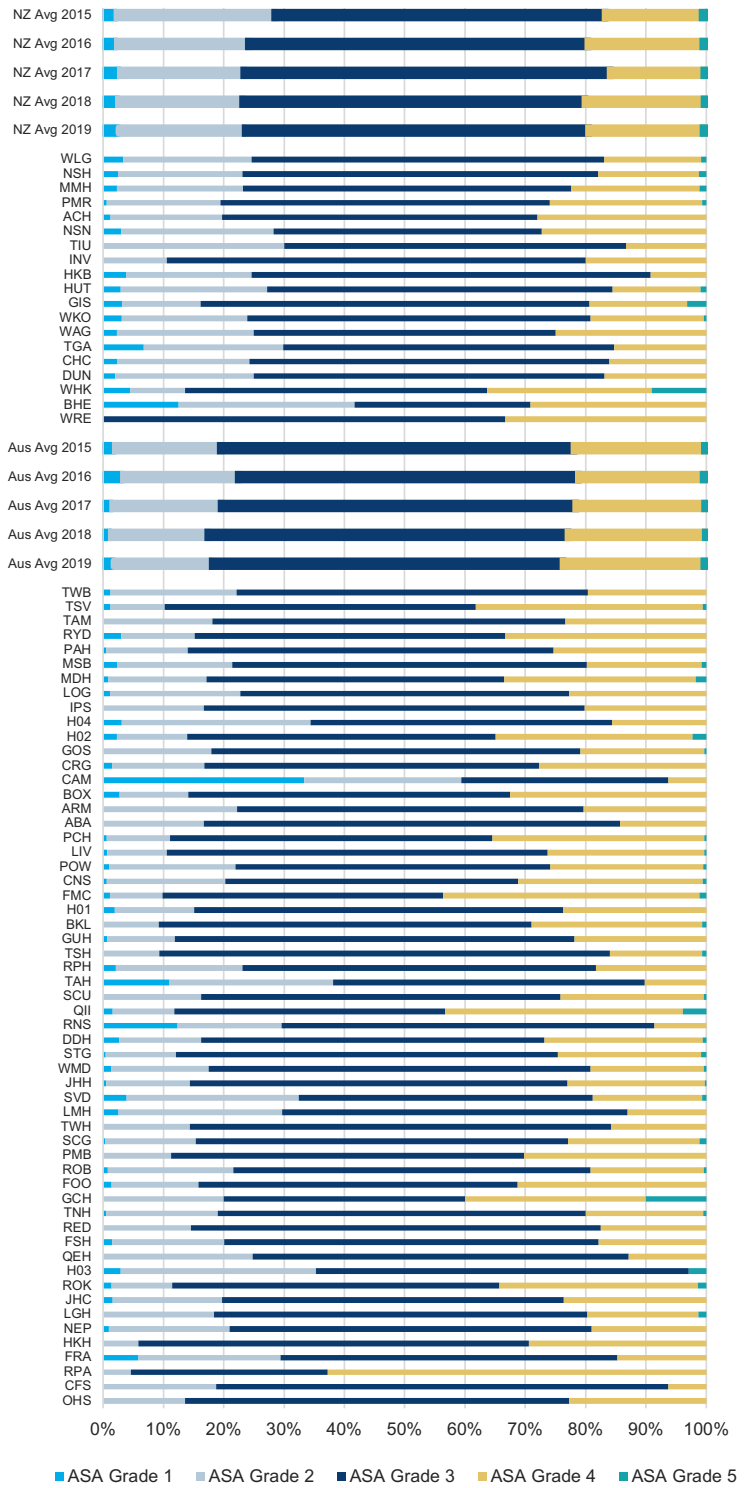


FIGURE 9 ASA GRADE



The American Society of Anaesthesiologists (ASA) developed the ASA grading as a measure of anaesthetic risk. It is often used as a general measure of physical health or comorbidity. Increasing ASA Grade is associated with mortality and morbidity risk in patients. For patients at each hospital for whom the ASA is known, Figure 9 shows the grading of anaesthetic risk. Grade 1 is a healthy individual with no systemic disease, Grade 2 is mild systemic disease not limiting activity, and Grade 3 is severe systemic disease that limits activity but is not incapacitating. Grade 4 indicates a patient with severe systemic disease that is a constant threat to life. ASA Grade 5 indicates that the patient is not expected to survive surgery. The ASA grades provided in Figure 9 show that most hip fracture patients have an ASA grade of 3 or higher, indicating significant comorbidities and anaesthetic risk. For some hospitals, ASA is unknown for more than 50% of records and this may reflect difficulty in sourcing the information in the medical record, or it may be missing. Figure 8 provides data that can be used by hospitals with low rates of collection to inform initiatives to improve data quality for this variable.

SECTION 2: CARE AT PRESENTATION

FIGURE 10 TRANSFERRED FROM ANOTHER HOSPITAL

Figure 10 shows the proportion of patients transferred to an operating hospital for definitive management of their hip fracture. There is considerable variation between sites in the proportion of patients transferred. In New Zealand and Australia, 7% and 14% of hip fracture patients, respectively, are transferred for definitive management of their hip fracture. This variation reflects differences in geography, service delivery, and the role delineation of the hospital. When the period spent in the transferring hospital and the time spent in transition is included, there may be an impact on time to surgery for transferred patients.

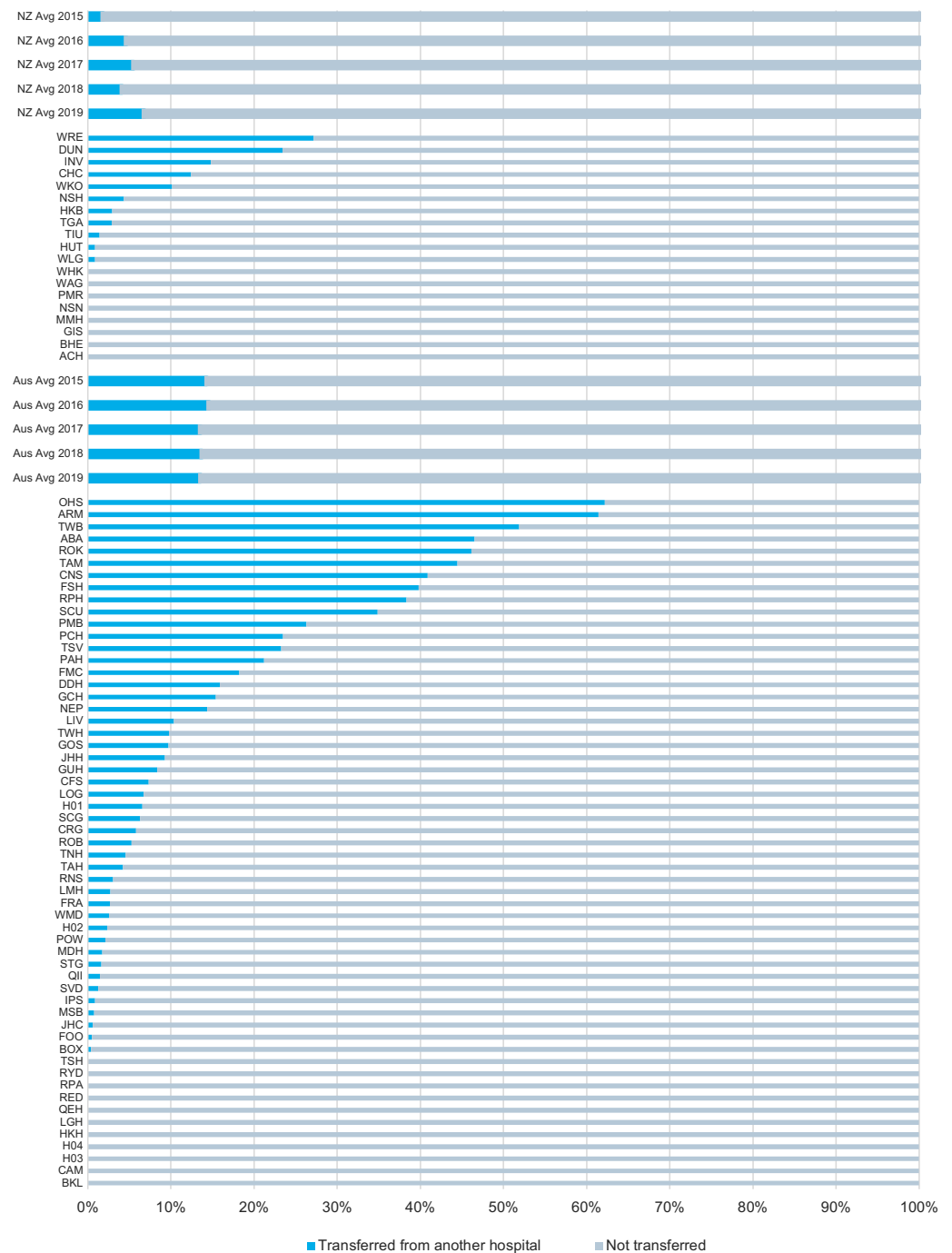




FIGURE II AVERAGE LENGTH OF STAY (LOS) IN THE EMERGENCY DEPARTMENT (ED)

Since the first report in 2015, average Length of Stay (LOS) for patients in the Emergency Department (ED) has trended down in New Zealand and trended up in Australia, but variation between individual hospitals remains. The median length of stay in the ED in 2019, for patients in New Zealand and Australia, is 4.5 hours and 6.4 hours, respectively.

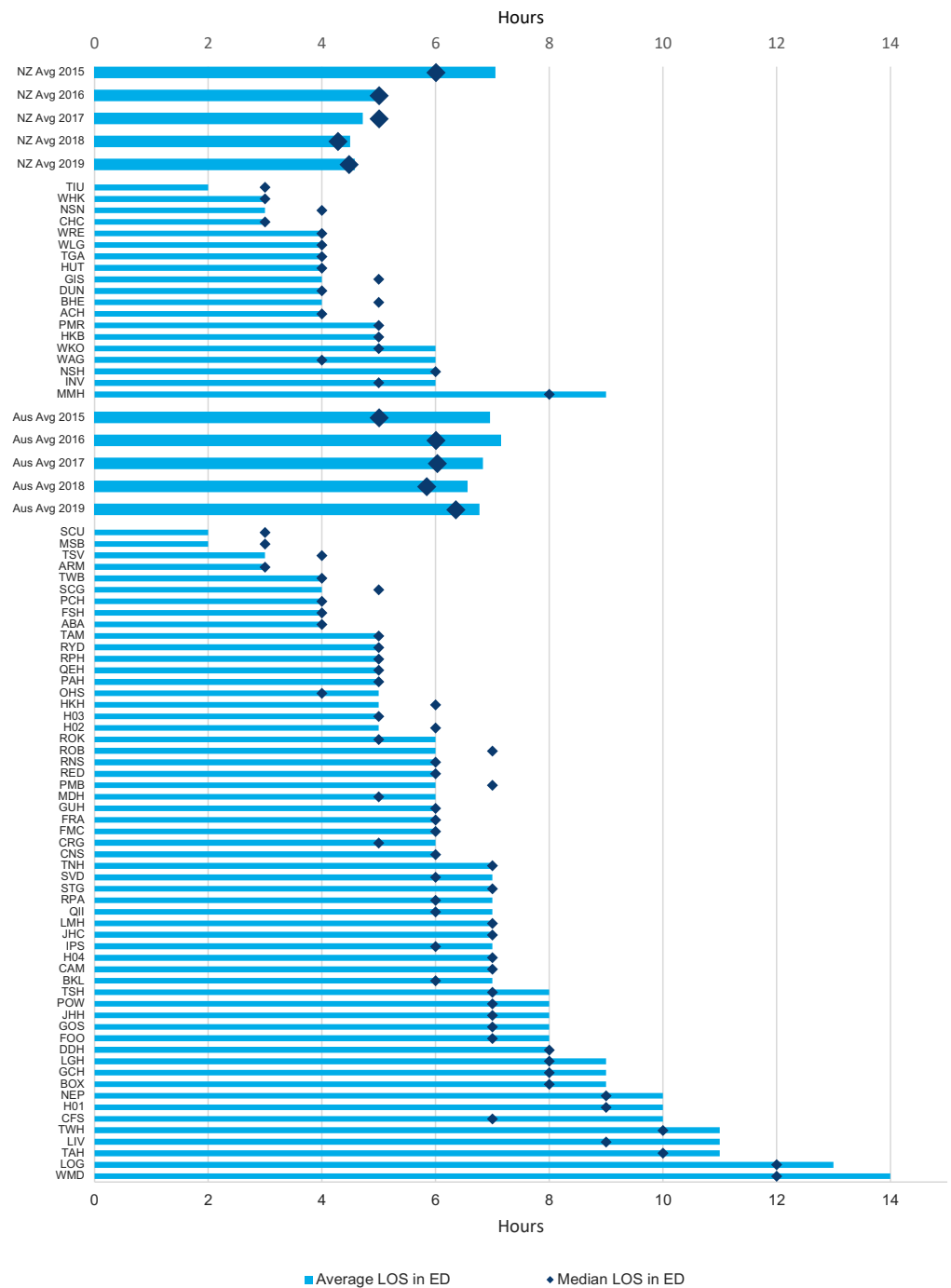




FIGURE 12 WARD TYPE

The type of ward used for hip fracture patients varies between sites due to factors such as the size and the role of the hospital. The proportion of patients admitted to a specific hip fracture or orthopaedic ward in 2019 was 94% and 91%, respectively, in New Zealand and Australia.

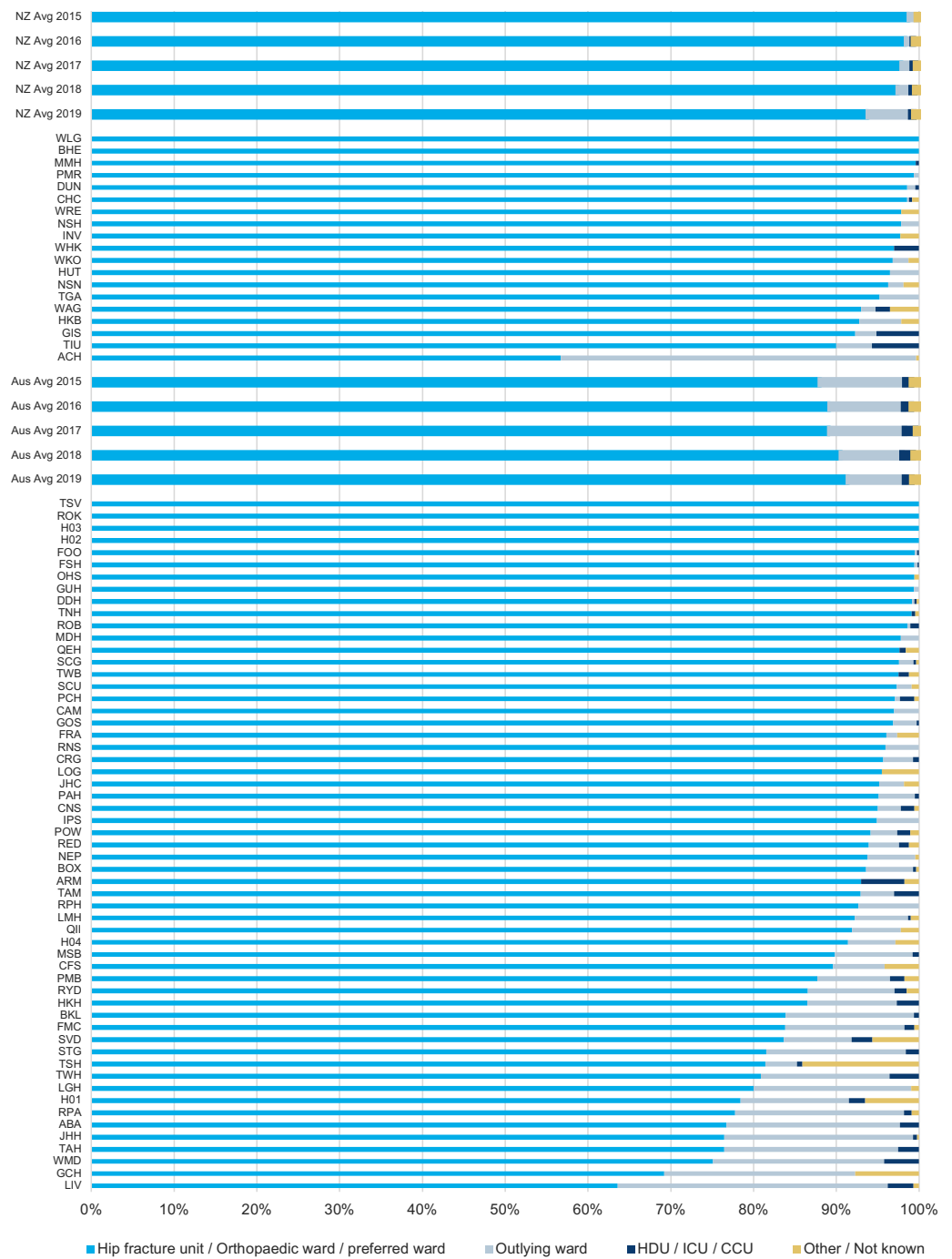
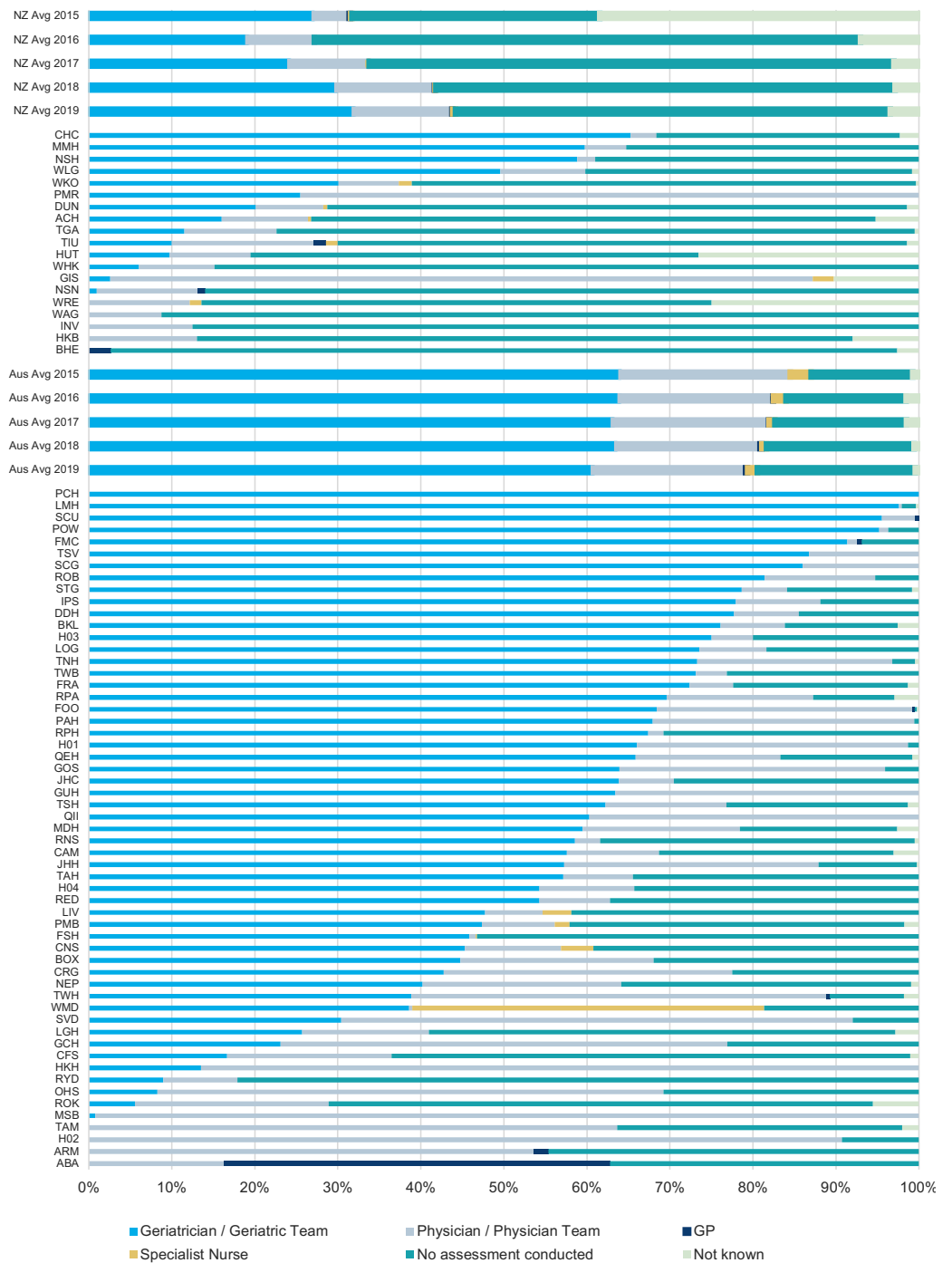
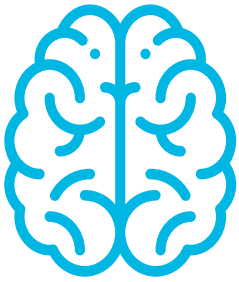




FIGURE 13 PREOPERATIVE MEDICAL ASSESSMENT

Thirty-two percent of patients in New Zealand are seen by a Geriatrician prior to surgery. In Australia, 61% of patients are seen by a Geriatrician prior to surgery. Some hospitals do not have access to geriatric medicine services and preoperative medical assessment may be undertaken by general physicians, general practitioners or specialist nurses. In New Zealand and Australia, 55% and 19% of patients, respectively, did not have a preoperative medical assessment. This is an area of difference between the two countries and may be an area for further investigation to better understand this difference.





Preoperatively, 24% of patients have cognitive impairment when assessed with a validated tool

FIGURE 14 PREOPERATIVE COGNITIVE ASSESSMENT

The Hip Fracture Care Clinical Care Standard recommends the use of a validated tool to assess and document cognition prior to surgical intervention. In New Zealand, 42% of patients had their cognition assessed using a validated tool prior to surgery, and 16% are recorded as having cognitive impairment. In Australia, 63% of patients had their cognition assessed and 26% are recorded as having cognitive impairment. Prior to last year's report, this information was presented simply as whether cognition was assessed. Since the first report in 2016, there have been year on year improvements in the preoperative assessment of cognition in patients. This information prior to surgery is important for the identification and prevention of avoidable complications such as delirium.

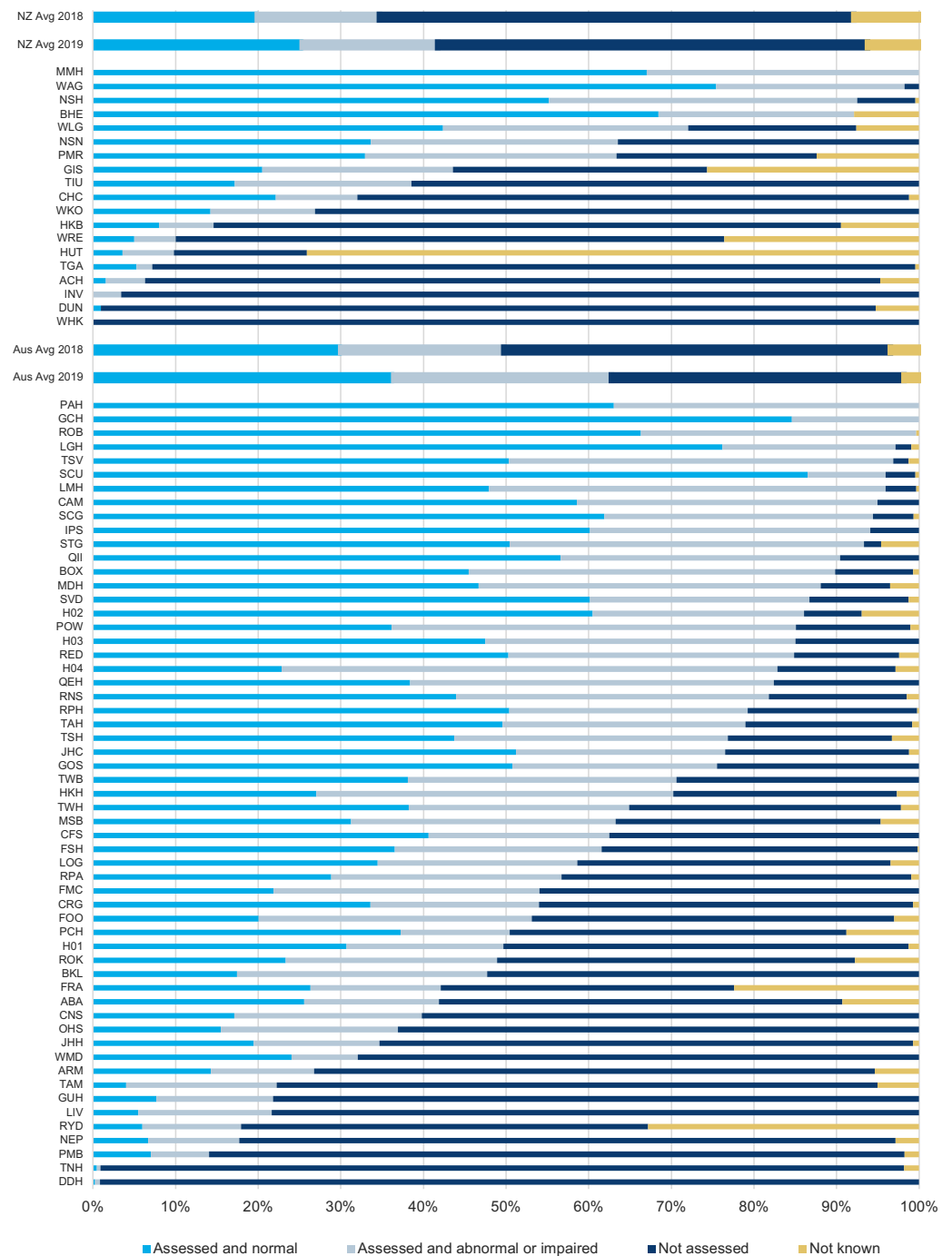




FIGURE 15 PAIN ASSESSMENT IN THE ED

Quality Statement 2 of the Hip Fracture Care Clinical Care Standard includes the documented assessment of pain within 30 minutes of presentation to the first hospital as a measurable indicator of quality hip fracture care. There is considerable variation seen between hospitals in the proportion of patients who have their pain documented within 30 minutes of arrival in the ED. On average, 58% and 61% of the New Zealand and Australian hip fracture patients, respectively, have a documented assessment of pain within 30 minutes of presentation.

