



# ANNUAL REPORT 2019



**ANZHFR**

Australian & New Zealand Hip Fracture Registry

# ENHANCING OUTCOMES FOR OLDER PEOPLE

The ANZHFR would like to acknowledge and thank sincerely the clinical and administrative staff of the 67 hospitals that have contributed to the Patient Level Report and the 118 hospitals that contributed to the Facility Level Report. Without their support, dedication, and energy, 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	ED	Emergency Department
AFRM	Australasian Faculty of Rehabilitation Medicine	FLS	Fracture Liaison Service
ANZ	Australia and New Zealand	GP	General Practitioner
ANZBMS	Australian and New Zealand Bone and Mineral Society	HDU	High Dependency Unit
ANZCA	Australian and New Zealand College of Anaesthetists	ICU	Intensive Care Unit
ANZHFR	Australian and New Zealand Hip Fracture Registry	MRI	Magnetic Resonance Imaging
ANZONA	Australian New Zealand Orthopaedic Nurses Association	NHFD	National Hip Fracture Database
ANZSGM	Australian and New Zealand Society for Geriatric Medicine	NHMRC	National Health and Medical Research Council
AOA	Australian Orthopaedic Association	NZ	New Zealand
APA	Australian Physiotherapy Association	NZOA	New Zealand Orthopaedic Association
ASA	American Society of Anesthesiologists	OA	Osteoporosis Australia
AUS	Australia	ONZ	Osteoporosis New Zealand
CT	Computed Tomography	OT	Operating Theatre
		RACP	Royal Australasian College of Physicians
		RACS	Royal Australasian College of Surgeons
		VTE	Venous Thromboembolism



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# CO-CHAIRS' FOREWORD



Welcome to the 2019 Annual Report, which includes the fourth patient-level report and the seventh facility-level report. Sixty-seven hospitals contributed data during 2018 to the patient-level report (58% of all public hospitals treating hip fractures) and 118 hospitals across both countries contributed to the facility-level report (representing all public and some private hospitals treating hip fractures). At the time of writing, the Registry holds data on 36,789 episodes of care for hip fracture, up from 23,330 at the time of writing the 2018 report.

The management of hip fracture crosses many clinical areas, from presentation in the emergency department, through pain management, anaesthetics, geriatric and other medical specialties, surgery, nursing, physiotherapy, dietitian services, occupational therapy and rehabilitation, all of which interact with each other. For this reason, the focus of the ANZ Hip Fracture Registry (ANZHFR) has been to look at care at the level of the hospital rather than any single clinical area. Therefore, both the facility-level report and the patient-level report are summarised at the level of the hospital.

In this report, you will note that the naming of hospitals has been expanded with only three hospitals of the total of 67 choosing not to be identified. We have found the identification of hospitals in the report has been a strong driver of change, as it has motivated local clinicians and managers to focus opportunities for improvement; the results of which can be seen in the changes in performance from the previous report. We are not aware of any negative effects of hospital naming and we encourage those hospitals that have not done so to consider having their institution named in the next report.

The acceptance of the binational Hip Fracture Care Clinical Care Standard, released in 2016, has enhanced the ability of the Registry to compare performance across hospitals. However, hospital performance reported in the Registry is also dependent on the data provided. Reports on data completeness are provided but some hospitals may be missing patients. This will be easier to detect in the future by using data linkage with state and national datasets. Data accuracy is also important for any Registry. To address this, an audit of ANZHFR data was conducted in 2017 and the results will be published in BMJ Open Quality this year. Good overall accuracy was achieved, and this was independent of the method of collection (we purposefully chose hospitals with different data collector roles: one surgical, one medical and one nursing).

2018 saw the roll out of the “Hip Fests” – one-day, state-based workshops bringing together people involved

in hip fracture care to share experiences with the aim of improving local and regional systems. Hip Fests were held in Western Australia and New South Wales in 2018 and they continued in 2019 in Queensland, Tasmania and South Australia. Events are already planned for Auckland (July) and Christchurch (September) in New Zealand and Victoria (October). To date, almost 600 people have attended the Hip Fests and feedback from the workshops has been extremely positive. The breadth of experience within one room ensures conversations amongst attendees empower clinicians and services to innovate and create a variety of solutions by using data to audit care provision. The ANZHFR plans to continue regular Hip Fests in coming years.

2018 also saw the establishment of the Research Committee within the ANZHFR, and several projects have been chosen to start the research programme within the Registry, including a trial of routine dietary supplementation. Sites wishing to contribute to projects or to develop their own Registry-based research should contact the Registry directly.

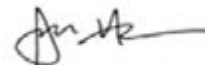
The Registry has continued to liaise with government bodies to enhance Registry capacity, efficiency and quality. In Australia, the Registry has made a submission to the Australian Government on their Draft National Clinical Quality Registry Strategy and commenced discussions with the Australian Institute of Health and Welfare around the topic of data linkage to the National Death Index to improve the accurate reporting of this important outcome. Across the Tasman, the Health Quality and Safety Commission New Zealand has held a workshop with patients to explore the possibility of developing patient important measures to add to the public reporting of the Registry with the primary theme being communication and information during the patient care journey.

As with every report, we acknowledge that the ongoing and expanding activities of the Registry would not be possible without input from clinicians and managers at the Registry and at each of the contributing sites, all of whom make significant voluntary efforts to ensure the success of the ANZHFR. The care of people with hip fractures has improved over time, and we remain committed to driving and reporting that improvement into the future.



**Professor Jacqui Close**  
**Geriatrician**

Co-Chair  
Australian and New Zealand  
Hip Fracture Registry



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**Orthopaedic Surgeon**

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Australian and New Zealand  
Hip Fracture Registry





# EXECUTIVE SUMMARY

The Australian and New Zealand Hip Fracture Registry is a binational audit of hip fracture care and secondary fracture prevention. The objective of the Registry is to use data to improve the care provided to older people who sustain a broken hip. This 2019 Annual Report contains patient-level data from 67 hospitals and facility-level data from 118 hospitals. It is the fourth year of reporting patient-level information and the seventh year of reporting facility-level elements of care provided by hospitals to patients with a fractured hip. There has been steady progress in hospital participation from 24 hospitals reported in the first patient level report. The commitment to improving hip fracture care from clinical, administrative or executive staff is evident by this continued growth of the Registry.

The data collected and reported by the Registry are used to generate feedback against the Hip Fracture Care Clinical Care Standard, a bi-national standard released in 2016 by the Australian Commission on Safety and Quality in Health Care, in partnership with the Health Quality & Safety Commission New Zealand. The Hip Fracture Care Clinical Care Standard assists health care providers to deliver appropriate, safe and high quality care and reduce unwarranted variation between recipients of care. It contains seven statements addressing priority areas for improvement initiatives: care at presentation; pain management; orthogeriatric model of care; timing of surgery; mobilisation and weight-bearing; minimising the risk of another fracture; and transition from hospital care.

In 2018, improvement in aspects of hip fracture care can be readily seen: however there are areas of care that show slow progress or remain unchanged ensuring efforts must continue. In the past 12 months, the Registry has enhanced the real-time feedback provided

to users through the online database. A dashboard uses data to provide hospital level summaries on numbers of records created, time based measures and proportions of patients achieving the bi-national quality statements. A level of access that provides access to only the dashboard and aggregated data reports permits hospital performance to be shared with the clinical team and hospital executive. This immediate and locally specific information is a great driver of improvement.

Another initiative of the Registry in 2018 was the commencement of state-wide “Hip Fests” to harness the collective knowledge of key stakeholders and to inspire and enable those involved in the provision of hip fracture care. In Perth, Western Australia, more than 60 attendees gathered and in NSW, over 170 took time to travel to Sydney. All were attending from both regional and city-based services to share their experiences, highlight the challenges and the many possible solutions to improving hip fracture care in both states. Of importance at each event was the patient perspective, a reminder to all of the importance of high quality care to the person with a hip fracture.

The Australian and New Zealand Hip Fracture Registry is hosted in New Zealand by the New Zealand Orthopaedic Association Hip Fracture Registry Trust, and in Australia, by Neuroscience Research Australia's Falls, Balance and Injury Research Centre and UNSW Sydney. The Registry acknowledges the support they provide and also acknowledges the support of a number of funding bodies that allow the Registry to continue its role in providing data to support improved hip fracture care.

## ANZ PATIENT LEVEL REPORT

62%

of patients had a documented pain assessment within 30 min of arriving at ED



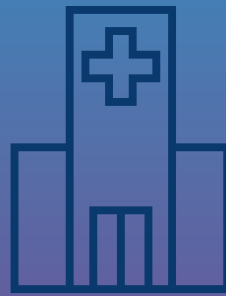
94%

of patients are allowed to full weight bear after surgery



11,995  
RECORDS

67  
ANZ  
HOSPITALS



20%

of patients were on active treatment for osteoporosis on discharge



84%

of patients had a nerve block to manage pain before and/or after surgery, 69% before surgery



77%

of patients have surgery within 48 hours



46%

of patients had a preoperative assessment of cognition



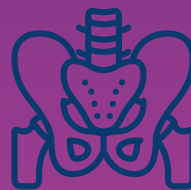
## ANZ FACILITY LEVEL DATA



118  
HOSPITALS

45%

of hospitals had planned operating lists for hip fracture patients



22%

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



72%

of hospitals used a pain protocol for hip fracture patients

29%

of hospitals have a shared care model between orthopaedics and geriatric medicine





# INTRODUCT

Hip fracture is the most serious and costly fall-related injury suffered by older people. More than 25,000 people across Australia and New Zealand break their hip each year, with the cost to the economy approximately \$1 billion annually.

As life expectancy increases and the population ages, the number of people admitted to hospital with a hip fracture will continue to rise. There are considerable costs of a hip fracture, both personal and community wide, associated with the acute treatment, the costs of rehabilitation, assistance with day-to-day living activities and the impact of long-term care placement.



# ION



The Australian and New Zealand Hip Fracture Registry (ANZHFR) is a hip fracture specific clinical quality registry that monitors and reports on key indicators of hip fracture care for older people, in New Zealand and Australia. The ANZHFR collects and manages data for analysis and descriptive reporting to drive improvement in hip fracture care. The ANZHFR data collection is aligned with the Australian and New Zealand Guideline for Hip Fracture Care and the Australian Commission on Safety and Quality in Health Care Hip Fracture Care Clinical Care Standard. The ANZHFR systematically monitors the quality of hip fracture care by reporting outcomes and variation in care at hospitals participating in the Registry.

The ANZHFR was established in 2012, with the objective of using patient-level and facility-level data to improve the delivery of hip fracture care across both countries. Ultimately, the Registry aims to maximise outcomes by reducing mortality and morbidity, reducing rates of institutionalisation, maximising functional independence, and preventing future fractures.

Oversight for the Registry is provided by the ANZHFR Steering Group. The Steering Group is comprised of clinicians and experts in the field and has representation from key professional and consumer organisations. The Group is co-chaired by a geriatrician and an orthopaedic surgeon reflecting the shared-care model recommended for the management of hip fracture patients. Sub-committees of the ANZHFR Steering Group include the New Zealand Implementation Committee, the Australian Management Committee, the Data Management Sub-committee and the Research Sub-committee. The Steering Group, Data Management and Research Sub-committees have representation from both sides of the Tasman.

## DATA COLLECTION

The ANZHFR has two components: facility-level data collection to document services and elements of care provided by hospitals to people who have fractured their hip; and collection of a minimum dataset at the level of the patient for all people aged 50 years and over admitted to a participating hospital with a minimal trauma fracture of the hip. The ANZHFR uses the data collected to evaluate care against the Hip Fracture Care Clinical Care Standard and its seven quality statements: care at presentation; pain management; orthogeriatric model of care; timing of surgery; mobilisation and weight-bearing; minimising the risk of another fracture; and transition from hospital care. These statements reflect the clinical care that should be delivered to all patients at all hospitals.

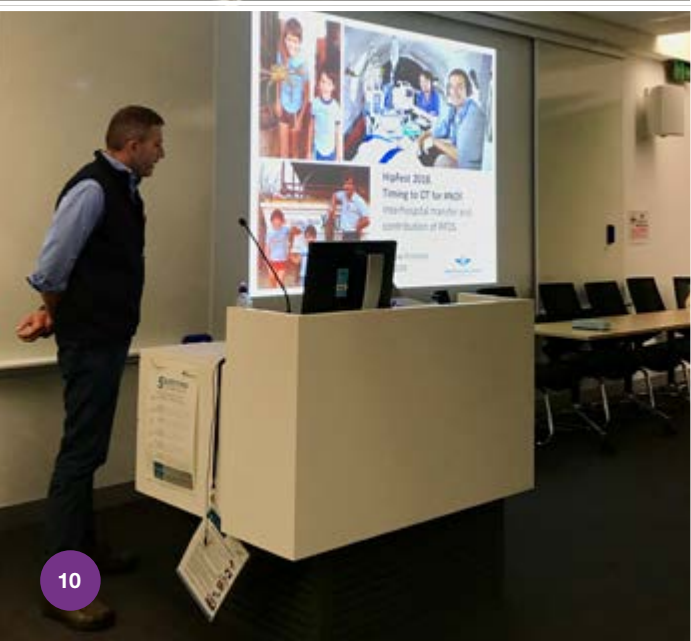
Collection and reporting of data accurately and in a consistent manner across hospitals provides the opportunity for meaningful comparison of performance. The ANZHFR identifies variation in care and outcomes between hospitals and across state and national jurisdictions. The Registry uses feedback of data to health professionals to drive system-level improvements in care and to subsequently track change over time. Feedback is provided in real-time to ensure clinical teams at participating hospitals are able to identify areas that would benefit from review and to enable participating hospitals to address barriers to the provision of high quality evidence based care in their local setting.



**“Great presentations, and variety of presentation, wonderful opportunity to meet others in my District and also across the State.”**

**Leading Better Value Care Program Manager, NSW**

**HIP FEST  
NSW+WA**





**“All the presentations were relevant and informative. It was really useful to hear how other sites manage hip fracture care. Great to have the opportunity to workshop in the afternoon.”**

**Nurse, WA**



## HIP FESTIVALS

In 2018, the ANZHFR commenced a series of “Hip Fests” to harness the collective knowledge of key stakeholders in health services, networks and districts across Australia and New Zealand. The purpose of these events is to inspire and enable those involved in the provision of hip fracture care, and to provide a forum to share best practice and learn from each other. They provide an opportunity to identify issues common across hospitals, and thus the opportunity to find common solutions, with the aim of driving improvement in hip fracture care across both countries. All events focus on the use of data and the Hip Fracture Care Clinical Care Standard to guide patient care.

The first two events were held in Perth and Sydney in the fourth quarter of 2018, with New Zealand North Island, South Australia, Tasmania and Queensland hosting events in the first half of 2019. Registered attendees included recovered patients and families, doctors, nurses, and allied health clinicians from the following areas of hip fracture care: emergency medicine; anaesthetics; pain management; orthopaedics; geriatric medicine; general medicine; rehabilitation; aged care services; general practice; community services; pharmacy; nutrition; exercise physiology; hospital and health-service decision makers.

## MEASURING PROGRESS

Participation in the patient-level data collection continues to grow. Since 2015, each year has seen an increase in the number of hospitals with approval to contribute data. In 2016, 25 hospitals were included in the first annual report, and this increased in 2017 to 34 hospitals, and in 2018 to 57 hospitals. This year, 67 hospitals are included in the report and 14 hospitals have approvals in place but have not yet implemented local systems to contribute data regularly. Of the hospitals without approval to contribute data, Bunbury, Geraldton, Royal Hobart, Grafton, Hornsby Ku-ring-gai, Lismore, Maitland, Ryde, Tweed, and Mackay hospitals are at various stages of the ethics and governance approval process that will enable their participation.

Image 1 (page 12) summarises hospital participation in the ANZHFR at the end of 2018.

It is important the ANZHFR evolves over time from being a quality assurance activity (provision of data) to something that drives change (quality improvement). The Registry will continue to enhance its utility over time to provide users with relevant information that is timely and useful to them. In 2019, additional questions were asked of the data around assessment and identification of delirium and the time of admission for residents living in private accommodation or residential aged care facilities (RACF). The data indicate large variation in each of these areas and this suggests these areas are worthy of further investigation. The ANZHFR provides an ideal environment to identify and subsequently explore such questions in further detail.

The ANZHFR will continue to explore mechanisms for embedding the minimum dataset within existing health system electronic data collections on both sides of the Tasman. The Registry will use data linkage to increase its efficiency, ensure data accuracy for important outcome measures, reduce the burden and costs to hospitals of data collection, avoid duplication, and improve rates of follow up. In particular, linkage with mortality data will increase the accuracy and completeness of reporting survival after hip fracture, linkage with hospitalisation data will provide a more accurate picture of the length of hospital stay, and linkage with aged-care data is likely to provide further information about patient outcomes following discharge from acute care.

With continued participation and access to existing high quality data collections, the ANZHFR will be able to make comparisons with other countries around the world that have national hip fracture registries. This will ensure that older people unfortunate enough to break their hip in New Zealand and Australia will have access to improved, high quality, and safe care no matter where they suffer their hip fracture.

## Image 1: ANZHFR hospital participation in the patient level audit

### HOSPITALS WITH ETHICS AND GOVERNANCE APPROVAL REGULARLY CONTRIBUTING PATIENT-LEVEL DATA TO THE ANZHFR

- WA: Albany Hospital, Fiona Stanley Hospital, Joondalup Hospital, Royal Perth Hospital, Sir Charles Gairdner Hospital
- SA: Flinders Medical Centre, Lyell McEwin Hospital, The Queen Elizabeth Hospital
- TAS: Launceston General Hospital
- VIC: Box Hill Hospital, Dandenong Hospital, Western Health (Footscray), Frankston Hospital, Geelong Hospital, Maroondah Hospital, The Austin Hospital, The Northern Hospital
- NSW: Armidale Hospital, Bankstown-Lidcombe Hospital, Blacktown Hospital, Campbelltown Hospital, Coffs Harbour Hospital, Concord Hospital, Gosford Hospital, John Hunter Hospital, Liverpool Hospital, Nepean Hospital, Orange Health Service, Port Macquarie Hospital, Prince of Wales Hospital, Royal North Shore Hospital, Royal Prince Alfred Hospital, St George Hospital, St Vincent's Hospital Darlinghurst, Sutherland Hospital, Tamworth Hospital, Westmead Hospital, Wollongong Hospital
- QLD: Cairns Hospital, Gold Coast University Hospital, Ipswich Hospital, Logan Hospital, Mater Hospital South Brisbane, Nambour Hospital, Princess Alexandra Hospital, Redcliffe Hospital, Robina Hospital, Rockhampton Hospital, Sunshine Coast University Hospital, The Prince Charles Hospital, Toowoomba Hospital, Townsville Hospital
- NZ: Auckland City Hospital, Christchurch Hospital, Dunedin Hospital, Gisborne Hospital, Hawkes Bay Hospital, Hutt Valley Hospital, Middlemore Hospital, Nelson Hospital, North Shore Hospital, Palmerston North Hospital, Southland Hospital, Tauranga Hospital, Waikato Hospital, Wairau Hospital, Wellington Hospital, Whakatane Hospital, Whanganui Hospital, Whangarei Hospital

### HOSPITALS WITH ETHICS AND GOVERNANCE APPROVAL TO CONTRIBUTE PATIENT-LEVEL DATA BUT DATA NOT CONTRIBUTED REGULARLY

- SA: Mount Gambier Hospital, The Royal Adelaide Hospital
- VIC: St Vincent's Hospital Melbourne, The Alfred
- NSW: Bowral Hospital, Shoalhaven Hospital
- QLD: Hervey Bay Hospital, QEII Jubilee Hospital
- NZ: Rotorua Hospital, Timaru Hospital, Wairarapa Hospital

### HOSPITALS IDENTIFIED AS ELIGIBLE TO CONTRIBUTE PATIENT-LEVEL DATA TO THE ANZHFR BUT NOT APPROVED TO CONTRIBUTE DATA

- WA: Geraldton Hospital, South West Health Campus Bunbury
- TAS: North West Regional Hospital, Royal Hobart Hospital
- NT and ACT: Alice Springs Hospital, Royal Darwin Hospital, Canberra Hospital
- VIC: Albury Wodonga Health, Ballarat Health Services, Goulburn Valley Health (Shepparton), Latrobe Regional Hospital, Mildura Base Hospital, Northeast Health Wangaratta, Royal Melbourne Hospital (Parkville), Sandringham Hospital, Southwest Healthcare (Warrnambool), The Bendigo Hospital, West Gippsland Healthcare Group, Western District Health Service (Hamilton), Wimmera Health Care Group (Horsham)
- NSW: Bathurst Hospital, Bega/South East Regional Hospital, Canterbury Hospital, Dubbo Hospital, Goulburn Hospital, Grafton Hospital, Hornsby Ku-ring-gai Hospital, Lismore Base Hospital, Maitland Hospital, Manning Hospital, Ryde Hospital, The Tweed Hospital, Wagga Wagga Hospital
- QLD: Bundaberg Hospital, Mackay Base Hospital
- NZ: Taranaki Hospital

#### References

1. Australian and New Zealand Hip Fracture Registry (ANZHFR) Steering Group. Australian and New Zealand Guideline for Hip Fracture Care: Improving Outcomes in Hip Fracture Management of Adults. Sydney: Australian and New Zealand Hip Fracture Registry Steering Group; 2014. Available at: [www.anzhfr.org](http://www.anzhfr.org)
2. Australian Commission on Safety and Quality in Health Care. Hip Fracture Care Clinical Care Standard. Sydney: ACSQHC, 2016. Available at: <https://www.safetyandquality.gov.au/our-work/clinical-care-standards/hip-fracture-care-clinical-care-standard/>



# DATA QUALITY, CAVEATS AND LIMITATIONS

The patient-level report includes data from 67 of 118 hospitals. In 2018, 11,995 records were contributed for the calendar year: 9,177 records from 49 Australian hospitals and 2,818 records from 18 New Zealand hospitals. Of the 11,995 records added across both countries in 2018, rates of follow up at 30 and 120 days were 60% and 54% respectively. In New Zealand, the rate of follow up at 30 days was 83% and at 120 days was 78%. In Australia, the rate of follow up at 30 days was 53% and at 120 days was 47%.

## DATA QUALITY ASSESSMENT

**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 on page 20 shows the average completeness of data for each hospital included in this report.

**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. The creation of new warnings in 2018 assists users to identify potentially wrong temporal data. These warnings flag unusual date and time combinations to help with data accuracy. If the data falls outside any of the limits specified, an immediate warning will pop up alerting the user. These pop-ups are attached to date and time variables such as ED arrival and discharge, time to surgery and length of stay.

**Coverage** refers to the proportion of eligible patients that are captured by the Registry. High levels of coverage allow the findings to be generalised to the whole population. If the capture rate is low, selection bias may be introduced where patients included or excluded are systematically different from each other. This may affect the generalisability of the findings.

## CAVEATS

- Figures in the patient-level report include data from Australia and New Zealand for all patients with an Emergency Department Arrival or an In-Hospital Fracture or a Transfer Date in the range 1st January 2018 up to and including 31st December 2018.
- Figures in the patient-level report only includes the records of people for whom data is available.
- Hospitals must have contributed more than nine (9) patient records during the relevant calendar year to be included in the patient-level report.
- New Zealand has elected to identify all hospitals with a hospital specific code. In Australia, a hospital specific code is used where local principal investigators and their hospital executive have elected to opt-in to identified reporting.
- Where local stakeholders have not opted-in, a randomly assigned number has been used consistently throughout this report. The hospital identification number will be provided to the listed principal investigator at each hospital.
- For 30 and 120 day outcome, hospitals have only been reported if they have at least 10 records and more than 80% of records have been followed up.
- The facility-level report includes aggregated data only. Responses were received from 118 hospitals, including two private hospitals.

# HIP FRACTURE CARE CLINICAL CARE STANDARD

In 2016, the Australian Commission on Safety and Quality in Health Care, in collaboration with the Health Quality & Safety Commission New Zealand, released the Hip Fracture Care Clinical Care Standard. The Standard plays a role in reducing unwarranted clinical variation and ensuring delivery of appropriate hip fracture care. Development of the Standard was informed by up-to-date clinical practice guidelines, identified gaps in evidence-based clinical practice, and the expertise of clinicians, researchers and consumers.

The purpose of the Hip Fracture Care Clinical Care Standard is to ensure all patients with a hip fracture from a minimal trauma injury receives optimal treatment from presentation to hospital through to discharge from hospital. The Hip Fracture Care Clinical Care Standard aims to optimise the assessment and management of the person suffering a hip fracture and to reduce the risk of another fracture in the future.

The Hip Fracture Care Clinical Care Standard contains seven statements that describe hip fracture care that ought to be offered to a person when they are admitted to hospital with a fractured hip. The Standard allows people to make informed decisions about their care and to understand the quality of care they should receive. The Standard allows clinicians to make decisions about appropriate care and allows health services to examine their performance and make improvements in the care provided by their service.

## 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.

- 78% of hospitals reported having a hip fracture pathway: 54% across the whole acute patient journey and 24% in the emergency department only
- 61% 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

- 55% of patients in New Zealand and 59% of patients in Australia were documented as having no cognitive issues prior to admission
- 35% and 50% 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.

- 72% of hospitals had a pathway for pain management in hip fracture patients: 47% across the whole acute patient journey and 25% in the emergency department only
- 54% and 64% 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 69% of patients in New Zealand and Australia, respectively, received analgesia in transit or within 30 minutes of presentation to the emergency department
- 57% and 73% 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.



- 73% of hospitals had an orthogeriatric service for older hip fracture patients: 29% utilising a shared-care arrangement with orthopaedics; 27% utilising a daily week-day geriatric medicine liaison service; and 17% an alternative orthogeriatric service model.
- 30% and 64% 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.

- 82% and 76% of patients in New Zealand and Australia, respectively, were operated on within 48 hours of presentation to hospital
- 34 hours in New Zealand and 37 hours in Australia was the average time to surgery for patients presenting directly to the operating hospital
- 44 hours in New Zealand and 53 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.