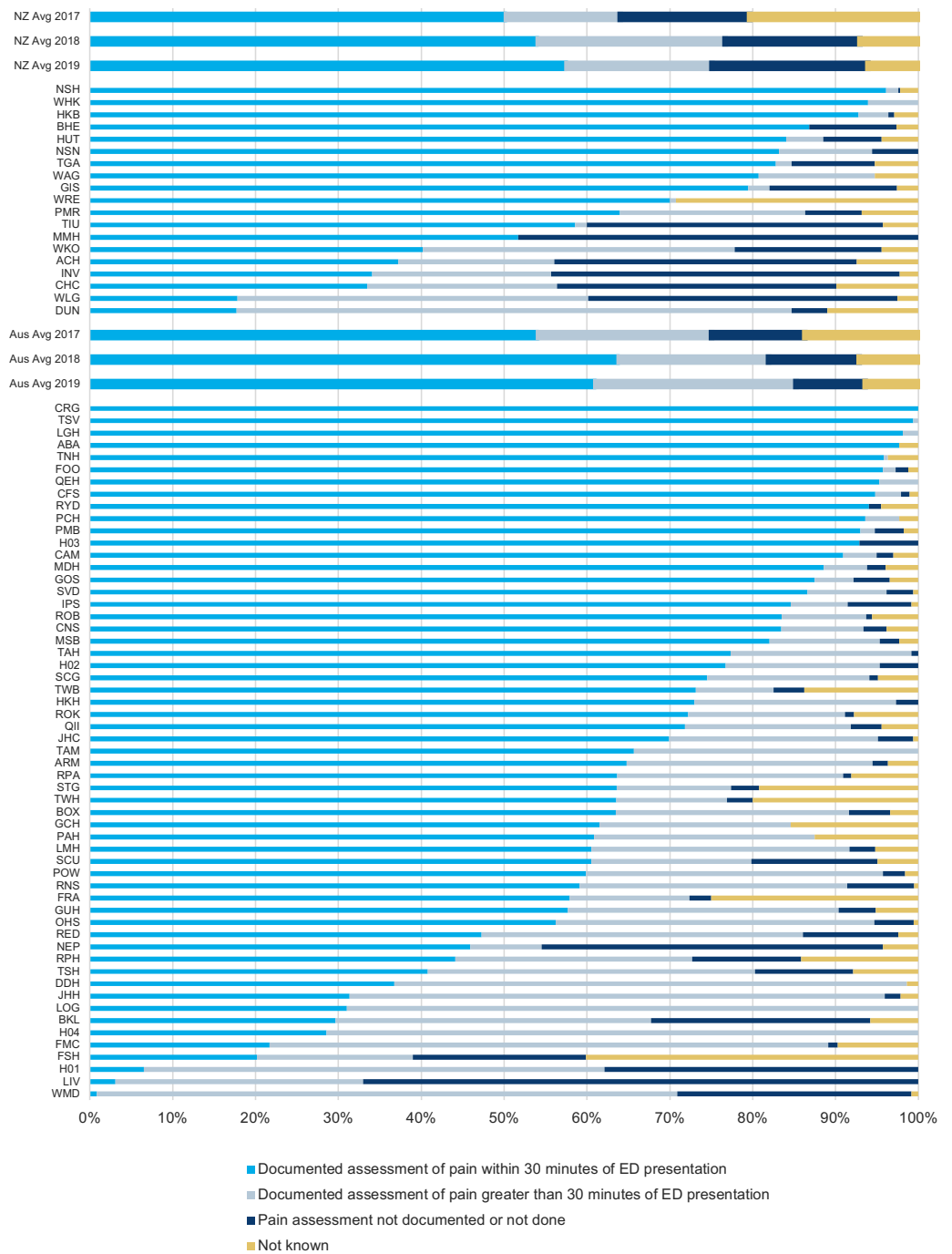
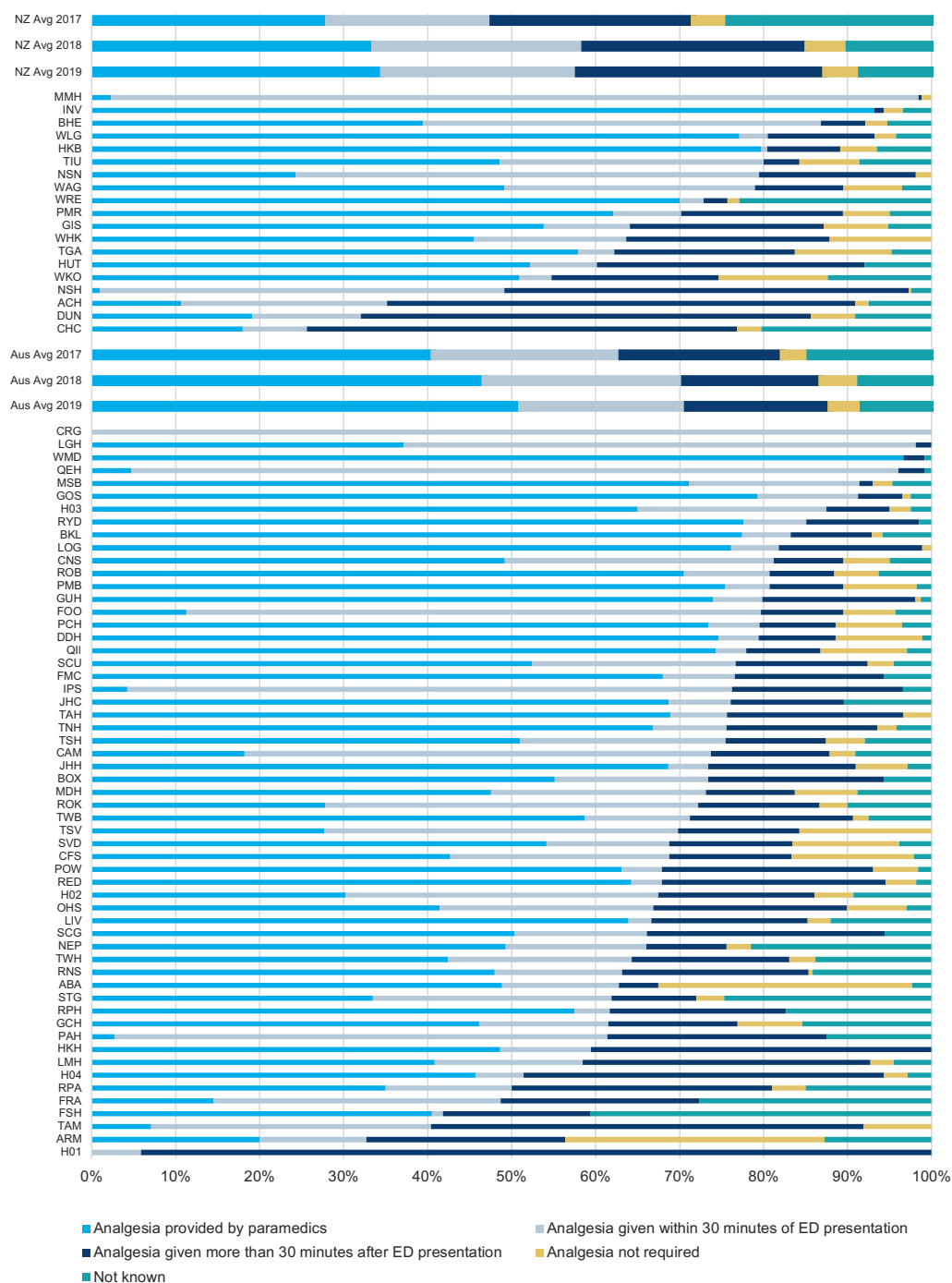




FIGURE 16 PAIN MANAGEMENT IN THE ED

Fifty eight percent and 71% of the New Zealand and Australian hip fracture patients, respectively, received analgesia either in transit (by paramedics) or within 30 minutes of arrival to the ED.

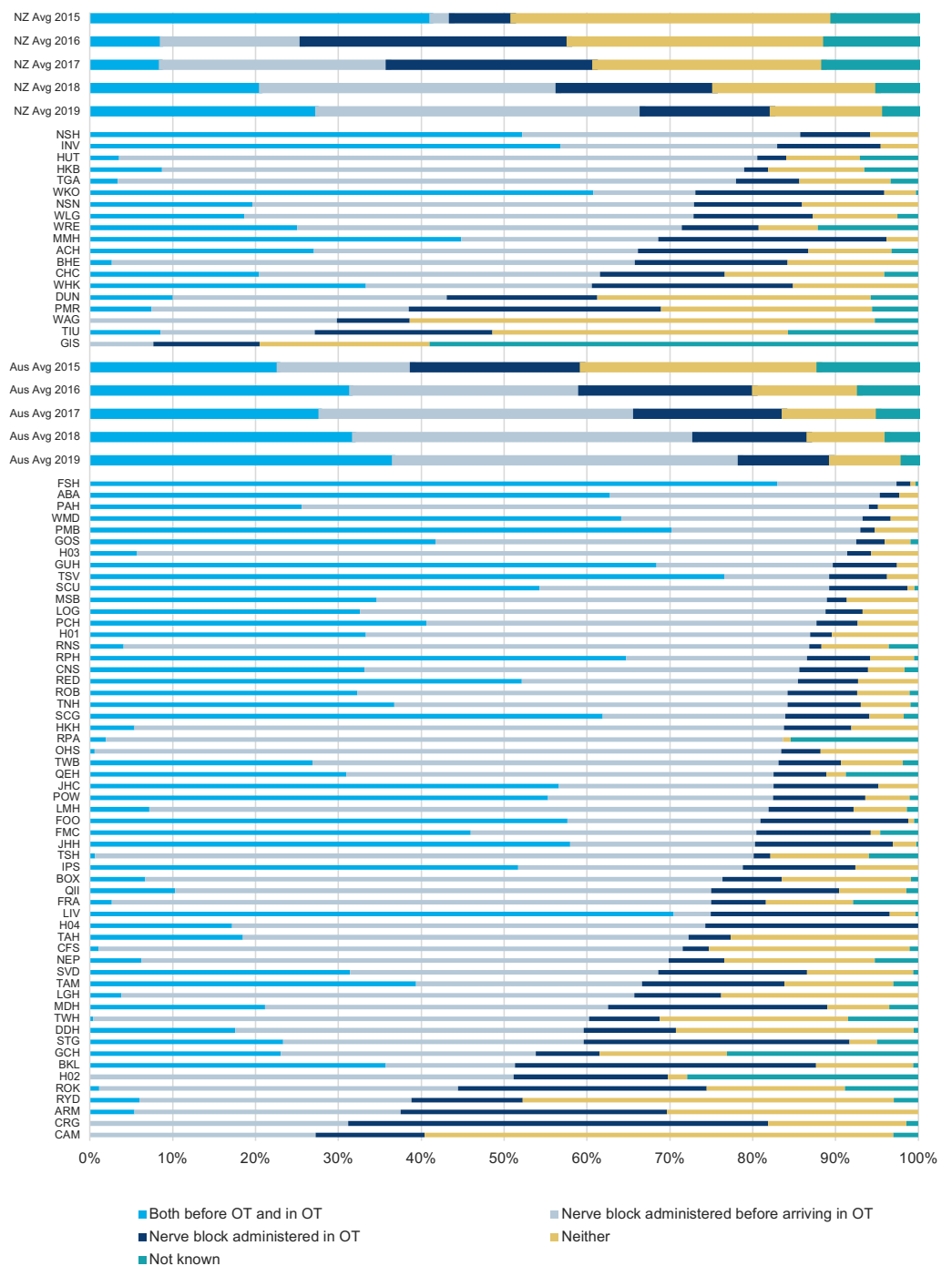




In 2019, 76% of patients had a nerve block prior to surgery

FIGURE 17 USE OF NERVE BLOCKS

Nerve blocks are used to manage pain in the acute care setting and particularly in the ED when a new hip fracture patient may be moved a number of times in order to investigate, assess and manage the fracture. The Registry does not record where the nerve block was administered prior to surgery, but for most hospitals this is likely to be in the ED. The increased use of nerve blocks seen in previous years has continued in 2019. In New Zealand, 67% of patients had a nerve block administered before surgical intervention and in Australia, 79% of patients received a nerve block before surgical intervention.





Informed by baseline data, the Nepean Leading Better Value Care Hip Fracture Committee led an improvement project to ensure hip fracture patients were reliably receiving regional analgesia prior to surgery, in-line with the well documented recommendation.

This project incorporated nurse education sessions, a falls injury balance workshop, and a junior medical officers teaching session. The following needs were identified: collaboration between the ED and Anaesthetics; standardisation of the nerve block technique; the importance of high quality data submitted to the ANZHFR to inform review of clinical care by the Hip Fracture Committee; ongoing education to include an annual workshop for Registrars; and education for JMOs and Nurses on analgesia options and pain assessment methods.

The documentation of pain assessment scores raises awareness and empowers staff to consider options for analgesia. Reviewing the data for pain management at our monthly LBVC Hip Fracture committee facilitated further consultation with all stakeholders to ensure a coordinated approach.

GERIATRICIAN / NSW

SECTION 3: SURGERY AND OPERATIVE CARE

FIGURE 18 TREATED WITH SURGERY

In New Zealand and Australia, it is anticipated that nearly all patients with a hip fracture will be treated surgically with a view to optimising function and/or alleviating pain. The data presented in Figure 18 shows some variation between hospitals, which may reflect differences in clinical management and in the populations treated. Non-operative treatment may be a reasonable option in some circumstances, such as for patients at high risk of perioperative mortality or those with stable undisplaced fractures who are able to mobilise. Decisions on surgical or non-surgical management should also consider the specific goals of care expressed by patients and their families.

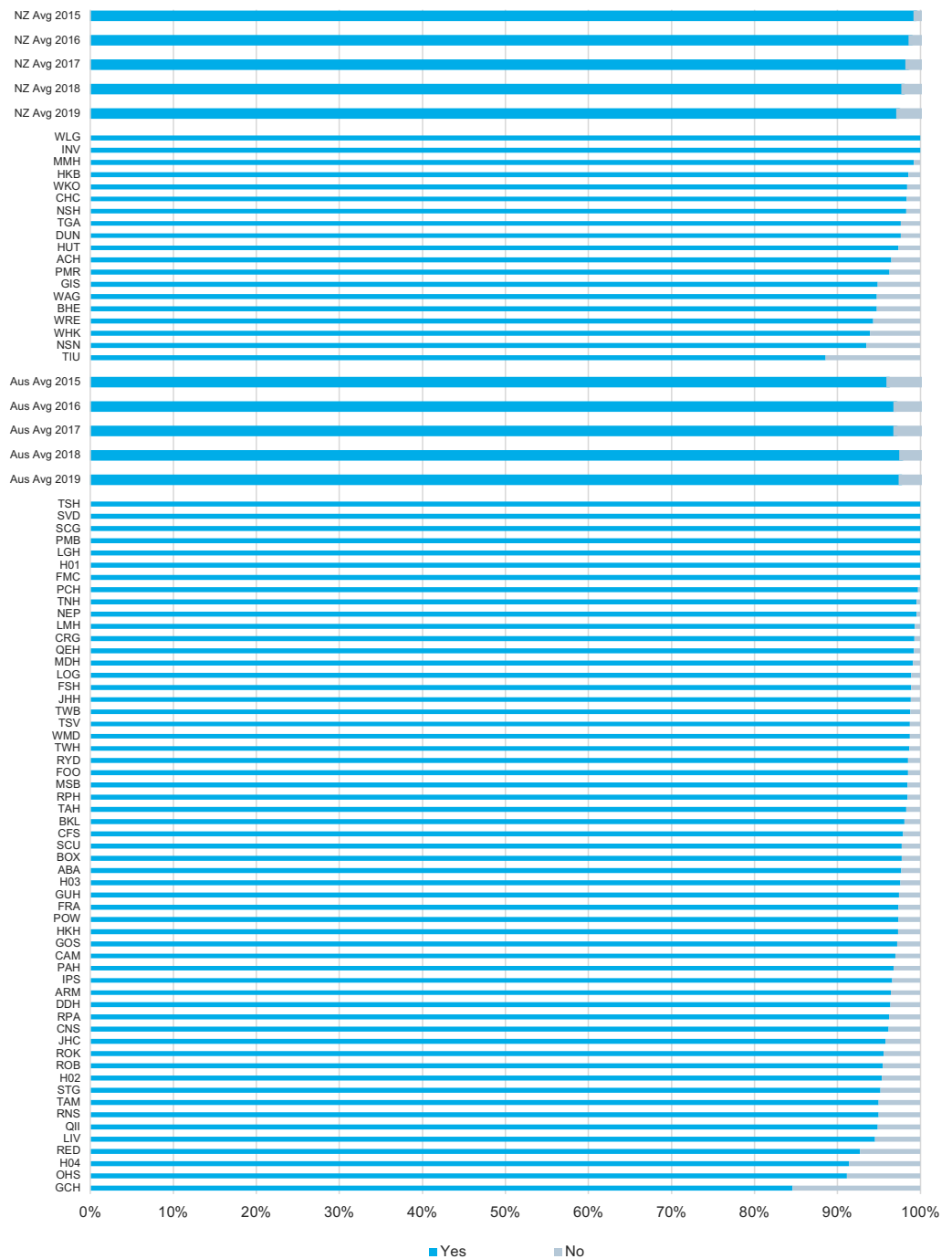




FIGURE 19 CONSULTANT SURGEON PRESENT AND SCRUBBED DURING SURGERY

The level of consultant supervision shows high institutional variation, which is likely to reflect differences in staff levels, staff seniority and theatre availability. There are also different levels of supervision between countries, and differences have remained consistent over the five years of reporting, but the reasons for this intercountry difference are unclear. The ANZHFR has further explored the patient, surgical and hospital characteristics associated with the presence of a consultant surgeon and these results are pending. The ANZ Guideline for Hip Fracture Care recommends performing hip fracture surgery on scheduled operating lists.

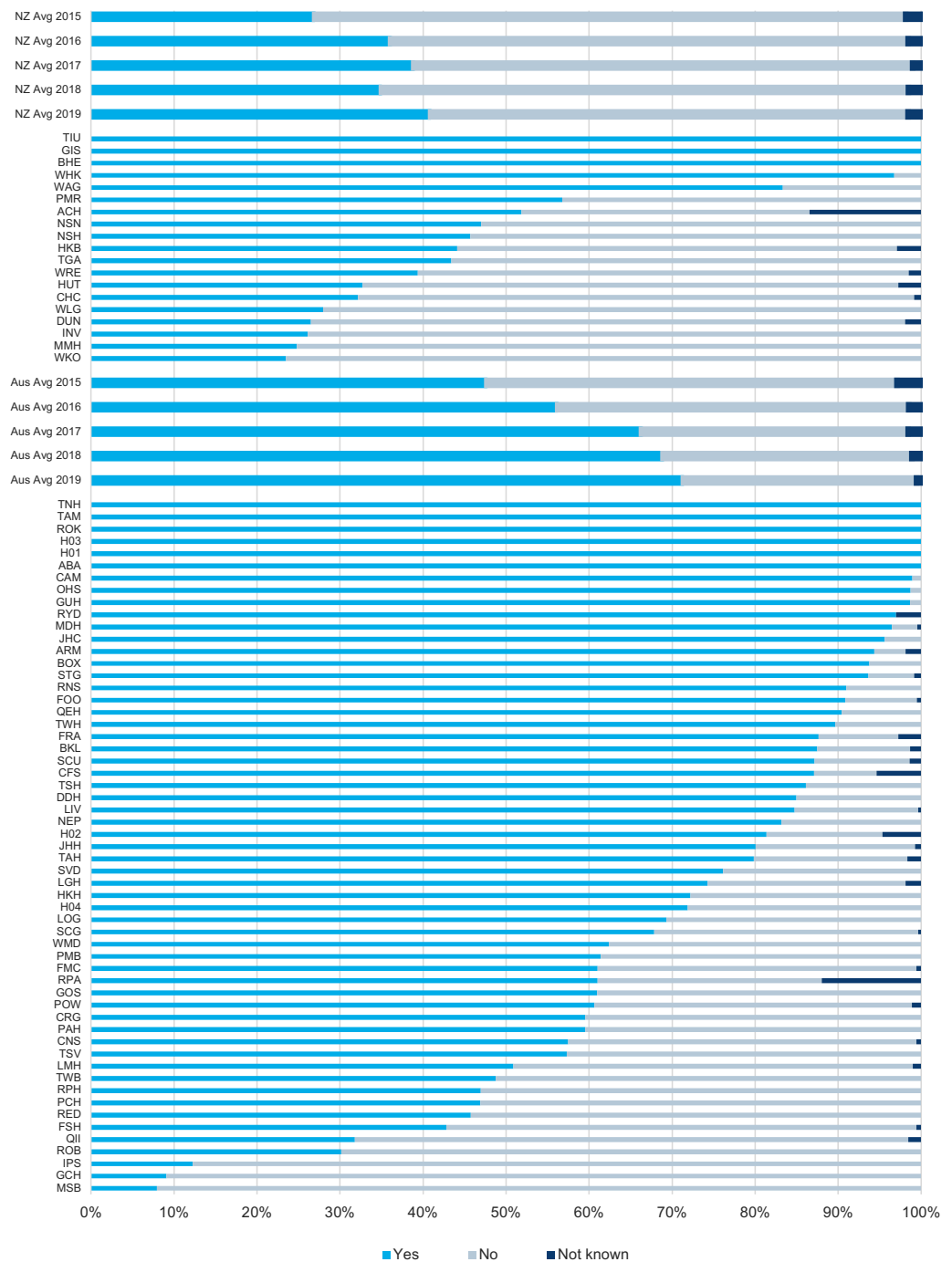




FIGURE 20 AVERAGE TIME TO SURGERY EXCLUDING TRANSFERRED PATIENTS

The Hip Fracture Care Clinical Care Standard states that surgery should be performed within 48 hours of presentation because early surgery has been demonstrated to reduce morbidity, hasten recovery and reduce length of stay.

Figure 20 excludes patients transferred to the operating hospital, reflecting the journey of a patient initially presenting to the treating hospital. Calculation of time to theatre is the difference between the date and time of presentation to the operating hospital and commencement of surgical anaesthesia. This year, the median time between initial presentation and surgery is 30 hours in Australia (average time to surgery is 36 hours). In New Zealand, median time to surgery is 26 hours in 2019 (average time to surgery is 35 hours). It is important to note that small numbers of patients and a few outliers can significantly alter the average time to surgery.

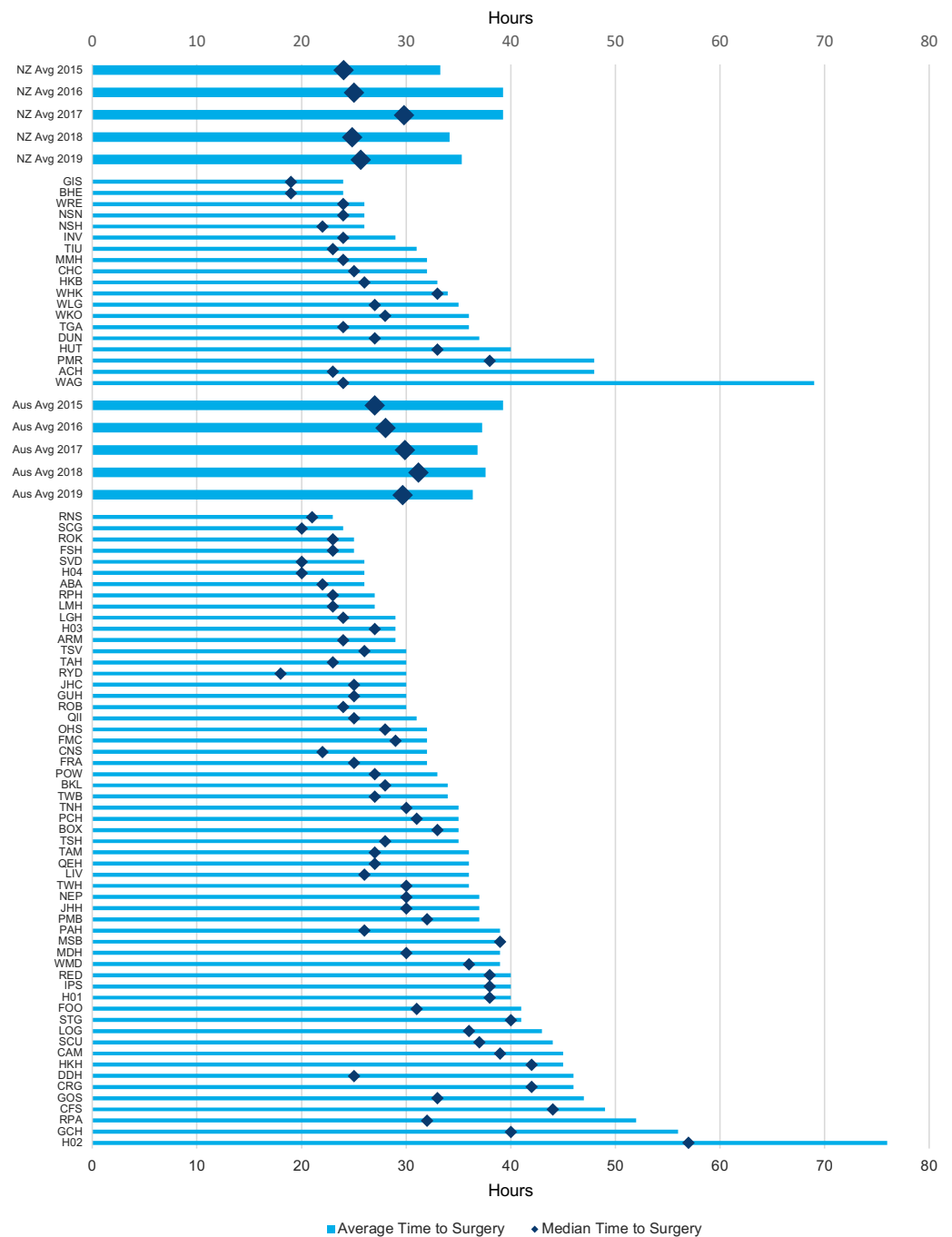




FIGURE 21 AVERAGE TIME TO SURGERY – TRANSFERRED PATIENTS ONLY

Reporting time to surgery for transferred patients alone takes into account the time spent at the transferring hospital and shows the treatment delays that result from health systems that do not have expedited pathways for the transfer of hip fracture patients, or that do not deliver patients directly to operating hospitals. This is only reported for 30 hospitals (24 Australian hospitals and six New Zealand hospitals) with ten records or more.

Figure 21 shows the time to surgery is longer for patients who are transferred into the operating hospital from other hospitals. The median time to surgery for transferred patients is 34 hours in New Zealand (compared with 26 hours for non-transferred patients) and 40 hours in Australia (compared with 30 hours for non-transferred patients). The average time to surgery for transferred patients is 40 hours in New Zealand and 47 hours in Australia. This compares with average time to surgery for non-transferred patients of 35 and 36 hours, respectively (see Figure 20).

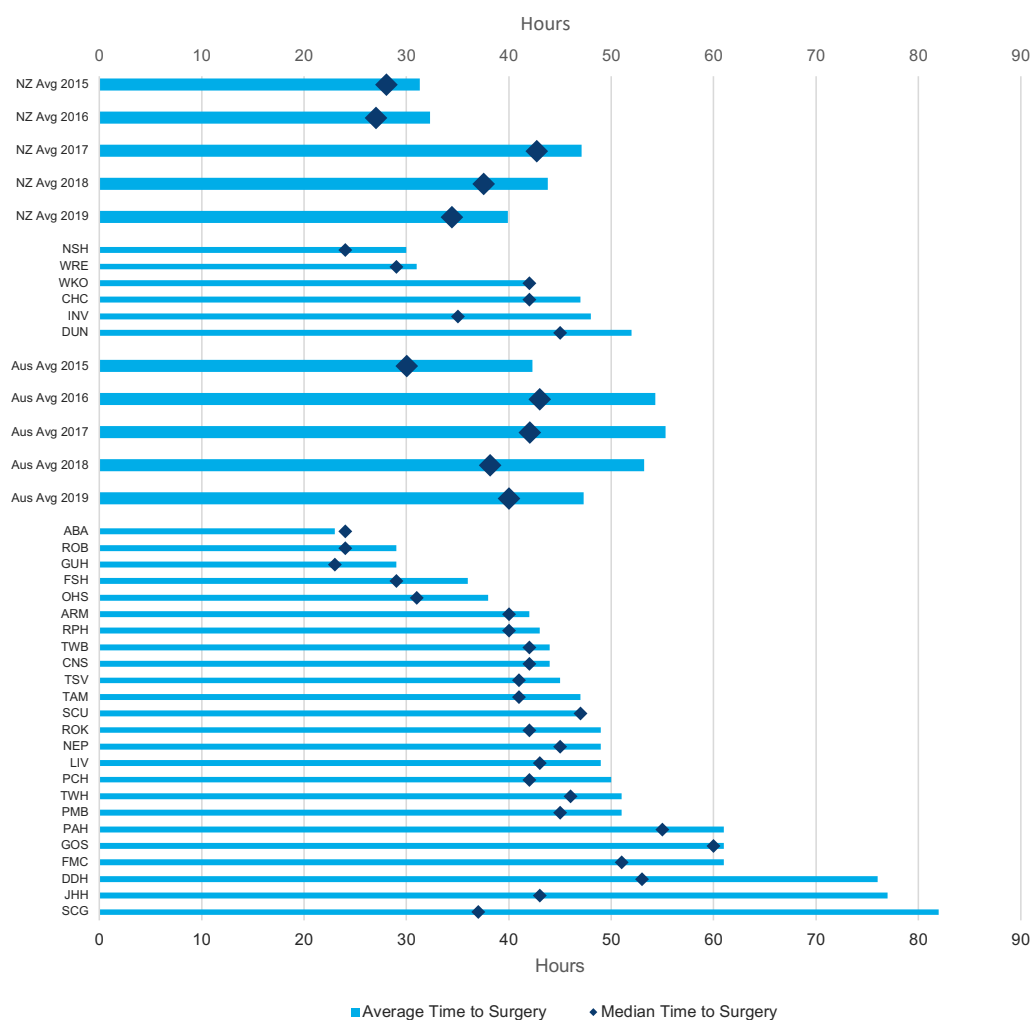


FIGURE 22
SURGERY WITHIN 48 HOURS

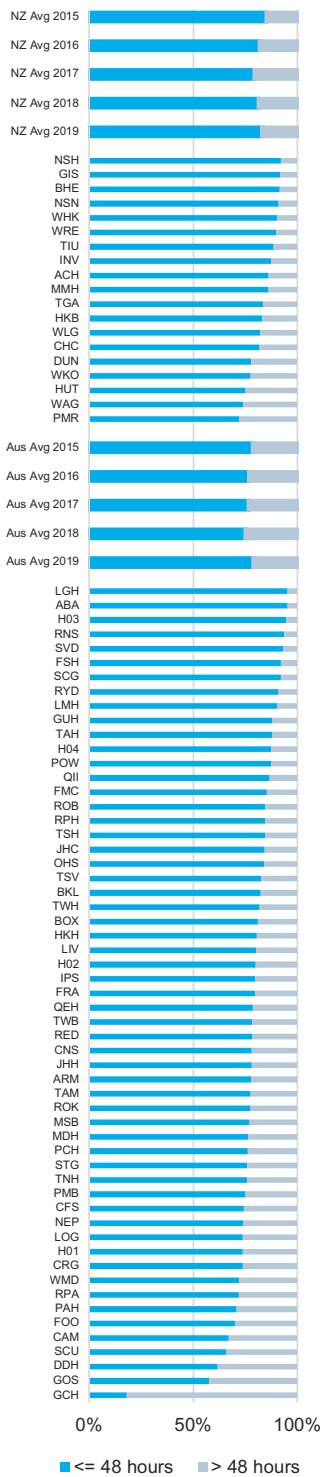
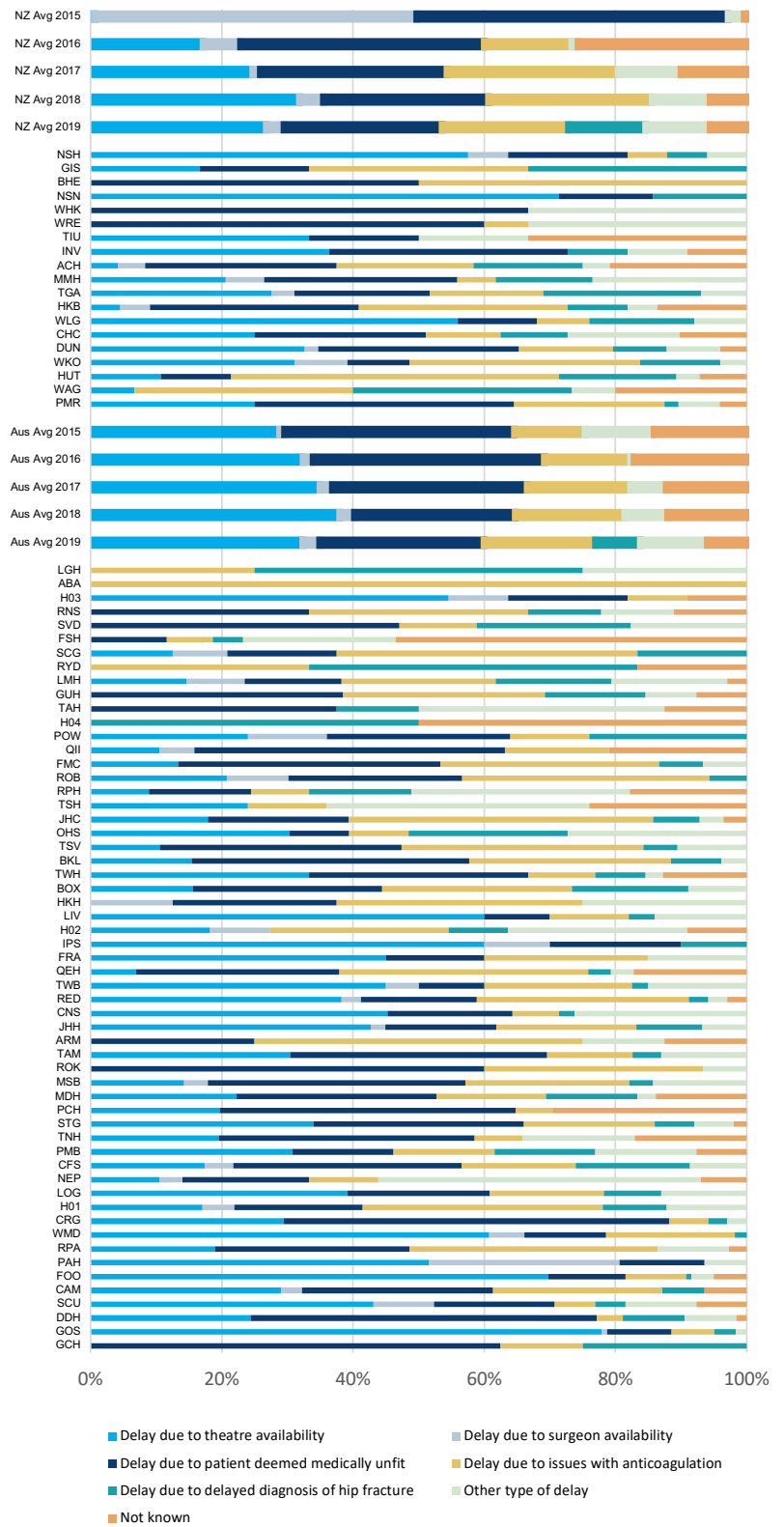


FIGURE 23
REASON FOR DELAY LONGER THAN 48 HRS



Figures 22 and 23 include both transferred patients and patients admitted directly to the operating hospitals. Figure 22 shows that of those patients who were treated operatively, 84% and 80% of patients in New Zealand and Australia, respectively, were operated within 48 hours of presentation to the first hospital. Figure 23 provides useful information for hospitals and health services wishing to improve the proportion of patients treated within 48 hours as it highlights causes for surgical delay. Access to theatres is still the primary reason for delay however the proportion of delays attributed to theatre access has decreased in this report.



For as long as I have been practising in orthogeriatric medicine I have understood two things. Firstly, it takes a whole hospital to look after older people with a broken hip. Secondly to change the way we have historically done things requires data. The Wollongong Hospital Steering Committee provided leadership to implement the Minimum Standards for the Management of Hip Fractures. The Committee worked hard to create a forum for the Director of Clinical Operations and the executive teams of the clinical divisions to work together to ensure the delivery of improvements for system and patient outcomes.

At our hospital, even before the ANZHFR, we were actively auditing and acutely aware we were not routinely meeting our minimum standards for hip fracture care. Early participation in the Registry and the development of an enthusiastic team and working party has literally revolutionised what we deliver.

We focussed on streamlining perioperative assessment and day 1 mobilisation. We developed a refracture prevention clinic. We introduced many strategies to improve interhospital transfer and reduce our delays to theatre. Over two annual cycles of patient data collection we could see improved outcomes in many categories but not in theatre times.

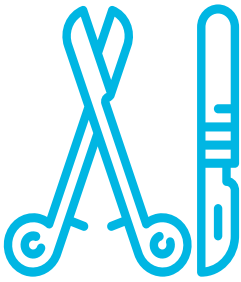
We took our data to our executive sponsor and our chief executive and the response was unequivocal. More trauma theatre time was required to meet the needs of our hip fracture group but also all the rest of our orthopaedic trauma patients. Three additional lists were funded, then staffed, and by April 2019 we were up and running. We now have 10 lists per week instead of seven.

In addition, we recognised 25% of our patients annually were transferring from another hospital in the LHD so it was agreed to establish a second full time orthopaedic trauma service in that locale accompanied by a developing orthogeriatric team. Our times to theatre have improved significantly. We are very proud of all our hard work.

The continual audit cycle will allow us to strive for further improvement. There is still more to do to increase our compliance with all components of the Hip Fracture Care Clinical Care Standard. Our established interdepartmental collegiate working will allow us to deliver change. Thanks to funding from the NSW ACI grant round, and the Illawarra Health and Medical Research Institute, we are working on a new early multidisciplinary notification and response care pathway (eHIP), outlined in this video <https://youtu.be/bcFJlznq34A>

It takes a whole of hospital approach to fix a broken hip.

GERIATRICIAN / NSW



70% of patients are delayed to surgery for three modifiable factors – theatre access, medical stability and anticoagulation.

FIGURE 24 REASON FOR DELAY > 48 HRS FOR NEW ZEALAND

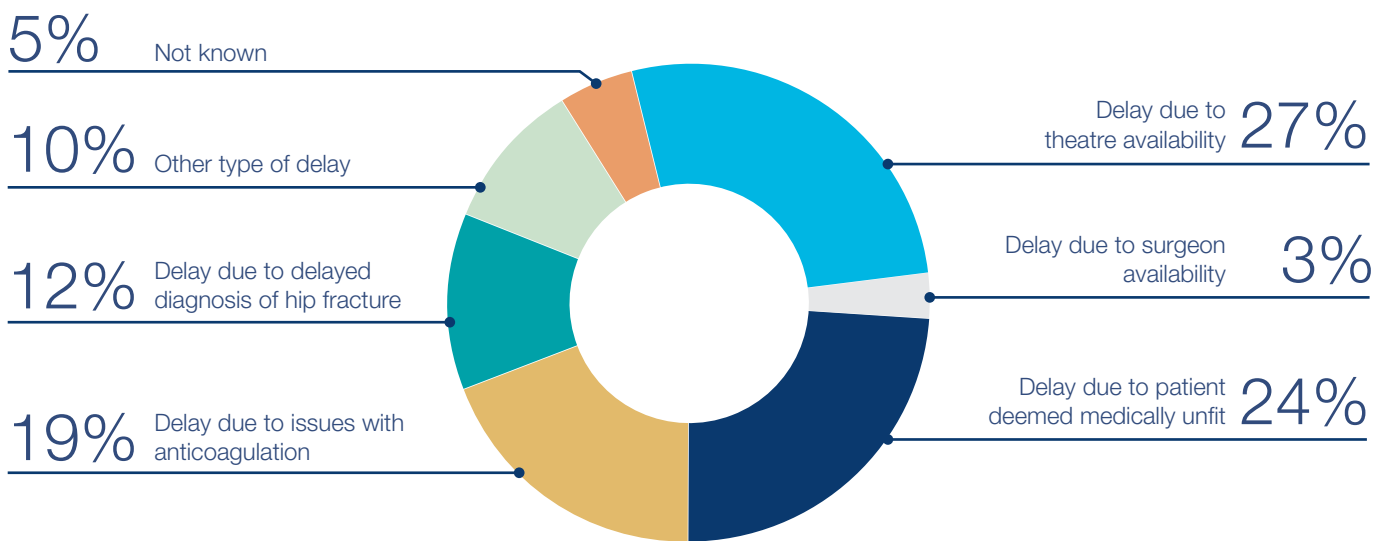
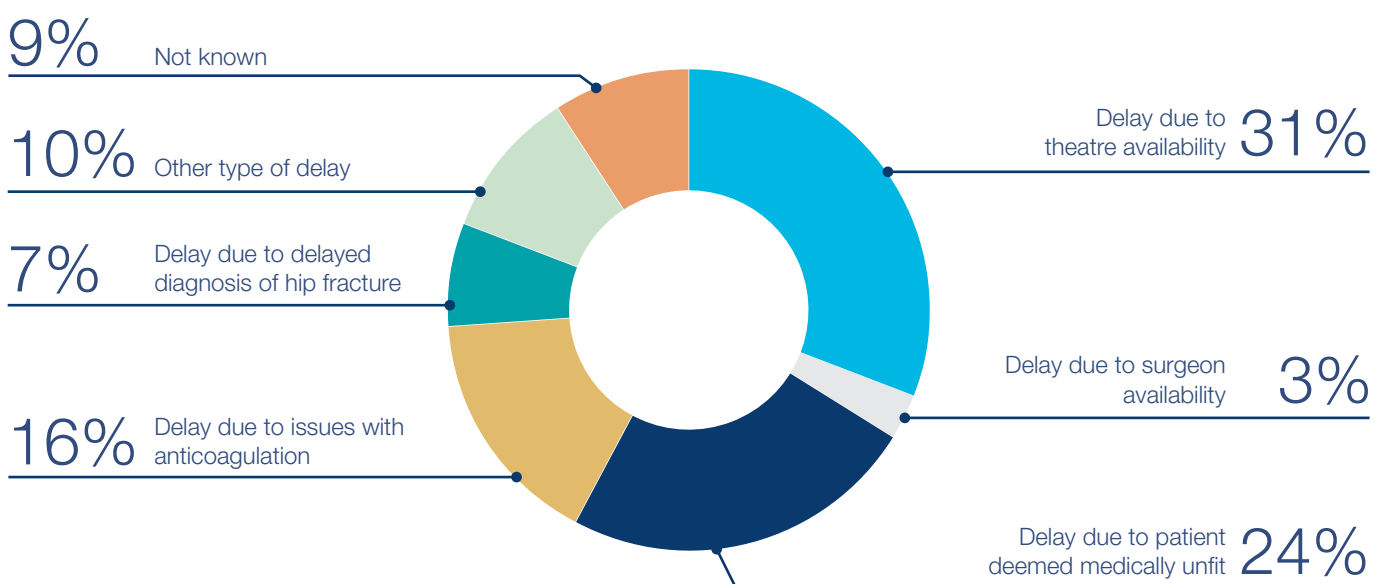


FIGURE 25 REASON FOR DELAY > 48 HRS FOR AUSTRALIA

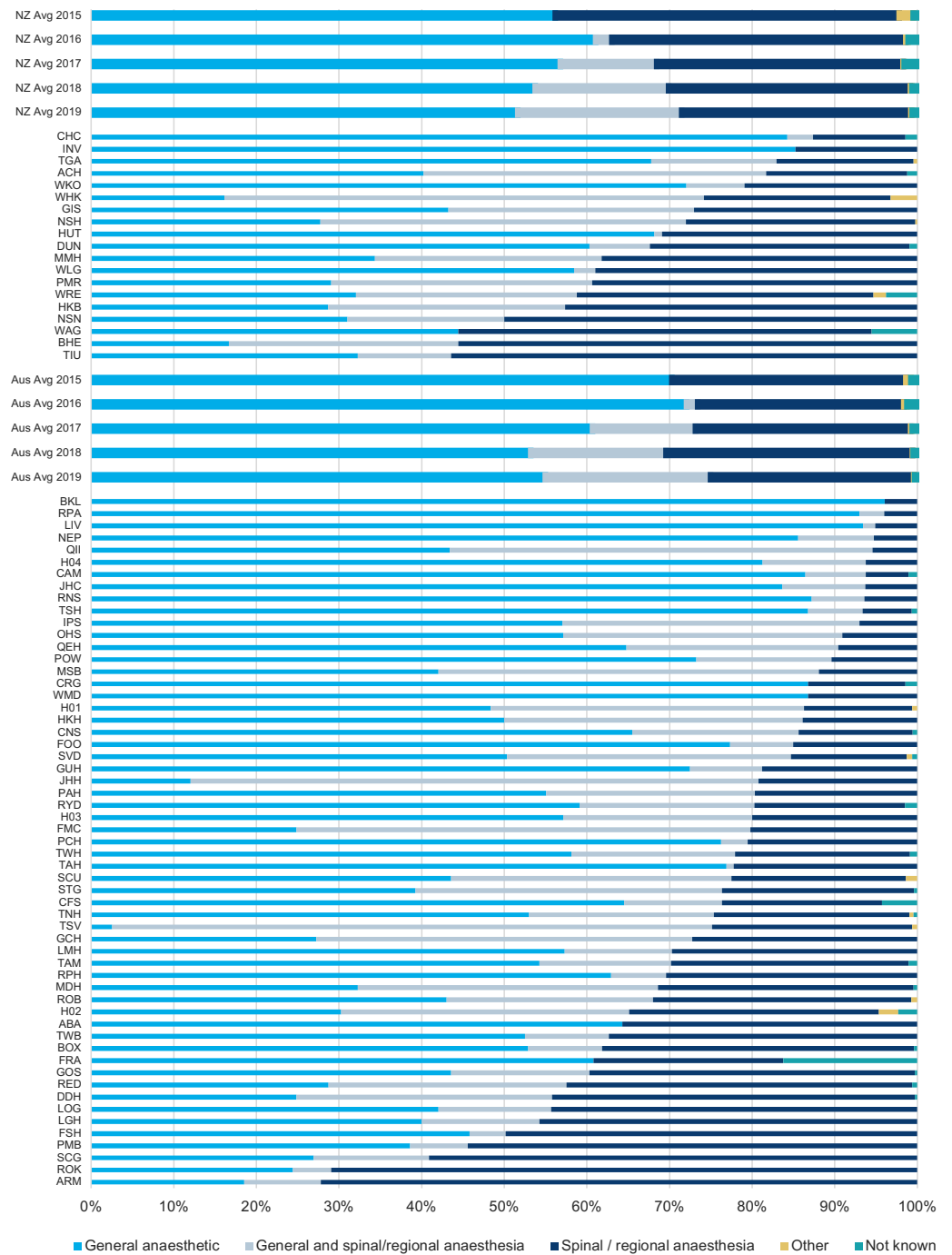


Figures 24 and 25 provide a comparison between countries for the reasons for surgical delay. In New Zealand and Australia, 51% and 55% of patients respectively are delayed to surgery due to one of two modifiable reasons: the availability of operating theatres or being deemed medically unfit.



FIGURE 26 TYPE OF ANAESTHESIA

The majority of people undergoing operative intervention for a hip fracture have a general anaesthetic with or without regional anaesthesia: 71% in New Zealand and 75% Australia. Marked variation is noted between hospitals and is likely to reflect the personal preference of the anaesthetist or the department.



Figures 27, 28, 29, 30, 31, 32, and 33 Fracture type and operations by type of fracture

Hospitals with fewer than ten (10) cases for any type of surgery have not been reported in Figures 27 to 33. Sites with wide variation from expected averages may reflect low numbers of cases. Alternatively, variation may highlight issues with the classification or coding of the type of fracture.

FIGURE 27 FRACTURE TYPE

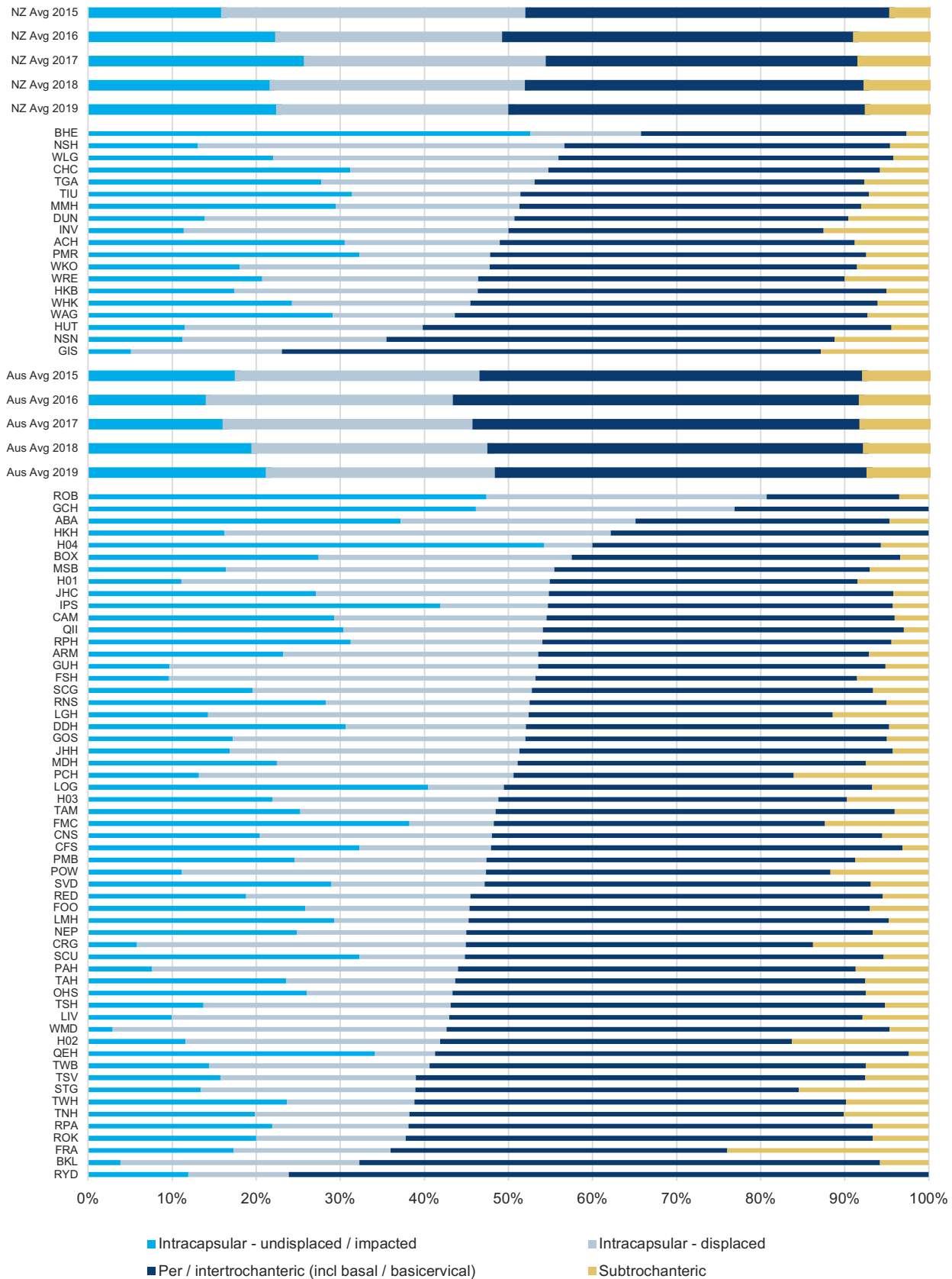


FIGURE 28 PROCEDURE TYPE FOR INTRACAPSULAR UNDISPLACED/IMPACTED FEMORAL NECK FRACTURES

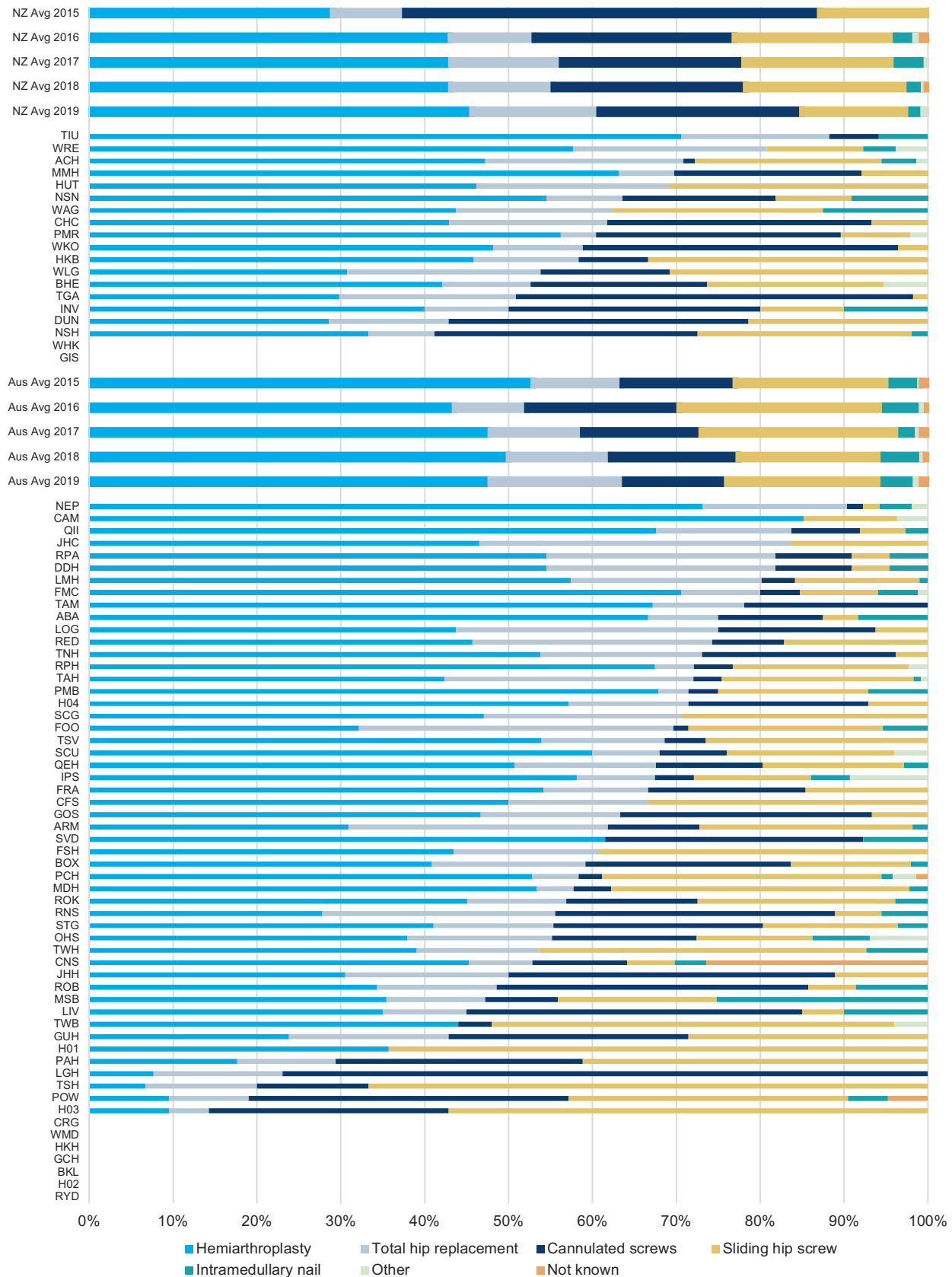


FIGURE 29 PROCEDURE TYPE FOR INTRACAPSULAR DISPLACED FEMORAL NECK FRACTURES

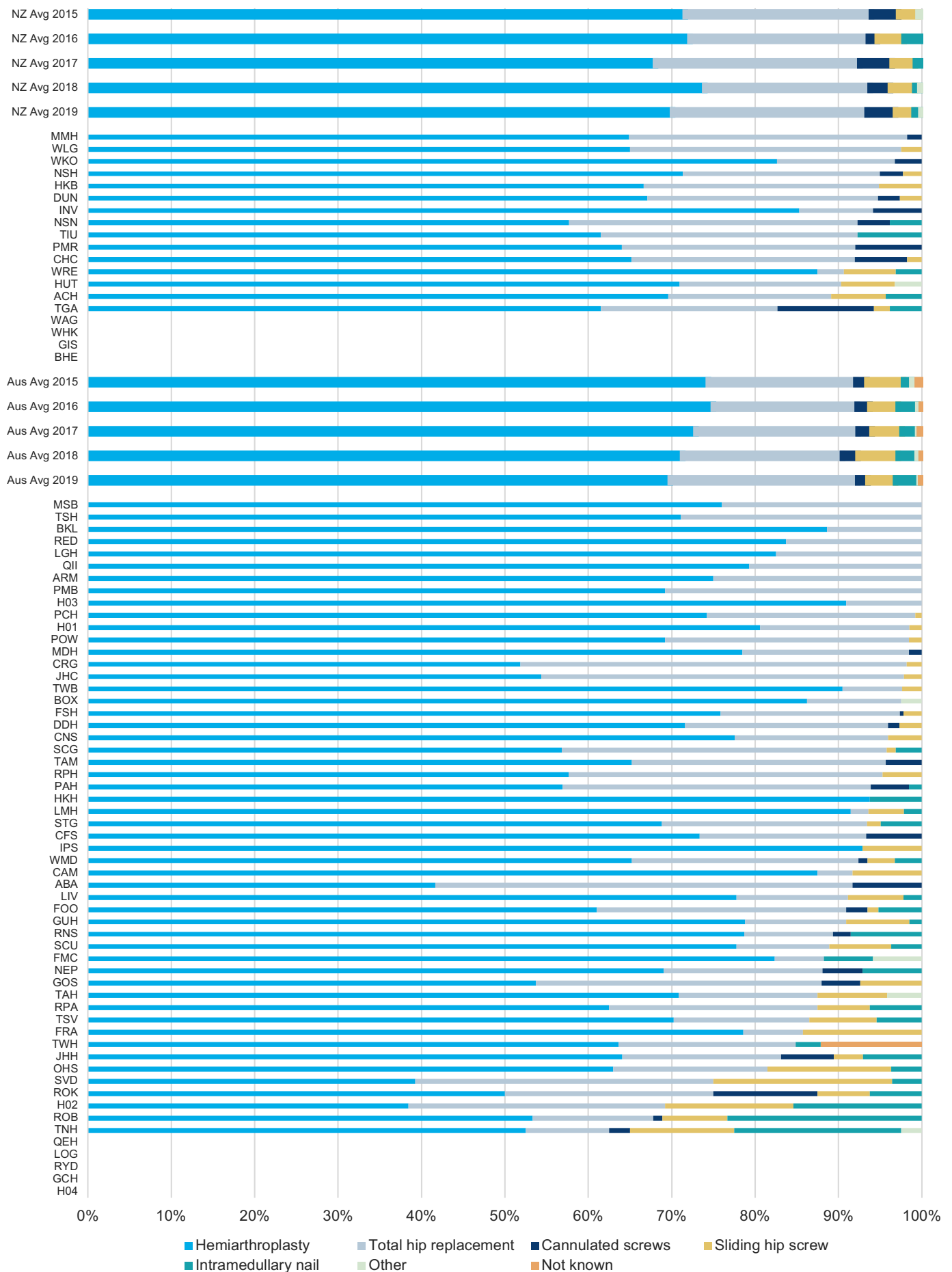


FIGURE 30 PROCEDURE TYPE FOR INTERTROCHANTERIC FRACTURE (INCL BASAL / BASICERVICAL)