- 91% and 95% of patients in New Zealand and Australia, respectively, had unrestricted weight-bearing immediately after hip fracture surgery
- 86% and 91% of patients in New Zealand and Australia, respectively, were offered the opportunity to mobilise on the first day after surgery
- 3% 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
- 79% of patients in New Zealand and 47% of patients in Australia were followed up at 120 days after presentation to hospital: of those followed up, 21% and 24% 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.

- 72% and 76% of patients in New Zealand and Australia, respectively, had undergone a fall-risk assessment during their inpatient stay
- 26% and 18% 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, 38% and 35% 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.

- 14% and 24% 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 followed up at 120 days after presentation to hospital, 79% and 73% of patients in New Zealand and Australia, respectively, have returned to their own home at 120 days

# PARTICIPATION

## PATIENT LEVEL AUDIT

In 2018, 67 hospitals contributed data for the patient-level audit an increase from 57 reported in 2018. Fourteen ANZ hospitals had approvals in place to contribute data to the ANZHFR patient-level audit but did not contribute sufficient data for inclusion in this report.

### AUSTRALIAN HOSPITALS

	REPORT ID	N		REPORT ID	N
Albany Hospital	ABA	46	Mater Hospital	MSB	112
Armidale Hospital	ARM	49	Nambour Hospital	NBR	-
Austin Hospital	###	153	Nepean Hospital	NEP	213
Bankstown / Lidcombe Hospital	BKL	143	Prince Charles Hospital	PCH	336
Blacktown Hospital	###	144	Prince Of Wales Hospital	POW	190
Box Hill Hospital	BOX	237	Princess Alexandra Hospital	PAH	112
Cairns Hospital	CNS	213	Qeii Hospital	QII	33
Campbelltown Hospital	CAM	106	Queen Elizabeth Hospital	QEH	34
Coffs Harbour Base Hospital	CFS	120	Redcliffe Hospital	###	87
Concord Hospital	CRG	169	Robina Hospital	ROB	133
Dandenong Hospital	DDH	361	Rockhampton Hospital	ROK	89
Fiona Stanley Hospital	FSH	523	Royal North Shore Hospital	RNS	178
Flinders Medical Centre	FMC	175	Royal Perth Hospital	RPH	400
Footscray Hospital	FOO	392	Royal Prince Alfred Hospital	RPA	154
Frankston Hospital	FRA	101	Sir Charles Gairdner Hospital	SCG	316
Geelong Hospital	GUH	208	St George Hospital	STG	235
Gosford Hospital	GOS	362	St Vincent's Hospital Darlinghurst	SVD	103
Ipswich Hospital	IPS	111	Sunshine Coast University Hospital	SCU	224
John Hunter Hospital	JHH	395	Tamworth Hospital	TAM	106
Joondalup Hospital	JHC	176	The Northern Hospital	TNH	204
Launceston Hospital	LGH	103	The Sutherland Hospital	TSH	19
Liverpool Hospital	LIV	269	Toowoomba Hospital	TWB	193
Logan Hospital	LOG	106	Townsville Hospital	TSV	179
Lyell Mcewin Hospital	LMH	258	Westmead Hospital	WMD	207
Maroondah Hospital	MAR	69	Wollongong Hospital	TWH	331

### NEW ZEALAND HOSPITALS

	REPORT ID	N		REPORT ID	N
Auckland City Hospital	ACH	155	Rotorua Hospital	ROT	-
Christchurch Hospital	CHC	459	Southland Hospital	INV	84
Dunedin Hospital	DUN	169	Tauranga Hospital	TGA	213
Gisborne Hospital	GIS	34	Wairau Hospital (Blenheim)	BHE	50
Hawkes Bay Hospital	HKB	115	Waikato Hospital	WKO	308
Hutt Valley Hospital	HUT	121	Wellington Hospital	WLG	134
Middlemore Hospital	MMH	247	Whakatane Hospital	WHK	31
Nelson Hospital	NSN	95	Whanganui Hospital	WAG	54
North Shore Hospital	NSH	391	Whangarei Hospital	WRE	61
Palmerston North Hospital	PMR	97			

# FACILITY LEVEL AUDIT

In 2018, 118 hospitals contributed data for the facility-level audit: two private hospitals and 116 public hospitals identified as providing definitive care to older people who suffer a hip fracture. This number may change each year as public health system service configurations change and as private hospitals increase their participation in the ANZHFR.

## New Zealand Hospitals

Auckland City Hospital	Rotorua Hospital	Taranaki Base Hospital	Wanganui 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 Hospital	Southland Hospital	Wairau Hospital	

## Australian Hospitals

### NEW SOUTH WALES

Armidale Hospital  
Bankstown Lidcombe Hospital  
Bathurst Hospital  
Blacktown Hospital  
Bowral Hospital  
Campbelltown Hospital  
Canterbury Hospital  
Coffs Harbour Hospital  
Concord Hospital  
Dubbo Hospital  
Gosford Hospital  
Goulburn Base Hospital  
Grafton Base Hospital  
Hornsby Ku-ring-gai Hospital  
John Hunter Hospital  
Lismore Hospital  
Liverpool Hospital  
Maitland Hospital  
Manly Hospital  
Manning Hospital  
Mona Vale Hospital  
Nepean Hospital  
Orange Health Service  
Port Macquarie Hospital  
Prince of Wales Hospital  
Royal North Shore Hospital  
Royal Prince Alfred Hospital  
Ryde Hospital  
Shoalhaven Hospital  
South East Regional Hospital (Bega)  
St George Hospital  
St Vincent's Hospital  
Darlinghurst  
Sutherland Hospital

Tamworth Hospital  
The Tweed Hospital  
Wollongong Hospital  
Wagga Wagga Rural Referral Hospital  
Westmead Hospital  
Wollongong Hospital

### VICTORIA

Albury Wodonga Health  
Austin Hospital  
Ballarat Health Services  
Bendigo Hospital  
Box Hill Hospital  
Dandenong Hospital  
Frankston 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  
The Alfred  
The Northern Hospital  
University Hospital Geelong  
West Gippsland Healthcare Group (Warragul)  
Western District Health Service (Hamilton)  
Western Hospital (Footscray)  
Wimmera Base Hospital (Horsham)

### QUEENSLAND

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

### SOUTH AUSTRALIA

Flinders Medical Centre  
Lyell McEwin Hospital  
Mount Gambier and Districts Health Service  
Royal Adelaide Hospital  
The Queen Elizabeth Hospital

### WESTERN AUSTRALIA

Albany Hospital  
Fiona Stanley Hospital  
Geraldton Hospital  
Joondalup Health Campus  
Royal Perth Hospital  
Sir Charles Gairdner Hospital  
South West Health Campus (Bunbury)

### TASMANIA

Launceston General Hospital  
North West Regional Hospital  
Royal Hobart Hospital

### NORTHERN TERRITORY

Royal Darwin Hospital  
Alice Springs Hospital

### AUSTRALIAN CAPITAL TERRITORY

The Canberra Hospital



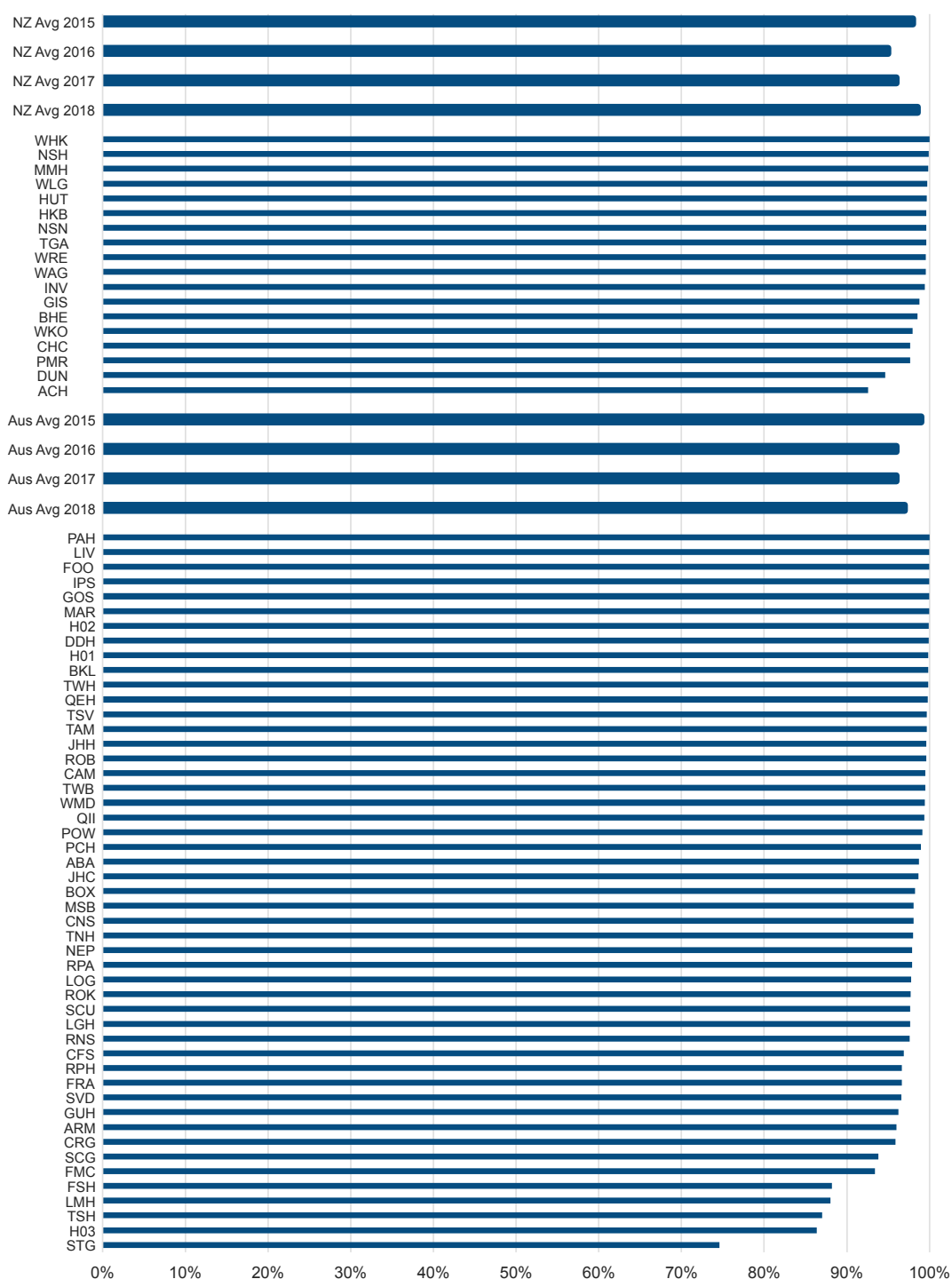
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# PATIENT LEVEL AUDIT

# SECTION I: DEMOGRAPHIC INFORMATION

**FIGURE I DATA COMPLETENESS**

Figure 1 shows the average completeness of all data for each patient record, shown as an average for each site, and for each country. Completeness is defined as the proportion of fields completed in the individual patient-level data collection form. 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.



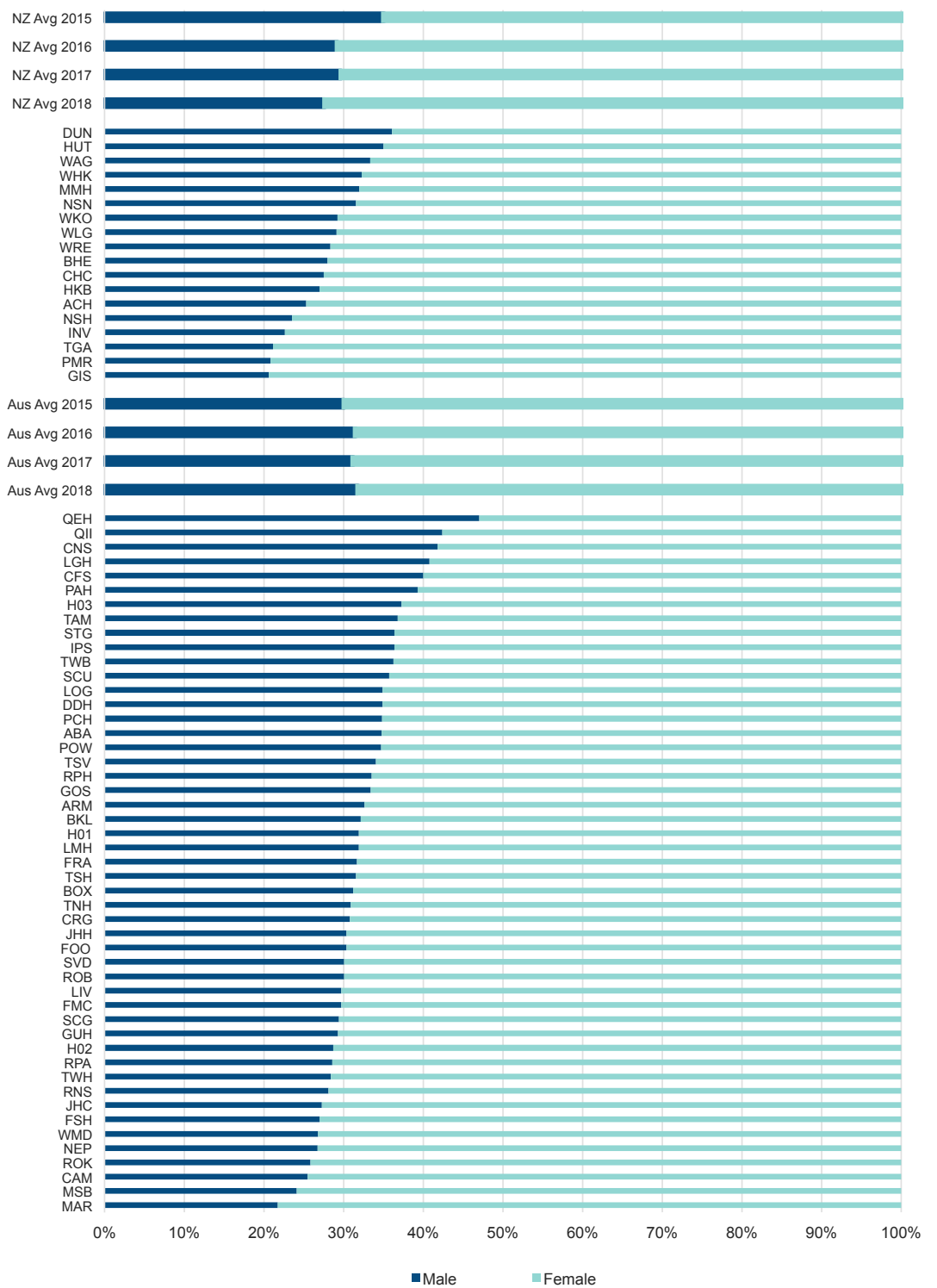


“It was a real inconvenience not being able to move properly and even when you get home you have to learn to walk and move differently so not to dislocate, but at four months, I am pleased with my progress and have fully recovered.”

MARY 64YRS • NZ • TOTAL HIP REPLACEMENT

**FIGURE 2 SEX**

Females comprised 72% and 68% of the New Zealand and Australian hip fracture patients in 2018, respectively.

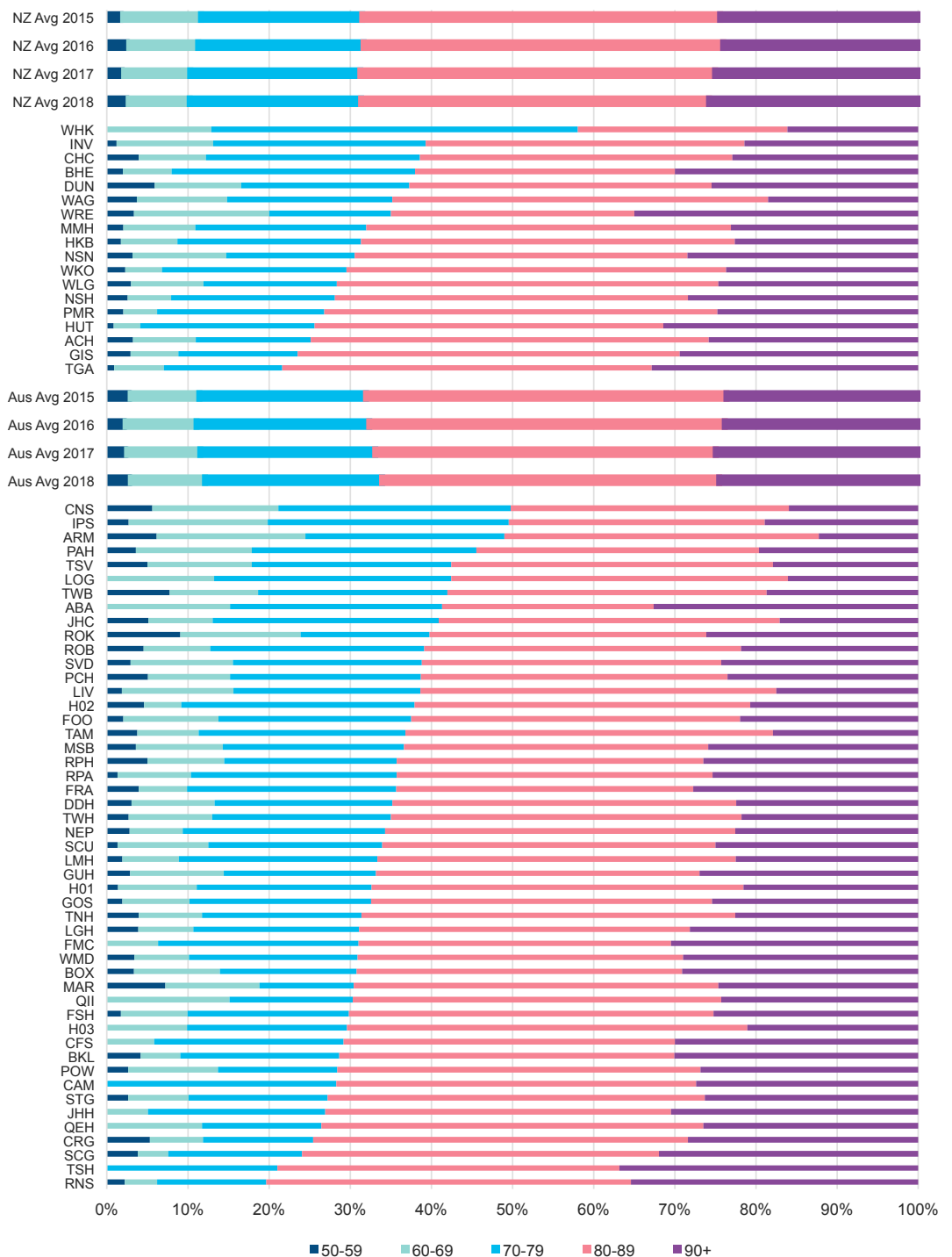




# 25% OF HIP FRACTURE PATIENTS ARE 90 YEARS AND OLDER

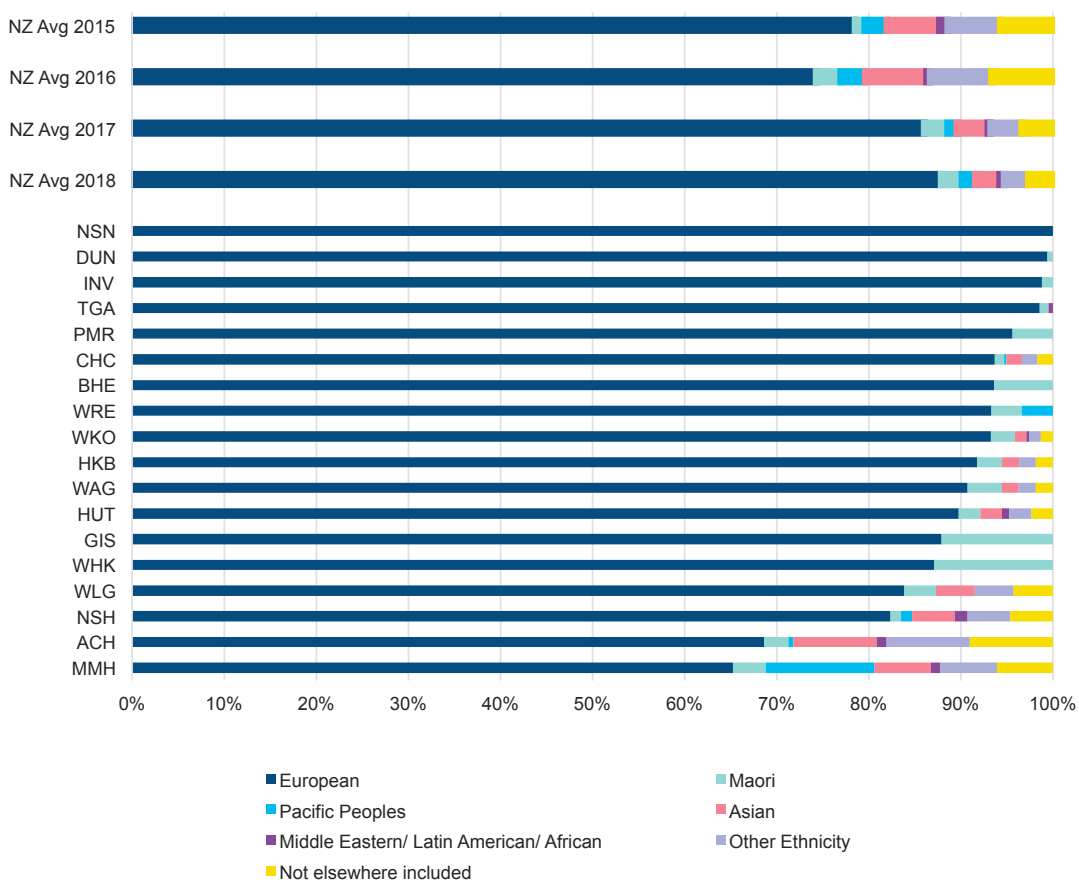
**FIGURE 3 AGE AT ADMISSION**

The average age of hip fracture patients is 82 years in both New Zealand and Australia. The median age of males is 84 years in New Zealand and 83 years in Australia and in women, the median age is 85 years in both New Zealand and Australia. Figure 3 shows the distribution of hip fracture patients by 10-year age bands. People aged 90 years and older make up 25% of hip fracture patients in both Australia and New Zealand. The proportion of people aged <80 years presenting with a hip fracture is increasing in Australia.



### FIGURE 4 NEW ZEALAND ETHNICITY

Indigenous populations constituted less than 1% of the Australian reported data. Maori and Pacific Peoples made up 3.8% of the New Zealand reported data. The majority of New Zealand hip fracture patients report being of European origin. Equivalent data were not collected in Australia. Accuracy in reporting of Indigenous status is known to be variable.

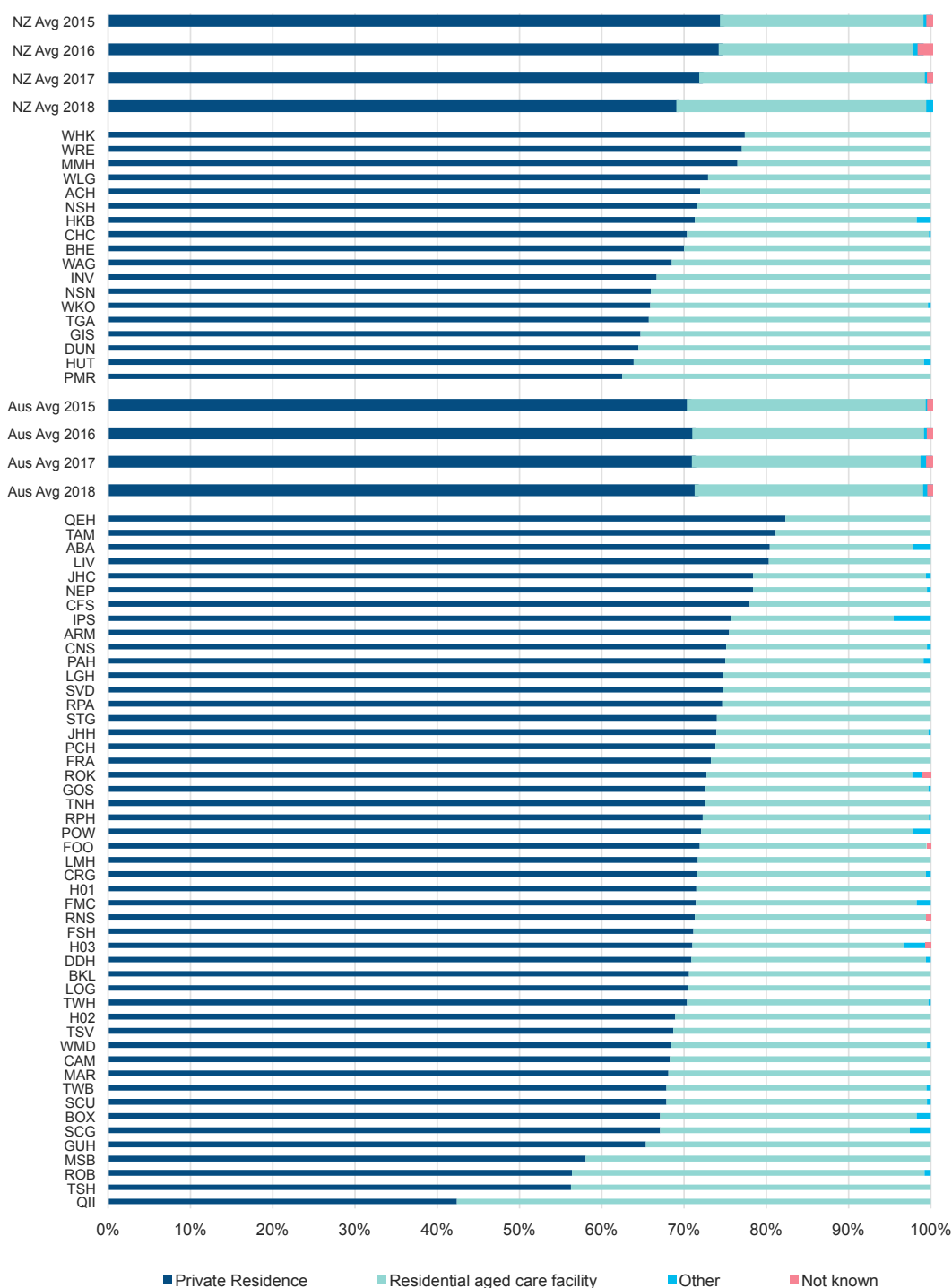






### FIGURE 5 USUAL PLACE OF RESIDENCE

The majority of people admitted to hospital with a hip fracture live at home: 69% of New Zealand patients and 72% of Australian patients. This indicates over representation of people from residential aged care facilities in the hip fracture population, 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.