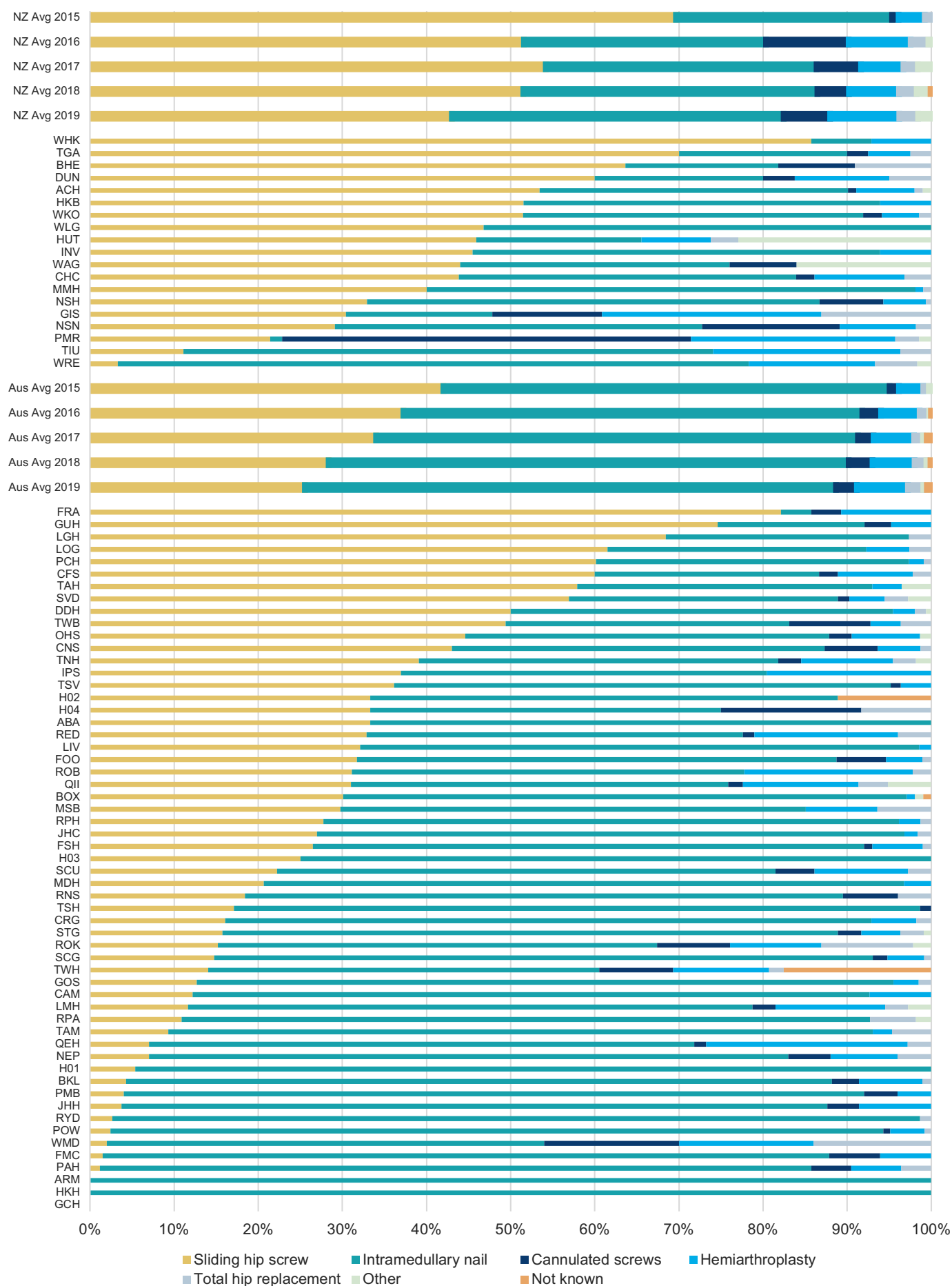


FIGURE 31 PROCEDURE TYPE FOR SUBTROCHANTERIC FRACTURES

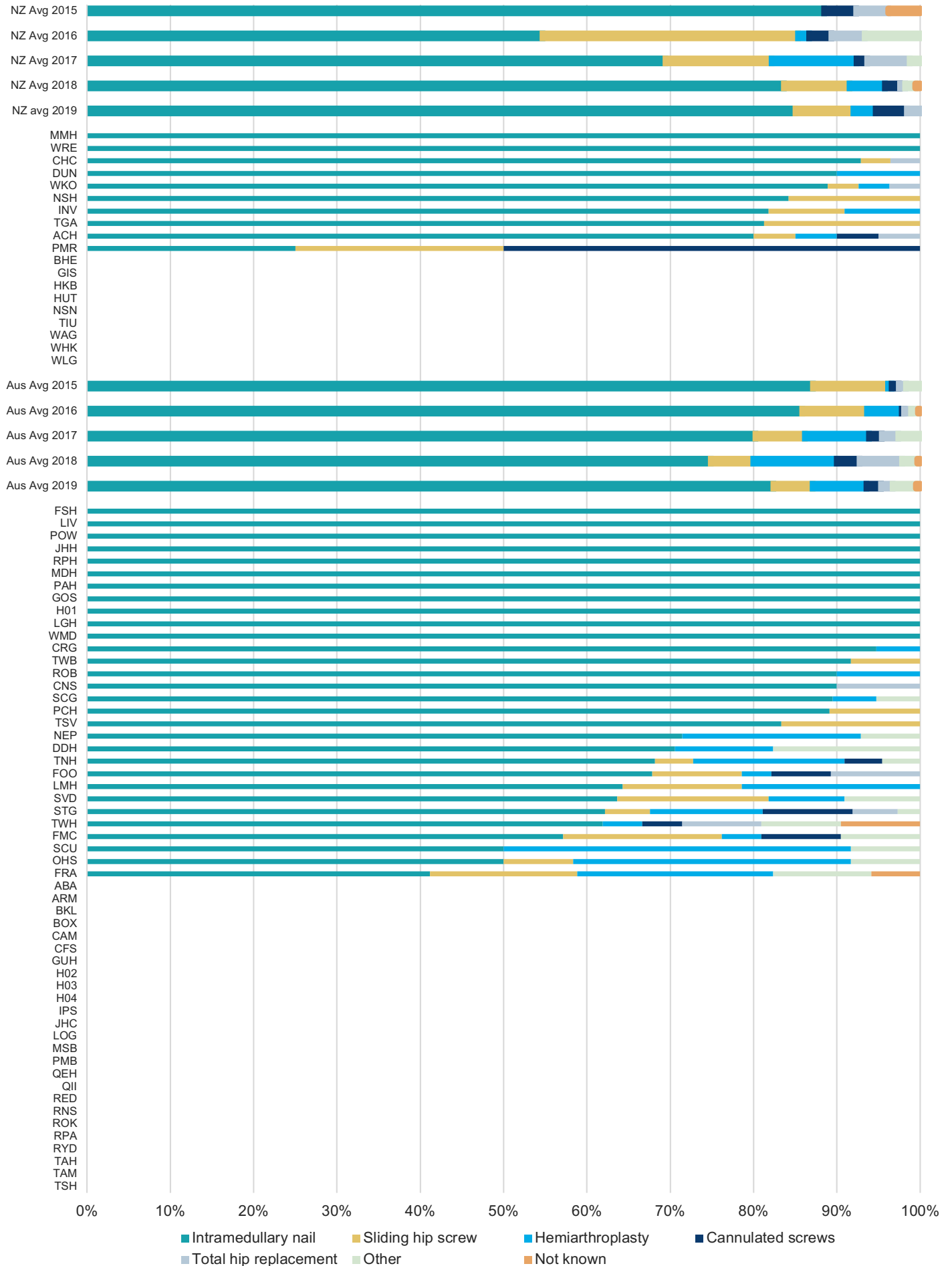


FIGURE 32 HEMIARTHROPLASTY: USE OF CEMENT

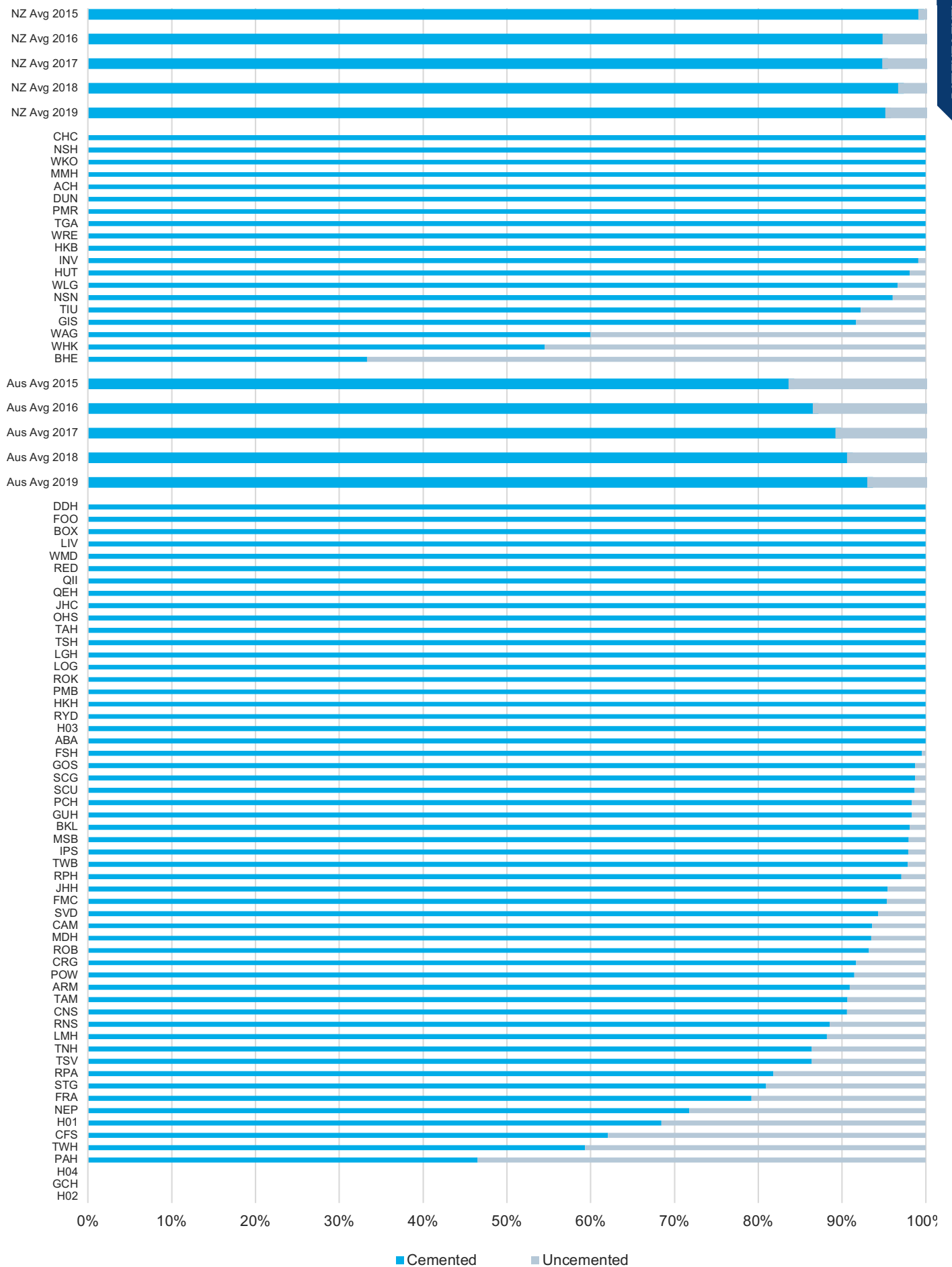
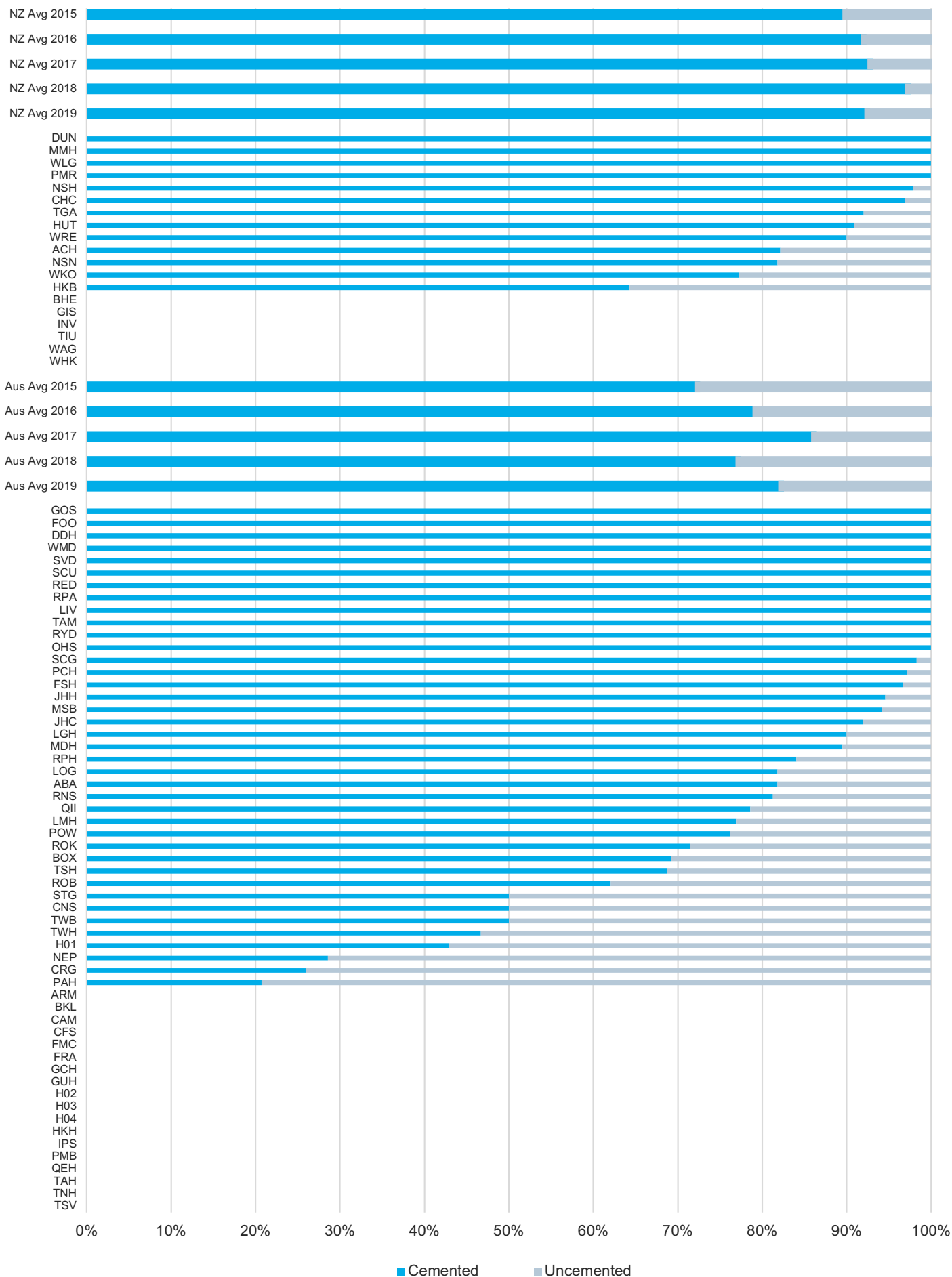


FIGURE 33 TOTAL HIP REPLACEMENT: CEMENTED STEM





Time to surgery for fractured neck of femur (NoF) patients is one of the key performance indicators for the Fractured NoF working group at Toowoomba Hospital. This group includes stakeholders from Orthopaedics, Anaesthetics, Operating Theatres, Allied Health, Geriatrics and Executive Management. Having surgery within 48 hours of first presentation to a hospital has significantly improved from 58% in 2018 to 80% in 2019.

This improvement has been due to several initiatives implemented within the health service. These include a NoF checklist for rural facilities to ensure patients are transferred promptly and early notification to the orthogeriatric service on presentation to the hospital during working hours, to allow the team to review patients (often in the emergency department) and optimize them for surgery as soon as possible.

Anaesthetics have also developed anticoagulation guidelines to ensure patients are able to get to surgery as soon as appropriate and there has been improved access to the operating theatre by the addition of a new theatre and addition of daily trauma lists, which enables hip fracture surgery to be performed outside of the emergency theatre lists. A daily huddle for operating theatres with all surgical disciplines present allows orthopaedics to advocate for prioritisation of patients with hip fractures. A trial of scheduling hip fracture surgery at the beginning of the orthopaedic consultant's operating list proved unsuccessful due to not being able to consistently fill the allocated space.

Having a multidisciplinary team working collaboratively to improve outcomes for this vulnerable cohort of patients is vital to the continuing efforts to improve care. The ANZHFR hip fracture data allows our hospital to continually monitor our performance.

NURSE / QLD

SECTION 4: POSTOPERATIVE CARE

FIGURE 34 WEIGHT BEARING STATUS AFTER SURGERY

Allowing immediate unrestricted weight bearing after surgery permits early rehabilitation and restoration of function. Previously, many patients were not permitted to fully weight bear after surgery for fear of disturbing the surgical fixation. There is little evidence to suggest full weight-bearing adversely impacts surgical fixation, and there is evidence that patients recovering from hip fracture surgery are unable to adhere to weight-bearing restrictions when mobilising. Figure 34 shows that 94% and 95% of patients in New Zealand and Australia, respectively, are allowed full weight bearing after surgery.

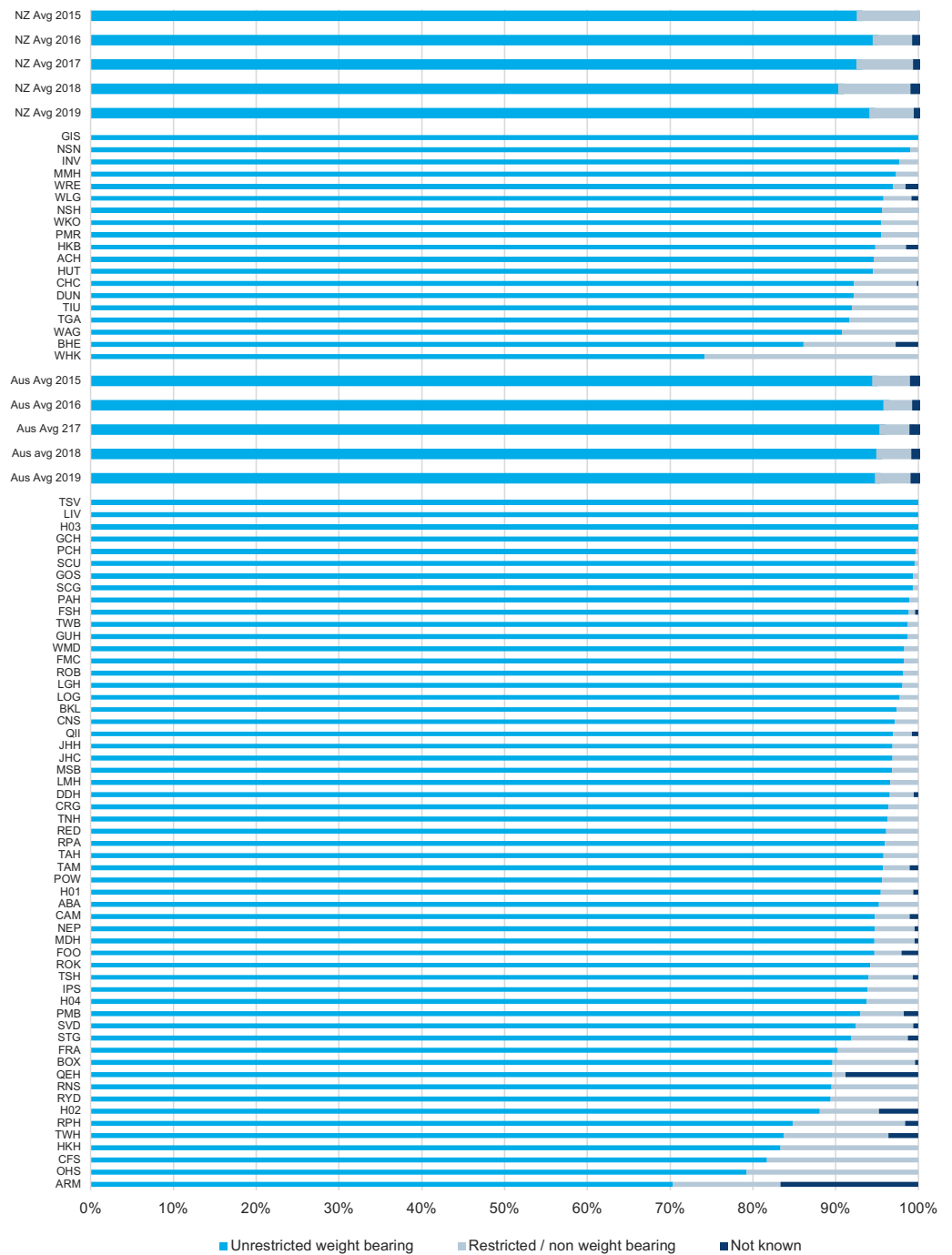
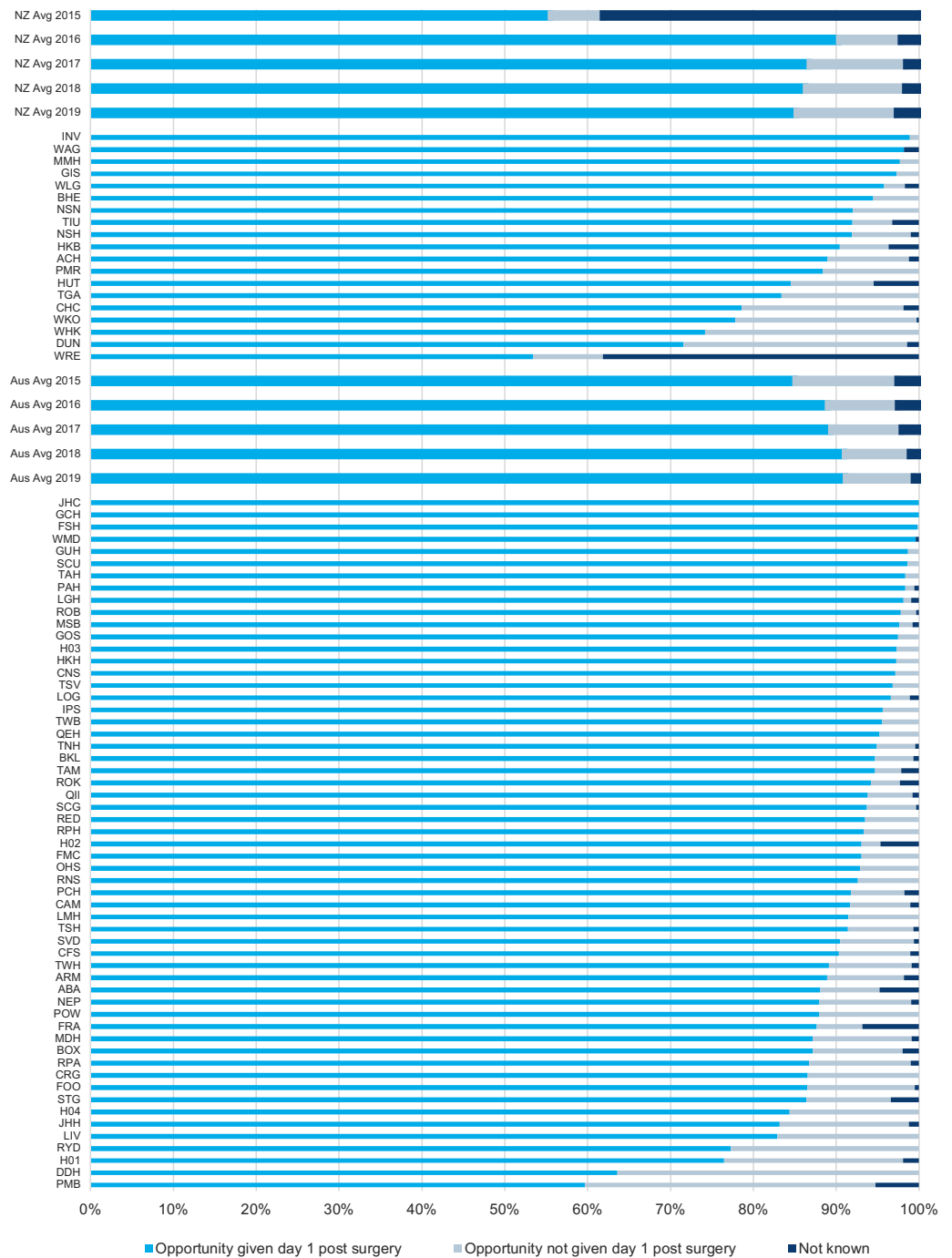


FIGURE 35 OPPORTUNITY FOR FIRST DAY MOBILISATION

Figure 35 provides insight into service configurations that encourage early mobilisation by providing patients with the opportunity to stand up and sit out of bed, or walk, on the first day after surgery. Low mobility during hospitalisation is associated with poorer functional outcomes. Figure 35 does not report on whether a patient did mobilise; only whether the opportunity was provided, and some patients may not be suitable for mobilisation. In New Zealand and Australia, 85% and 91% of patients, respectively, are given the opportunity to mobilise the day after surgery. In 2020, a new variable was included to record if the patient walked and it will be reported for the first time in 2021.





This year for the first time, Ryde and Hornsby Ku-ring-gai Hospitals (HKH), together with the Level 1 trauma centre at Royal North Shore Hospital, entered data into the ANZHFR. They form part of the Northern Sydney Local Health District (NSLHD) in New South Wales, and between the three facilities they see over 350 patients a year with hip fracture.

The teams at each hospital have used their participation in the ANZHFR to work with the NSW Agency for Clinical Innovation (NSW ACI) to bring some innovative hip fracture ideas to life. The introduction of early alert systems in Ryde Emergency, the development of a hip fracture pathway, and discussions with ICT about automating 120-day follow-ups were priorities for the team. Anna Butcher, Service Development Manager, Musculoskeletal, Integumentary and Trauma and Neurosciences Networks NSLHD: 'I want to see continued exemplar patient care for everyone, including vulnerable elderly hip fracture patients and that will call for out-of-the-box multidisciplinary team thinking'.

Mary, who recently had a fall at her Hornsby home that resulted in her breaking her right hip, spoke about the care she received. "I was really worried that I might have to wait. It was reassuring for me and my family, that I received really prompt care and had my hip fixed the very next morning. My pain was well controlled and I was even up walking the next day after surgery." Mary's daughter, Sharon had praise for the staff: 'Mum was in so much pain in the beginning, and the nurses, doctors and allied health staff worked to prioritise her care.'

Our results, measured in hard data and patient stories, show how years of behind-the-scenes team work has led to successes in hip fracture care in Northern Sydney. Strong clinical-led steering groups with regular executive briefings using peer comparable data to present unambiguous evidence, is essential. Raising awareness of issues at all levels of our health service has given NSLHD clarity and transparency. Data has given us the opportunity to identify areas for improvement, and focus targeted solutions. It's during these regular team meetings that Registry data is used to clarify concerns and identify areas to focus on. Our teams use the live Registry dashboard to isolate and target areas for improvement at individual hospitals - an approach that has allowed us to concentrate on site-specific solutions.

The next stage will be for all NSLHD hospitals to take ANZHFR data and use it to leverage further system-wide improvements, even in a health system that may find itself under enormous pressure. COVID-19 may pressure our hospitals, but the core business of caring for patients with a hip fracture will need to remain agile, targeted and responsive to continue to maintain safe quality care.

CLINICAL NURSE CONSULTANT / NSW

FIGURE 36 ASSESSED BY GERIATRIC MEDICINE

There is good evidence to support surgeons and physicians sharing the provision of hip fracture care to improve the outcome of acute hip fracture care. In New Zealand, 83% of hip fracture patients saw a geriatrician at some stage in their acute hospital stay compared to 91% in Australia. As more hospitals join the Registry, a drop may be seen in this proportion as smaller sites and non-metropolitan sites are less likely to have access to a geriatric medicine service.

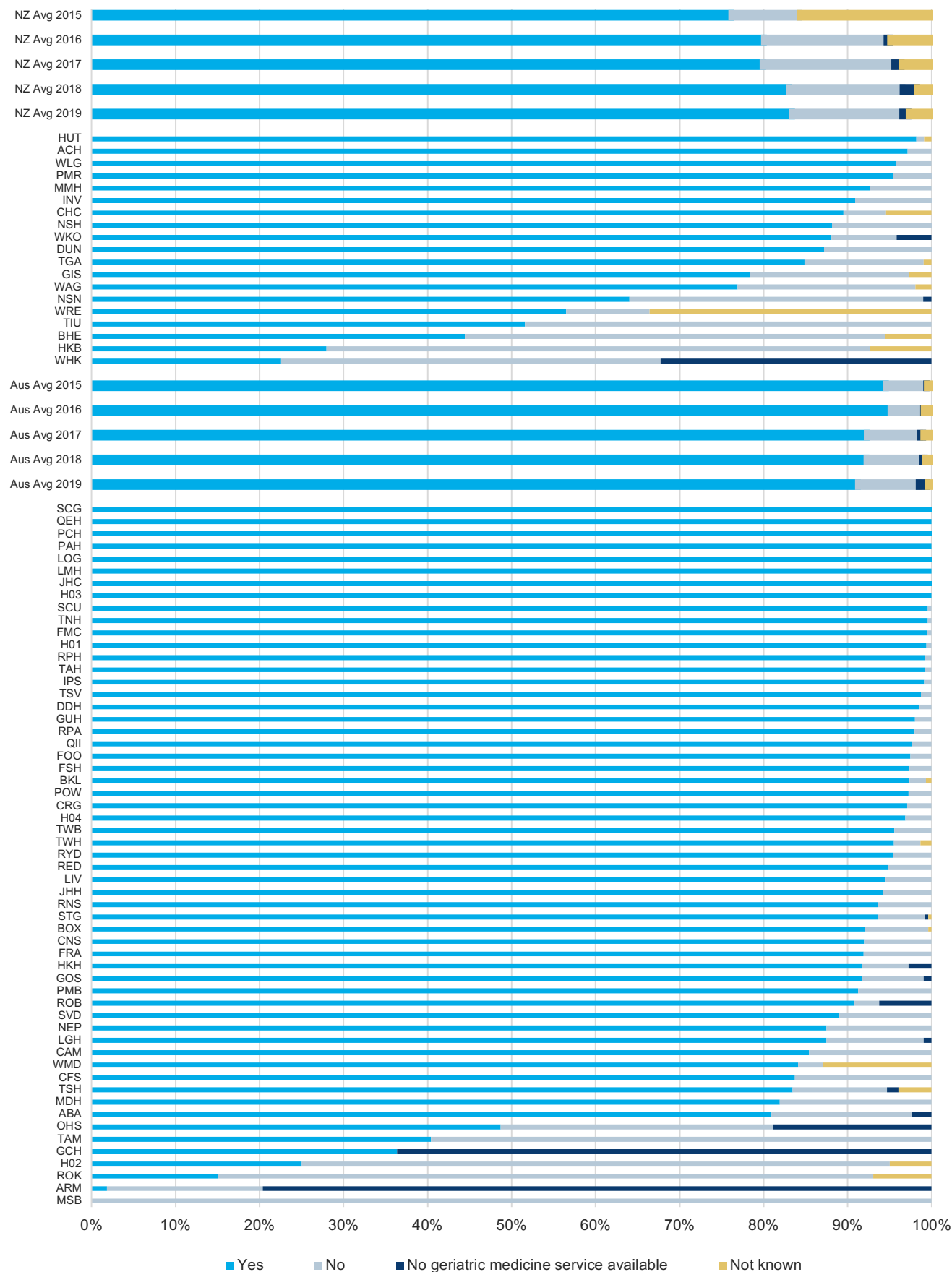


FIGURE 37 HOSPITAL ACQUIRED PRESSURE INJURIES OF THE SKIN

Figure 37 shows the proportion of patients that acquire a new pressure injury of the skin during the acute hospital stay. A pressure injury of the skin is a potentially preventable complication of hip fracture care and can affect a person's level of pain, quality of life, costs of care, and mortality. As a complication of a hip fracture, it is associated with delayed functional recovery and an increased length of stay. In New Zealand and Australia, 4% of patients are documented as having sustained a pressure injury of the skin during the acute hospital stay.

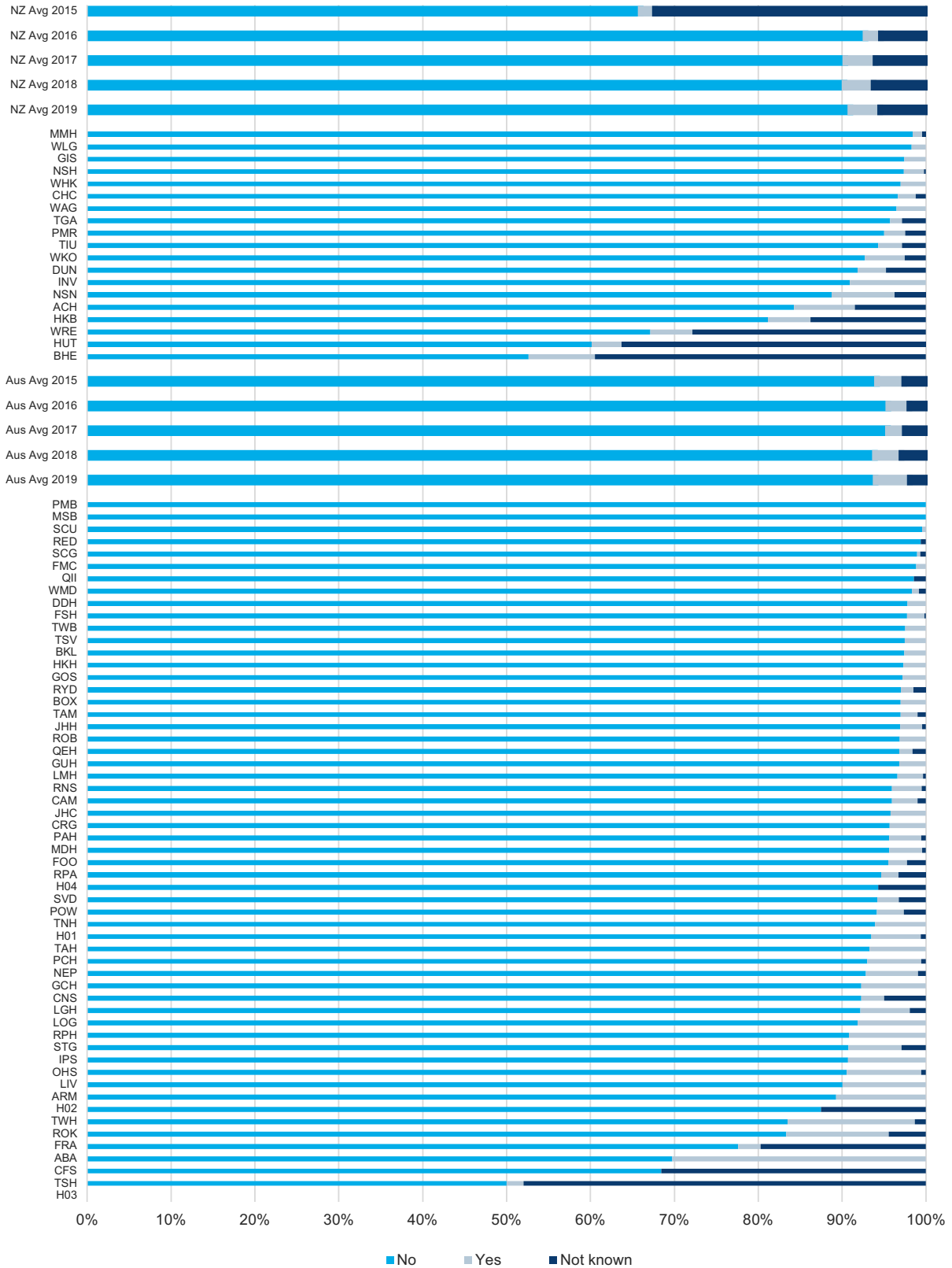


FIGURE 38 SPECIALIST FALLS ASSESSMENT

A minimal trauma fracture is a strong predictor of risk of a second fracture. The Hip Fracture Care Clinical Care Standard requires that each hip fracture patient is assessed for future fall and fracture risk, and that a plan is documented and put in place to manage identified risks. The ANZ Guideline for Hip Fracture Care recommends that hip fracture patients be assessed for their individual risk of falls. This assessment should be conducted by a suitably trained health professional and cover fall history, risk factors for falls, including a medication review, and formulation of a plan to prevent further falls. In New Zealand, 76% of patients are reported to have undergone a falls assessment during their inpatient stay. In Australia, 72% of patients underwent a fall risk assessment during their in-patient stay. It is recognised that a specialist falls assessment is not always possible in the acute hospitalised period.

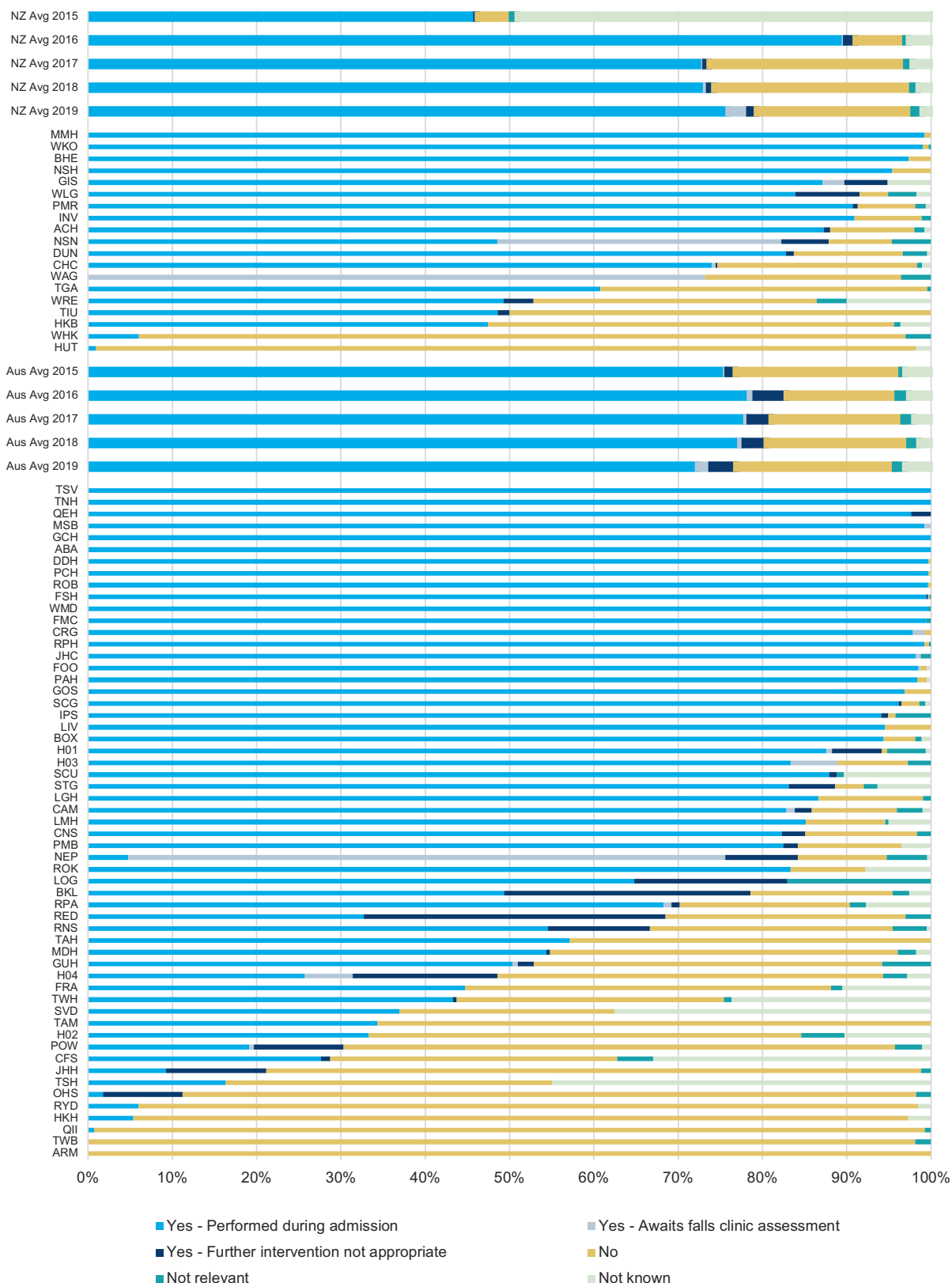
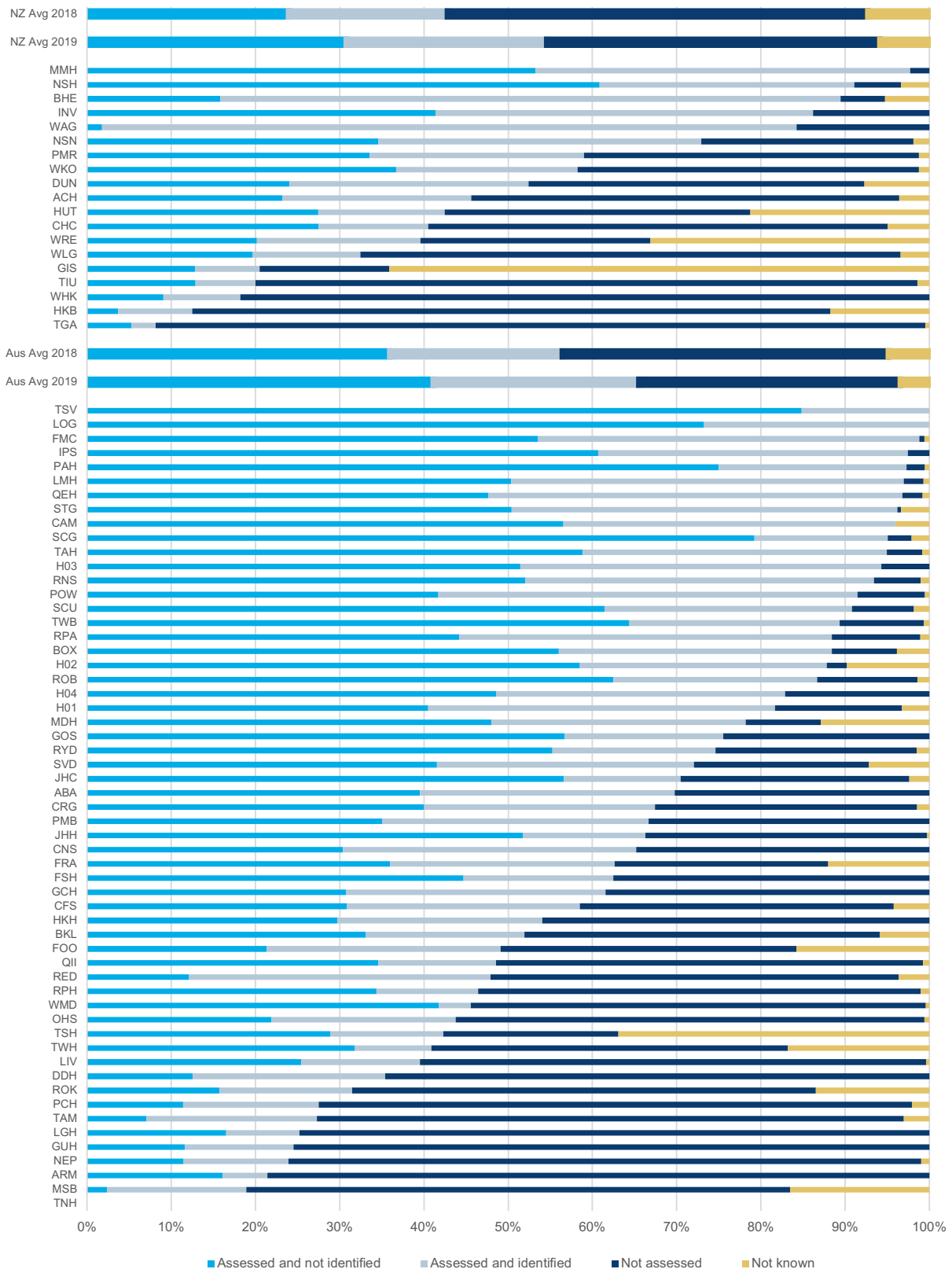


FIGURE 39 ASSESSMENT OF DELIRIUM

Delirium is an acute change in mental status common among older patients hospitalised with a hip fracture. It is a condition more common in people with a cognitive impairment and may be poorly recognised. Assessment of delirium was included in the ANZHFR dataset in 2018 and this is the second year of reporting. In New Zealand, 55% of patients had an assessment for delirium and 24% were identified as experiencing delirium during the acute hospital stay. In Australia, 66% of patients had an assessment for delirium and 24% were identified as experiencing delirium during the acute hospital stay. In both countries, a large proportion of patients are not assessed suggesting delirium may be under reported in Figure 39.





During 2019-2020, Townsville University Hospital's Orthogeriatrics team has worked to improve the detection, assessment and management of patients with delirium, recognising that delirium adversely affects patient outcomes and length of stay in hospital.

The Geriatrics team has worked with the Nursing staff on our orthopaedic ward to increase the cognitive screening within the first few days of admission for all fractured neck of femur elderly patients, resulting in a 31 per cent increase in patient screening. In 2019, only 65% of our patients received a delirium and cognitive assessment screen, improving greatly in 2020 to 96%.

This has been achieved with education and dedicated tools like the 4AT in our integrated electronic medical records to facilitate ease of administration of the assessment tools. Further, cognitive assessment is carried out with patients who have a score of 1 or more. Early identification of patients at risk of delirium helps us identify patients who require closer nursing care and supervision. Early interventions and comprehensive management of medical comorbidities are key to reducing delirium and to managing those with delirium to improve outcomes for our patients. To ensure these excellent results continue, we constantly review our data to identify any issues and rectify them in real time.

Delirium is a barrier to patient recovery, wellbeing and discharge. Flinders Medical Centre saw an opportunity for improvement, so a project was initiated to improve this area of patient care.

Initially, we sought baseline data from focus groups. Clinicians discussed their perceptions of the barriers and the enablers to the recognition, assessment, prevention and management of delirium. This work informed the next step to tailor interventions to the local context.

An intervention bundle was developed and implemented. The bundle included an online cognitive impairment education module, an in-service focused on recognising delirium risk factors, and the significance of using a screening instrument to inform prevention strategies, as well as a face-to-face cognitive impairment workshop. The bundle also included a restructure of clinical documentation, the inclusion of the 4AT in the local neck of femur patient information package (to improve accessibility), and the introduction of a tool to engage family and nurses with at-risk patients.

The Surgical Division of Southern Adelaide LHN have taken a network-wide approach and developed an education in-service on cognitive impairment, and convened a cognitive impairment Steering Committee. Delirium champions have been identified, delirium boards using infographics posters have been developed, and a senior nurse delirium screening project has been commenced. Regular use of the audit data, and feedback to staff, is done at daily 4AT huddle discussions.

NURSE UNIT MANAGER / SA



FIGURE 40 CLINICAL MALNUTRITION ASSESSMENT

Hip fracture patients are at high risk of malnutrition during hospital admission, or they may be admitted to hospital already malnourished. Malnutrition in older people with a fractured hip is associated with increased morbidity and mortality and a decrease in return to pre-fracture functioning. Whilst there is no gold standard for assessing malnutrition, clinical assessment of a person’s nutritional status is encouraged during acute hospital admission. In New Zealand, 44% of patients had an assessment for malnutrition and 13% were identified as being malnourished. In Australia, 65% of patients had an assessment for malnutrition and 21% were identified as being malnourished. In both countries, a large proportion of patients not assessed suggests malnutrition may be under reported in Figure 40.

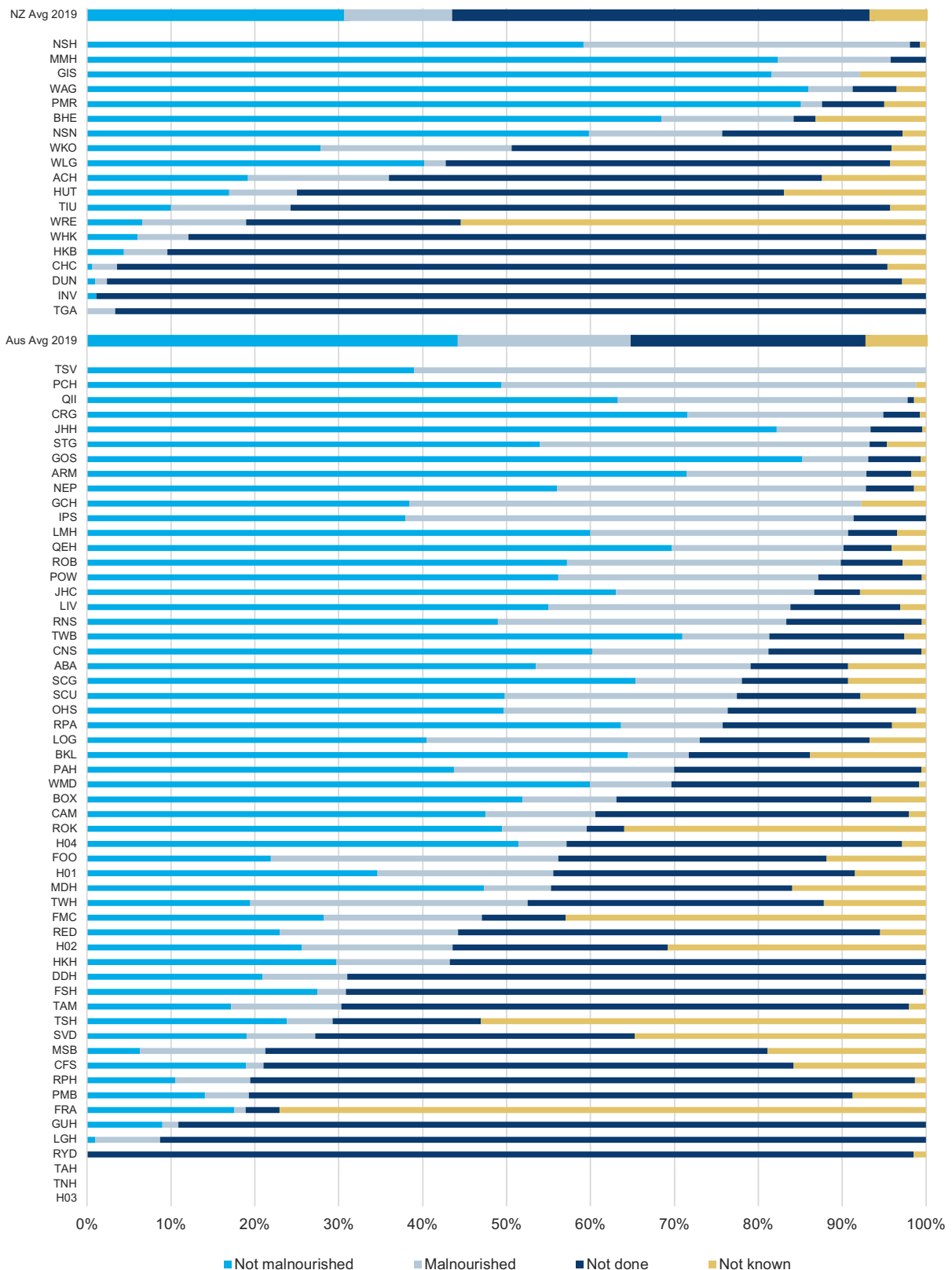


FIGURE 41 AVERAGE LENGTH OF STAY IN ACUTE WARD

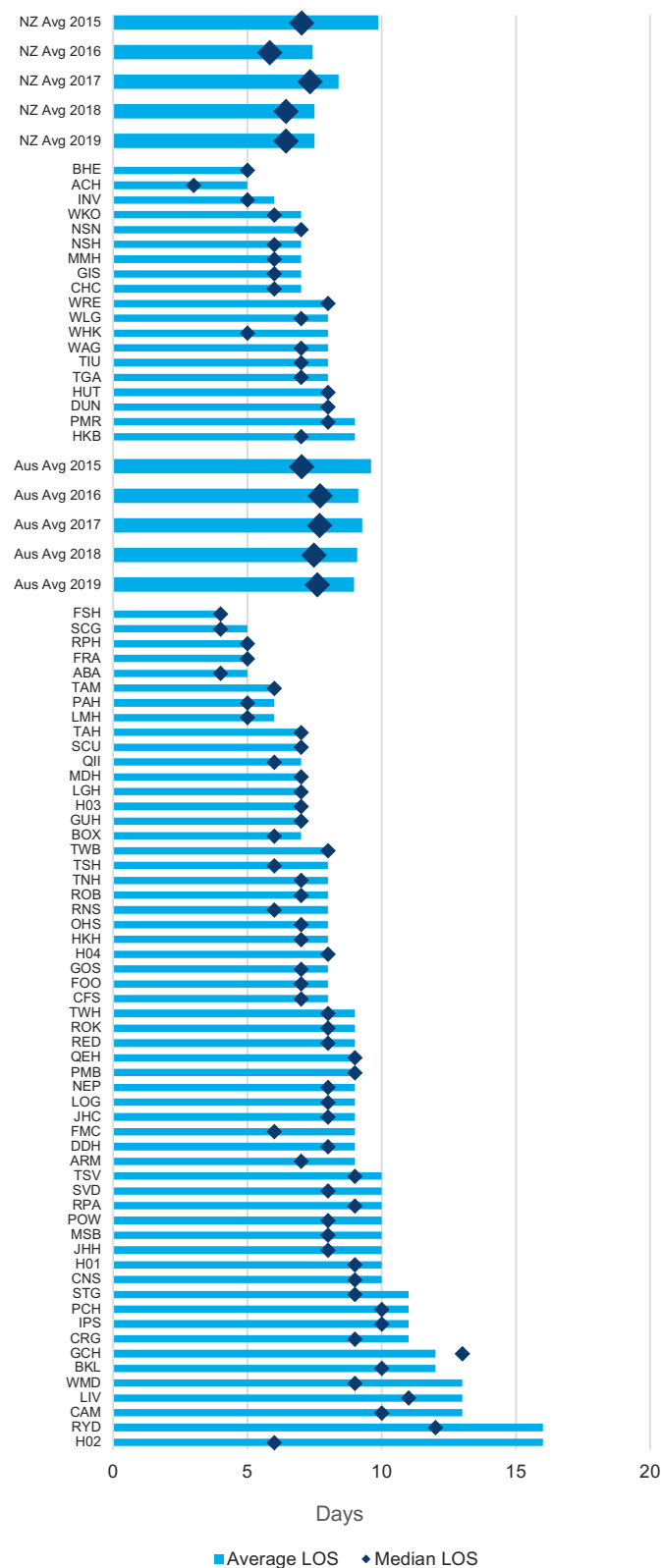
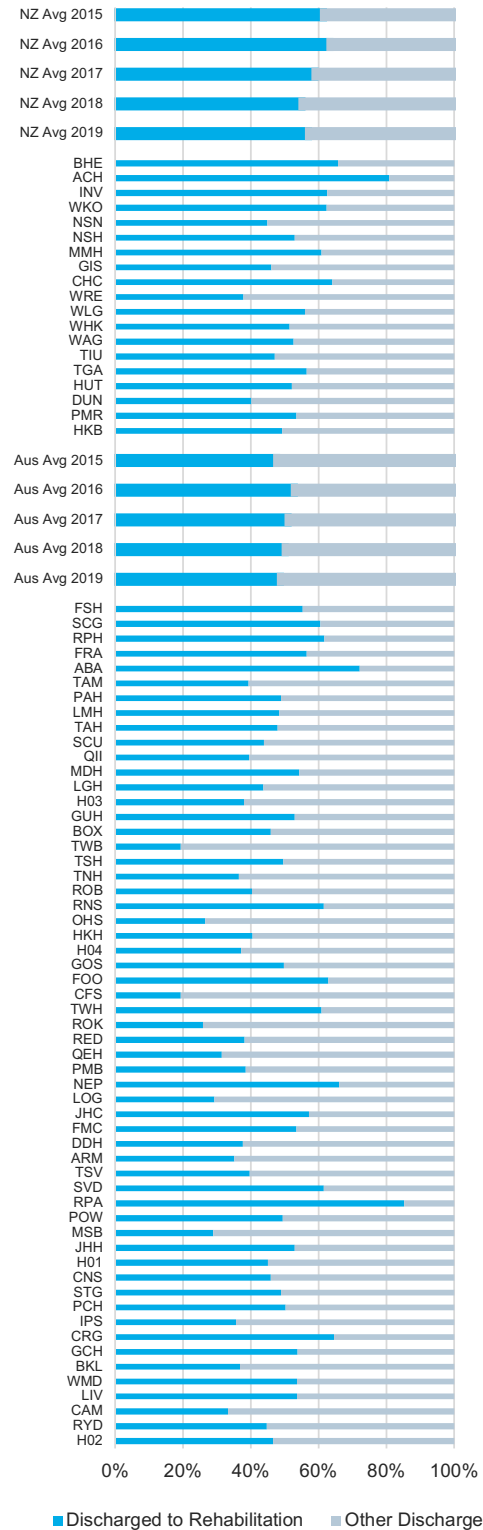


FIGURE 42 DISCHARGE TO REHABILITATION



Variation is seen in mean and median length of stay (LOS) in the acute ward it is similar to the previous year in both New Zealand and Australia. The median LOS in New Zealand is 6.4 days and 57% of patients are transferred to rehabilitation. In Australia, the median length of stay in the acute ward is 7.6 days and 49% are transferred to rehabilitation.

A multitude of factors contribute to acute length of stay including access to subacute facilities or services in the community that can deliver home-based rehabilitation. Median total length of stay is the preferred measure but because of the movement of patients between hospitals, including to the private sector, this is not currently available.