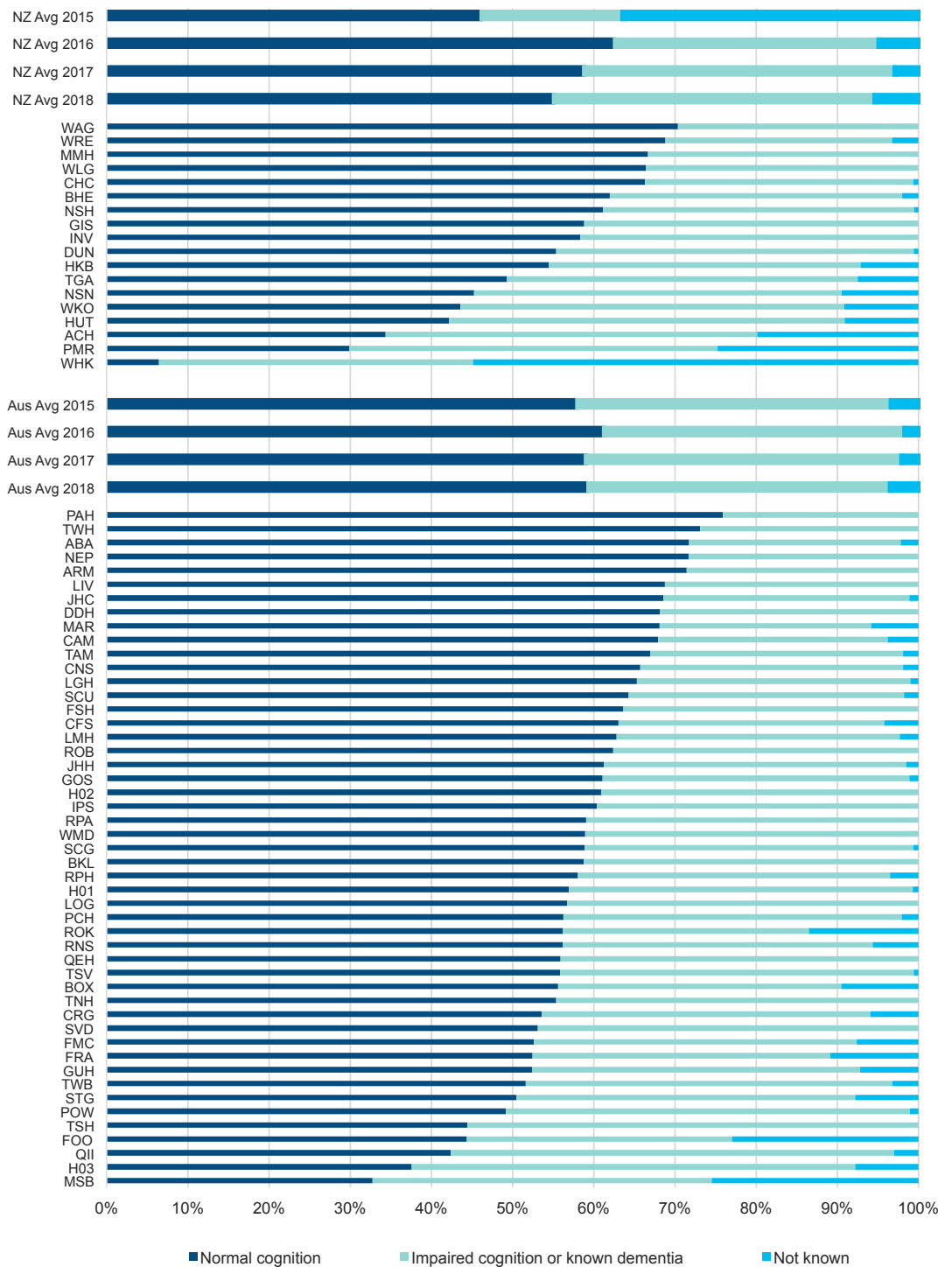




# 38% OF HIP FRACTURE PATIENTS HAD IMPAIRED COGNITION OR KNOWN DEMENTIA AT PRESENTATION

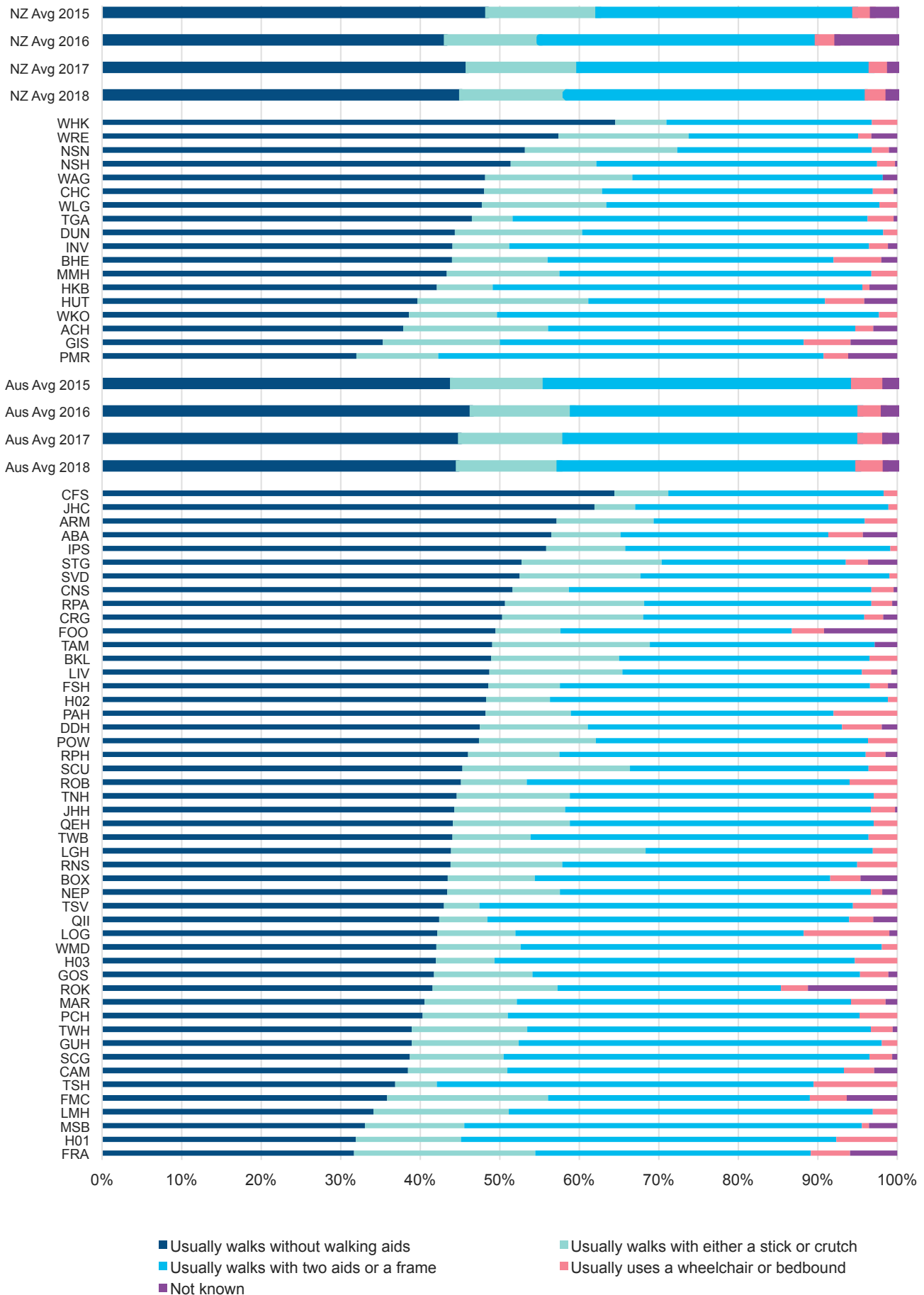
**FIGURE 6 PRE-ADMISSION COGNITIVE STATUS**

Fifty five percent of patients in New Zealand and 58% of patients in Australia had no reported cognitive issues prior to admission. However, 40% 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.



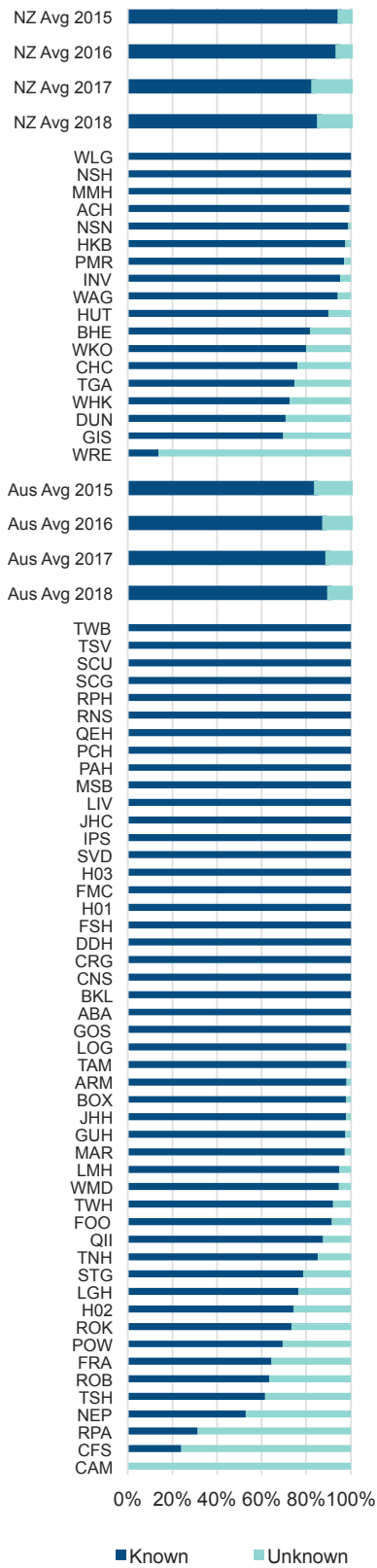
## FIGURE 7 PREADMISSION WALKING ABILITY

In New Zealand and Australia, 45% and 44% of hip fracture patients, respectively, walked without any assistive device prior to hospitalisation. There is variation seen between hospitals, which is likely to reflect the make-up of the local population.

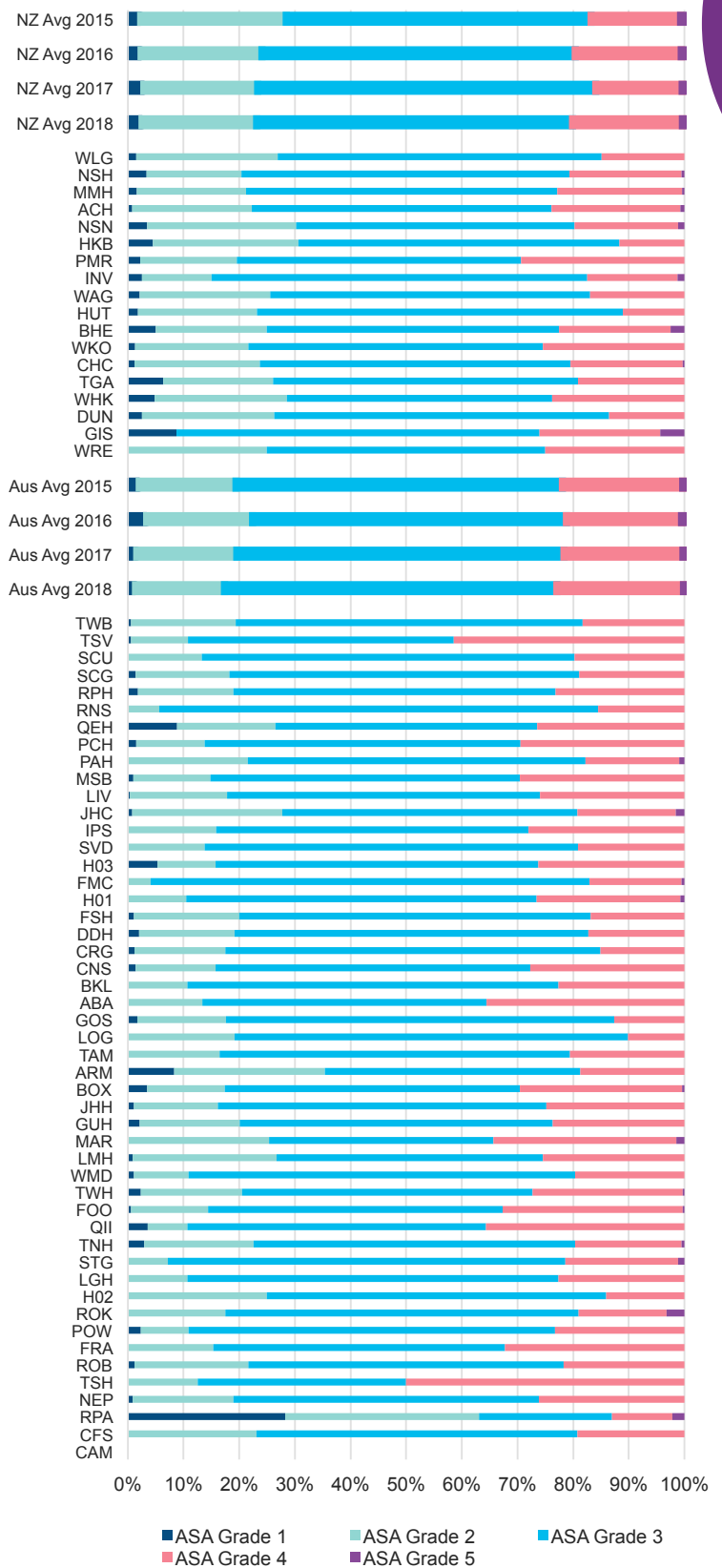




**FIGURE 8 ASA KNOWN**



**FIGURE 9 ASA GRADE**

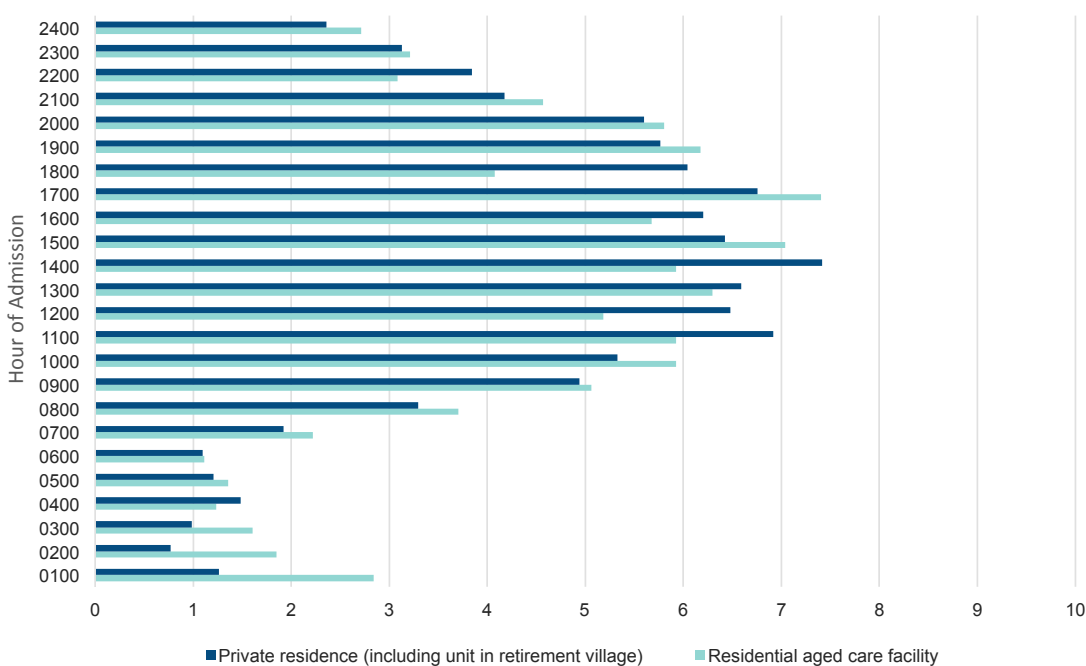


The American Society of Anesthesiologists (ASA) developed the ASA grading as a measure of anaesthetic risk. It is often used as a general measure of physical health or comorbidity. Increasing ASA Grade is associated with mortality and morbidity risk in patients. For patients at each hospital for whom 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.

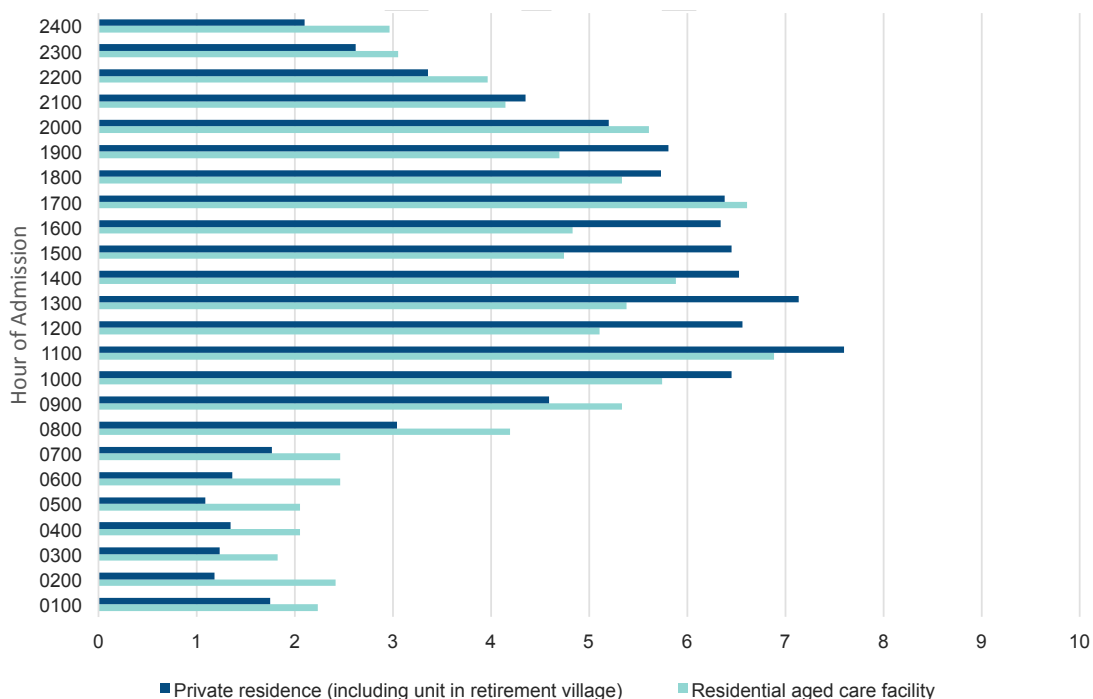
# SECTION 2: CARE AT PRESENTATION

**FIGURE IO ADMISSION BY RESIDENCE BY HOUR OF ADMISSION NEW ZEALAND**

The time of presentation to the Emergency Department (ED) following a hip fracture varies by place of residence in both Australia and New Zealand. A disproportionate number of people from residential aged care present late at night or in the early hours of the morning.

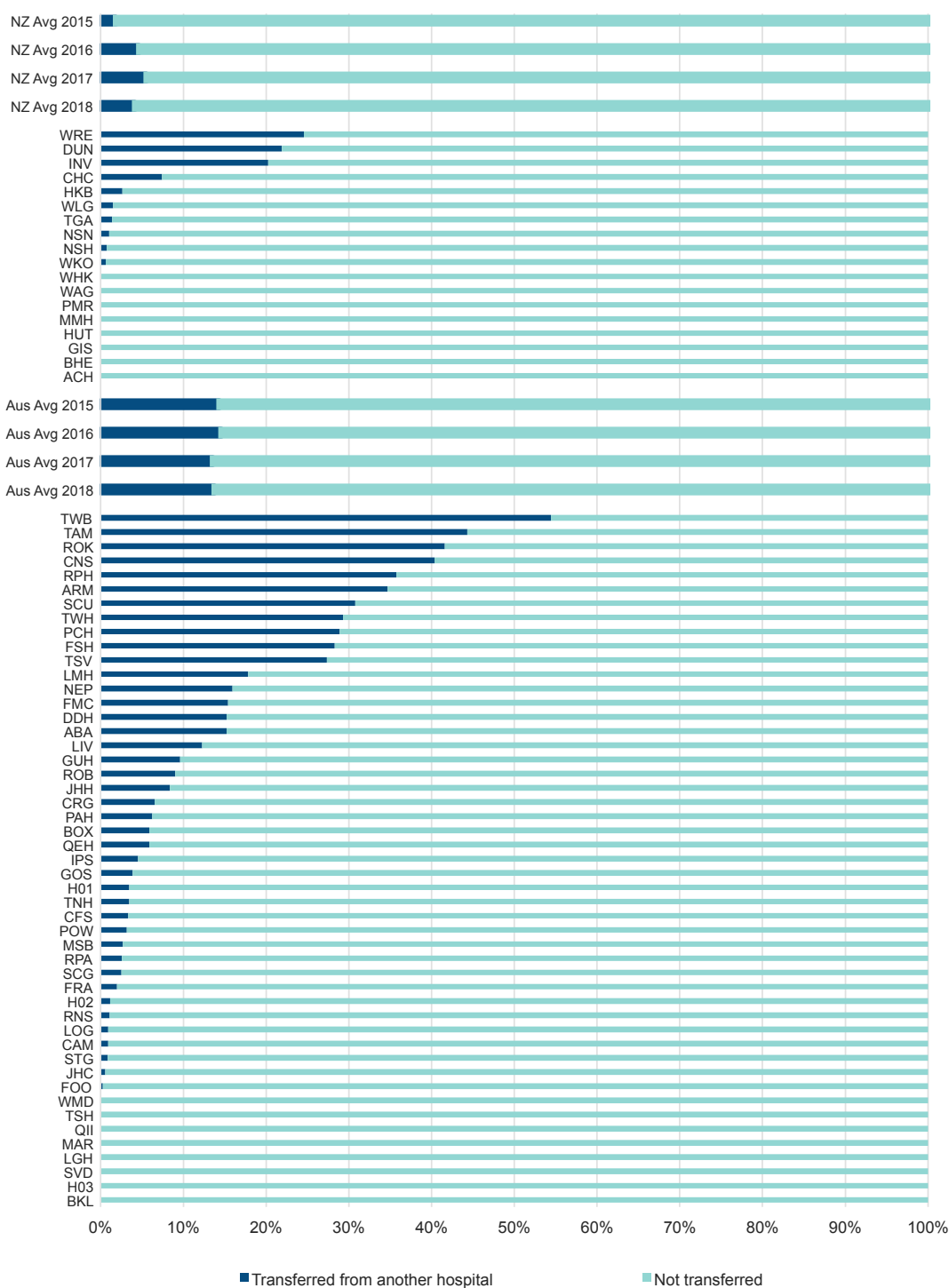


**FIGURE II ADMISSION BY RESIDENCE BY HOUR OF ADMISSION AUSTRALIA**



**FIGURE 12 TRANSFERRED FROM ANOTHER HOSPITAL**

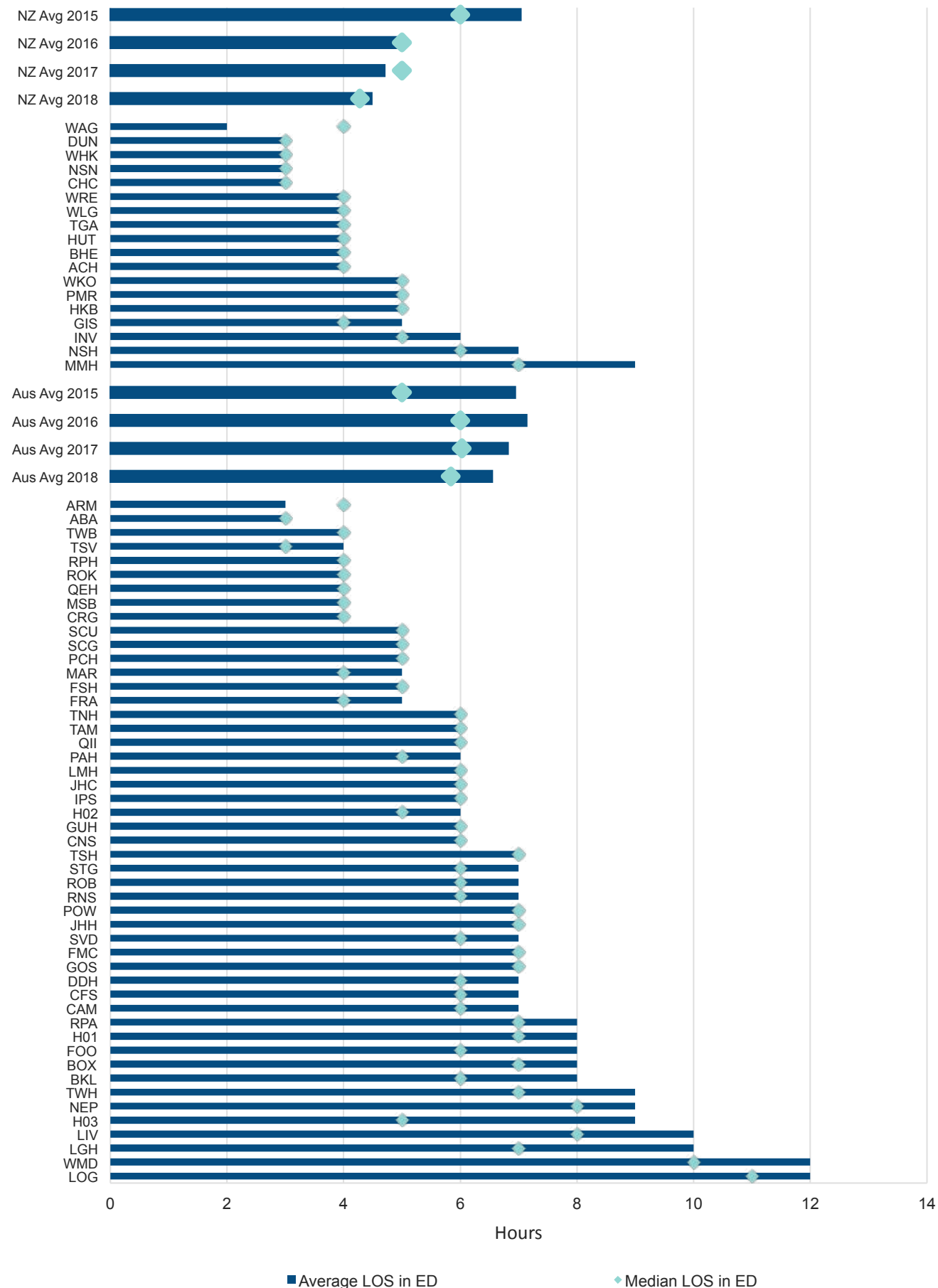
There is considerable variation between sites in the proportion of patients transferred in from other hospitals prior to definitive treatment. In New Zealand and Australia, 4% and 14% of hip fracture patients, respectively, are transferred for definitive management of their hip fracture. This variation 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.