FIGURE 43
DISCHARGE DESTINATION FROM ACUTE WARD

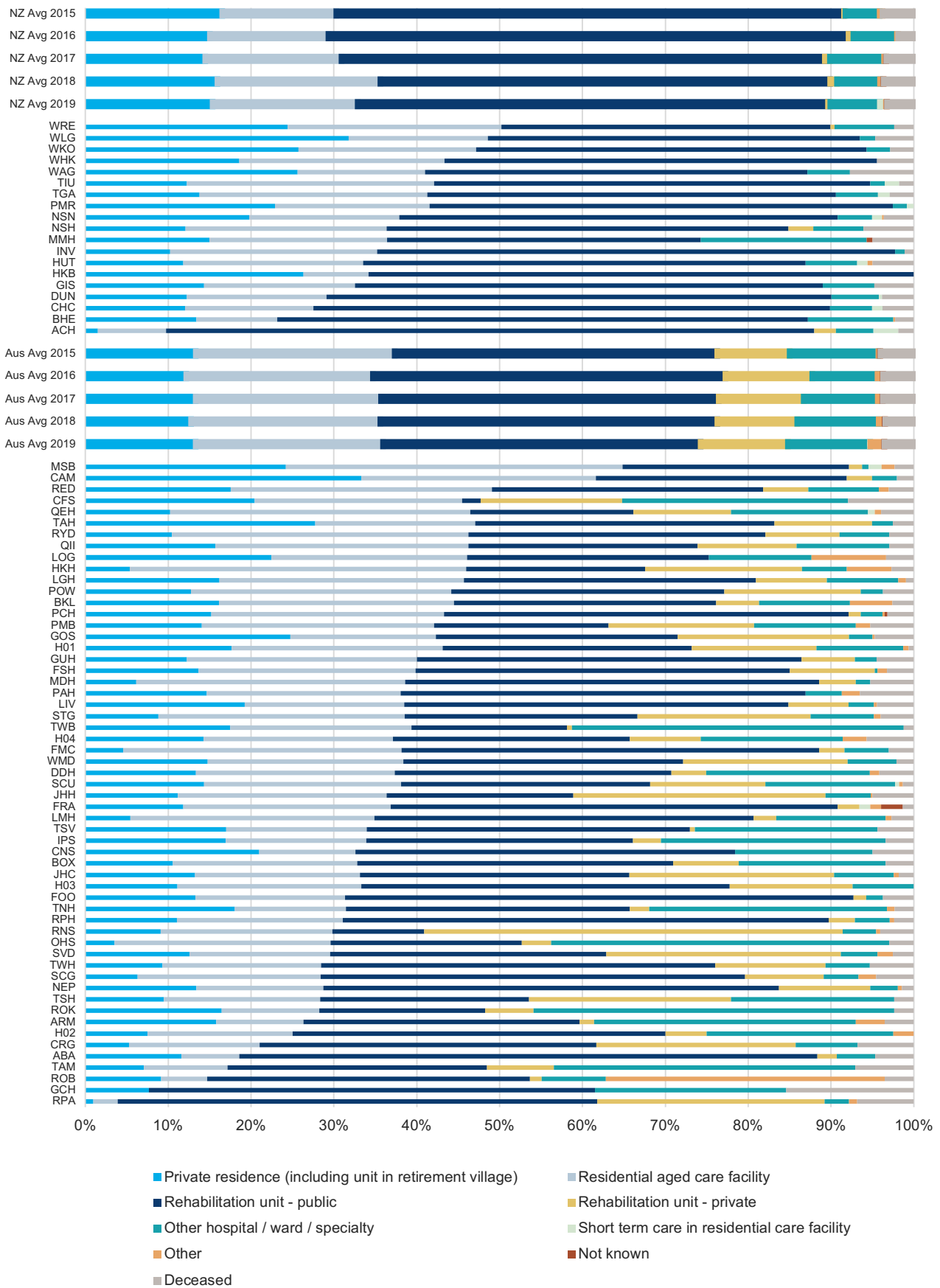
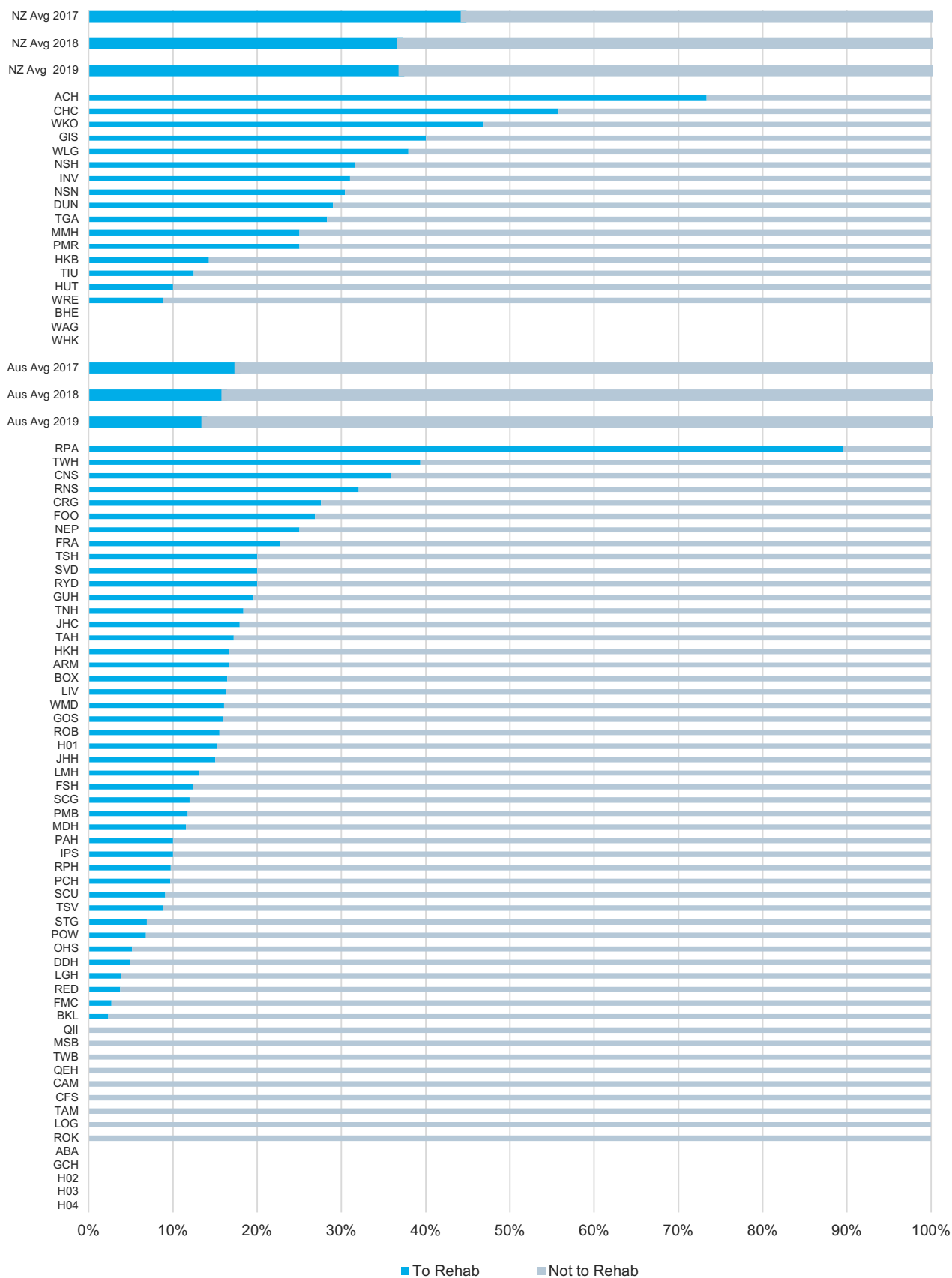


FIGURE 44 RESIDENTS OF AGED CARE FACILITIES DISCHARGED TO REHABILITATION (PUBLIC OR PRIVATE)



Overall, 37% of people from residential aged care are transferred for rehabilitation after their acute care for their hip fracture in New Zealand. This is consistent with the previous year. This contrasts with 14% of hip fracture patients in Australia, slightly lower than 16% the previous year. Wide variation in practice is evident. More work is needed in this area to explore why the variation exists and more importantly, the impact it has on the individual longer term.

FIGURE 45 TRANSFERRED TO REHABILITATION (PUBLIC OR PRIVATE) FOR PATIENTS FROM PRIVATE RESIDENCE WITH PREADMISSION IMPAIRED COGNITION

In New Zealand, 71% of people with a pre-existing cognitive impairment, who lived in a private residence before their hip fracture, were transferred for rehabilitation after their acute care. This contrasts with 61% of hip fracture patients with pre-existing cognitive impairment in private residences in Australia. Wide variation in practice is evident. More work is needed in this area to explore why the variation exists and more importantly, the impact it has on the individual longer term.

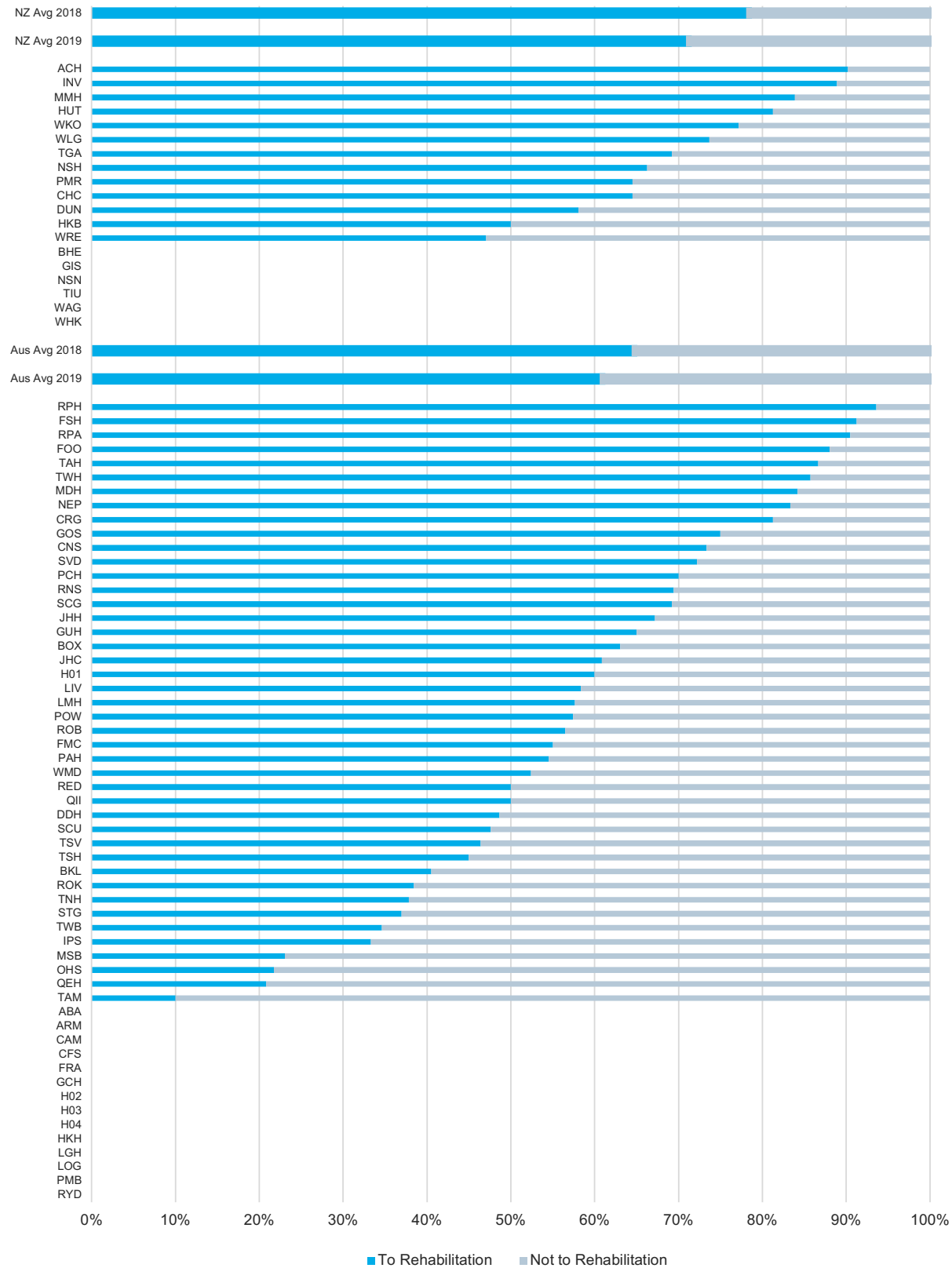


FIGURE 46 BONE PROTECTION MEDICATION ON ADMISSION

The majority of people admitted with a hip fracture were not on any form of pharmacological treatment for bone health prior to their fracture. This is despite evidence demonstrating that up to 50% of these people will have already sustained a minimal trauma fracture, and fracture prevention services are effective in reducing subsequent fractures.

In New Zealand, 61% of people were not taking any medication to protect their bones and only 9% were recorded as taking active treatment for osteoporosis above and beyond calcium and/or vitamin D. In Australia, 62% of people were not taking any medication to protect their bones and only 9% were recorded as taking active treatment for osteoporosis (bisphosphonates, denosumab or teriparatide). These proportions suggest a significant and ongoing care gap in secondary fracture prevention in both countries, and a care gap that has been resilient to change over the five years of reporting.

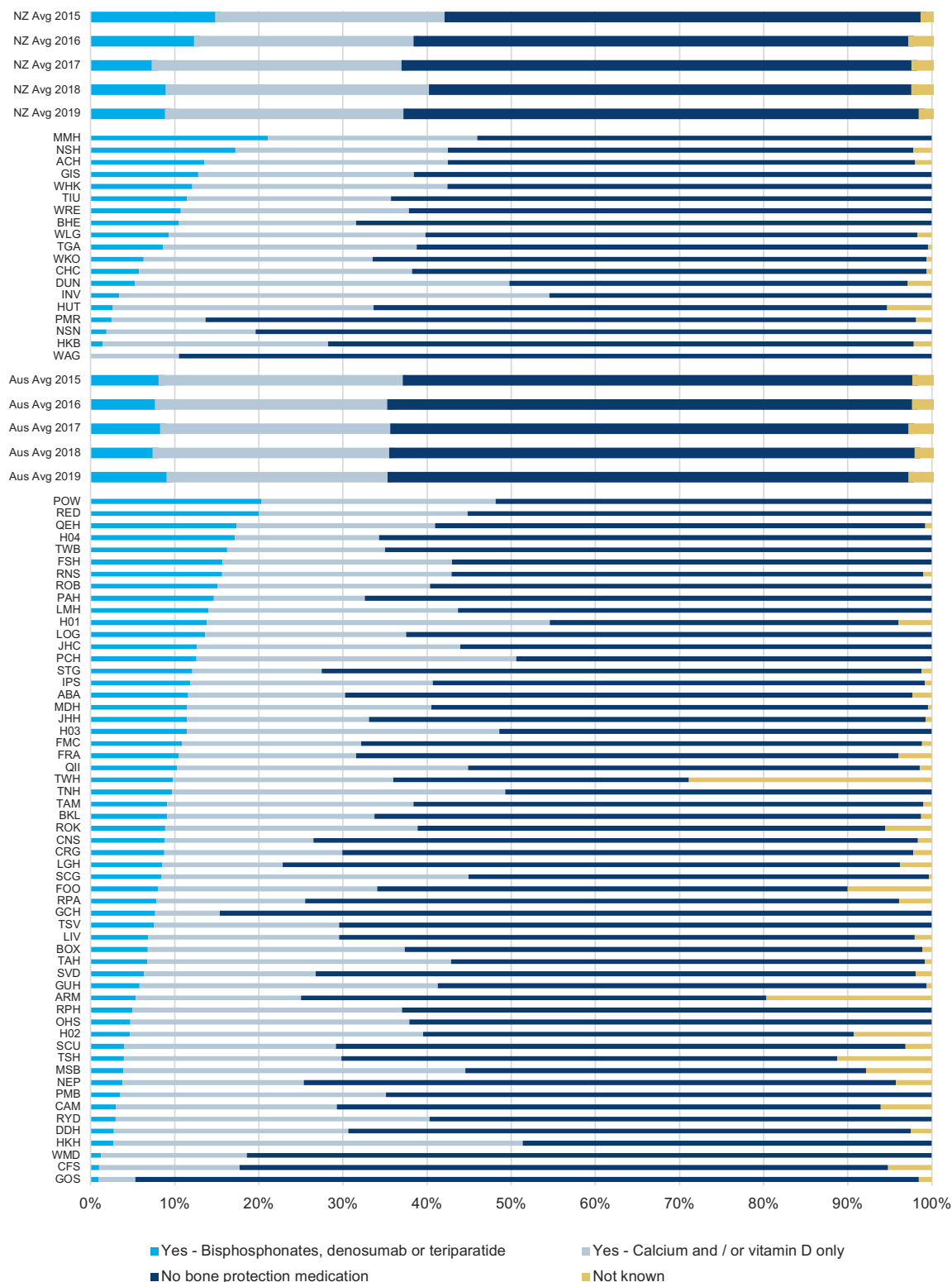
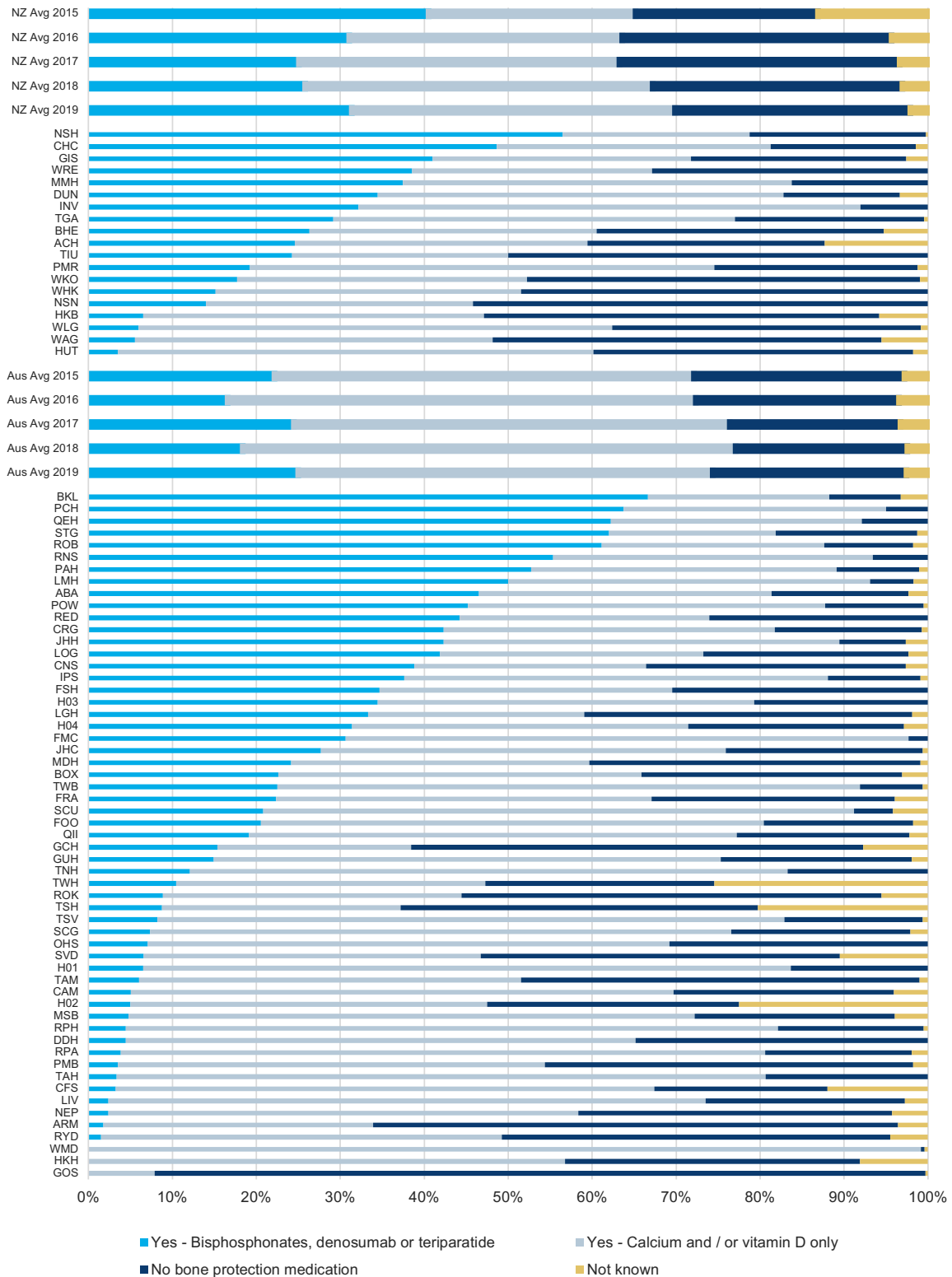


FIGURE 47 BONE PROTECTION MEDICATION ON DISCHARGE

The Hip Fracture Care Clinical Care Standard requires an assessment and management plan for future fracture prevention, including initiation of treatment for osteoporosis in hospital where appropriate. The Registry is able to capture this in the acute setting but information on treatments initiated after transfer to another facility, such as a subacute hospital, are not available and so the data reported here may underestimate the number of people treated for osteoporosis.

In New Zealand, 31% of hip fracture patients left hospital on bisphosphonate or denosumab or teriparatide and in Australia, 25% of patients left hospital on bisphosphonate or denosumab or teriparatide. For both countries, this compares with to 9% of patients on admission. Whilst not always possible to initiate treatment in the acute setting, the data continues to highlight substantial variation and a significant care gap and missed opportunity to contribute towards preventing another fracture.





More than 60% of patients are not taking any medication to protect their bones from a fracture



It has been over 10 years since Hauora Tairāwhiti has had a resident geriatrician. In the time our Geriatrician has been employed since November 2018, she has made a significant contribution to our ANZHFR statistics. She not only reviews the fractured hip patients with her geriatrician hat but also utilizes her physician background. She ensures that the patient either commences on bisphosphonates or Vitamin D as an inpatient or is discharged with the appropriate bone medication”.

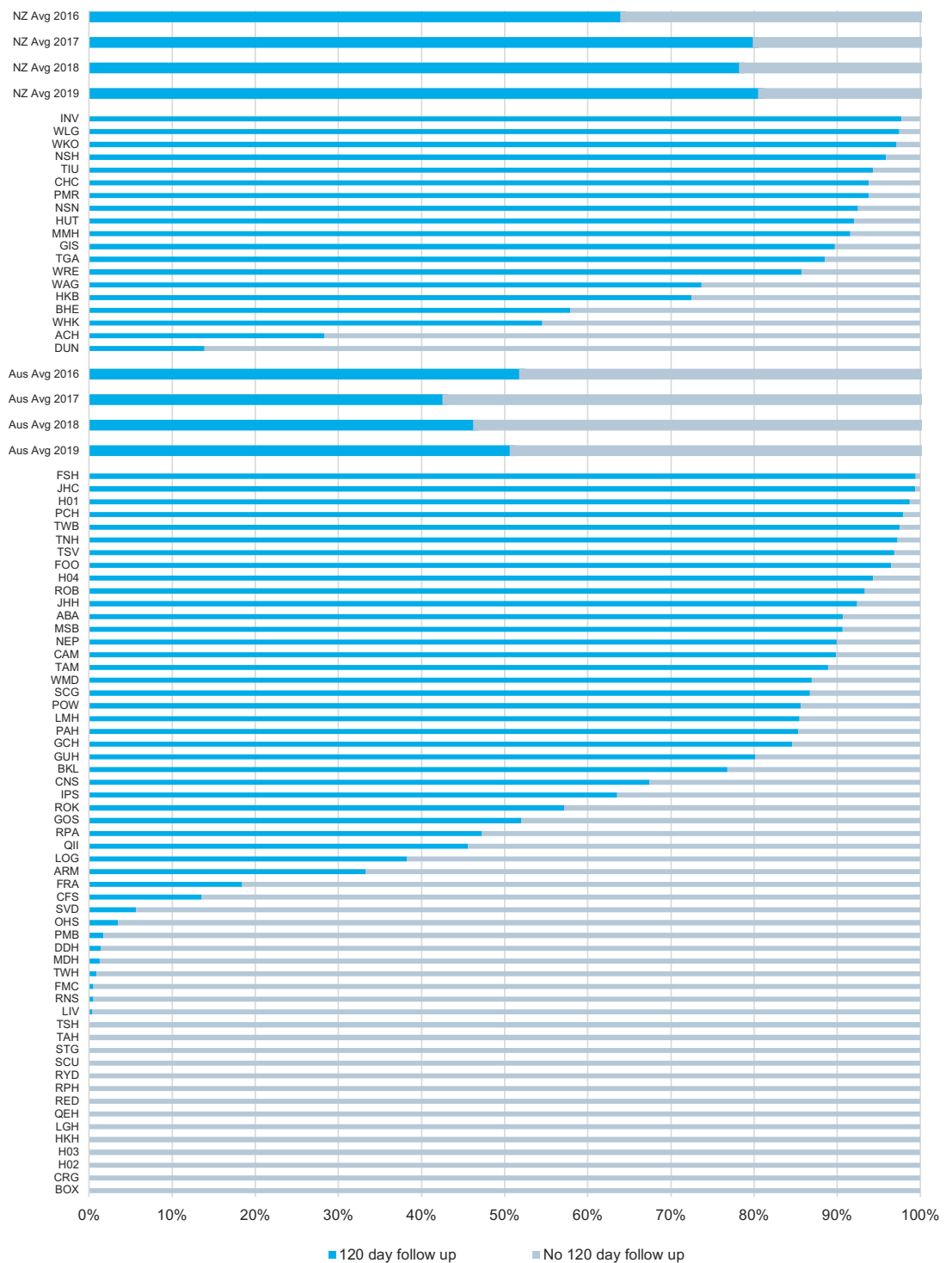
CLINICAL NURSE SPECIALIST / NEW ZEALAND



SECTION 5: 120 DAY FOLLOW-UP

FIGURE 48 120 DAY FOLLOW UP

Figure 48 shows the rate of 120 day follow up for each hospital. Follow up is completed by staff at the treating hospital via telephone, and the variation reflects local differences in resources and prioritisation. In New Zealand, 81% of records had data for 120 days. In Australia, 51% had data for 120 days. For figures 49 to 59, hospitals are only reported if they have followed up more than 80% of eligible patients and have at least 10 records.





Thank you so much for calling to see how my husband is doing. I am very impressed. His surgery went well but he may have tried too hard and he has taken a couple of steps backwards since getting home. But overall, he is doing well.”

PATRICIA / AGE 75 / NEW ZEALAND

FIGURE 49 REOPERATION WITHIN 120 DAYS

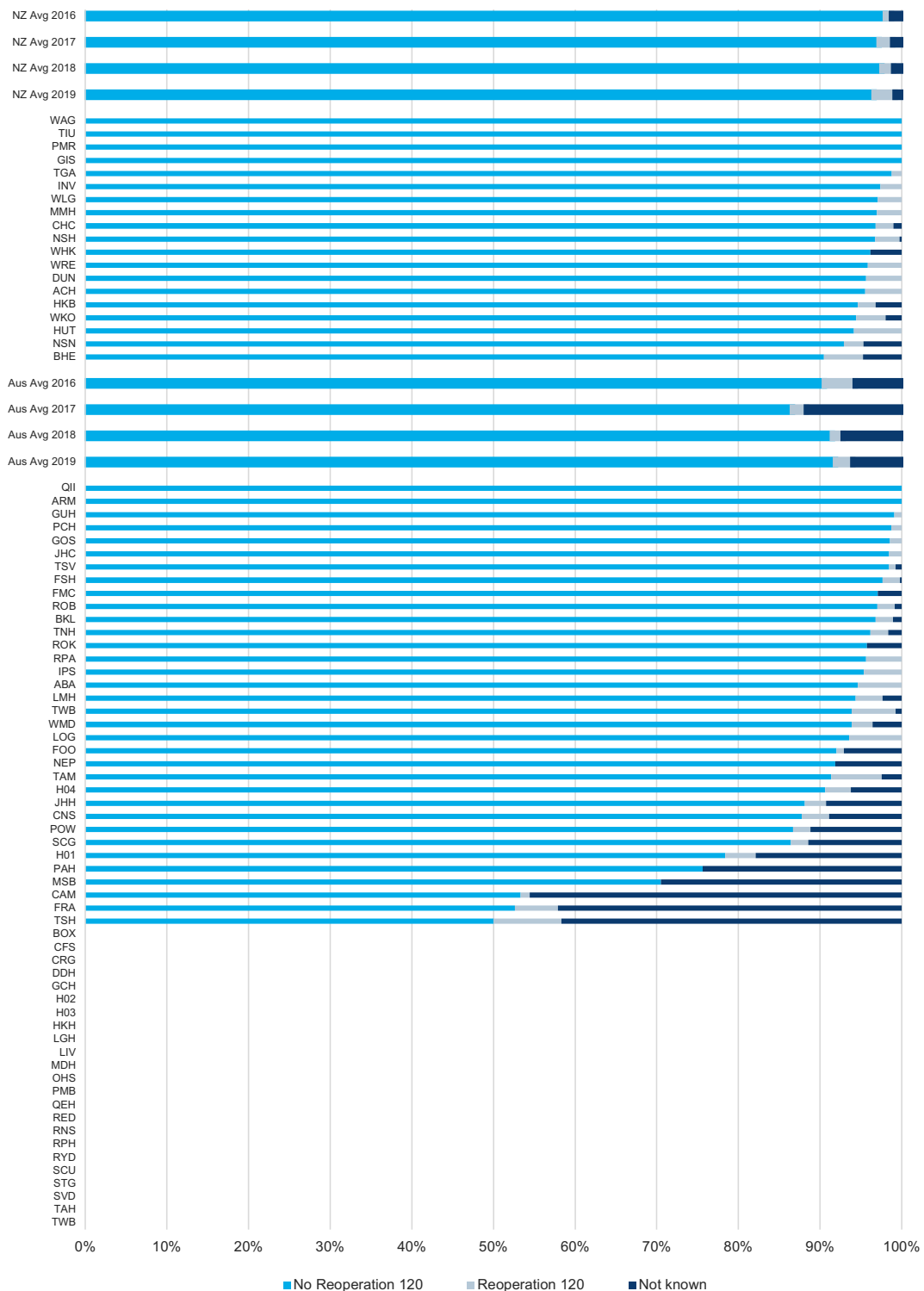


FIGURE 50 SURVIVAL AT 120 DAYS

This year, Figure 50 includes records for which this outcome is unknown as the figure uses data obtained during follow up to report survival at 120 days after admission to hospital with hip fracture. In Australia for the first time, survival is also reported using linked data from the National Death Index (figures 54 to 57). Utilising NDI data for this important outcome has been an objective of the Registry since its start, and the use of this independent and accurate dataset will inform key stakeholders and the broader health system on the impact of initiatives to improve hip fracture care. In New Zealand, date of death is available in hospital information systems within a few days. While this means that the data on survival is likely to be correct, the intention in the future is to link with the National Mortality Collection within the New Zealand Ministry of Health to ensure accuracy of the survival data.

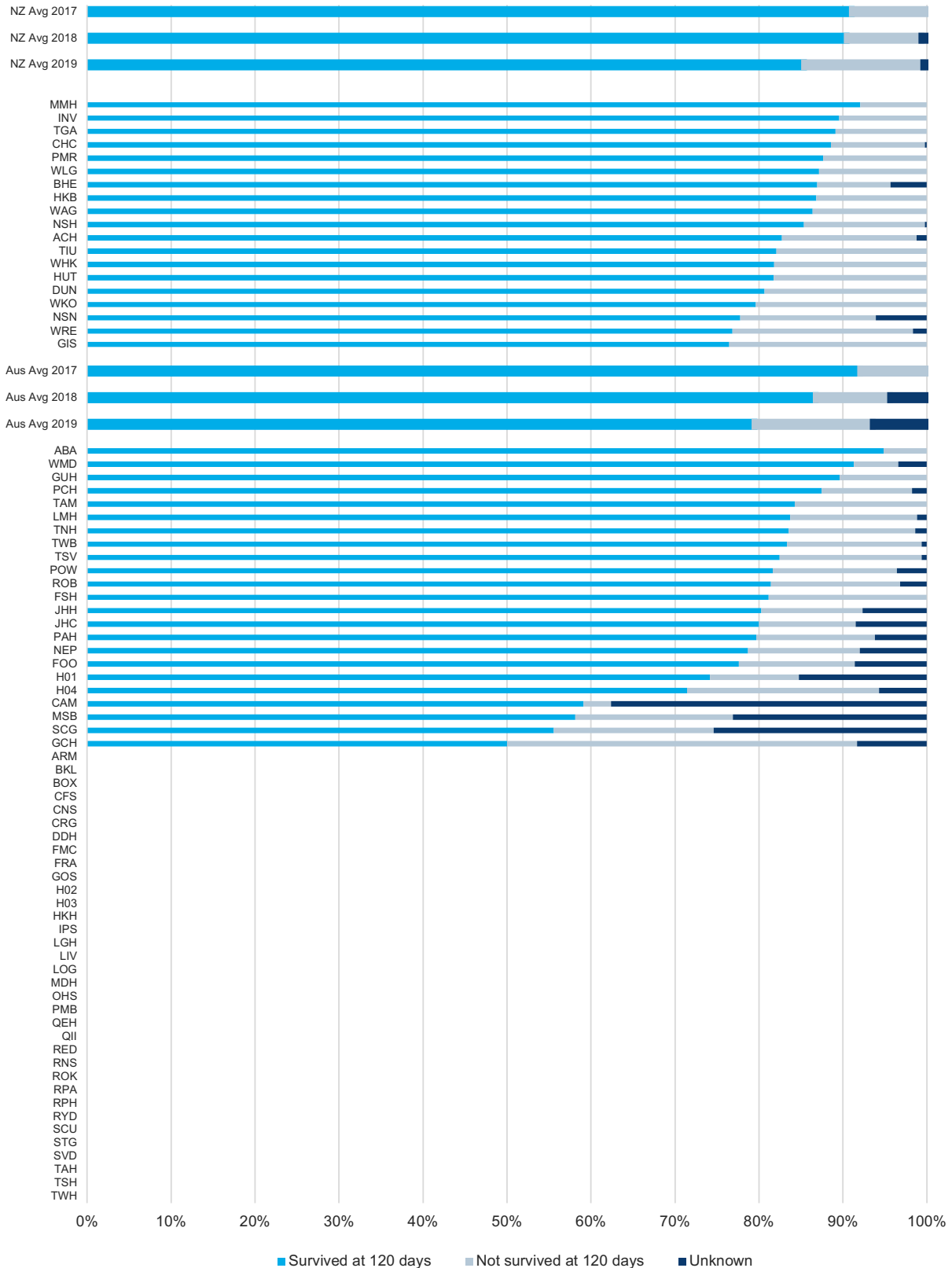


FIGURE 51 BONE PROTECTION MEDICATION AT 120 DAYS

Figure 51 shows the majority of patients are not provided with medication to prevent future fractures at 120 days after admission to hospital for a hip fracture and for the first time includes records for which this outcome is unknown. In New Zealand, follow up is over 80% and 45% of patients reported receiving bone protection medication to reduce the risk of another fracture. Follow up rates are low in Australia and 38% were receiving bone protection medication to reduce the risk of another fracture. When reporting only those who have been followed up at 120 days, 45% and 42% in New Zealand and Australia, respectively, reported receiving bone protection medication.