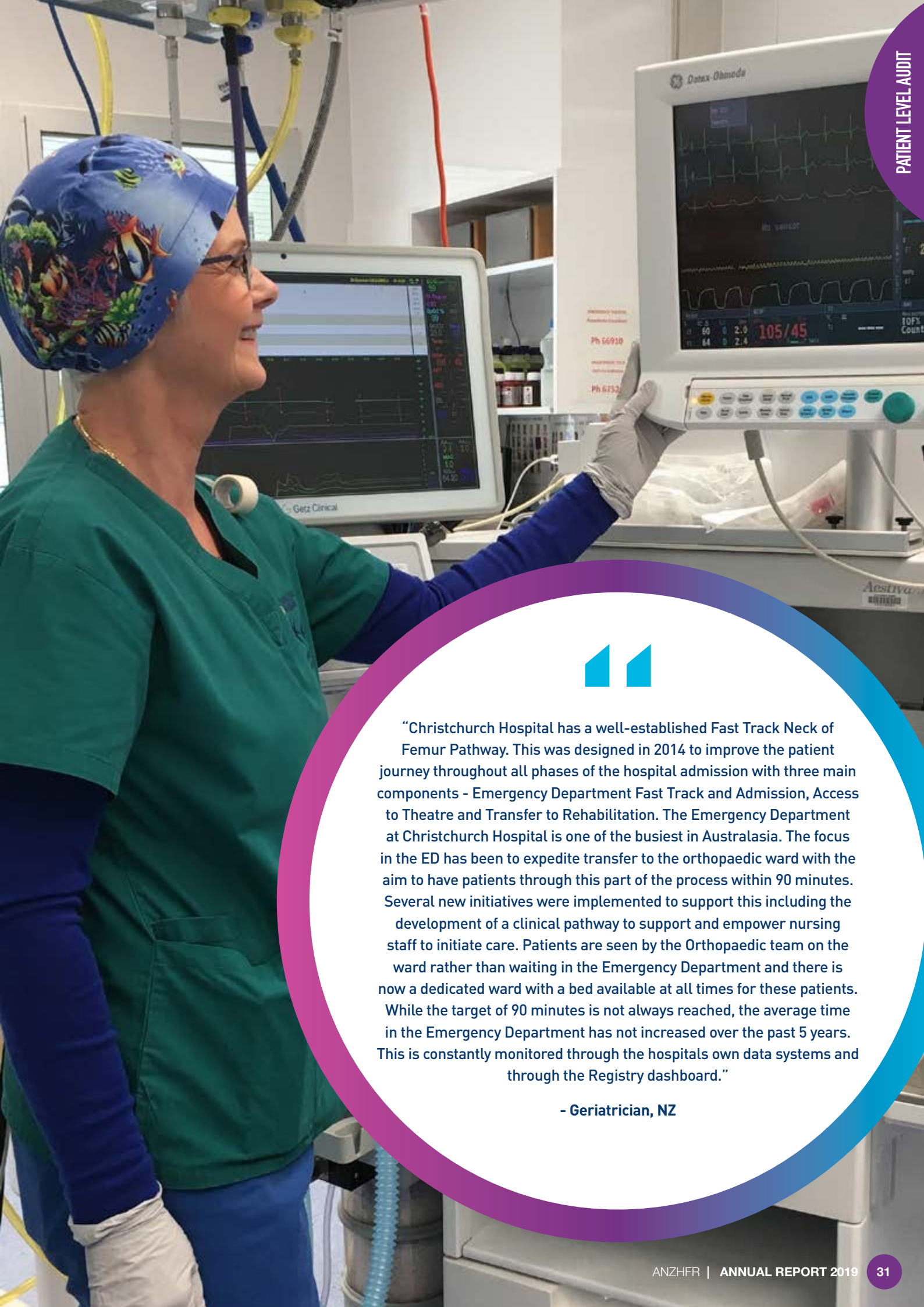




### FIGURE 13 AVERAGE LENGTH OF STAY IN THE EMERGENCY DEPARTMENT

Average Length of Stay (LOS) in the ED has decreased slightly each year since 2016 in both countries, but variation in length of stay in the ED between individual hospitals remains. The median length of stay in the ED also decreased in 2018 in both Australia (5.8 hours) and New Zealand (4.3 hours).



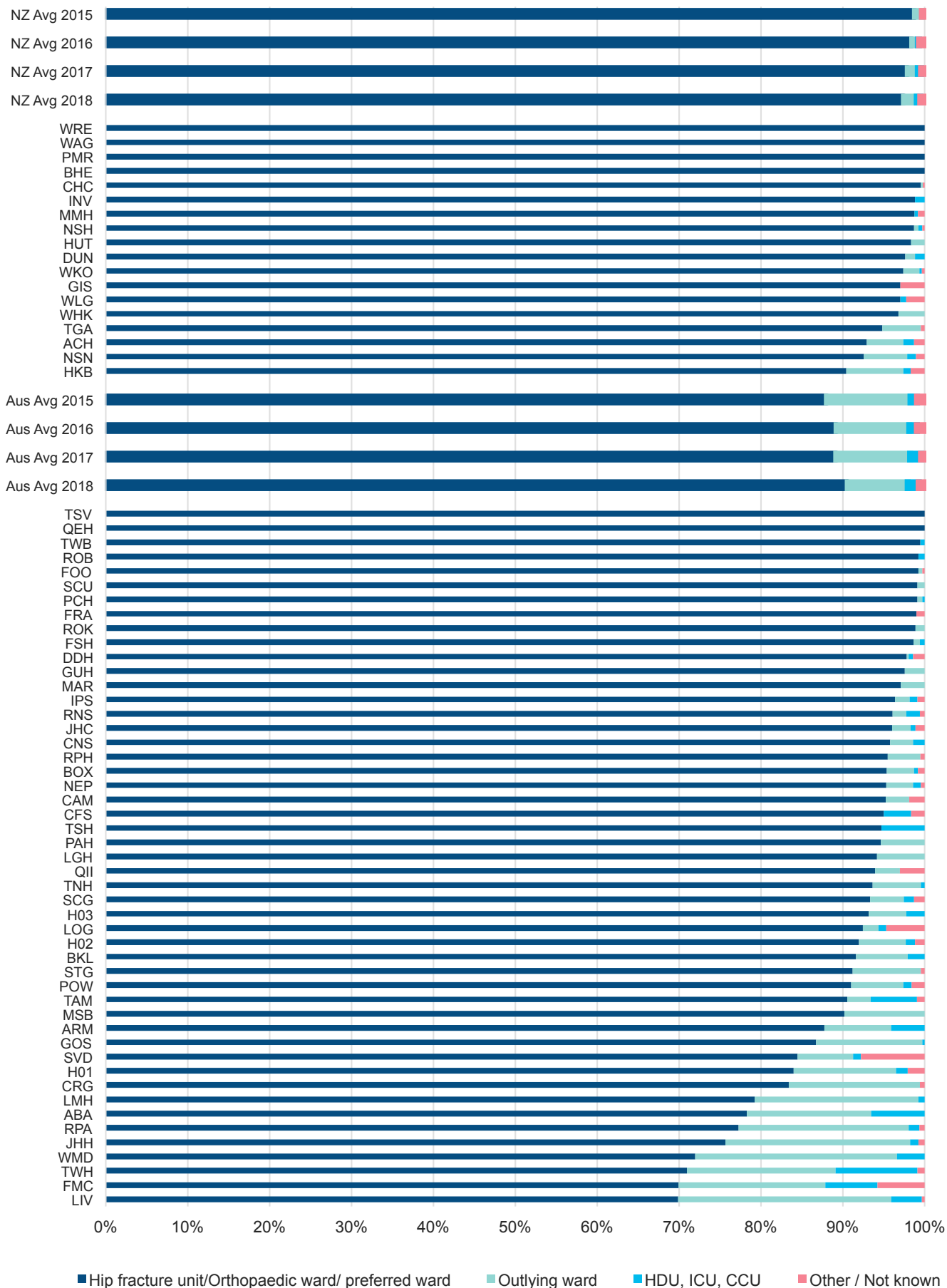


“Christchurch Hospital has a well-established Fast Track Neck of Femur Pathway. This was designed in 2014 to improve the patient journey throughout all phases of the hospital admission with three main components - Emergency Department Fast Track and Admission, Access to Theatre and Transfer to Rehabilitation. The Emergency Department at Christchurch Hospital is one of the busiest in Australasia. The focus in the ED has been to expedite transfer to the orthopaedic ward with the aim to have patients through this part of the process within 90 minutes. Several new initiatives were implemented to support this including the development of a clinical pathway to support and empower nursing staff to initiate care. Patients are seen by the Orthopaedic team on the ward rather than waiting in the Emergency Department and there is now a dedicated ward with a bed available at all times for these patients. While the target of 90 minutes is not always reached, the average time in the Emergency Department has not increased over the past 5 years. This is constantly monitored through the hospitals own data systems and through the Registry dashboard.”

- Geriatrician, NZ

### FIGURE 14 WARD TYPE

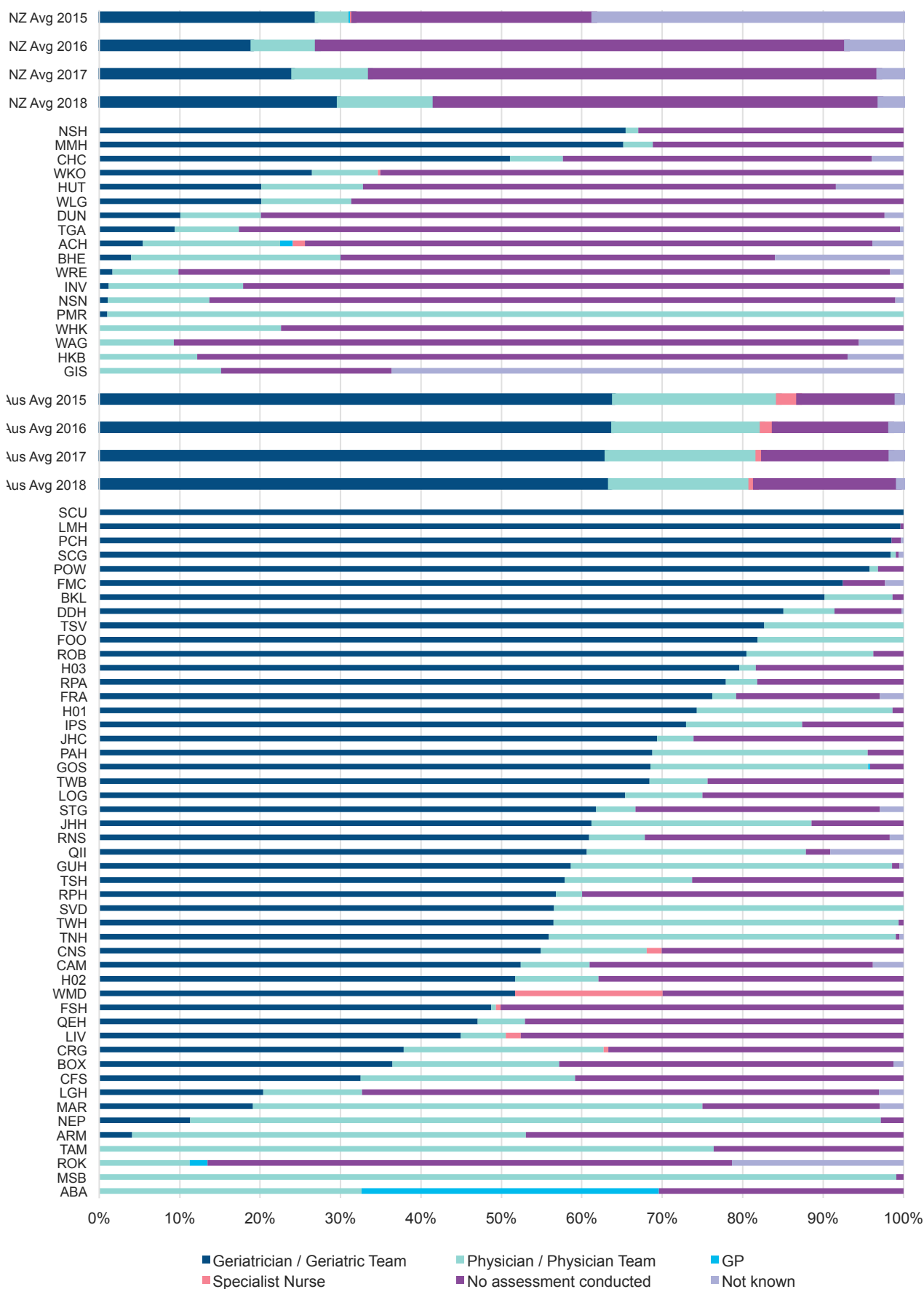
The type of ward used for hip fracture patients varies between sites due to factors such as the size and the role of the hospital. Despite this, the proportion of patients admitted to a specific hip fracture or orthopaedic ward in 2018 was 97% and 91%, respectively, in New Zealand and Australia. This is similar to previous years.





## FIGURE 15 PREOPERATIVE MEDICAL ASSESSMENT

Thirty percent of patients in New Zealand are seen by a geriatrician prior to surgery. In Australia, 64% of patients are seen by a geriatrician prior to surgery. Some hospitals do not have access to geriatric medicine services and may undertake preoperative medical assessment by general physicians, general practitioners or specialist nurses. In New Zealand and Australia, 55% and 18% of patients, respectively, did not have a preoperative medical assessment.





Albany team

“The majority of doctors working in the local emergency departments in our region are General Practitioners. They are instrumental in early analgesia, resuscitating the patient and diagnosing the fracture before contacting the orthopaedic team. At Albany Health Campus, most patients with hip fractures are under a GP bed card to facilitate the review of the patient on the ward as soon as possible after admission. Many of the patients will already be known to the team, either through the GP practice or previous admissions. There is often a medical record for the patient on practice software, which can be accessed from the hospital. This knowledge of patients is valuable in working up the patients pre-operatively, minimising un-necessary investigations as well as optimizing them in the post-operative phase. Early GP involvement helps clarify goals of care with the patient and their carers including using printed information material supplied by the hospital.

After-hours, an on-site Junior Medical Officer helps facilitate the optimisation of the patient under the guidance of the on-call GP.

Apart from reducing time to surgery where possible, we also concentrate on assessing patients’ risk for developing delirium post-operatively and put in place strategies to prevent delirium as well as recognizing and treating delirium early. The GPs work closely with the local rehabilitation team and geriatrician who prioritise hip fracture patients, and are instrumental in achieving positive outcomes for these patients. After discharge, the patients return to the care of the GP for their ongoing health issues and osteoporosis prevention and management.”

- General Practitioner, WA



“On arrival to the Emergency Department (ED) of the Princess Alexandra Hospital (PAH) in Brisbane, patients with a suspected hip fracture are streamlined to a resuscitation bay equipped with an x-ray machine to facilitate timely imaging and a diagnosis, which will trigger the commencement of the hip fracture clinical pathway. To improve care, pain management and time to analgesia for hip fracture patients in the ED, Nurse Initiated and Standing Orders (NICO) allow nurses to administer both Schedule 4 and 8 medications. Femoral Nerve Blocks are primarily given in the resuscitation bay before the patient is transferred into the less acute areas of the ED.”

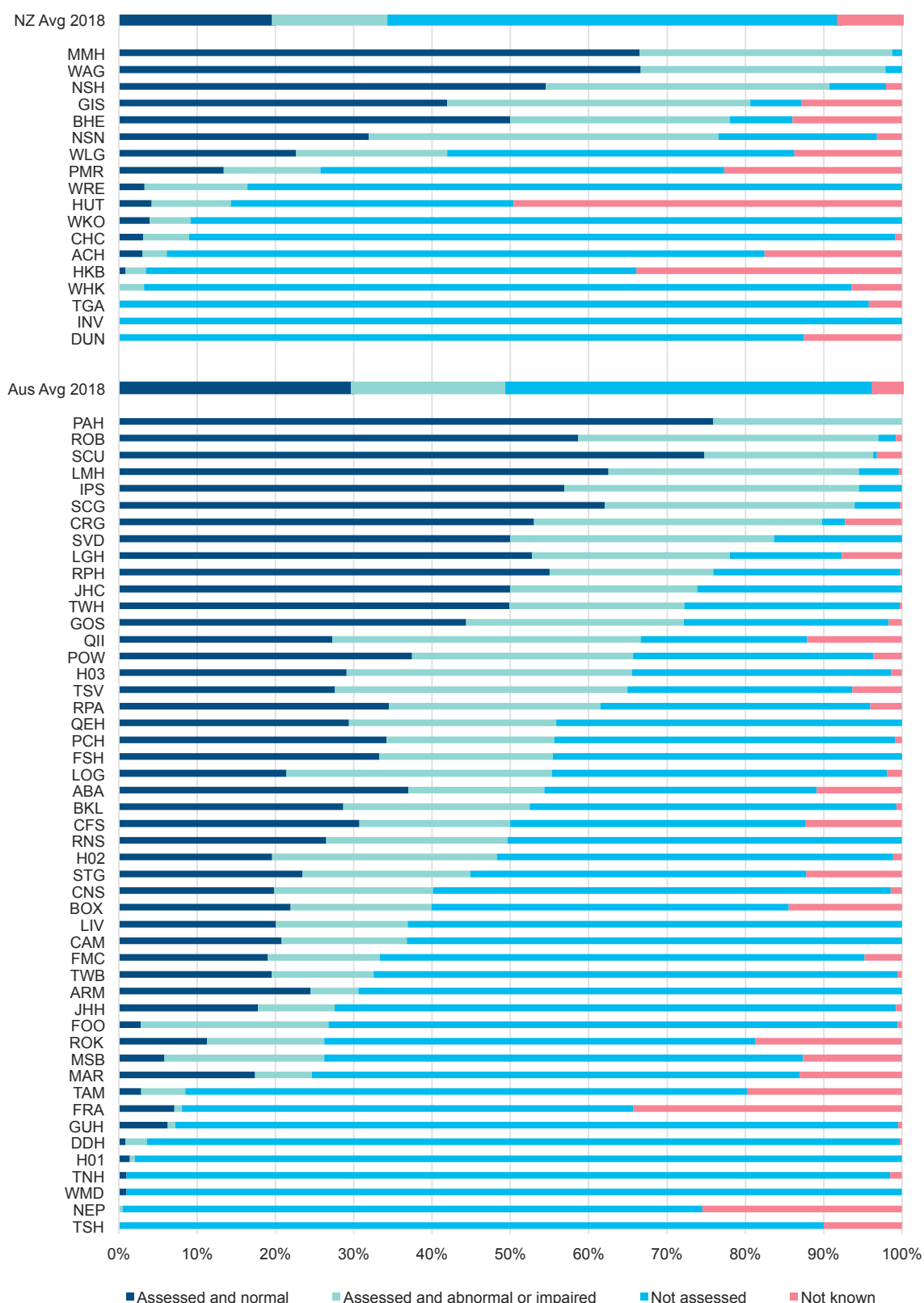
- Nurse Practitioner, QLD

## FIGURE 16 PRE-OPERATIVE 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, 35% of patients had their cognition assessed using a validated tool prior to surgery, and 15% are recorded as having a cognitive impairment. In Australia, 50% of patients had their cognition assessed and 20% are recorded as having a cognitive impairment.

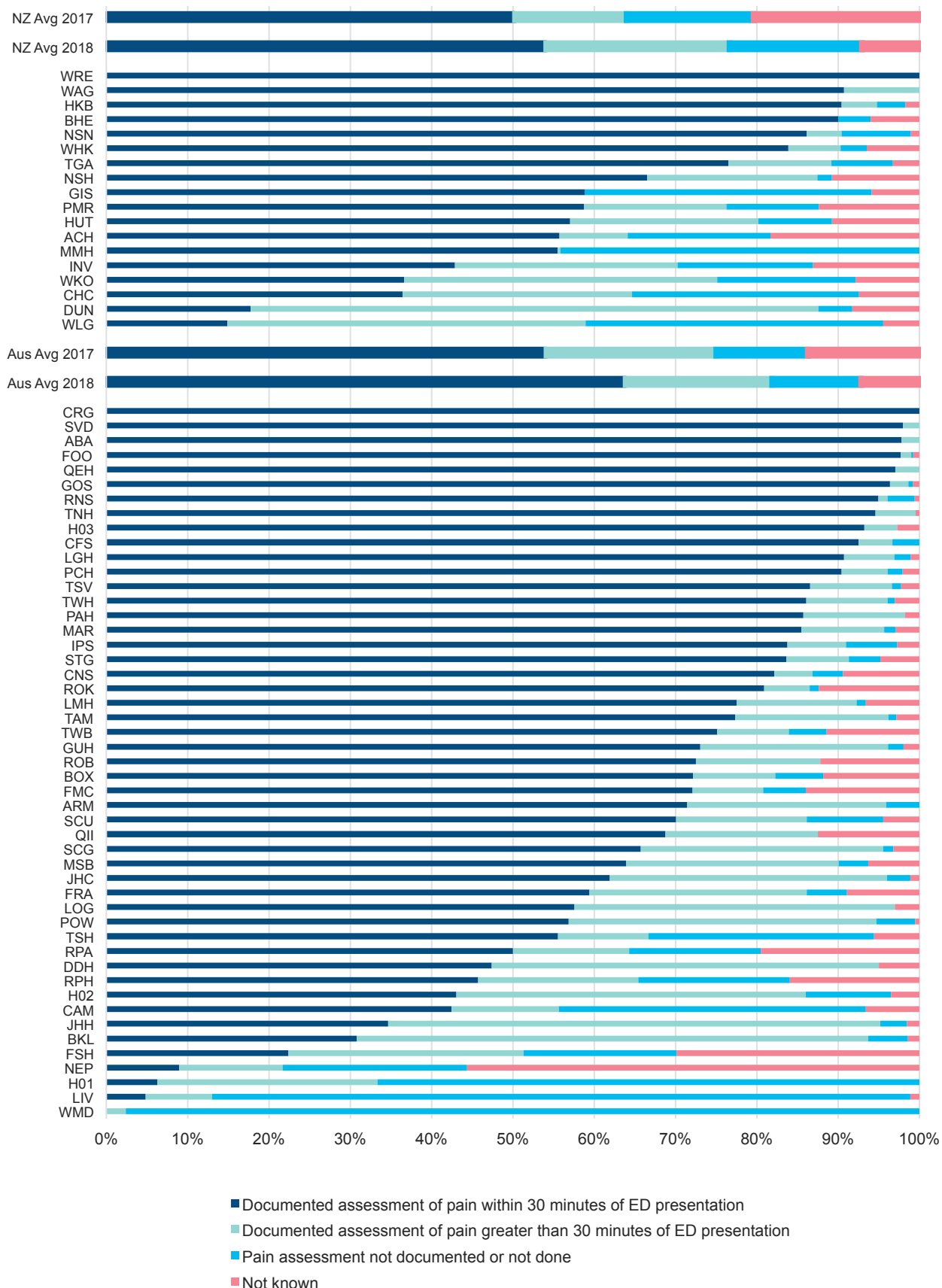


In 2019, the reporting of this information has changed and the outcome of the assessment is presented in Figure 16, rather than simply whether the assessment was performed. The proportion of people assessed preoperatively has increased from 2016 and 2017 although widespread variation exists across both countries.



## FIGURE 17 PAIN ASSESSMENT IN THE ED

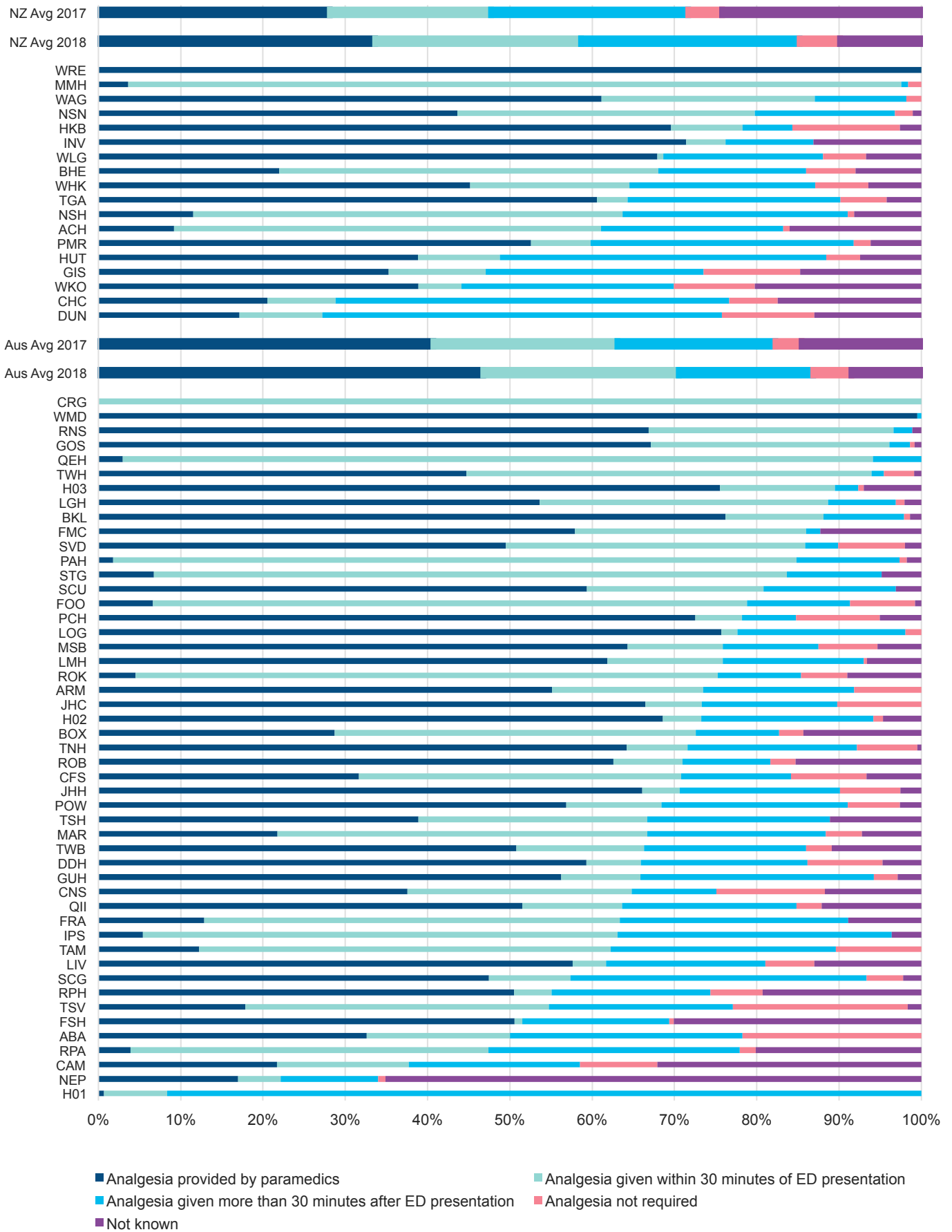
A documented assessment of pain within 30 minutes of presentation to the emergency department is a specified indicator within Quality Statement 2 of the Hip Fracture Care Clinical Care Standard. There is considerable variation seen between hospitals in the proportion of patients who have a documented assessment of pain within 30 minutes of arrival in the ED, varying from 0% to 100%. On average, 54% and 64% of the New Zealand and Australian hip fracture patients, respectively, have a documented assessment of pain within 30 minutes of presentation. This is an improvement in both countries on the previous year.





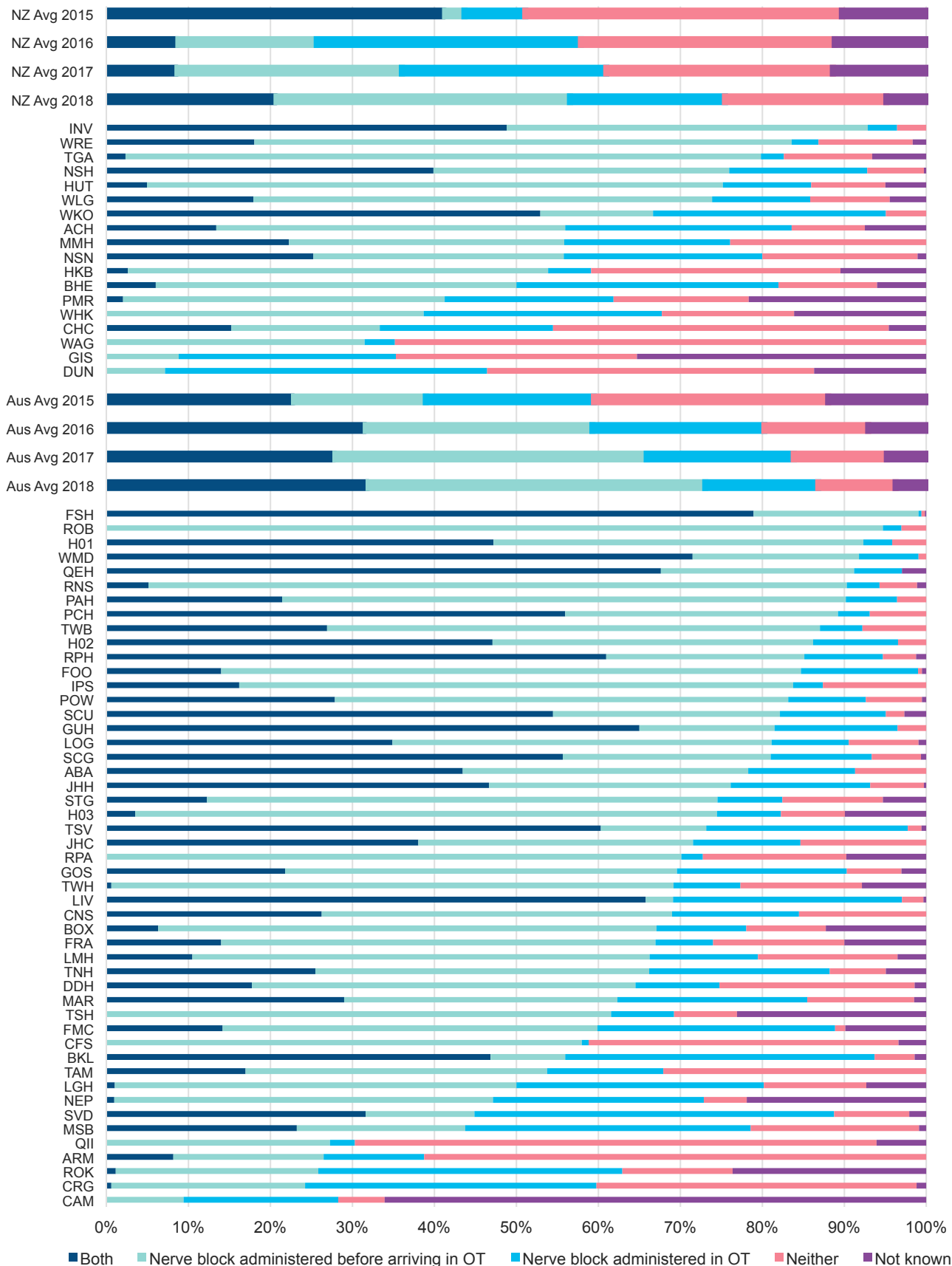
## FIGURE 18 PAIN MANAGEMENT IN THE ED

Fifty nine 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 at the ED.



## FIGURE 19 USE OF NERVE BLOCKS

Nerve blocks are used to manage pain in the acute care setting and particularly in 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. In 2018, there was increased use of nerve blocks in both New Zealand and Australia and this has continued the increase seen in 2016 and 2017. In New Zealand, 57% of patients had a nerve block administered before surgical intervention. In Australia, 73% of patients received a nerve block before surgical intervention.



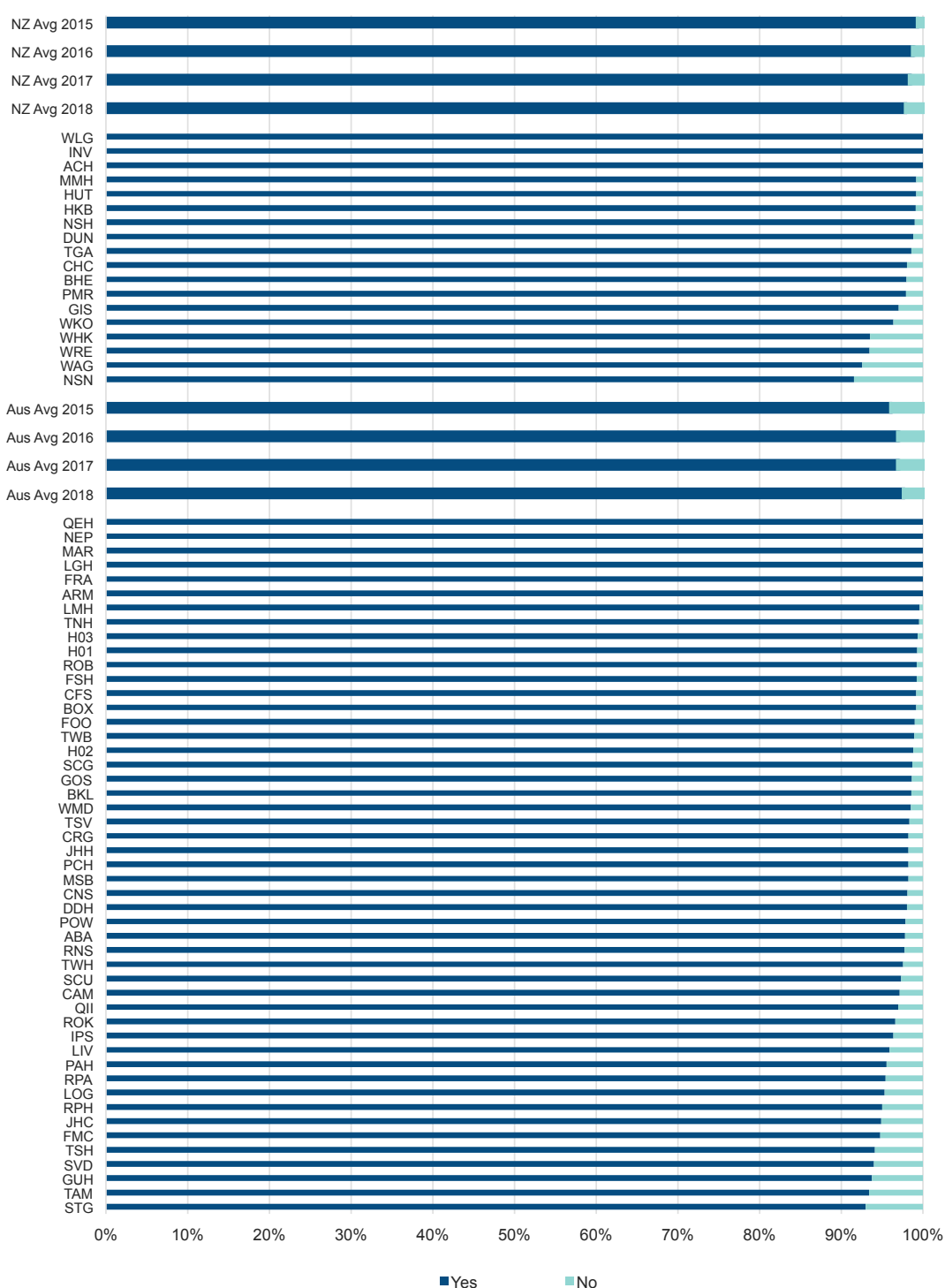


“At Fiona Stanley Hospital, 70% of the hip fracture patients come through our Emergency Department. We developed a local guideline with detailed instructions of what to use in the nerve block and ED have ensured that their team are trained in nerve block technique. All our clinical teams believe the nerve block is an essential part of our care pathway – patients just don’t leave ED without one. Last year we had a patient who was too agitated and distressed to have a nerve block. She was so distressed overnight that when we had a similar patient a few weeks later we expedited her surgery from ED. We now consider a patient who can’t have a nerve block a “surgical emergency.” We have also worked hard with our referral sites – 30% of our patients are transferred from other sites. We have made sure that those sites all have our guideline and understand the importance of a nerve block before transfer. The Royal Flying Doctor Service (RFDS) are key partners in ensuring that nerve blocks occur even prior to transfer from remote areas. If RFDS know the patient hasn’t had a nerve block locally a doctor is part of the team to retrieve the patient and administers a nerve block prior to the patient being flown to Perth. It really has been a team effort to achieve nearly 100% of patients having nerve blocks prior to surgery – we can see how much it benefits patients. Janis was transferred from Rockingham Hospital on Monday. She felt the nerve block “100% improved her pain”. She had no delirium and was discharged back to her facility after a timely operation.”

# SECTION 3: SURGERY AND OPERATIVE CARE

**FIGURE 20 TREATED WITH SURGERY**

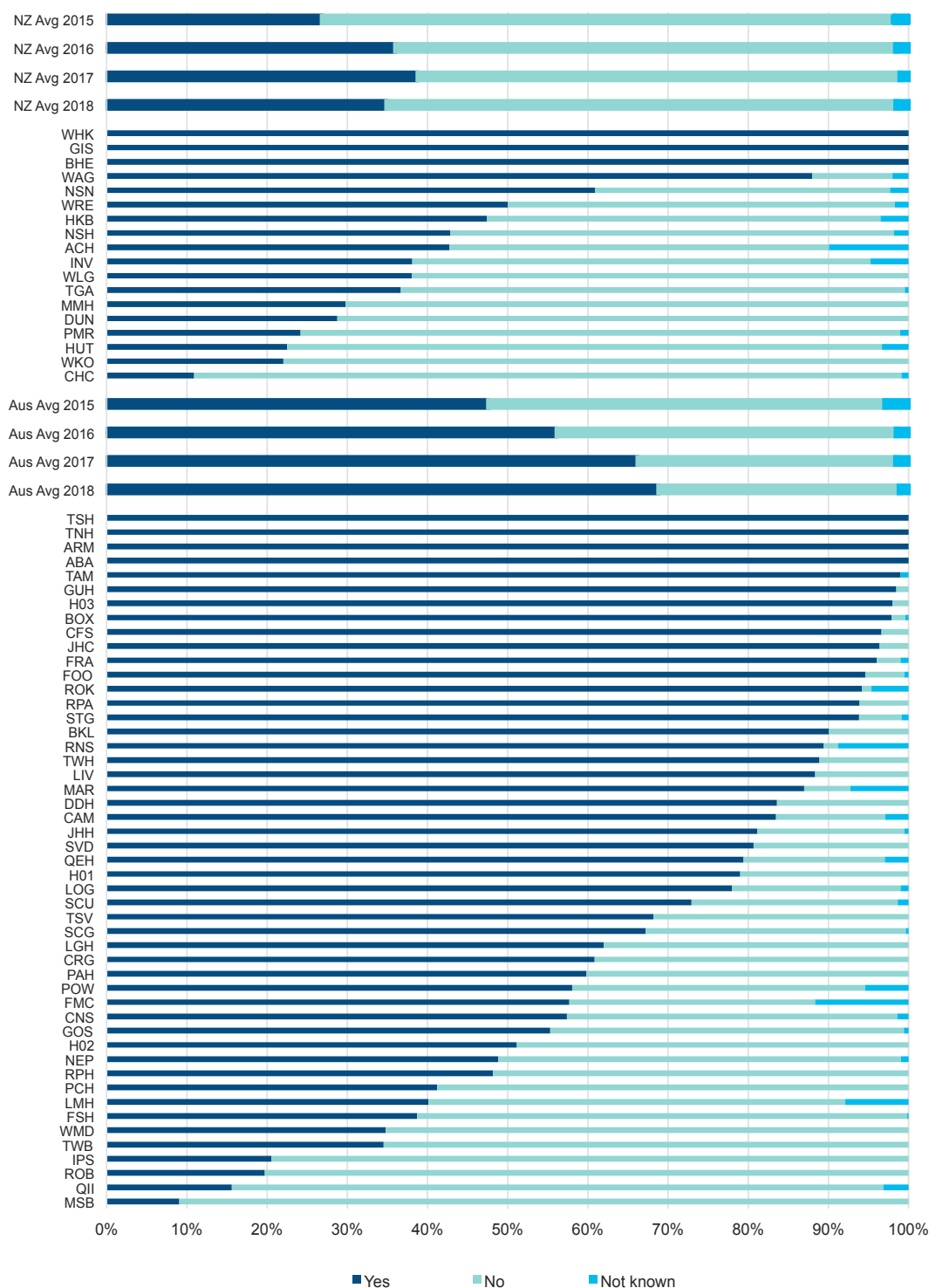
It is anticipated that nearly all patients with a hip fracture will be treated surgically with a view to optimising function and/or alleviating pain. The data presented in Figure 20 shows some variation between hospitals, which may reflect differences in clinical management and in the populations treated. 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.





**FIGURE 21 CONSULTANT SURGEON PRESENT 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. Hip fracture surgery that is performed on scheduled operating lists is more likely to have a consultant present compared to cases performed on emergency lists, which are associated with unpredictable start times and after-hours surgery. The ANZ Guideline for Hip Fracture Care recommends performing hip fracture surgery on scheduled operating lists.

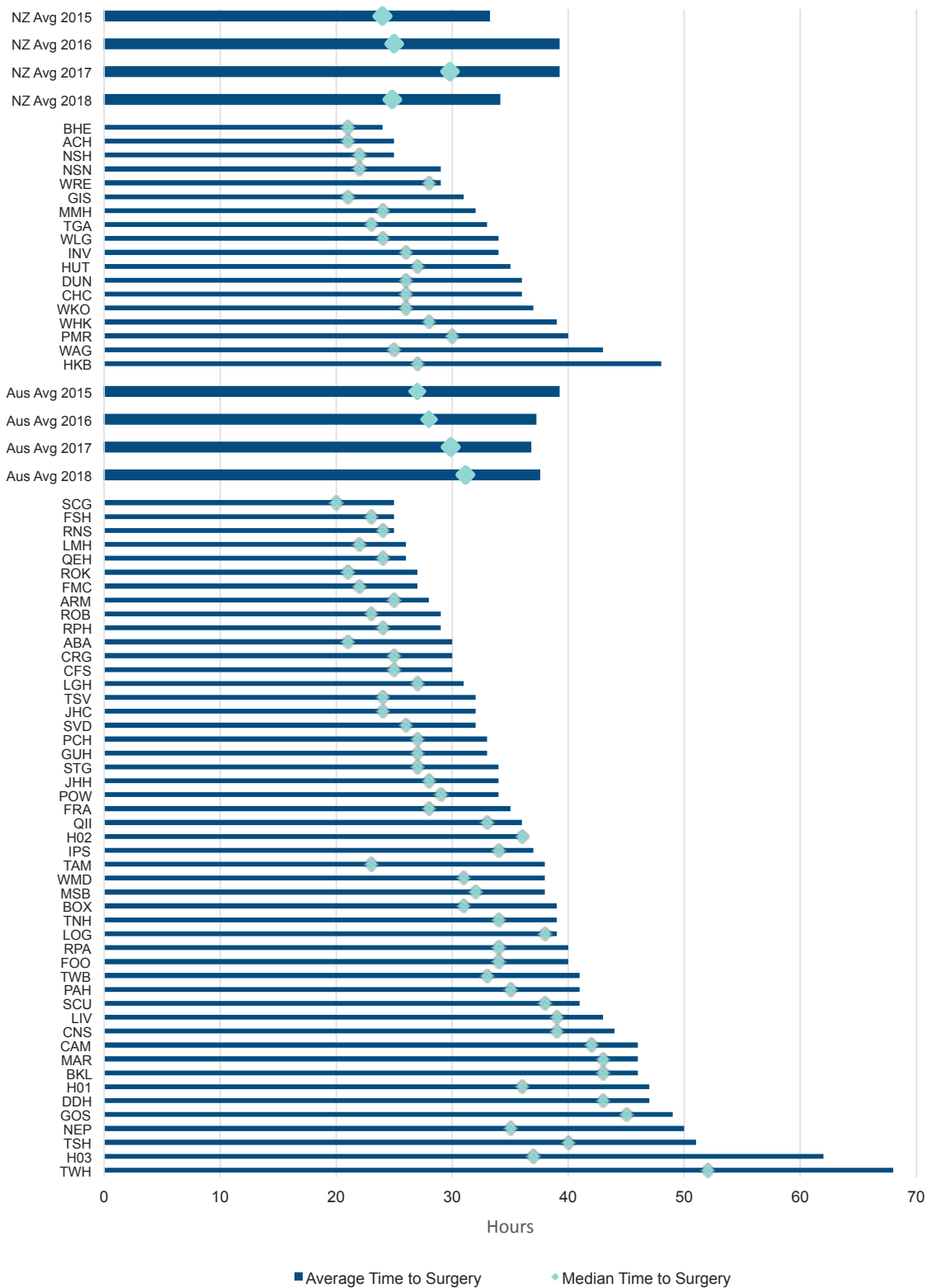


## FIGURE 22 TIME TO SURGERY EXCLUDING TRANSFERRED PATIENTS

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.

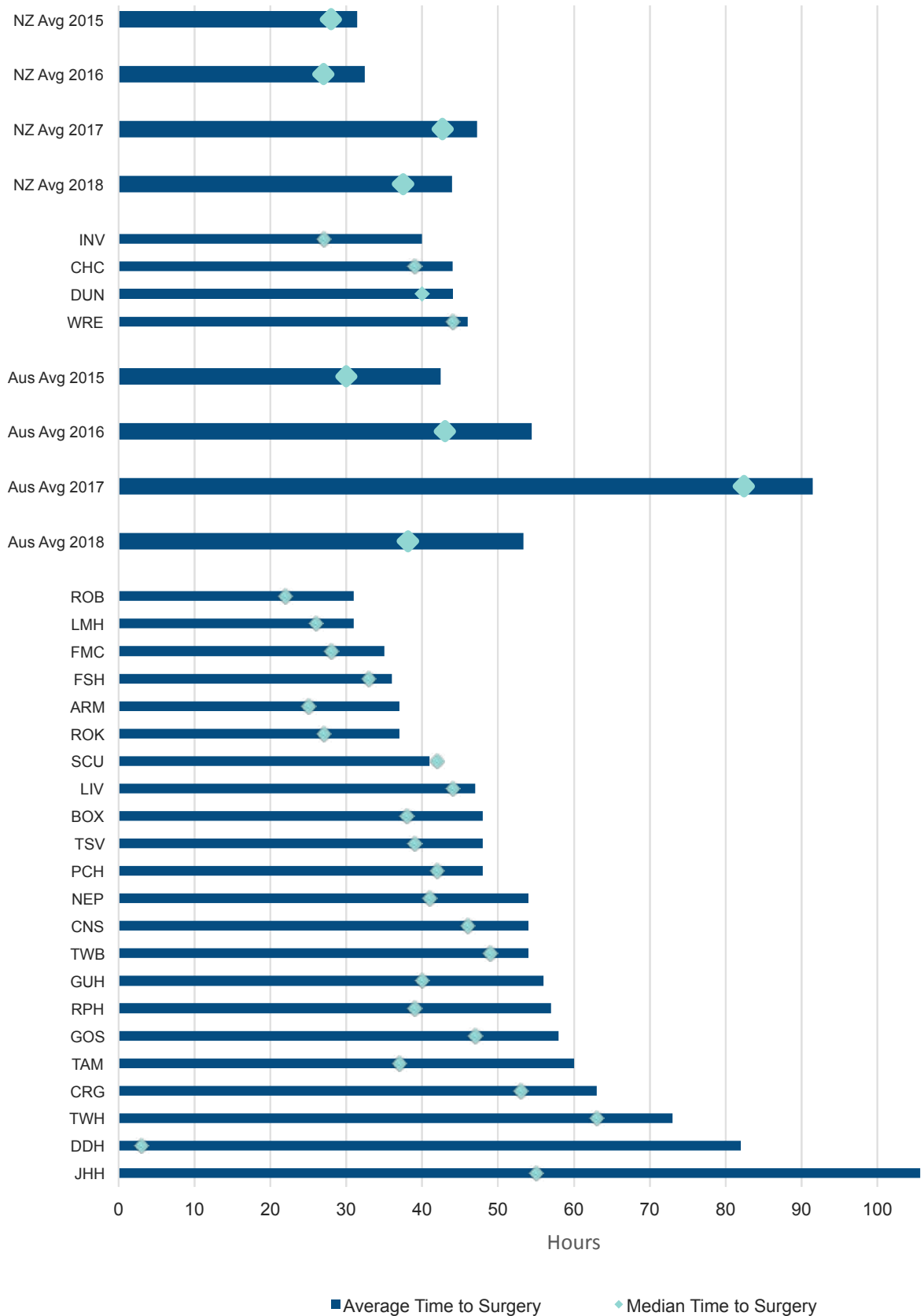


Figure 22 excludes patients transferred into the treating hospital, reflecting the journey of a patient initially presenting to the treating hospital. Calculation of time to theatre is the difference between the date and time of presentation to the operating hospital and commencement of surgical anaesthesia. The median time between initial presentation and surgery has increased each year since 2015 in Australia and is currently 31 hours (average time to surgery is 37 hours). In New Zealand, median time to surgery decreased from 30 hours in 2017 to 25 hours in 2018 (average time to surgery is 34 hours). It is important to note that small numbers of patients and a few outliers can significantly alter the average time to surgery.