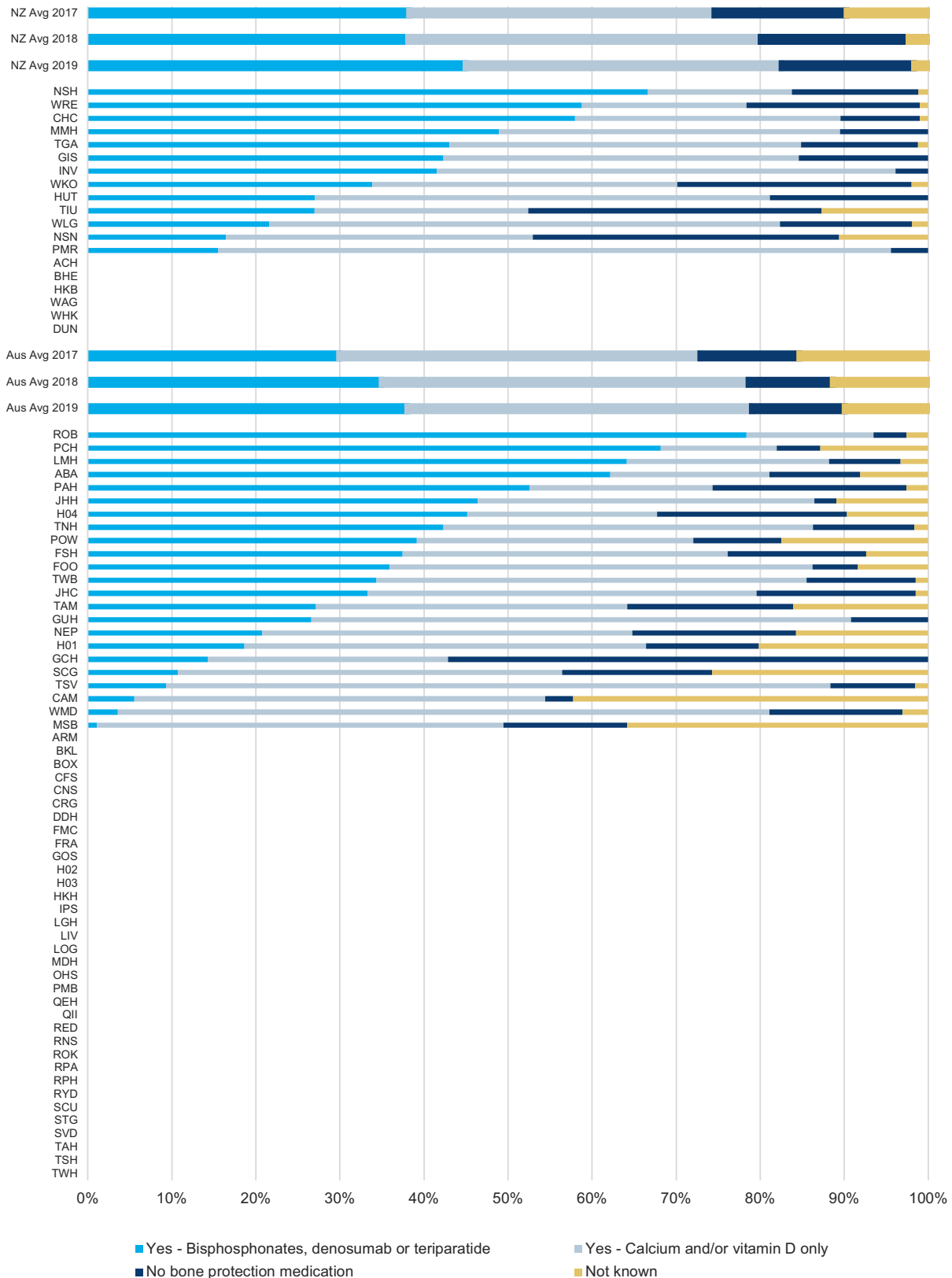


FIGURE 52 RETURNED TO PRIVATE RESIDENCE AT 120 DAYS

Figure 52 captures all patients who came from private residence and were returned to private residence, did not return to private residence or is not known.

Being able to return home after a hip fracture is one of the most important outcomes for a patient following a hip fracture. This year, Figure 52 includes records for which this outcome is unknown. For all records in 2019, of those who lived at home prior to hip fracture, 59% and 35% in New Zealand and Australia, respectively, returned to their own home at 120 days after admission. When only using records with follow up, 80% of patients in New Zealand and 62% of patients in Australia returned to their own home at 120 days after their hip fracture surgery.

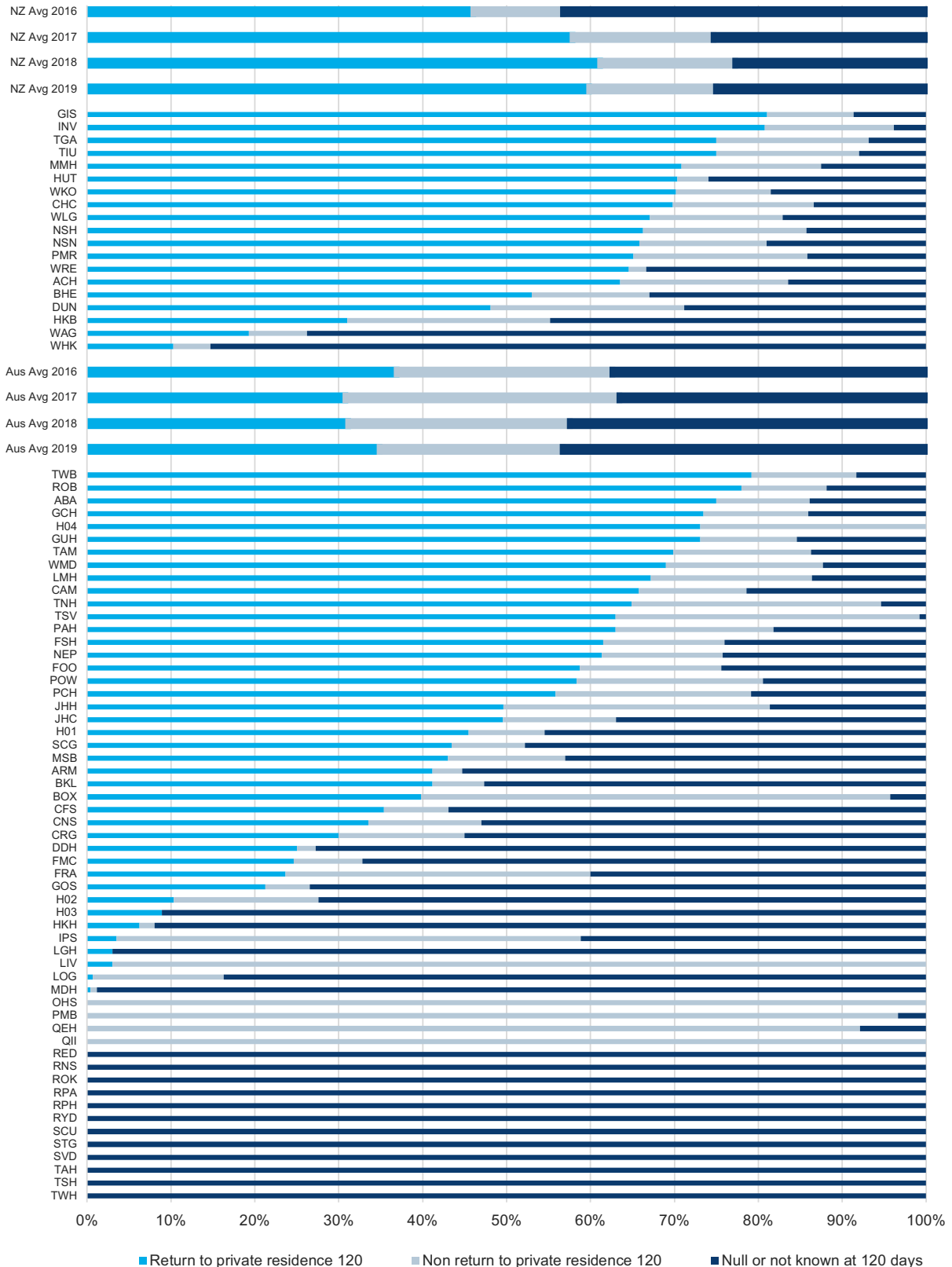
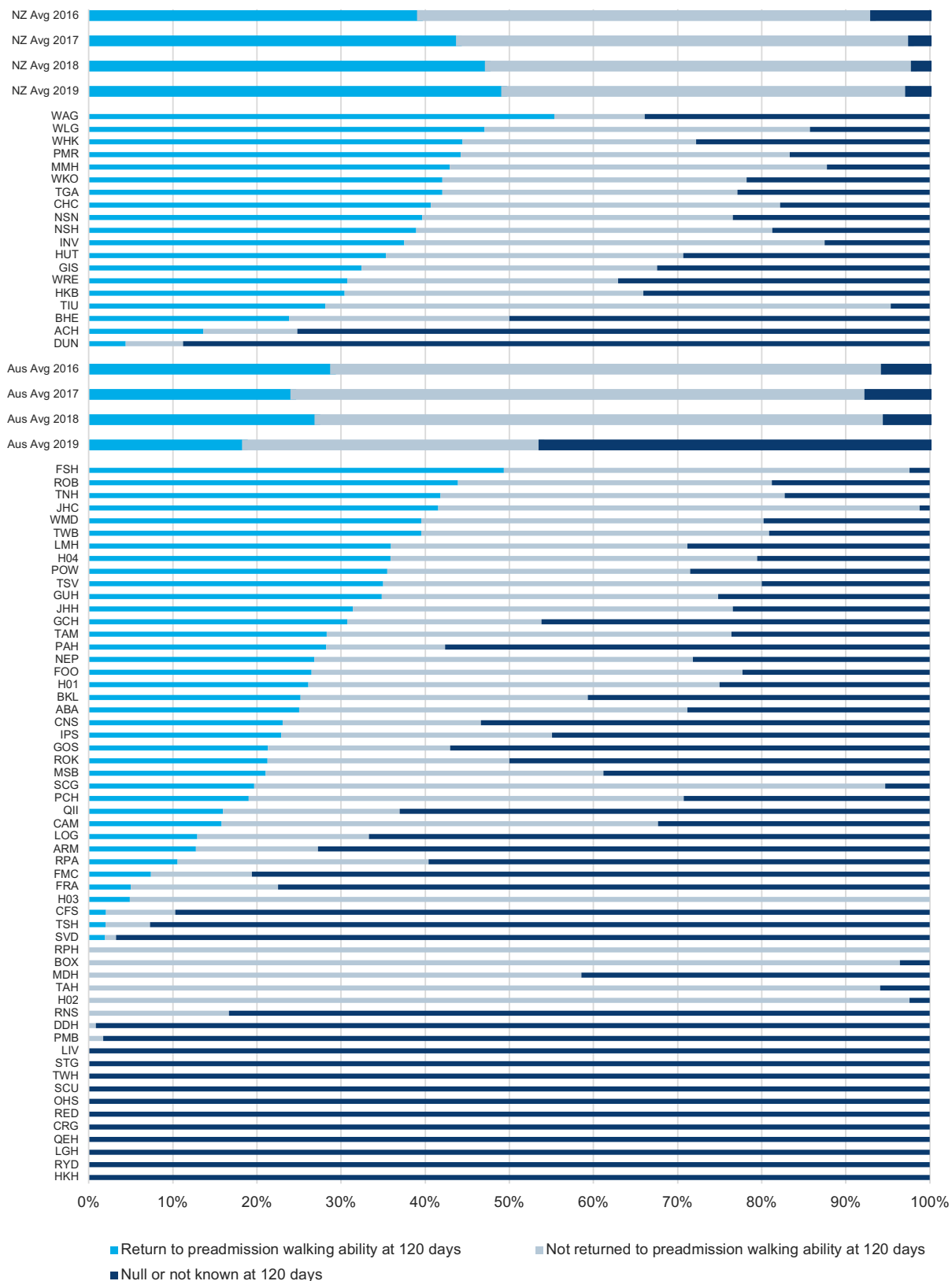


FIGURE 53 RETURNED TO PRE-FRACTURE MOBILITY AT 120 DAYS

From a patient perspective, the recovery of function including mobility is a critical outcome following a hip fracture. This year, Figure 53 includes records for which this outcome is unknown. In New Zealand, 49% of patients reported a return to preadmission walking ability at 120 days. In Australia, 19% of patients have returned to preadmission walking ability at 120 days. Low rates of follow up suggest caution with the interpretation of Figure 53 for Australia.



For the first time, the Annual Report includes mortality data derived from linking registry data with the Australian National Death Index (NDI). In future, the ANZHFR will undergo regularly linkage with the NDI and will report the 30-day mortality for each hospital for patients treated in the previous year. In this report, pooled data is used for all patients reported to the Registry, from each site, from the start of 2016 to the end of 2018 as this was the only information available at the time of printing.

Mortality has been adjusted for age, sex, pre-morbid level of function (mobility), fracture type, residence type and ASA and data is presented for two follow-up periods and in two ways. The follow-up periods are 30 and 365 days. 30-day mortality is a common benchmark for hip fracture care. 365 day mortality is more likely to be influenced by factors beyond hospital care, but remains an important outcome for patients. Data are presented in funnel plots, where each dot represents a hospital, and the x-axis represents hospital volume. Because of the higher precision from the greater number of patients, data points should ‘funnel’ to a narrower distribution on the right side of the funnel plot.

FIGURE 54 FUNNEL PLOT OF ADJUSTED MORTALITY RATE AT 30 DAYS

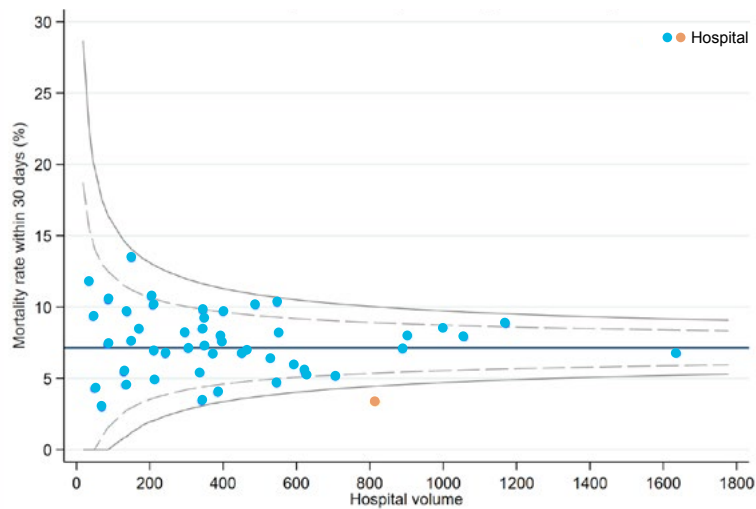
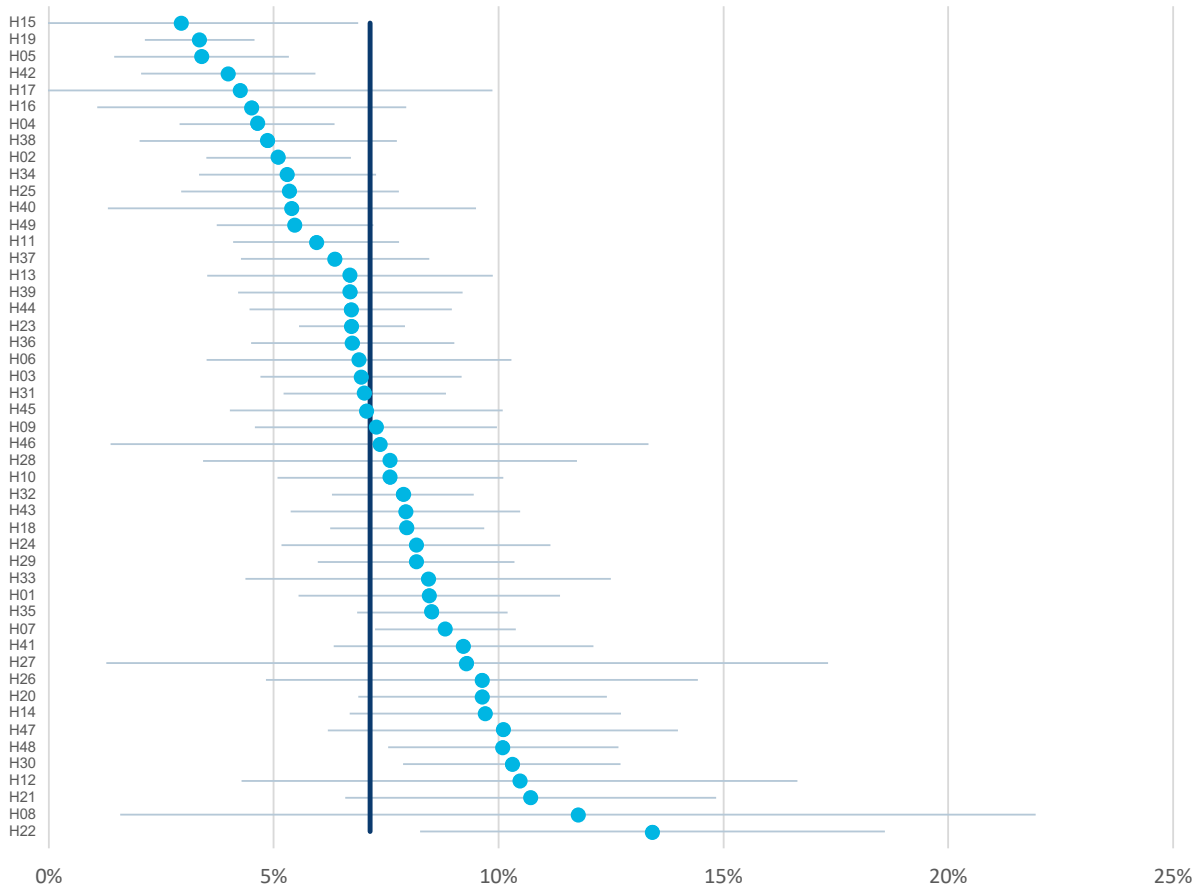


FIGURE 55 CATERPILLAR PLOT OF ADJUSTED MORTALITY AT 30 DAYS



Confidence limits set at 2 and 3 standard deviations are included so that outlier hospitals can be seen. The other graphs are 'caterpillar' plots (named because of their resemblance to a caterpillar) where each hospital is ranked according to the mortality rate and the 'legs' of the caterpillar represent the 95% confidence interval. Hospitals with smaller volume are likely to have longer 'legs'.

Whilst linked data is not available for New Zealand in this report, in 2018, the New Zealand Perioperative Mortality Review Committee, an independent committee that advises the Health Quality & Safety Commission, released a New Zealand report examining perioperative mortality after hip fracture. It can be accessed using the following link: <https://www.hqsc.govt.nz/our-programmes/mrc/pomrc/publications-and-resources/publication/3372/>

As this is the first time that mortality has been reported in these ways, hospitals have not been named. If hospitals are comfortable with the format and the findings, we plan to name hospitals in future reports.

FIGURE 56 FUNNEL PLOT OF ADJUSTED MORTALITY RATE AT 365 DAYS

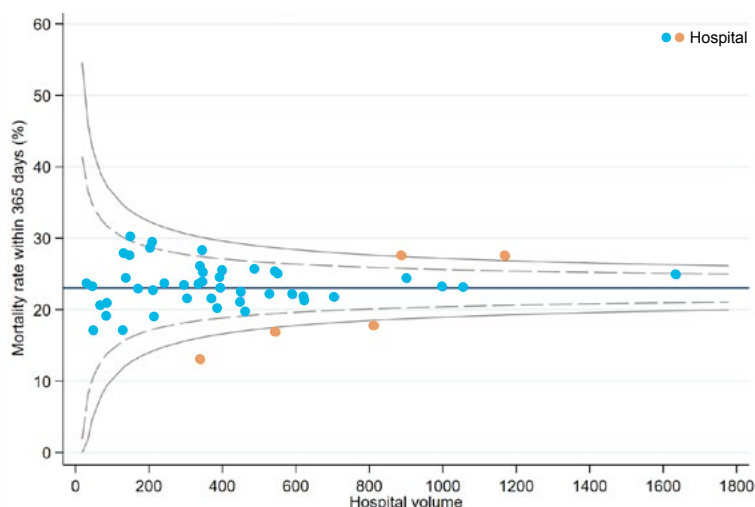
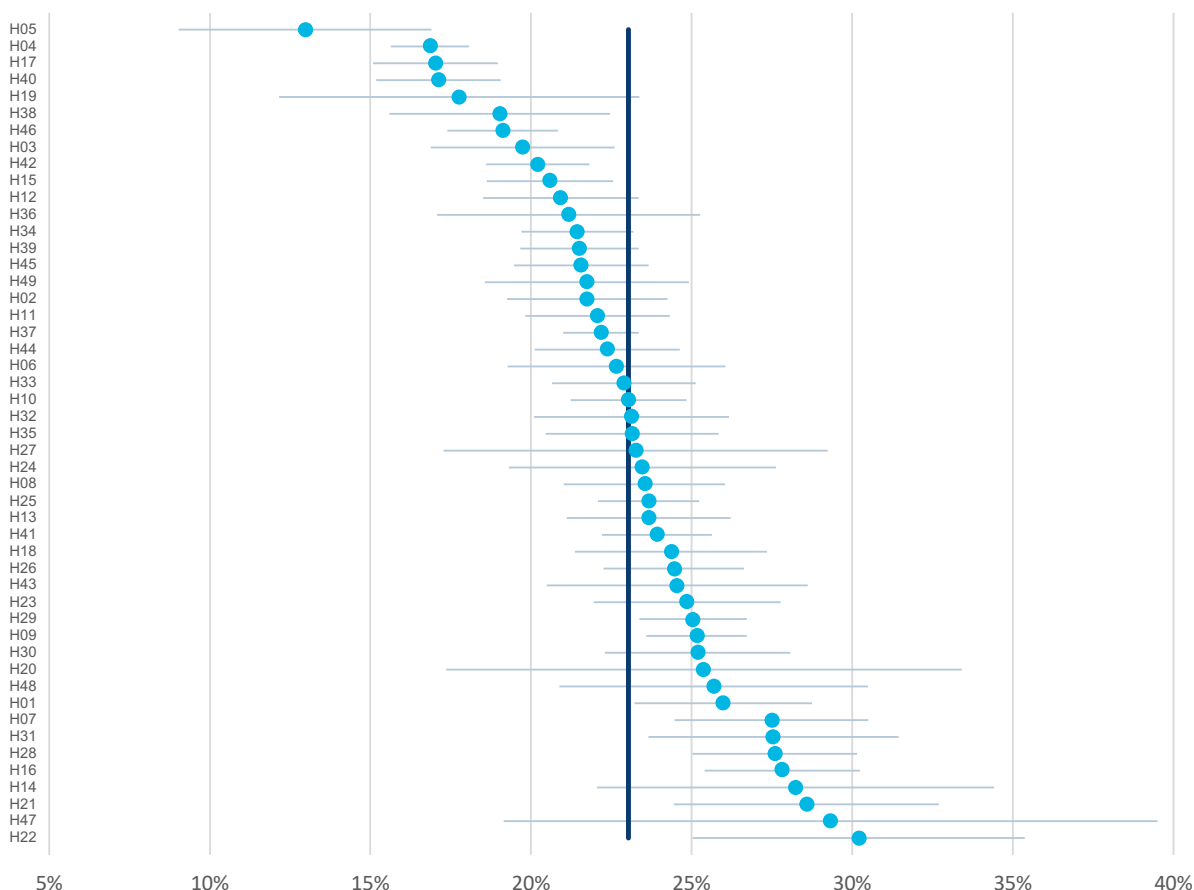



FIGURE 57 CATERPILLAR PLOT OF ADJUSTED MORTALITY AT 365 DAYS





**This is the 8th Facility Level
Audit of Australian and New Zealand
hospitals undertaking definitive
management of older people with a hip fracture.**

**The aim of the audit is to document over time the services,
resources, policies, protocols and practices that exist across both
countries. This year, 117 hospitals have completed the audit
and the results are provided here. Comparisons, where
provided, are with last year and/or the first year
of patient and facility level reporting,
which was 2016.**

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FACILITY LEVEL AUDIT

RESULTS 1: GENERAL INFORMATION

FIGURE 58 NUMBER OF HIP FRACTURES TREATED 2019 CALENDAR YEAR

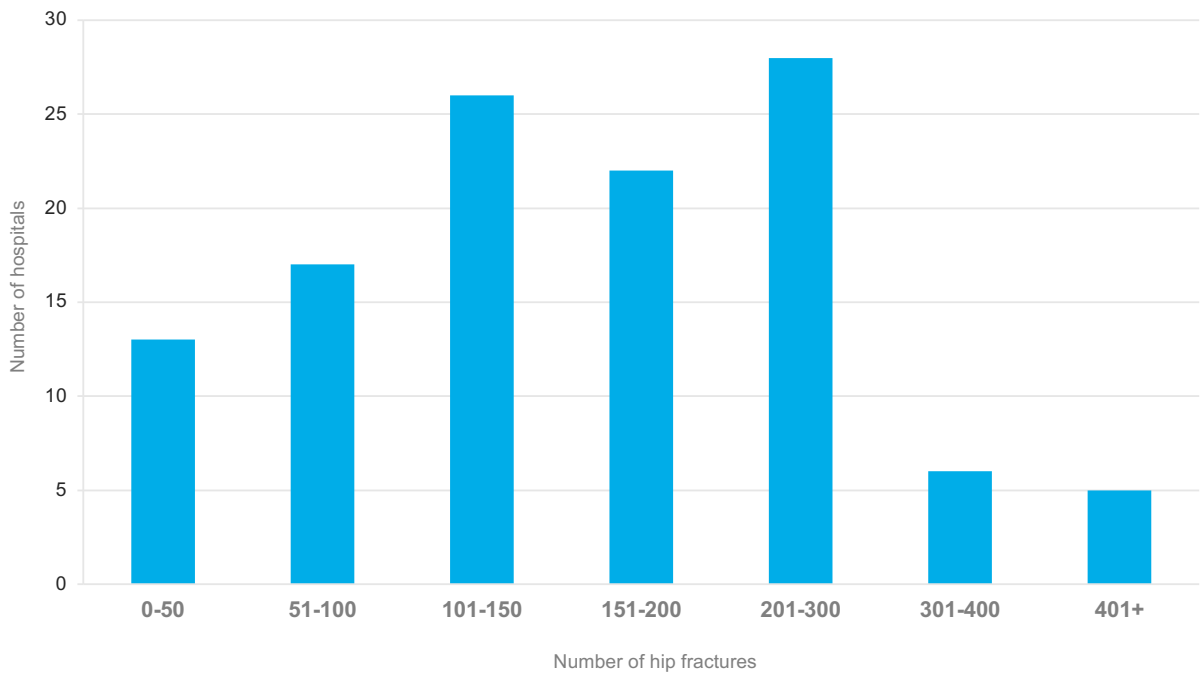
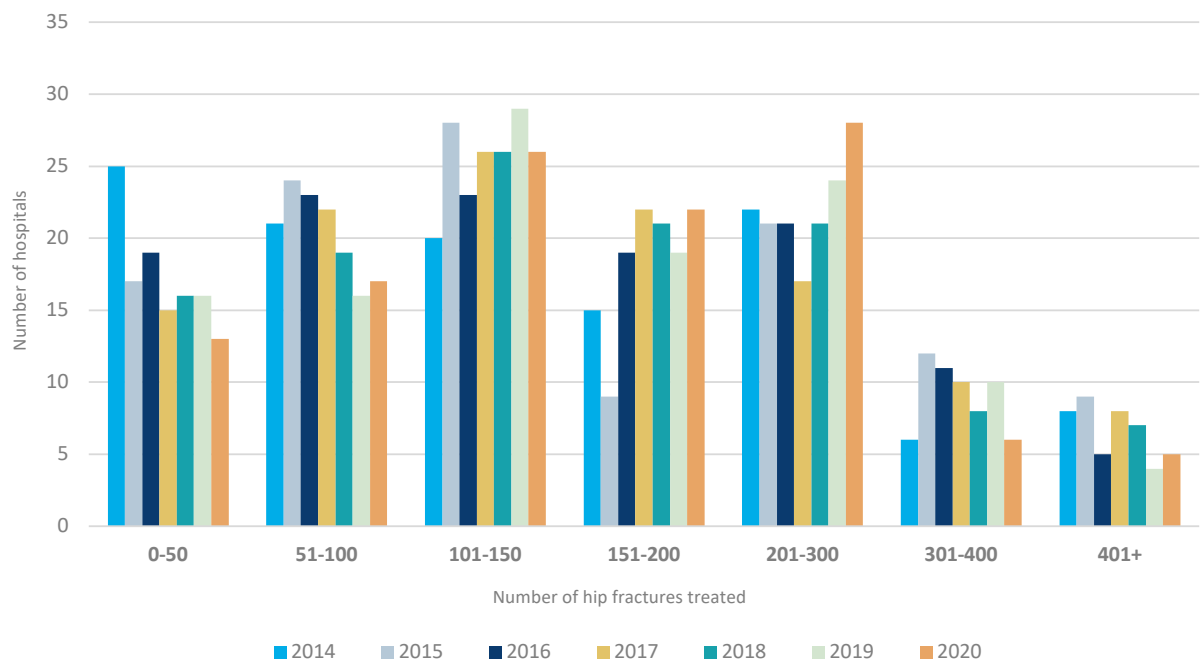