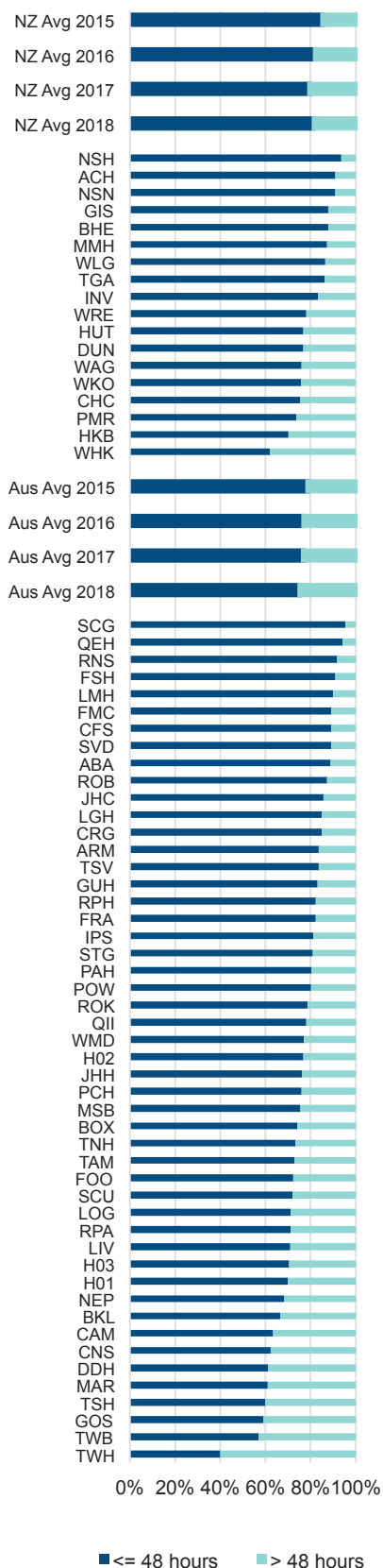


### FIGURE 23 AVERAGE TIME TO SURGERY TRANSFERRED PATIENTS ONLY

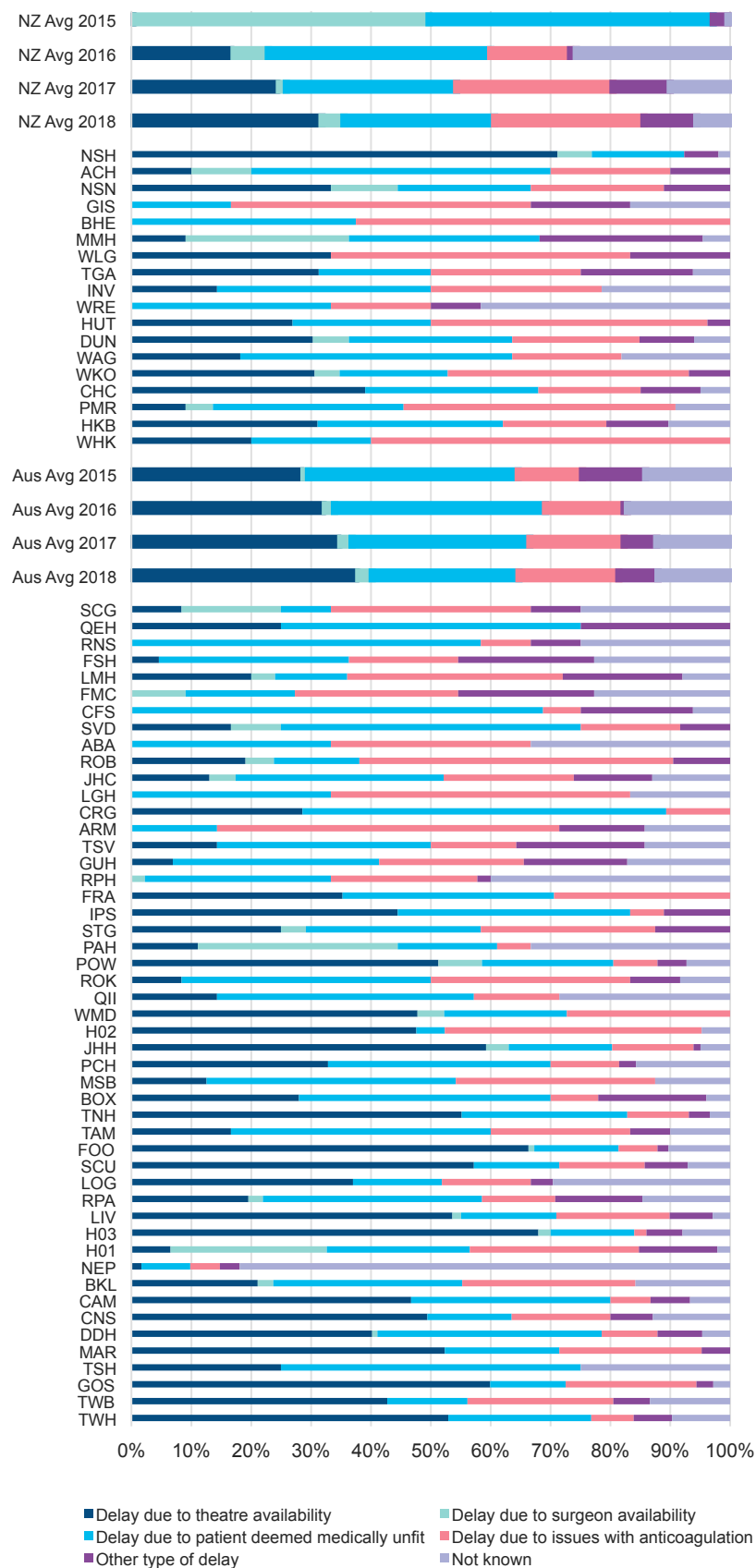
Figure 23 shows that the time to surgery is longer for patients who are transferred in from other hospitals. This measure takes into account the time spent at the first transferring hospital and shows the treatment delays that result from health systems that do not have expedited pathways for the transfer of hip fracture patients or that do not deliver patients directly to treating hospitals. The median time to surgery is 38 hours, improved from 2017. Average time to surgery for transferred patients is 44 hours in New Zealand and 53 hours in Australia.



**FIGURE 24**  
**SURGERY WITHIN 48 HOURS**

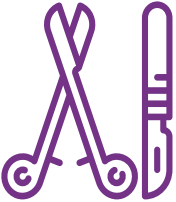


**FIGURE 25**  
**REASON FOR DELAY LONGER THAN 48 HOURS**



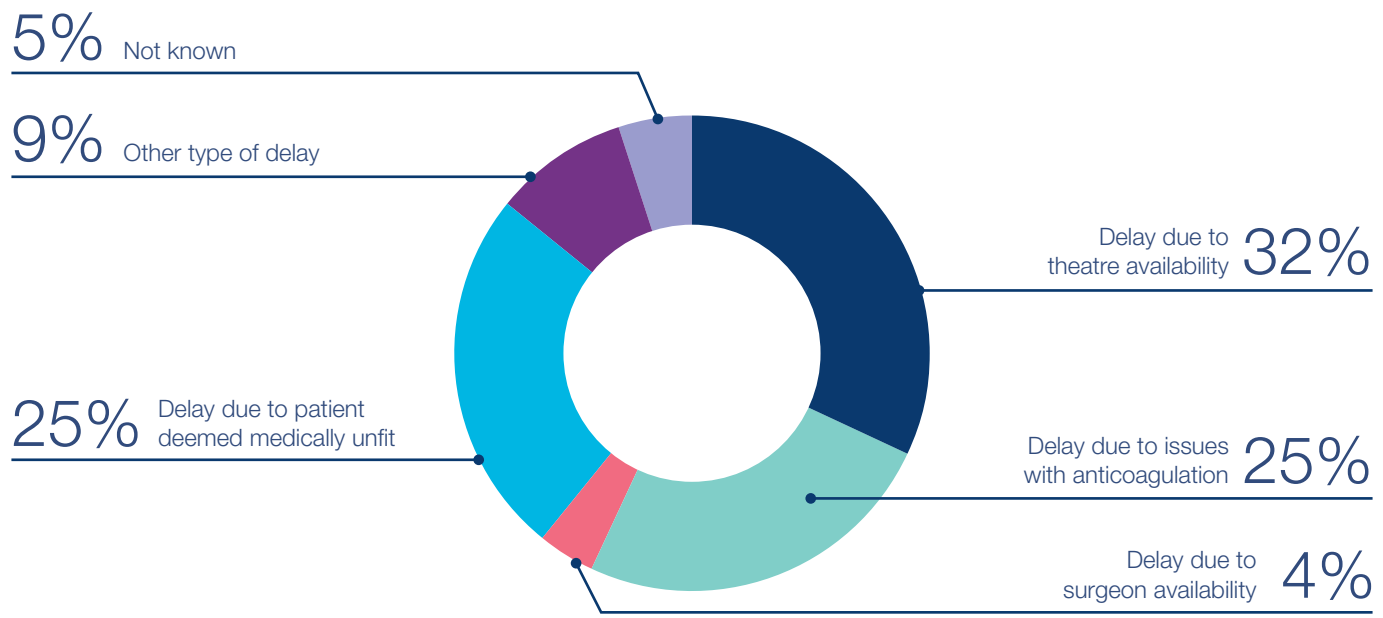
Figures 24 and 25 include transferred patients and patients admitted directly to the operating hospitals. Figure 24 shows that 82% and 76% of patients in New Zealand and Australia, respectively, were treated within 48 hours of presentation to hospital. Figure 25 provides useful information for hospitals 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 the main reason for delay and the proportion of delays attributed to theatre access is increasing over time.



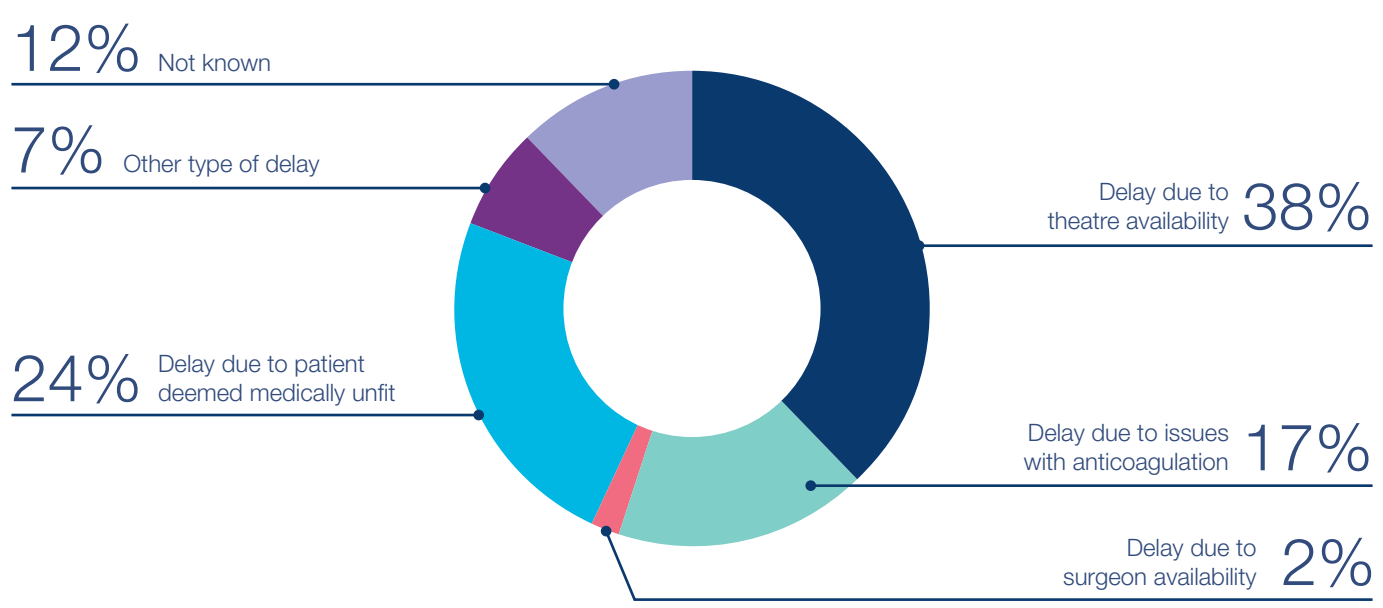


## MORE THAN 55% OF PATIENTS ARE DELAYED TO SURGERY FOR ONE OF TWO MODIFIABLE REASONS: THEATRE AVAILABILITY AND ANTICOAGULANTS

**FIGURE 26 REASON FOR DELAY >48 HOURS NEW ZEALAND**



**FIGURE 27 REASON FOR DELAY >48 HOURS AUSTRALIA**



Figures 26 and 27 provide a comparison between countries for the reasons for surgical delay. In New Zealand and Australia, 57% and 55% of patients respectively are delayed to surgery due to one of two modifiable reasons: the availability of operating theatres or issues with anticoagulation.



“One of the most interesting findings from viewing our own department’s results in the ANZHFR has been the variation in performance. If you had asked us previously, we would have said we were good at managing hip fractures, but it turns out that hospitals are rarely all good or all bad – it’s more complicated than that. While on some measures, such as early mobilisation and unrestricted weight bearing (something we had worked on in the past) we were doing relatively well, on others we weren’t. We knew we were performing poorly with refracture prevention and had spent some time already working on that, but we were surprised to find that our time to theatre was the second longest in the registry.

We had long since moved to a system of daytime operating, using dedicated orthopaedic trauma lists Monday to Friday, 8AM to 6PM, and we were satisfied that we had enough theatre time to manage the workload, yet the registry was telling us that theatre availability was the main reason for the delay, not medical reasons. We looked into the delays and quickly found that while patients were usually getting their surgery the next day (or day after occasionally), this only occurred when there was a list, and patients admitted on Fridays and Saturdays (and sometimes Thursdays) were waiting until the Monday list to get their surgery, as there were no weekend lists.

We took this problem (and our copy of the ANZHFR Annual Report) to the hospital executive and theatre management. They were very supportive, as the problem was very clear. We proposed an extra list on Sundays for orthopaedic trauma, and to prioritise hip fractures. After some negotiation, including arranging for extra anaesthetic and nursing staff, the proposal was approved and in April 2018, the list began. The orthopaedic department agreed that the list would be consultant led – using the weekend on call surgeon.

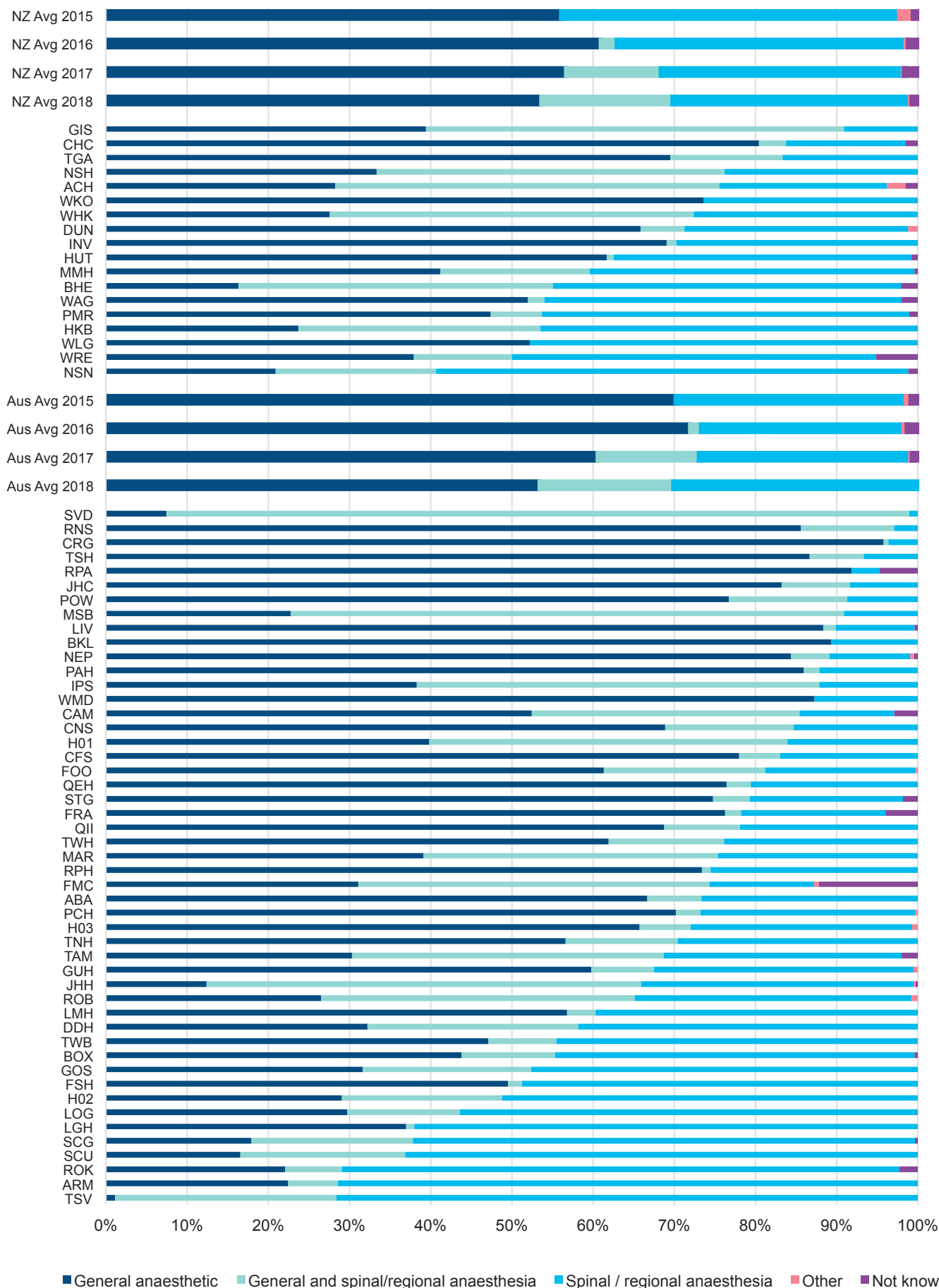
Using the live reporting available through the registry, we were able to see an improvement in the proportion of patients undergoing surgery within 48 hours. From a little over 60% in the first quarter of 2018 (and below the state and national average) we gradually increased to around 85% by the last quarter (better than the state and national average).

The registry allowed us to identify the problem, identify the cause of the problem, provide data to support the solution, and to document improvement in patient care resulting from the solution. We are now working on other aspects of our performance that have been highlighted in the registry reports.”

- Orthopaedic Surgeon, NSW

### FIGURE 28 TYPE OF ANAESTHESIA

The majority of people undergoing operative intervention for a hip fracture have a general anaesthetic with or without regional anaesthesia: 70% in both New Zealand and Australia. Marked variation is noted between hospitals and is likely to reflect the personal preference of the anaesthetist or the department.

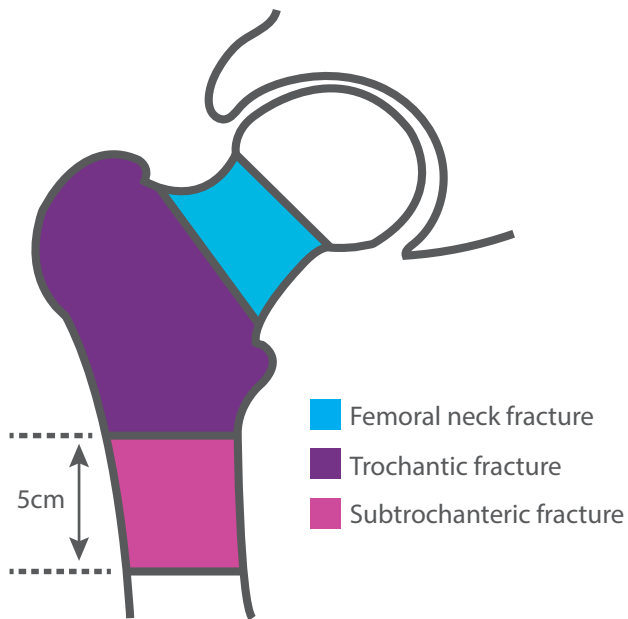


## FIGURES 29, 30, 31, 32, 33, 34 AND 35

### OPERATIONS BY TYPE OF FRACTURE

The term “hip fracture” is used to describe different types of fracture of the proximal (upper) femur. The types of hip fracture are classified by the location of the fracture. Classification of the type of hip fracture is important, as it will determine the most appropriate management of the fracture. The fracture locations and terms used by the ANZHFR are shown in Image 2.

**Image 2: Zones of hip fracture**



The types of fracture seen at each site (Figure 29) are consistent with expectations in that between 5% and 10% are subtrochanteric, and the remainder are divided fairly evenly between intertrochanteric and intracapsular (subcapital) fractures. Sites with wide variation from the average may reflect low numbers of cases from those sites. Alternatively, variation may highlight issues with the classification or coding of the type of fracture.

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 30 and 31 show the proportions of intracapsular (subcapital) fractures treated with various techniques, reported separately for undisplaced and displaced femoral neck fractures (intracapsular/subcapital). Note that undisplaced fractures (Figure 30) may be treated by inserting screws across the fracture (“cannulated screws”) rather than replacing the broken part of the bone (“arthroplasty”). Although the proportion of displaced intracapsular fractures treated with total hip arthroplasty is increasing, hemiarthroplasty remains the most common treatment for this fracture type.

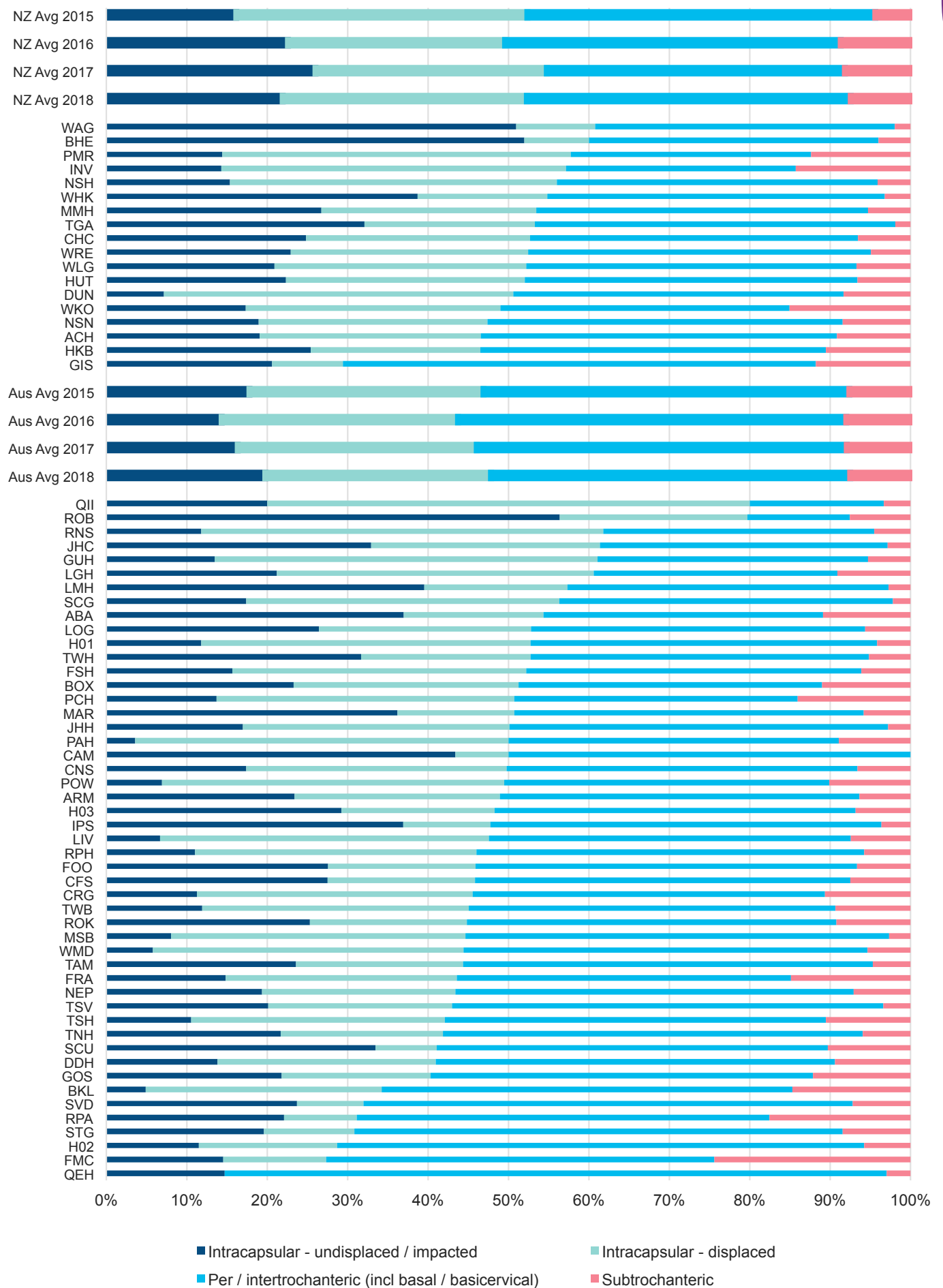
Figure 32 provides information on the variation in surgical treatment for intertrochanteric fractures. These fractures are usually treated by internally securing (fixing) the fractures using metallic devices, rather than replacing the broken part (arthroplasty). There is variation in the use of the two most common types of implant: a sliding hip screw and an intra-medullary nail. The ANZHFR does not distinguish between simple and comminuted or unstable fracture types and this may influence the choice of implant. Intramedullary fixation is recommended for subtrochanteric fractures and this recommendation appears to have been followed as seen in Figure 33.

The ANZ Guideline for Hip Fracture Care recommends the use of cemented stems for hip arthroplasty. Figures 34 and 35 show the rates of cement use reported by sites for hemiarthroplasty and total hip arthroplasty.

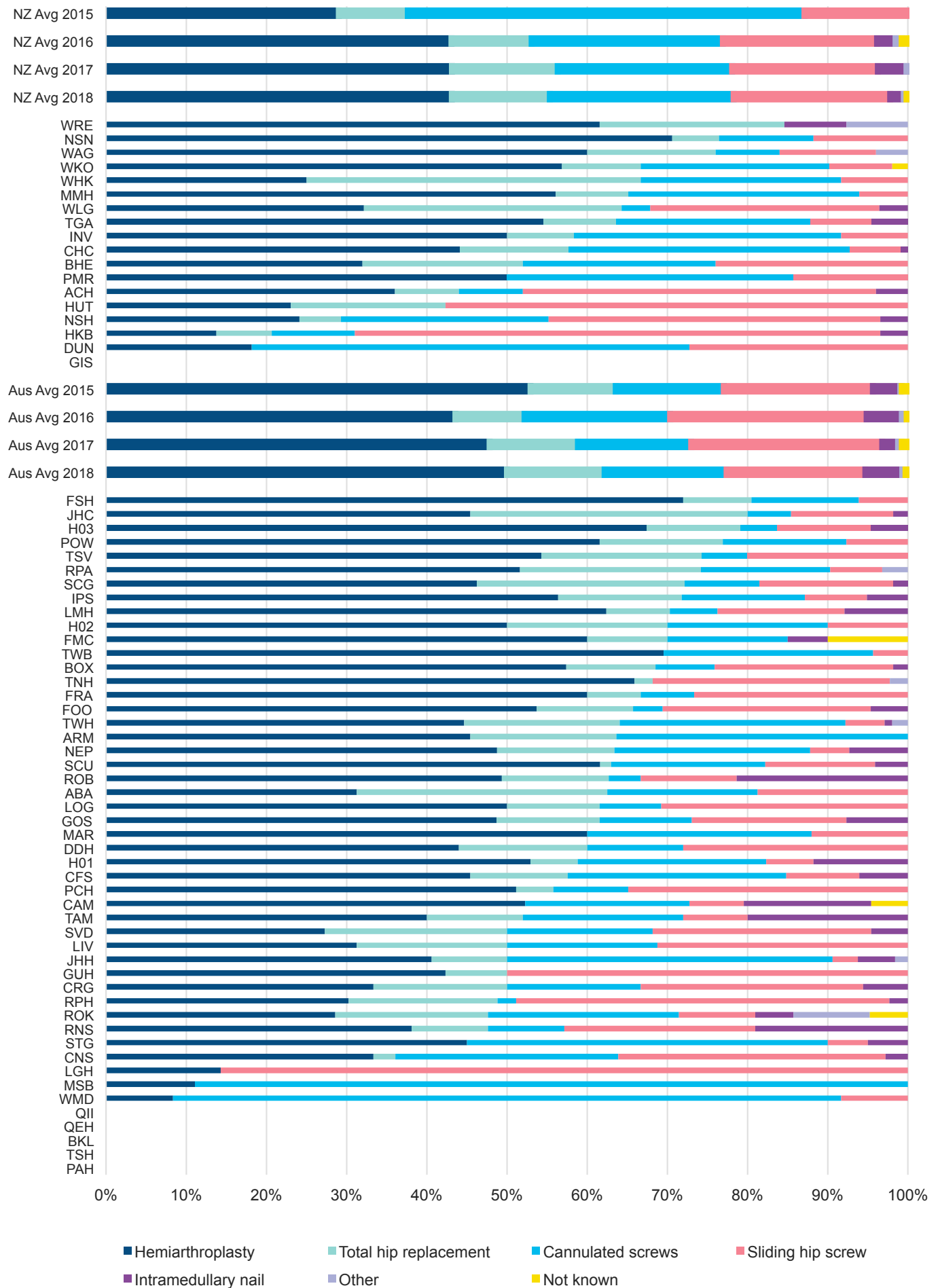
*NOTE: hospitals with fewer than ten (10) cases for any type of surgery have not been reported in Figures 29 to 35.*



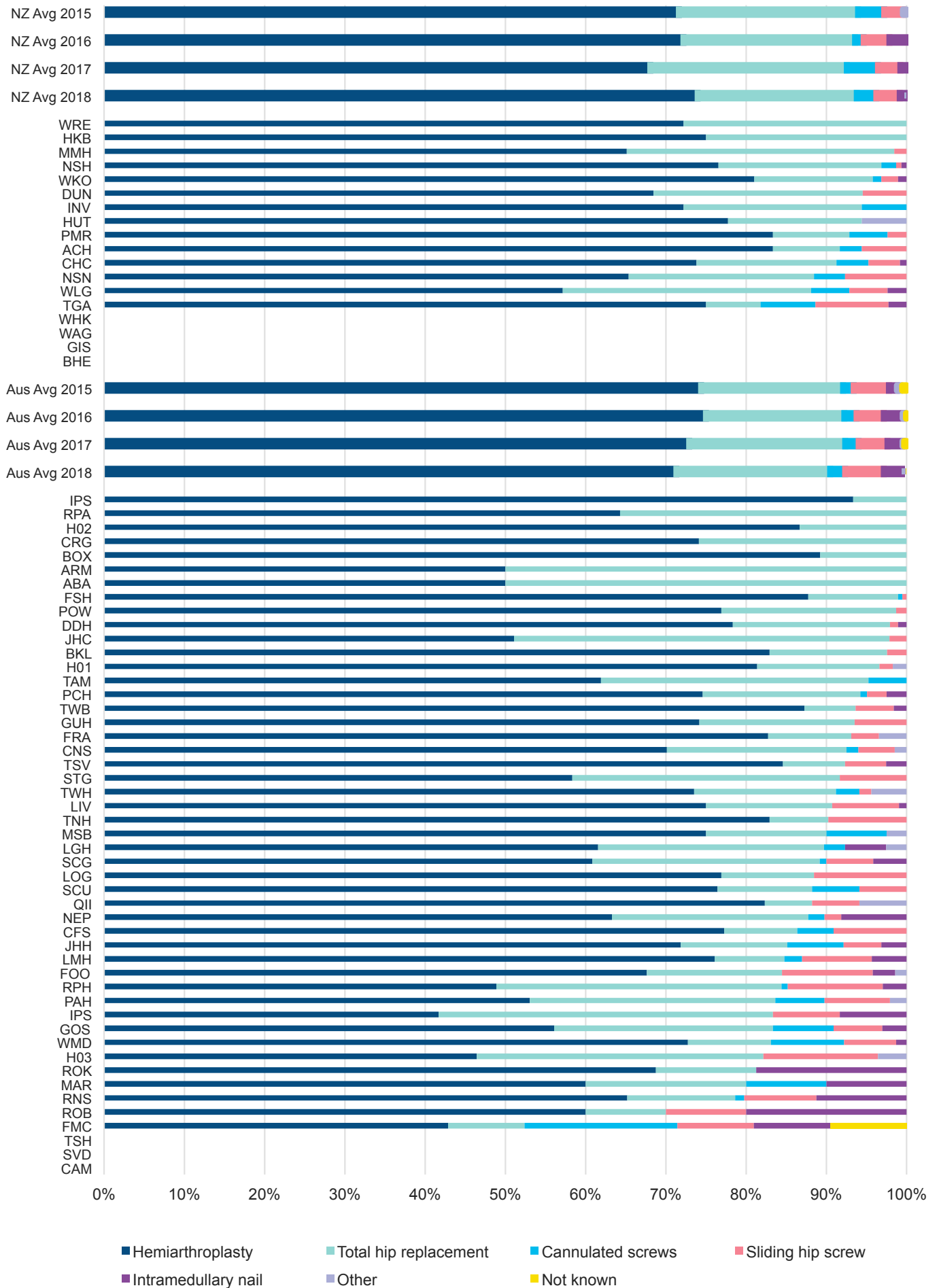
**FIGURE 29 FRACTURE TYPE**



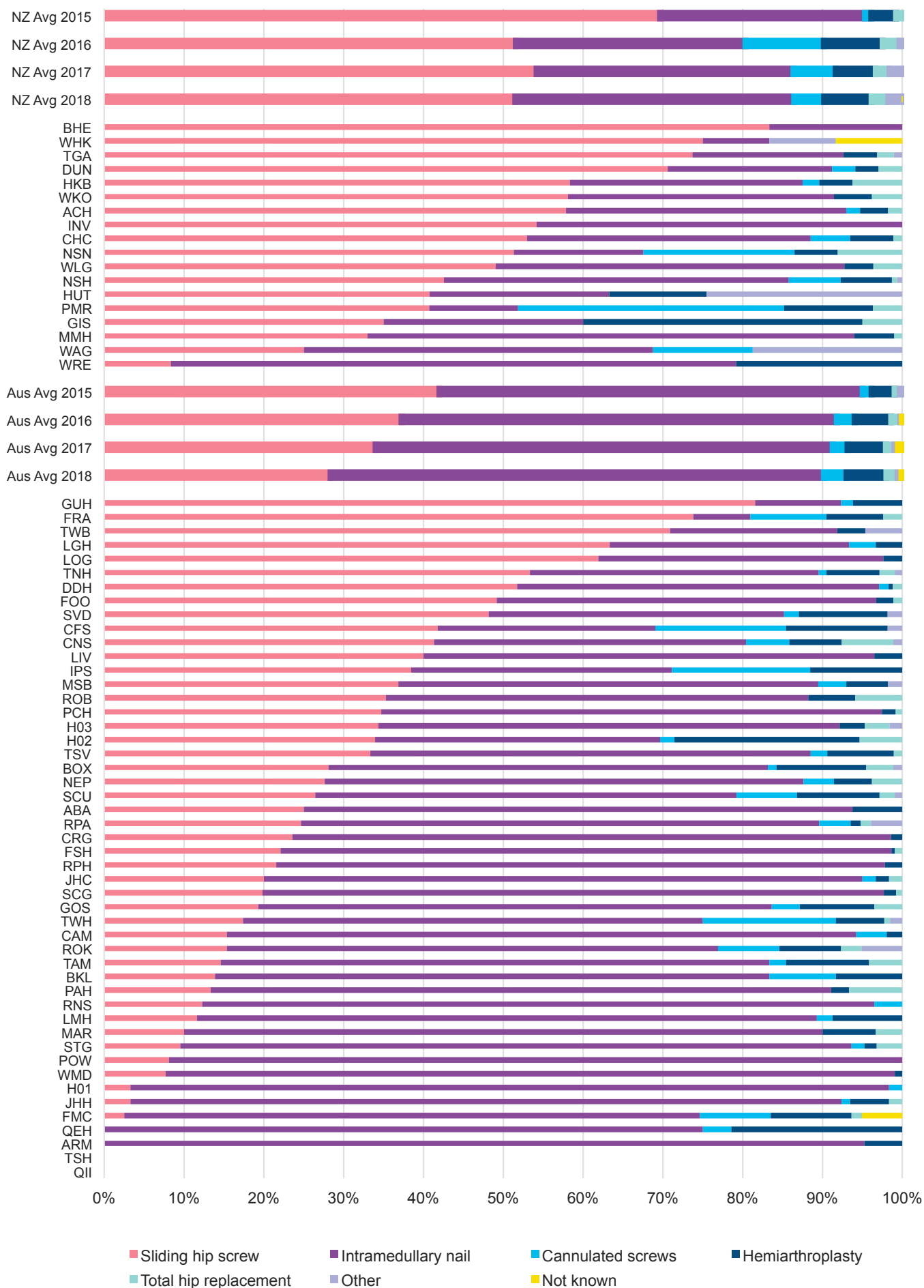
**FIGURE 30 PROCEDURE TYPE FOR INTRACAPSULAR UNDISPLACED/IMPACTED FEMORAL NECK FRACTURES**



**FIGURE 31 PROCEDURE TYPE FOR INTRACAPSULAR DISPLACED FEMORAL NECK FRACTURES**

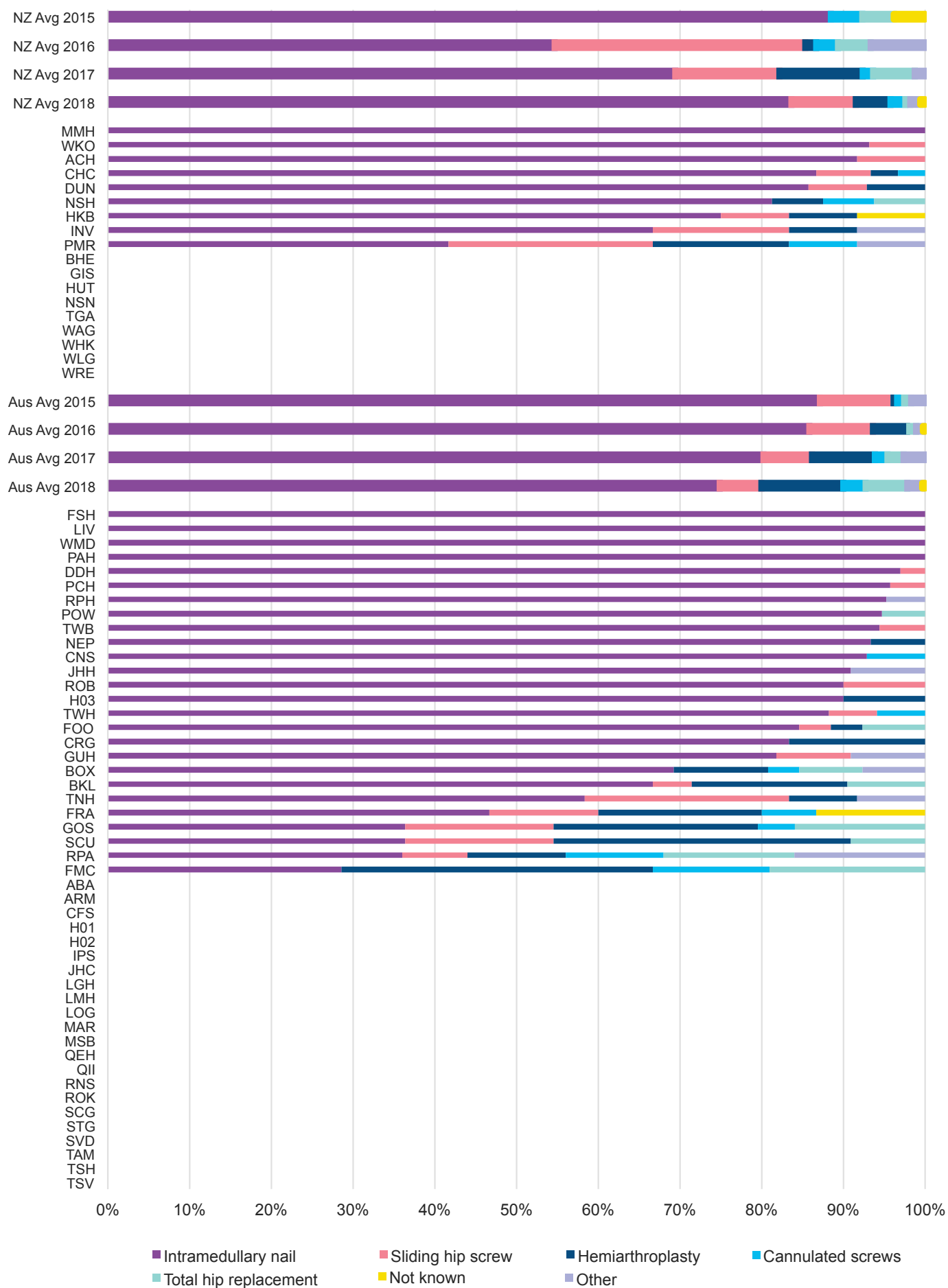


**FIGURE 32 PROCEDURE TYPE FOR INTERTROCHANTERIC FRACTURE (INCLUDING BASAL/BASICERVICAL)**

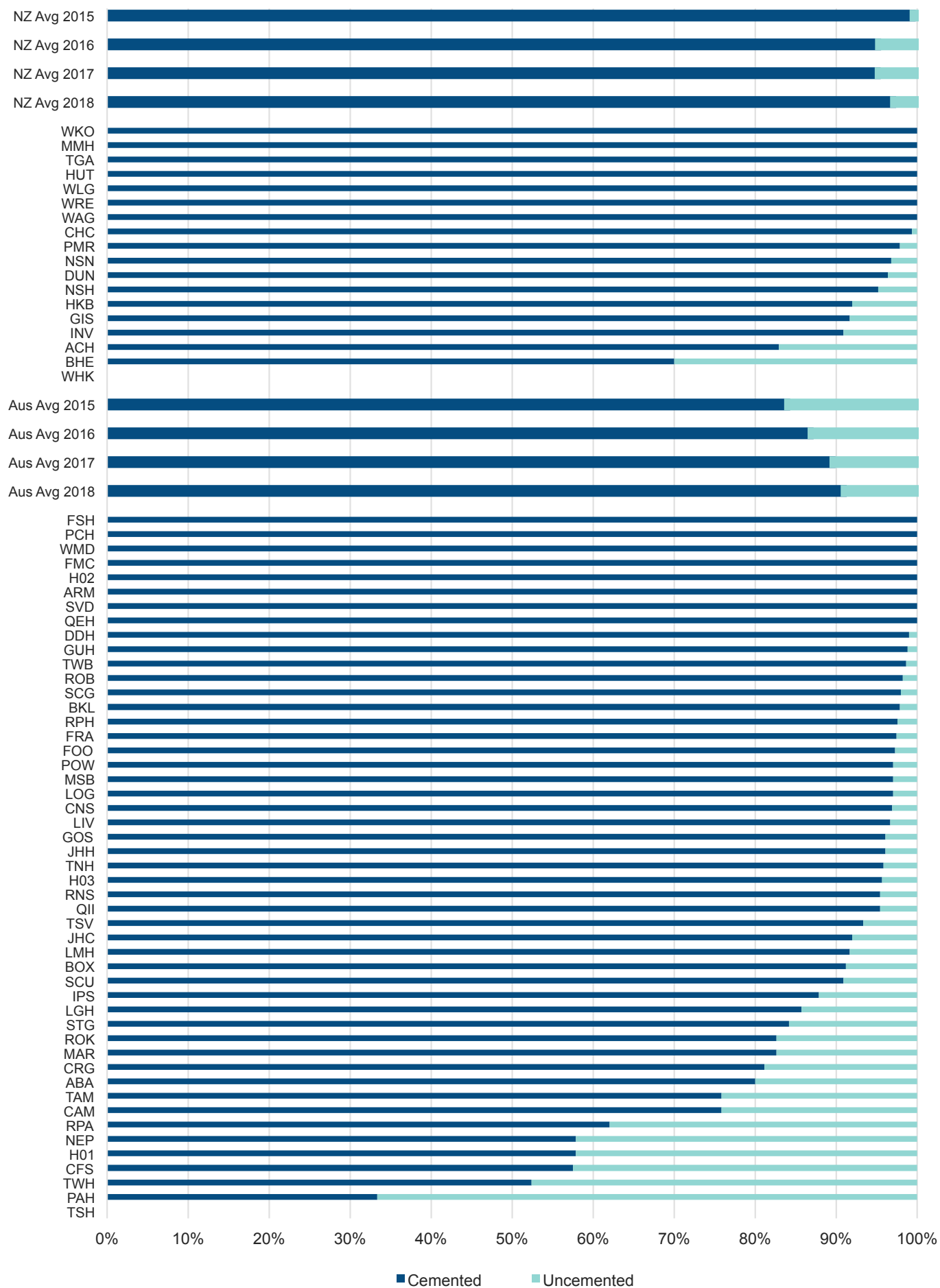




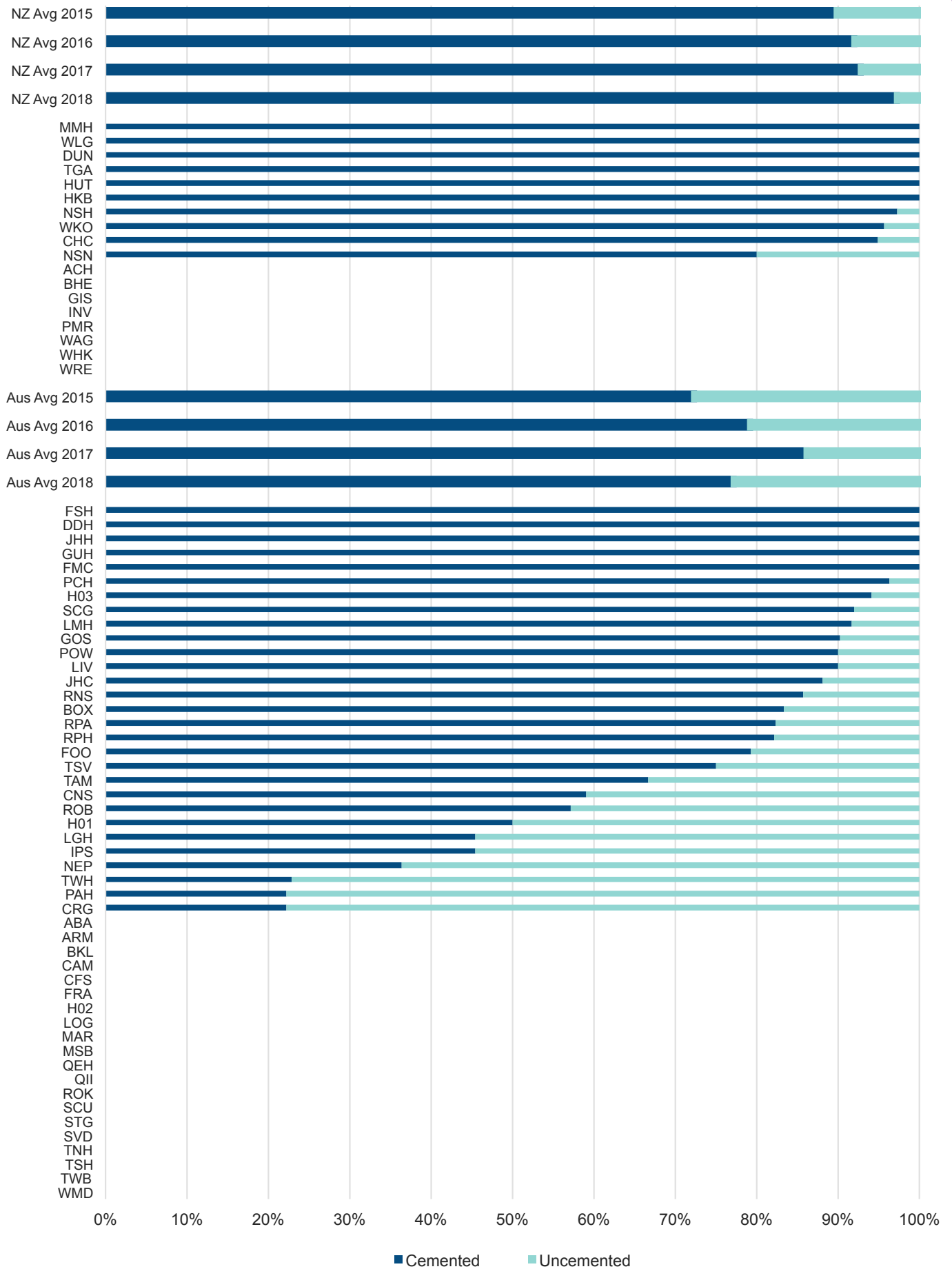
**FIGURE 33 PROCEDURE TYPE FOR SUBTROCHANTERIC FRACTURES**



**FIGURE 34 HEMIARTHROPLASTY: USE OF CEMENT**



**FIGURE 35 TOTAL HIP REPLACEMENT: CEMENTED STEM**



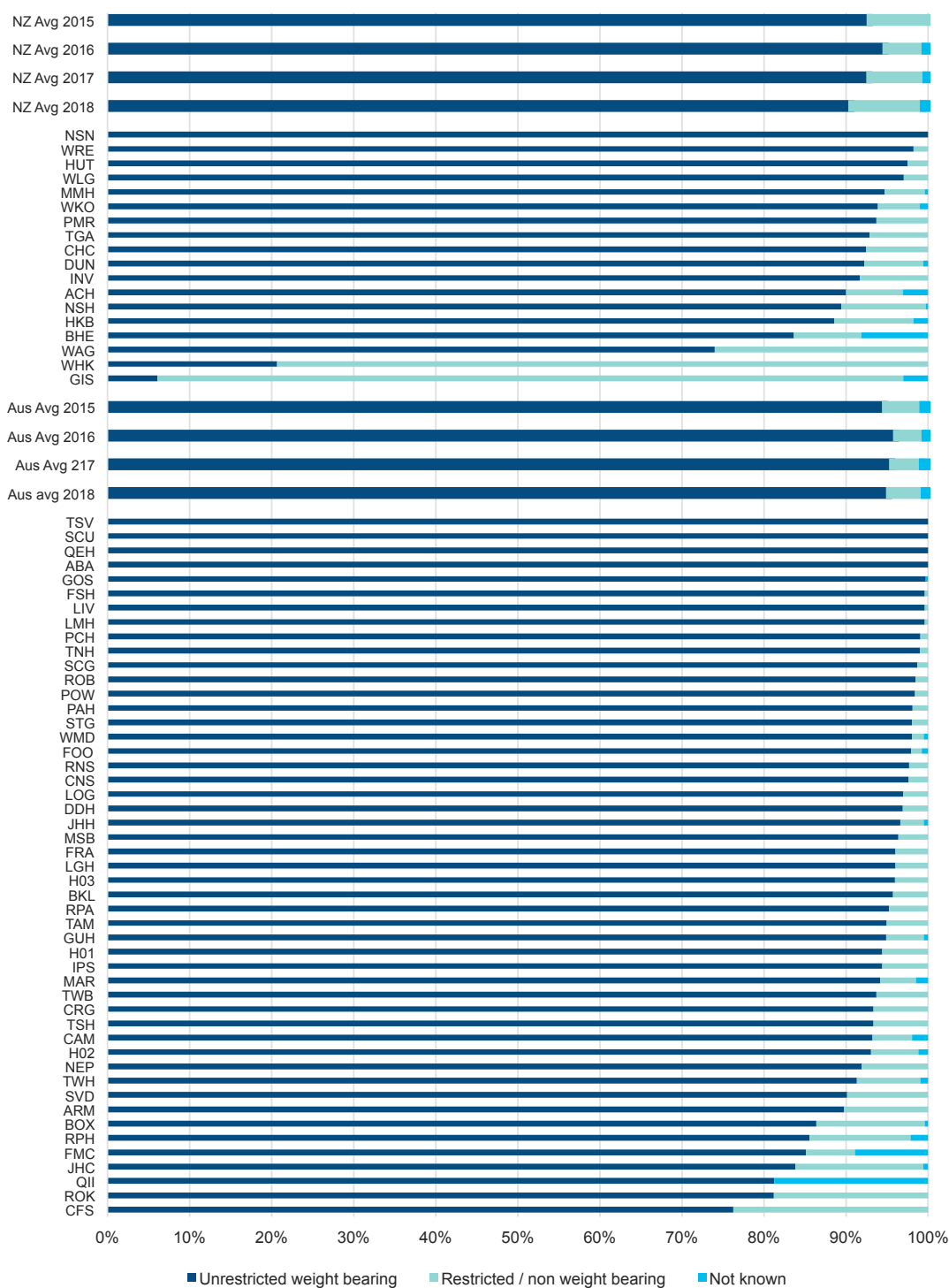
# SECTION 4: POSTOPERATIVE CARE

**FIGURE 36 WEIGHT BEARING STATUS AFTER SURGERY**



Previously, many patients were not permitted to fully weight bear after surgery for fear of disturbing the surgical fixation. There is evidence suggesting patients recovering from hip fracture surgery are unable to adhere to weight-bearing restrictions and there is little evidence to suggest full weight-bearing adversely impacts the surgical fixation. Allowing immediate unrestricted weight bearing after surgery permits early rehabilitation and restoration of function.

Figure 36 shows that 91% and 95% of patients in New Zealand and Australia, respectively, are allowed full weight bearing after surgery.