FIGURE 59 NUMBER OF HIP FRACTURES TREATED 2014–2020



RESULTS 2: SERVICE MODEL OF CARE

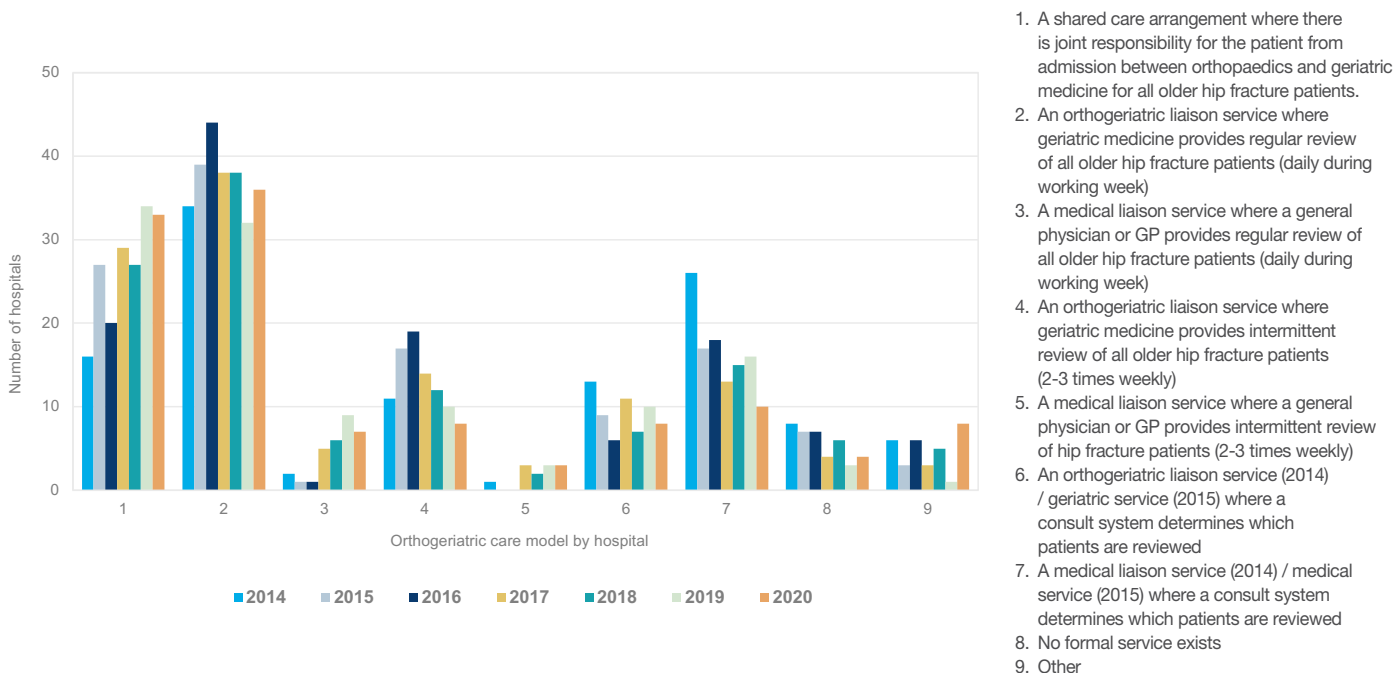
Research evidence supports the provision of integrated orthogeriatric care to older people who have sustained a hip fracture. Orthogeriatric care involves both specialties of orthopaedics and geriatric medicine and while the best model has not been determined, older patients cared for by both physicians and surgeons have surgery more quickly and improved short term outcomes. The geriatrician is involved in the preoperative optimisation of the patient in preparation for surgery. They take a lead in the patient's post-operative medical care and coordinate the discharge planning process. Implicit in this role are many of the aspects of basic care including nutrition, hydration, pressure care, bowel and bladder management, and monitoring of cognition and coexisting conditions. Hospitals that do not have access to a geriatric medicine service must look for ways to provide orthogeriatric care that utilises alternative medical practitioners, such as orthopaedic surgeons, anaesthetists, general physicians and general practitioners.

Over the eight years of the facility level audit, it can be seen that geriatricians are providing greater oversight of older people who have fractured their hip, represented by the increasing numbers of ANZ hospitals reporting shared care arrangements or regular input by an orthogeriatric liaison service. In 2020, shared care arrangements were reported in 28% of hospitals (33/117). A weekday orthogeriatric liaison service was reported in 31% (36/117) of hospitals. These are the two most common models reported.

This year, two new questions were asked to better understand the tools used to assess delirium and patient frailty. All hospitals submitted a response to both questions. Delirium assessment has been included in the patient level audit for two years but the data does not provide insight into the tools preferred by clinicians at treating hospitals. This year, the facility audit has asked for information on which validated tool is used to undertake assessment as it is most likely a hospital will use a preferred tool, rather than different tools for individual patients. The 4AT was used by 43% (50/117) of hospitals, the CAM by 33% (39/117), another tool by 15% (18/117) and 9% (10/117) either did not use a tool or did not know.

Frailty is common in older people who sustain a hip fracture and is associated with length of stay and complications. It is increasingly being used as an assessment of risk and to inform planning and prognosis after hip fracture. There are a number of validated tools but it is not known how widely these tools are used in the New Zealand and Australian context, nor which tool (if used) is the most commonly used for assessment. In 2020, 53% (62/117) responded they did not collect frailty, 17% (20/117) reported using the Clinical Frailty Scale, 11% (13/117) used another scale and 19% (22/117) were not sure if frailty was collected.

FIGURE 60 ORTHOGERIATRIC CARE SERVICE MODEL BY HOSPITAL 2014–2020



1. A shared care arrangement where there is joint responsibility for the patient from admission between orthopaedics and geriatric medicine for all older hip fracture patients.
2. An orthogeriatric liaison service where geriatric medicine provides regular review of all older hip fracture patients (daily during working week)
3. A medical liaison service where a general physician or GP provides regular review of all older hip fracture patients (daily during working week)
4. An orthogeriatric liaison service where geriatric medicine provides intermittent review of all older hip fracture patients (2-3 times weekly)
5. A medical liaison service where a general physician or GP provides intermittent review of hip fracture patients (2-3 times weekly)
6. An orthogeriatric liaison service (2014) / geriatric service (2015) where a consult system determines which patients are reviewed
7. A medical liaison service (2014) / medical service (2015) where a consult system determines which patients are reviewed
8. No formal service exists
9. Other

RESULTS 3: PROTOCOLS AND ELEMENTS OF CARE

Protocols and pathways are interventions used in the provision of health care that aim to improve the quality, cost and satisfaction of that care. They help to sequence specific aspects of care for a given condition, such as hip fracture, and therefore improve communication and collaboration between health care professionals.

HIP FRACTURE PATHWAY

In 2020, 90% (105/117) reported having a hip fracture pathway: 30% in the emergency department only and 60% for the whole acute journey. This compares with 72% (87/121) reporting the use of a hip fracture pathway in 2016, the first year of both patient level and facility level reporting.

COMPUTED TOMOGRAPHY (CT) / MAGNETIC RESONANCE IMAGING (MRI)

In 2020, 54% (63/117) reported the availability of a protocol or pathway to access either CT or MRI if plain imaging of a suspected fracture was inconclusive. This compares with 50% (60/121) in 2016 showing little change over the past five years. For some hospitals, the introduction of a protocol may be an opportunity to improve the diagnosis of clinically suspicious fractures, since Figures 24 and 25 show 12% of patients in New Zealand, and 7% of patients in Australia, are delayed to surgery due to a delayed diagnosis. It is unknown if delayed diagnoses are more likely to occur in hospitals without a CT/MRI protocol.

VENOUS THROMBOEMBOLISM (VTE)

VTE is a serious complication of lower limb trauma and agreed protocols to prevent its onset are common. In 2020, 93% (109/117) of respondents reported that their hospitals did utilise a protocol for the prevention of VTE. This is consistent with last year and an increase from 88% (107/121) reported in 2016.

PAIN PATHWAY

In 2020, a protocol or pathway for pain was available at 84% (98/117) of hospitals: 36% in the emergency department only and 48% for the whole acute journey. These results show an increase in the overall proportion of hospitals using a pathway (72% last year) with the greatest change in the proportion of respondents reporting a pathway in the ED. This year's responses compare with 2016 when 61% (74/121) of respondents reported the use of a protocol or pathway for pain.

The facility level audit also asks respondents if patients are offered local nerve blocks as part of preoperative and postoperative pain management. This year, 91% (107/117) responded that patients were offered nerve blocks preoperatively 'always' or 'frequently' and 78% (91/117) responded that patients were offered nerve blocks for postoperative pain relief 'always' or 'frequently'.

CHOICE OF ANAESTHESIA

This question has remained constant since the facility audit commenced eight years ago. The question asks if hip fracture patients are routinely offered a choice of anaesthesia. In 2020, 77% (90/117) of hospitals reported routinely offering a choice of anaesthesia 'always' or 'frequently'. Whilst this is lower than last year, it does represent an increase from 2016 when 69% (84/121) reported choice was offered 'always' or 'frequently'.

PLANNED THEATRE LIST

The ANZ Guideline for Hip Fracture Care in Adults recommends that older hip fracture patients are operated on a scheduled list in daytime working hours. In 2020, 46% (53/117) of respondents reported having access to a planned operating theatre list, or planned trauma list, for hip fracture patients. This is similar to last year but an improvement from 39% (47/121) in 2016. The proportion of ANZ hospitals reporting access to a planned theatre list has remained relatively steady in the past five years and may contribute to the primary delay to surgery reported in Figures 24 and 25.

WEEKEND THERAPY

Mobilisation on the day of, or day after, hip fracture surgery helps to restore movement and function and prevent complications. Low, or delayed, mobility after surgery for a hip fracture is more likely to result in poorer short term outcomes and recovery of mobility after discharge. Provision of access to weekend therapy ensures the day of surgery does not negatively impact

the rehabilitation process. In 2020, 82% (96/117) of respondents reported their hospital as providing routine access to weekend physiotherapy services. This figure is similar to previous years and is relatively unchanged in the past five years.

FIGURE 61 NEW ZEALAND HOSPITALS REPORTED ELEMENTS OF CARE

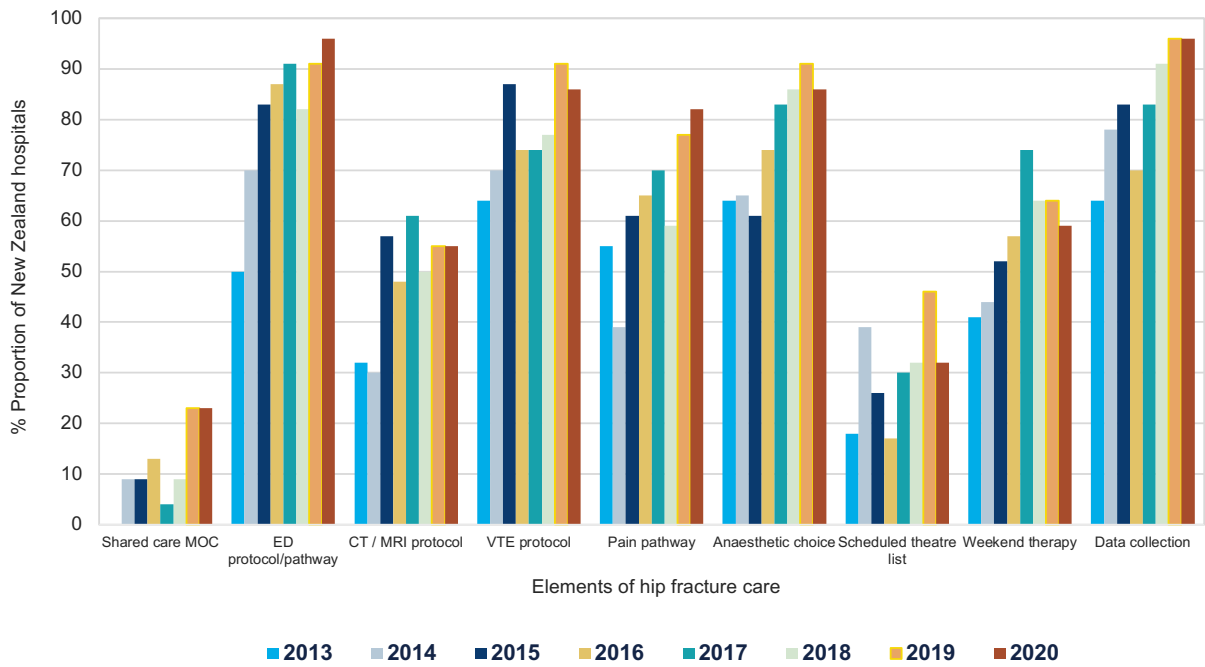
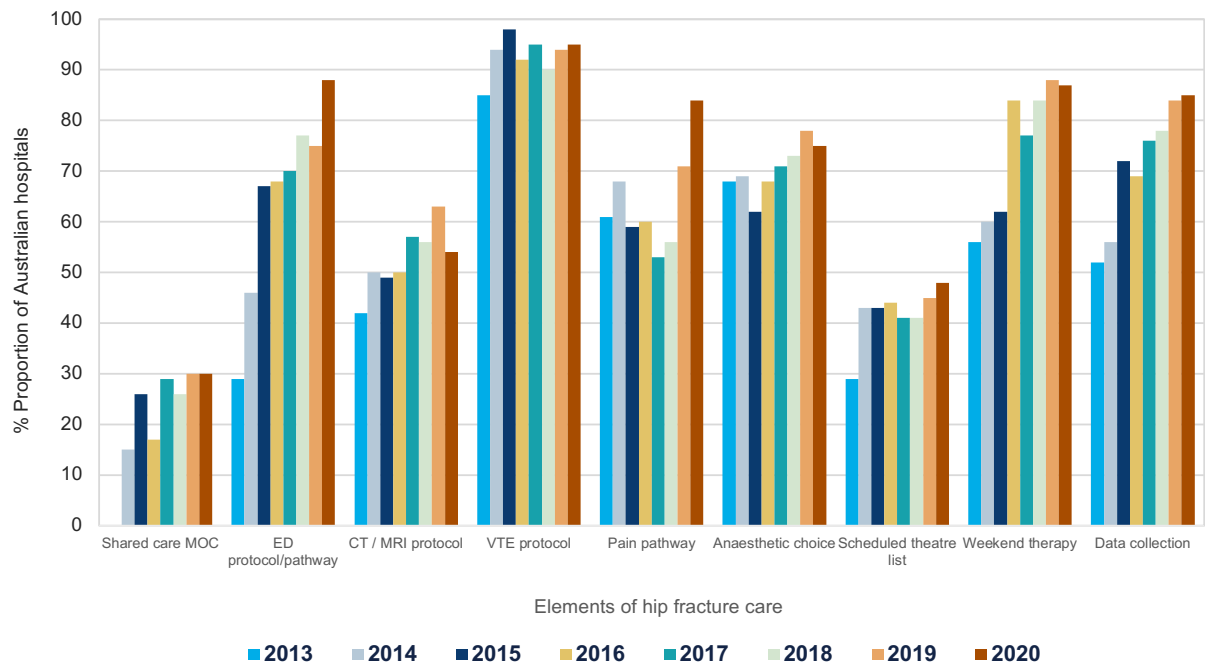


FIGURE 62 AUSTRALIAN HOSPITALS REPORTED ELEMENTS OF CARE



RESULTS 4: BEYOND THE ACUTE HOSPITAL STAY

REHABILITATION

Early mobilisation and rehabilitation should be encouraged as it leads to improved functional mobility. Structured, multidisciplinary programmes supporting early discharge home, or discharge to a structured rehabilitation program for those patients needing more defined care, are recommended to facilitate functional recovery. In 2020, 44% reported access to both onsite and offsite rehabilitation; 50% reported access to home based rehabilitation (Table 1 and Figure 59).

FRACTURE LIAISON SERVICE

Dedicated resources allocated to the identification, management and follow up of minimal trauma fractures are successful in reducing refracture rates in people with osteopenia and osteoporosis. New Zealand has a national approach to making fracture liaison services available in all District Health Boards and has partnered successfully with Osteoporosis NZ. Despite these initiatives and consistent evidence supporting these services, the availability of fracture liaison services is reported at 41% (48/117).

OUTPATIENT CLINICS

Again in 2020, access to orthopaedic clinics remains high at 91% (106/117). Access to public clinics for falls, osteoporosis, or a combined falls and bone clinic, are lower at 58% (68/117), 49% (57/117) and 22% (26/117), respectively.

PATIENT AND CARER INFORMATION

The ANZ Guideline for Hip Fracture Care in Adults recommends offering patients, or their family, information about hip fracture treatment and care in a range of media and appropriate languages. All key decisions about care should include discussion with patients and/or their family or carer. A steady increase in the provision of written information on treatment and care after hip fracture has been seen over the years of audit, and this year, 56% (66/117) reported providing this at their hospital. The routine provision of individualised written information on the prevention of future falls and fractures was reported by 26% (30/117).

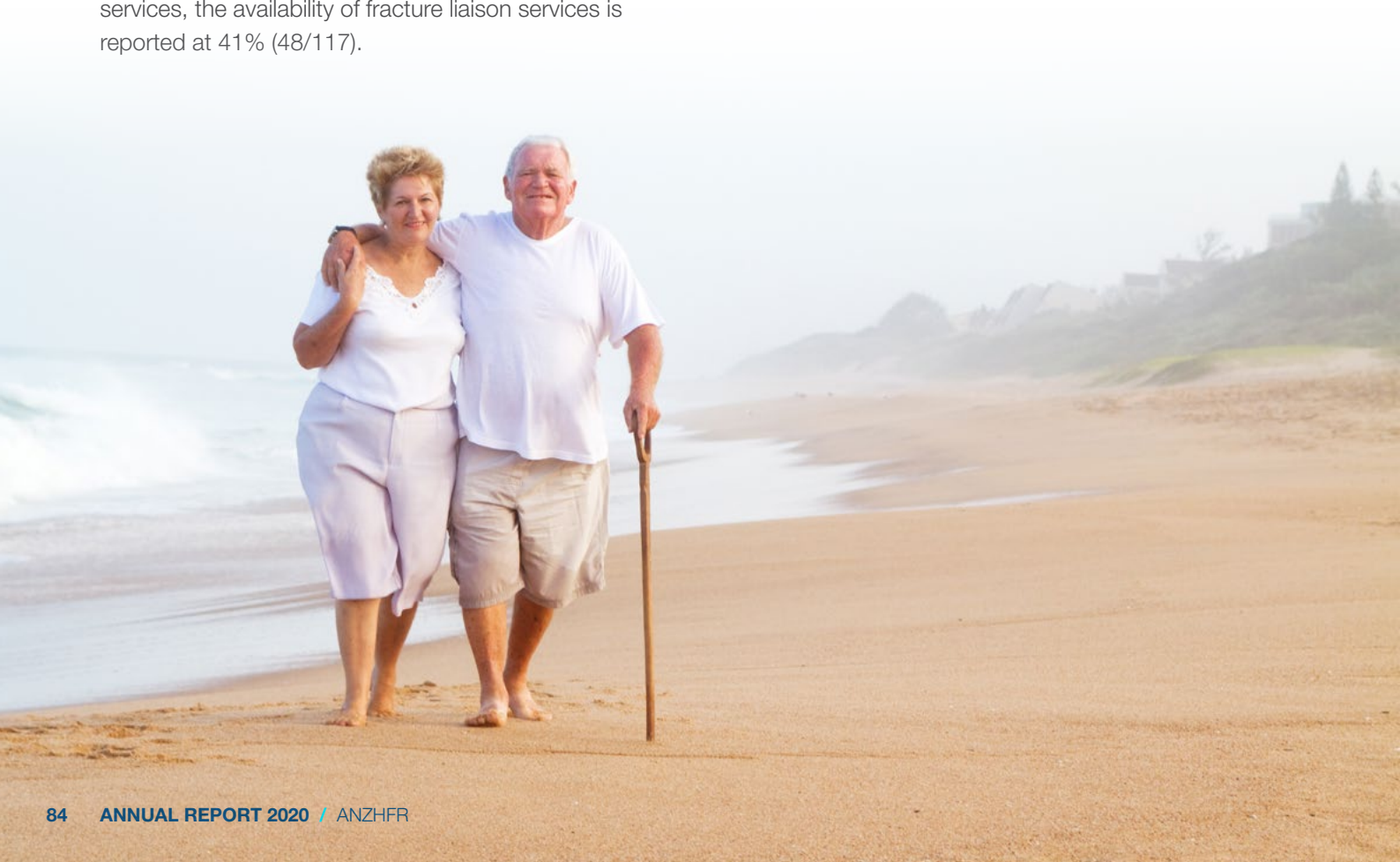
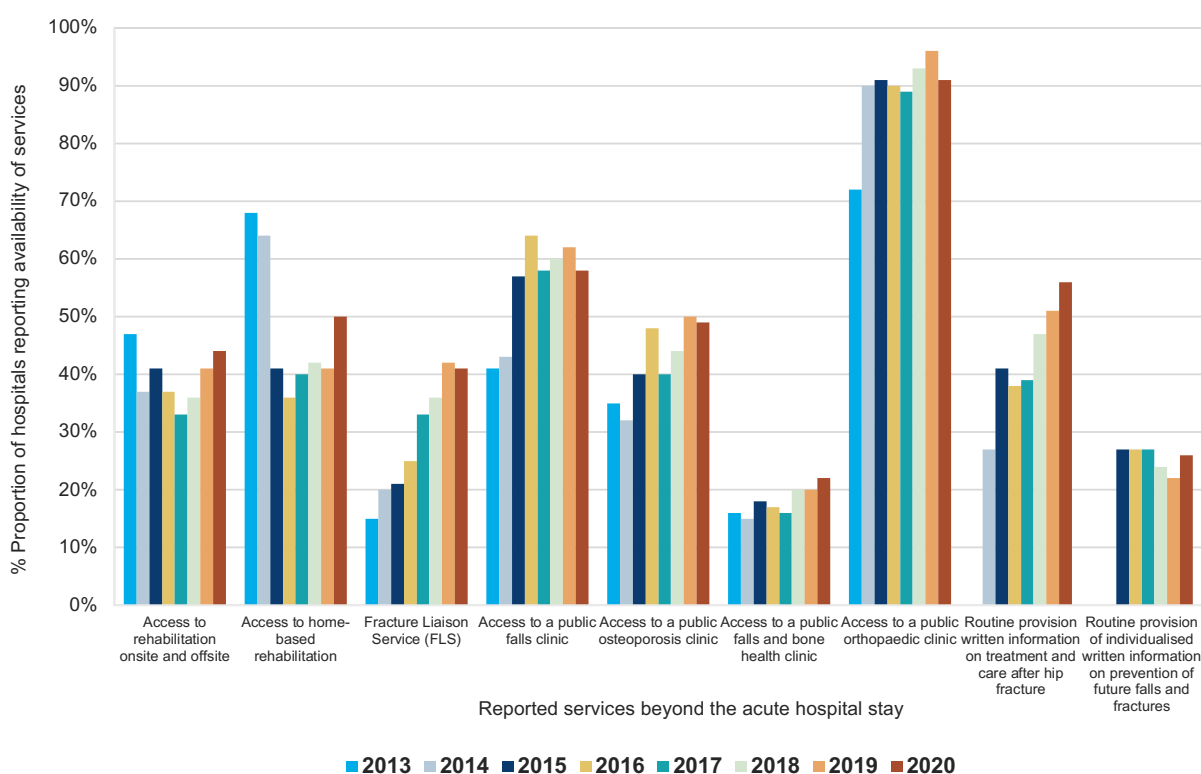


TABLE I PROPORTION OF NEW ZEALAND AND AUSTRALIAN HOSPITALS REPORTING SPECIFIC SERVICES BEYOND THE ACUTE HOSPITAL STAY

	2013	2014	2015	2016	2017	2018	2019	2020
Access to rehabilitation onsite and offsite	47%	37%	41%	37%	33%	36%	41%	44%
Access to home-based rehabilitation	68%	64%	41%	36%	40%	42%	41%	50%
Fracture Liaison Service (FLS)	15%	20%	21%	25%	33%	36%	42%	41%
Access to a public falls clinic	41%	43%	57%	64%	58%	60%	62%	58%
Access to a public osteoporosis clinic	35%	32%	40%	48%	40%	44%	50%	49%
Access to a public falls and bone health clinic	16%	15%	18%	17%	16%	20%	20%	22%
Access to a public orthopaedic clinic	72%	90%	91%	90%	89%	93%	96%	91%
Routine provision written information on treatment and care after hip fracture	n/a#	27%	41%	38%	39%	47%	51%	56%
Routine provision of individualised written information on prevention of future falls and fractures	n/a#	n/a#	27%	27%	27%	24%	22%	26%

FIGURE 63 PROPORTION OF NEW ZEALAND AND AUSTRALIAN HOSPITALS REPORTING SPECIFIC SERVICES BEYOND THE ACUTE HOSPITAL STAY



APPENDIX 1:

ANZHFR STEERING GROUP MEMBERSHIP

The ANZHFR is based at the Falls, Balance and Injury Research Centre at Neuroscience Research Australia (NeuRA). Members of the ANZHFR Steering Group are:

MEMBERS OF THE ANZHFR STEERING GROUP ARE:

Professor Jacqueline Close, Geriatrician Co-Chair

Professor Ian Harris, Orthopaedic Surgeon Co-Chair

Ms Elizabeth Armstrong (Australian Registry Manager)

Mr Brett Baxter (Physiotherapist, Australian Physiotherapy Association)

Dr Jack Bell (Advanced Accredited Practising Dietitian, Dietitians Australia)

Prof Ian Cameron (Rehabilitation Physician, Australasian Faculty of Rehabilitation Medicine)

A/Prof Mellick Chehade (Orthopaedic Surgeon, Australian and New Zealand Bone and Mineral Society)

Dr Owen Doran (Emergency Medicine Physician, Australasian College of Emergency Medicine)

A/Prof Kerin Fielding (Orthopaedic Surgeon, Royal Australasian College of Surgeons and Osteoporosis Australia)

Mr Stewart Fleming, (Webmaster)

Ms Christine Gill (CEO, Osteoporosis New Zealand)

Dr Roger Harris (Geriatrician, Australian and New Zealand Society for Geriatric Medicine)

Dr Sarah Hurring (Geriatrician, Clinical Lead New Zealand)

Mr Angus Jennings (Orthopaedic Surgeon, New Zealand Orthopaedic Association)

Dr Angel Hui-Ching Lee (Geriatrician, Royal Australasian College of Physicians)

Dr Catherine McDougall (Orthopaedic Surgeon, Australian Orthopaedic Association)

Dr Sean McManus (Anaesthetist, Australian and New Zealand College of Anaesthetists)

A/Prof Rebecca Mitchell (Injury Epidemiologist, Australian Institute Health Innovation, Macquarie University)

A/Prof Marinis Pirpiris (Orthopaedic Surgeon, Victoria)

Dr Gretchen Poiner (Consumer)

Dr Hannah Seymour (Geriatrician, Australian and New Zealand Society for Geriatric Medicine)

Ms Anita Taylor (Nurse Practitioner, Australian and New Zealand Orthopaedic Nurses Association)

Ms Nicola Ward (New Zealand National Coordinator)

Dr Mark Wright (Orthopaedic Surgeon, New Zealand)

ATTENDEES

Ms Linda Roylance (Secretariat)

Ms Karen Lee, ANZHFR Project Officer

A photograph of two surgeons in an operating room, wearing blue scrubs, masks, and hairnets. They are focused on a surgical procedure. The image is overlaid with a large, semi-transparent blue diamond shape that contains white text. In the bottom right corner, there is a decorative graphic of several overlapping squares in various shades of blue, teal, and orange.

**THE CARE
OF PEOPLE
WITH HIP FRACTURES
HAS IMPROVED OVER TIME,
AND WE REMAIN COMMITTED TO
DRIVING AND REPORTING
THAT IMPROVEMENT
INTO THE FUTURE**



ANZHF

Australian & New Zealand Hip Fracture Registry