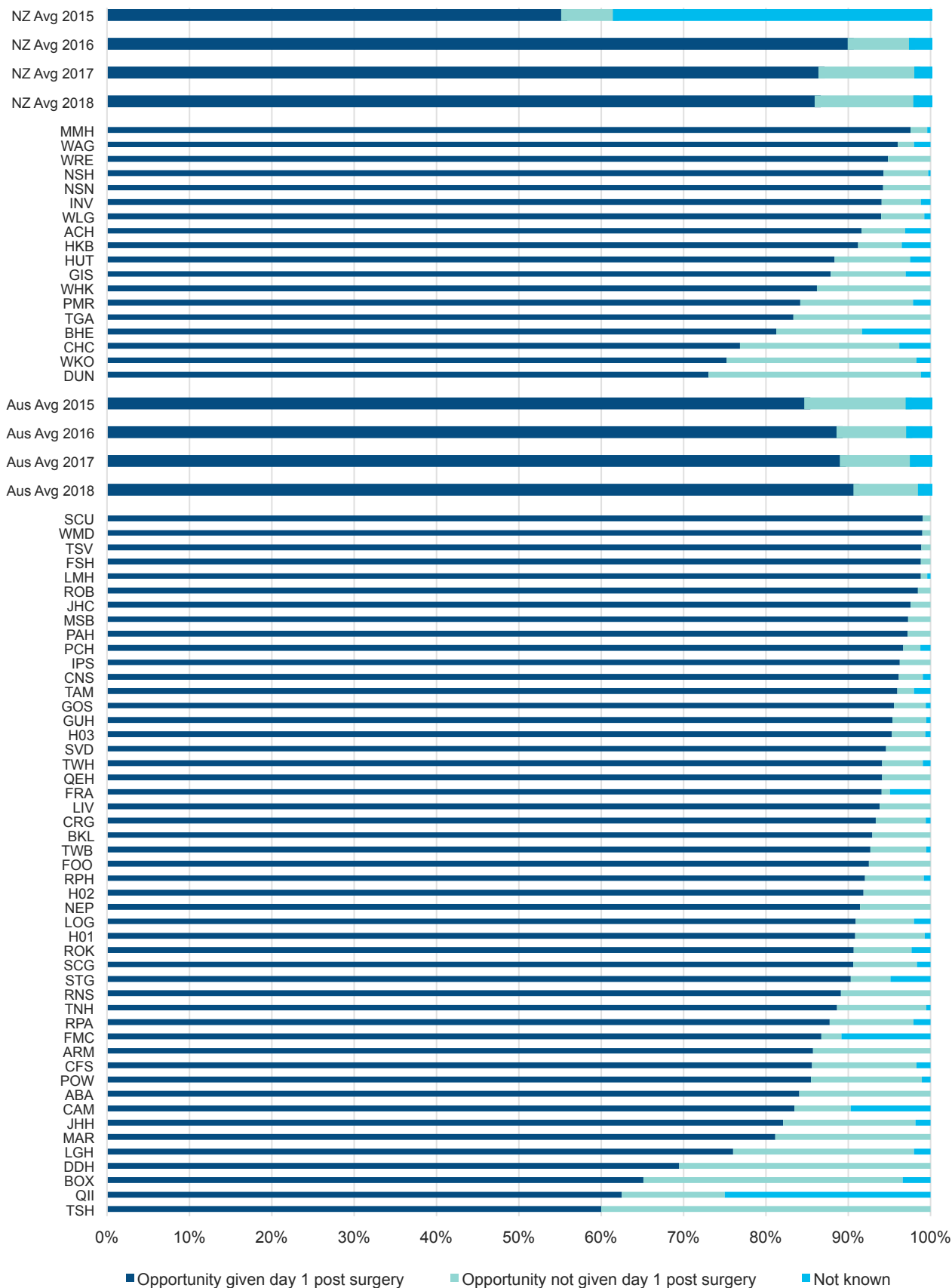


“The Townsville Hospital Orthopaedics team has been analysing the ANZHFR annual reports and the real-time data in the Registry to inform regular education and training sessions. These sessions facilitate discussion amongst all team members, and coupled with a renewed focus on evidence informed practice, has led to the implementation of strategies designed to optimise patients’ post-operative recovery. These strategies focus on early mobilisation and early functional re-training and includes reviewing hip fracture management against the ANZHFR Guideline for Hip Fracture and the Hip Fracture Care Clinical Care Standard, improved orientation and supervision processes, trial of diversion of physiotherapy resources to orthopaedics to meet weekday priorities, staff education and the inclusion of patients with a hip fracture on existing limited weekend physiotherapy service lists. Medical management strategies have included commencement of routine pre-operative assessment and management by the orthogeriatric team; clear post-operative plans and an increased focus on pain management (increased use of pre-op and intra-operative nerve blocks). From a nursing perspective, ensuring all risk assessments have been completed and facilitating ADLs/ mobilisation and early functional returns has also assisted in optimising post-operative care.”

- Clinical Nurse Consultant, QLD

### FIGURE 37 OPPORTUNITY FOR FIRST DAY MOBILISATION

In New Zealand and Australia, 86% and 91% of patients, respectively, are given the opportunity to mobilise the day after surgery.







Mary lives with her husband John. In recent years she'd become more frail and their son, who spent time commuting and working out of the area, was increasingly worried about leaving Mary and John alone. John's health was poor, and he struggled with an early onset of dementia.

One Thursday evening, Mary tripped on the living room mat and fell, landing heavily on her right hip. She lay on the floor for more than an hour before John was able to get help. Mary was taken to the Emergency Department at Wollongong Hospital. Here the team used their eHip protocol to initiate a new prescribed pain protocol, early analgesia and the scheduling of her surgery.

The morning after surgery, Mary was flagged on multidisciplinary rounds on the Orthopaedic Ward. Mary stood and transferred to sit out of bed that morning with the physio and again later that afternoon with the nurse. The Orthopaedic Physiotherapist and the Discharge Planner started prepping Mary and John for discharge.

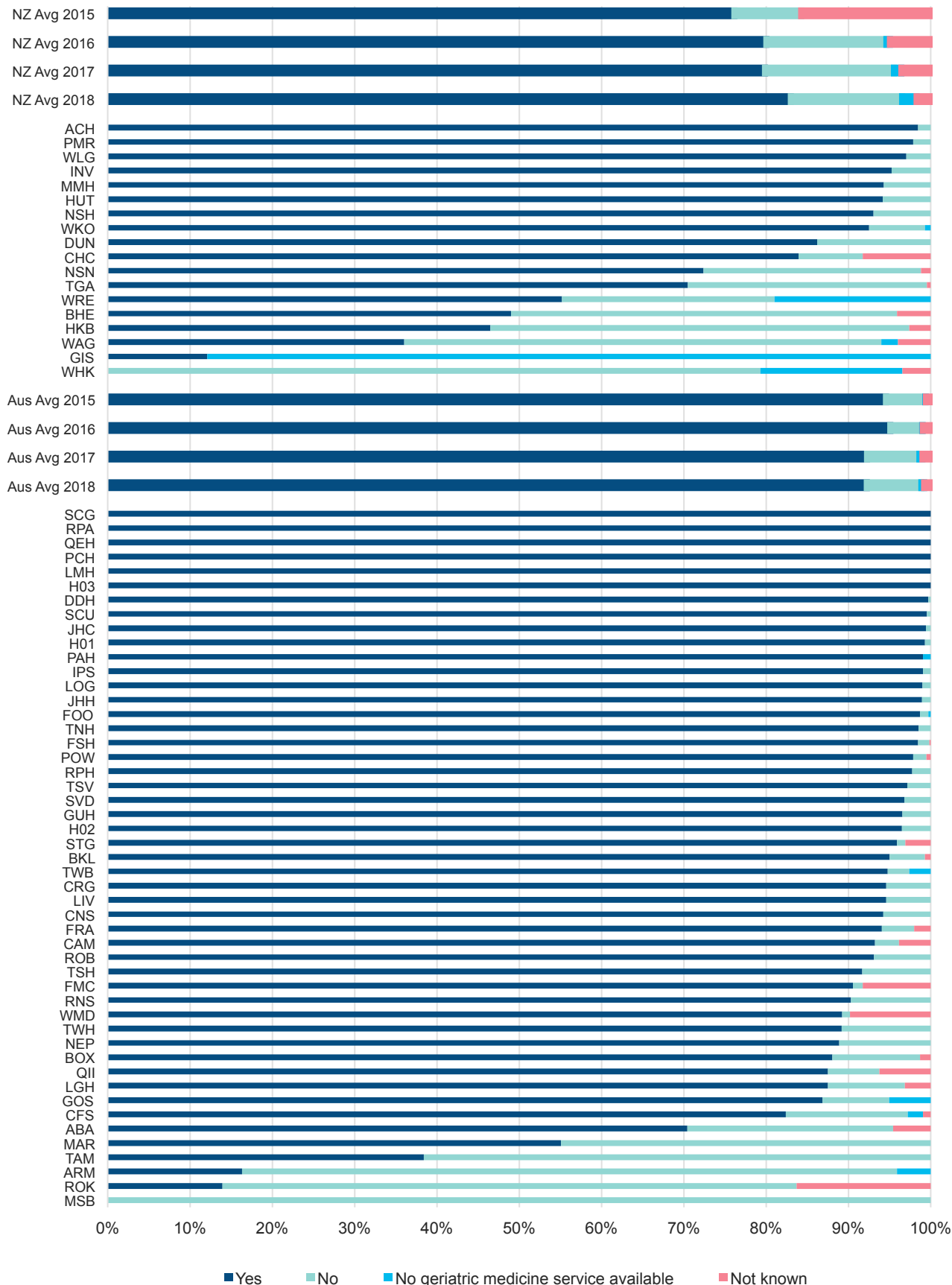
When Wollongong Hospital started looking at the Hip Fracture Care Clinical Care Standard, mobilisation was a "low-hanging fruit" - an easy win that needs multidisciplinary support. The Hip Fracture Working Party focused on improving day 1 mobilisation from its low of 64%. Physios, geriatricians, surgeons, nurses, dietitians and support staff soon realised that the opportunity to mobilise after surgery was fraught with variation. In order to fix the variation, a simple memo from the Head of Department of Orthopaedics empowered the physiotherapists and orthopaedic nurses to mobilise patients on the day of or day after surgery. With mobilisation as everybody's business, within 12 months, 94% of patients were mobilising early.

With a focus on improving length-of-stay, morbidity and patient experience, staff challenged and changed mobilisation expectations within the multidisciplinary team. Early mobilisation is now the "new norm".

- Service Lead, NSW.

### FIGURE 38 ASSESSED BY GERIATRIC MEDICINE

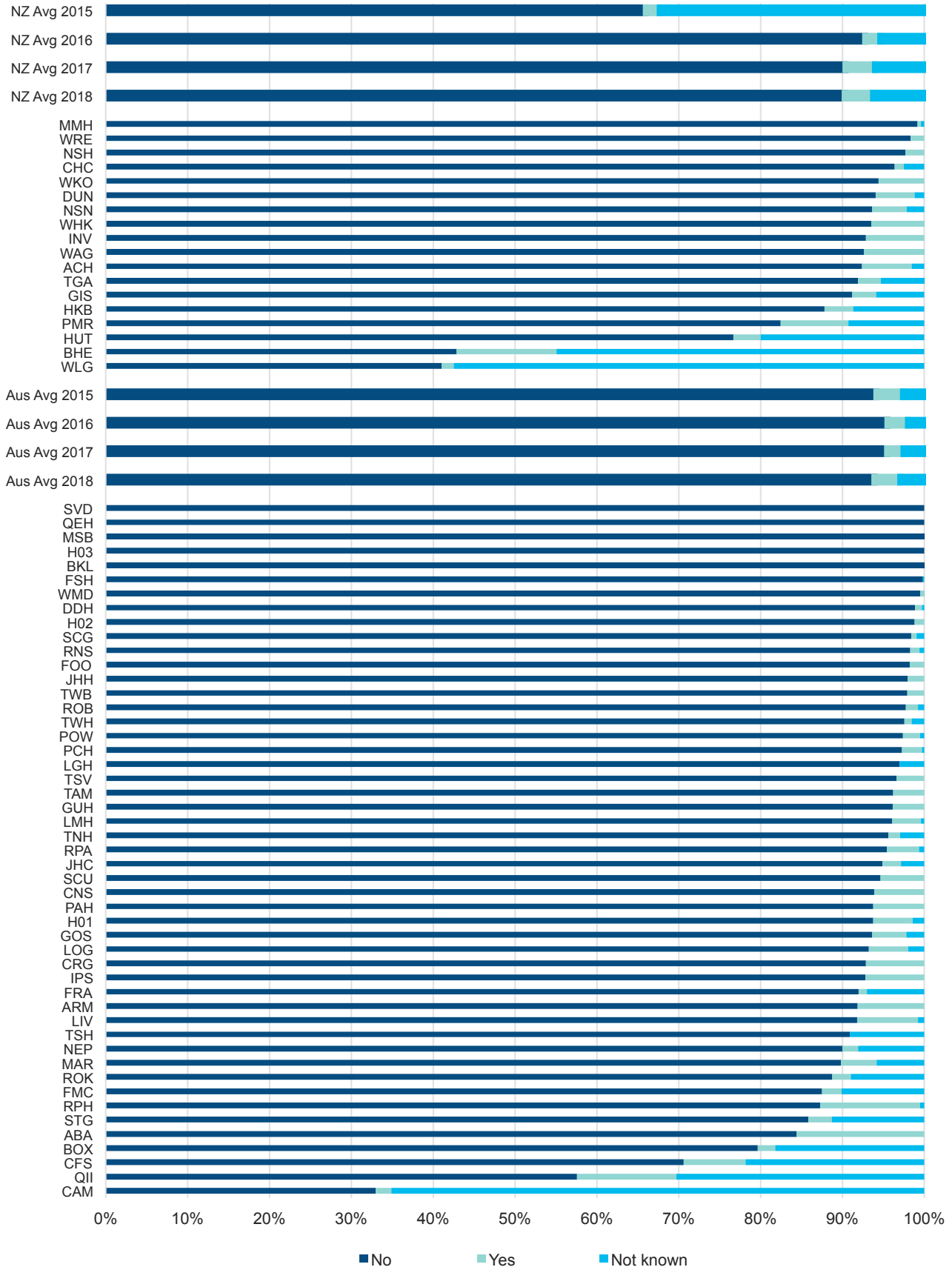
In New Zealand, 83% of hip fracture patients saw a geriatrician at some stage in their acute hospital stay compared to 92% in Australia. As more hospitals join the Registry we may see a drop in this proportion as smaller sites and non-metropolitan sites are likely to have less access to a geriatrician.





### FIGURE 39 PRESSURE INJURIES OF THE SKIN

A pressure injury of the skin is a potentially preventable complication of hip fracture care. As a complication it is associated with delayed functional recovery and an increased length of stay. In New Zealand and Australia, 3% of patients are documented as having sustained a pressure injury.

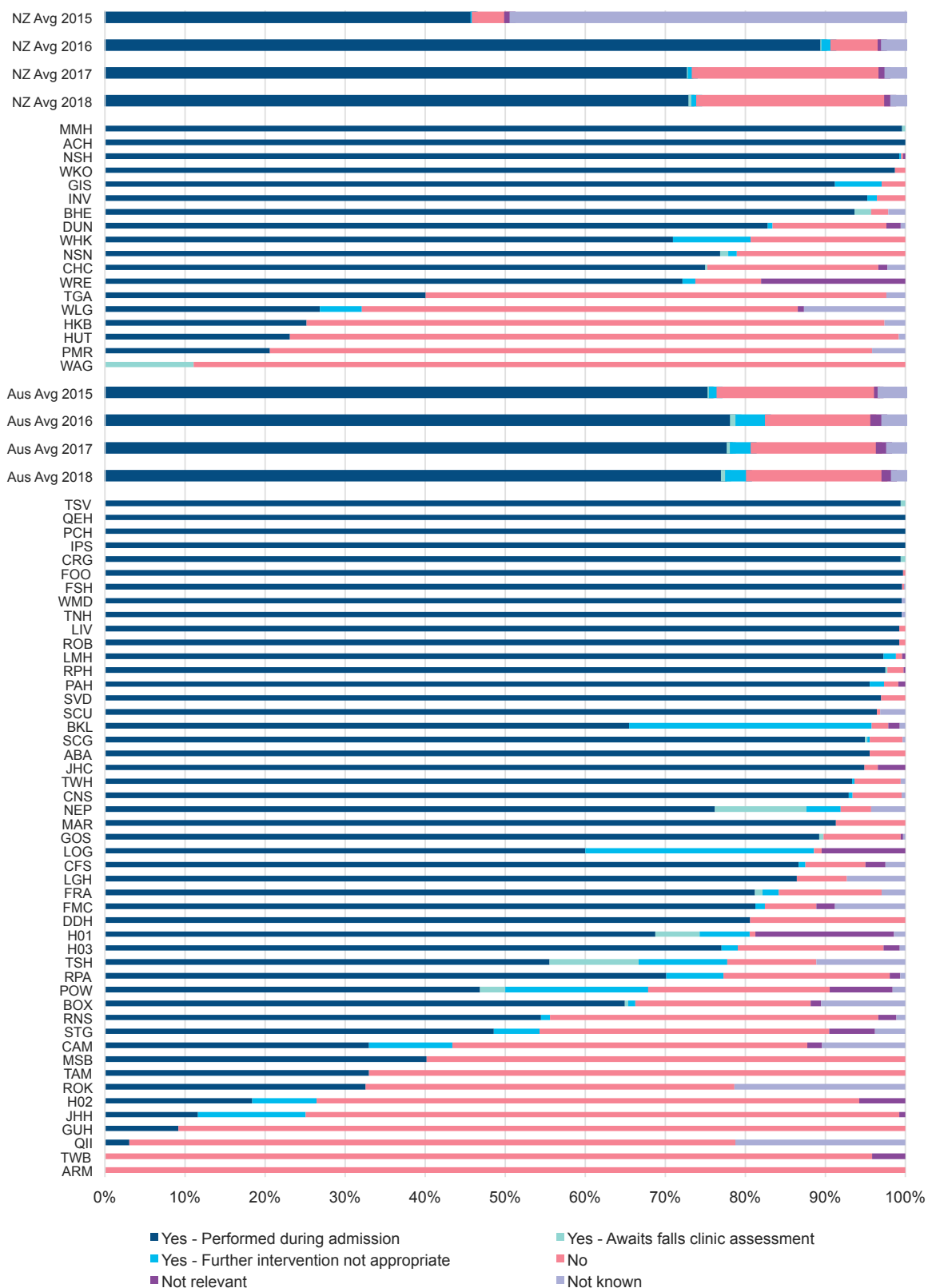


## FIGURE 40 SPECIALIST FALLS ASSESSMENT

A minimal trauma fracture is a strong predictor of risk of a second fracture. The Hip Fracture Care Clinical Care Standard Quality Statement 6 requires that each hip fracture patient is assessed in relation to future fall and fracture risk and that a plan is put in place to manage risk.

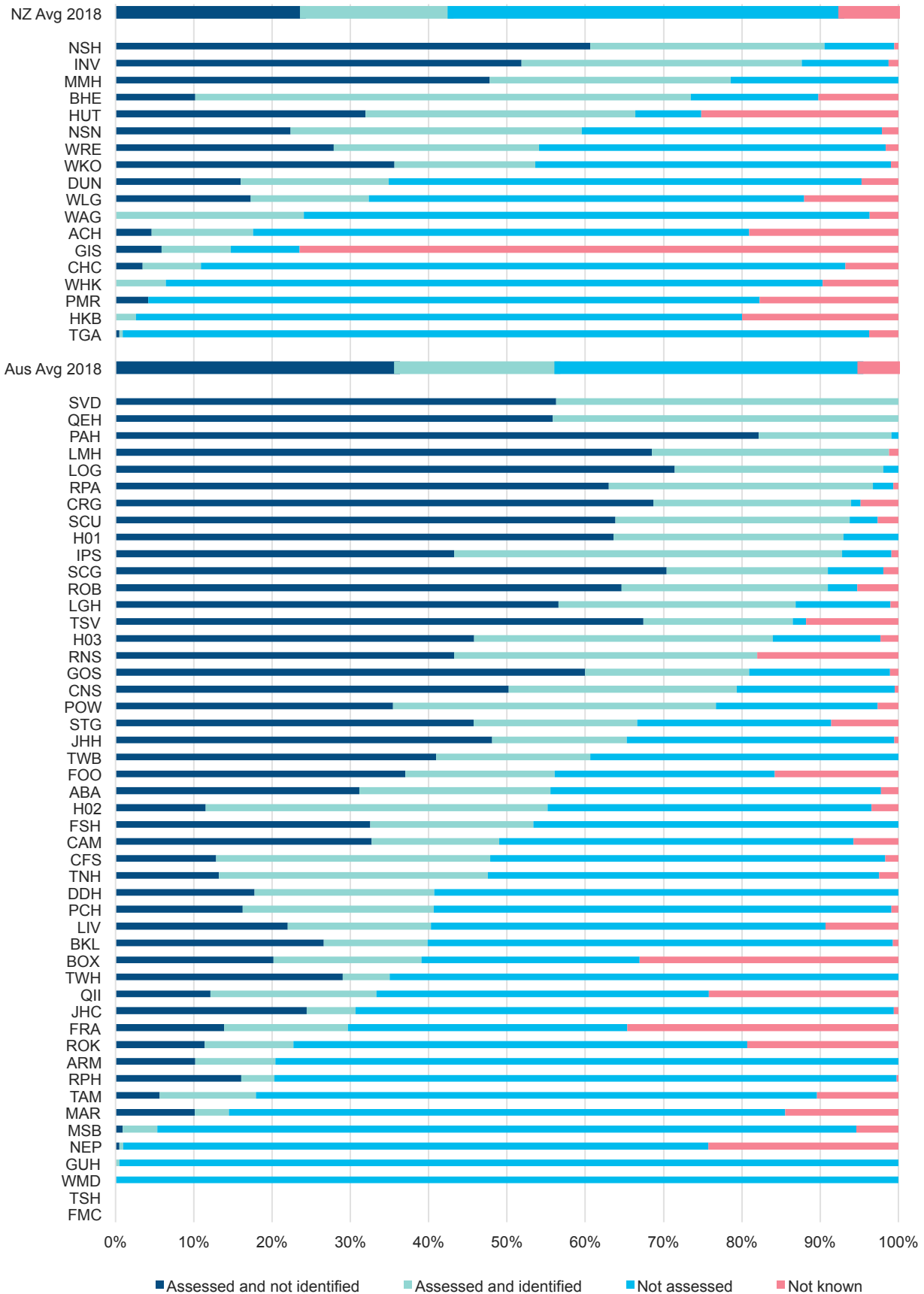


The ANZ Guideline for Hip Fracture Care recommends that hip fracture patients be assessed for their individual risk of falls. This assessment should be conducted by a suitably trained health professional and cover fall history, risk factors for falls, including medication review, and formulation of a plan to prevent further falls. In New Zealand, 72% of patients are reported to have undergone a falls assessment during their inpatient stay. In Australia, 76% of patients underwent a fall risk assessment during their in-patient stay.

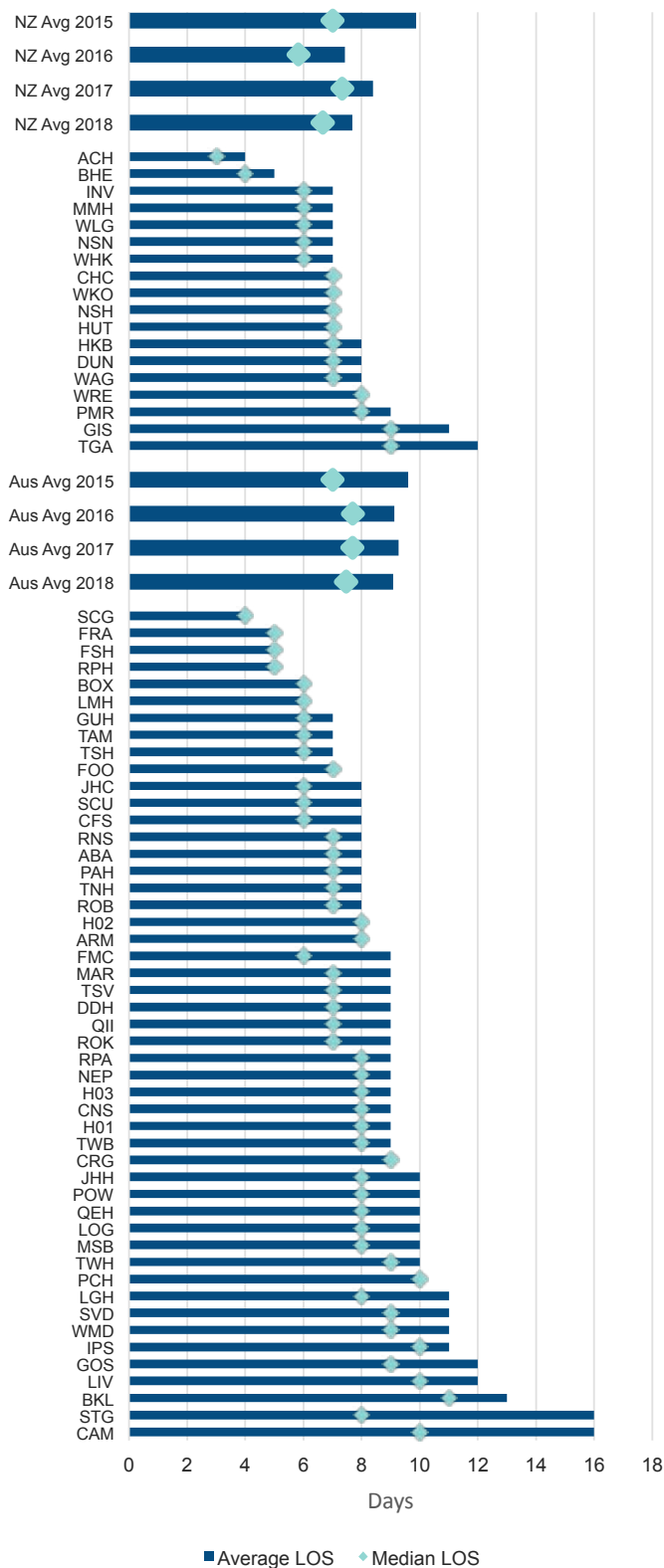


## FIGURE 41 ASSESSMENT OF DELIRIUM

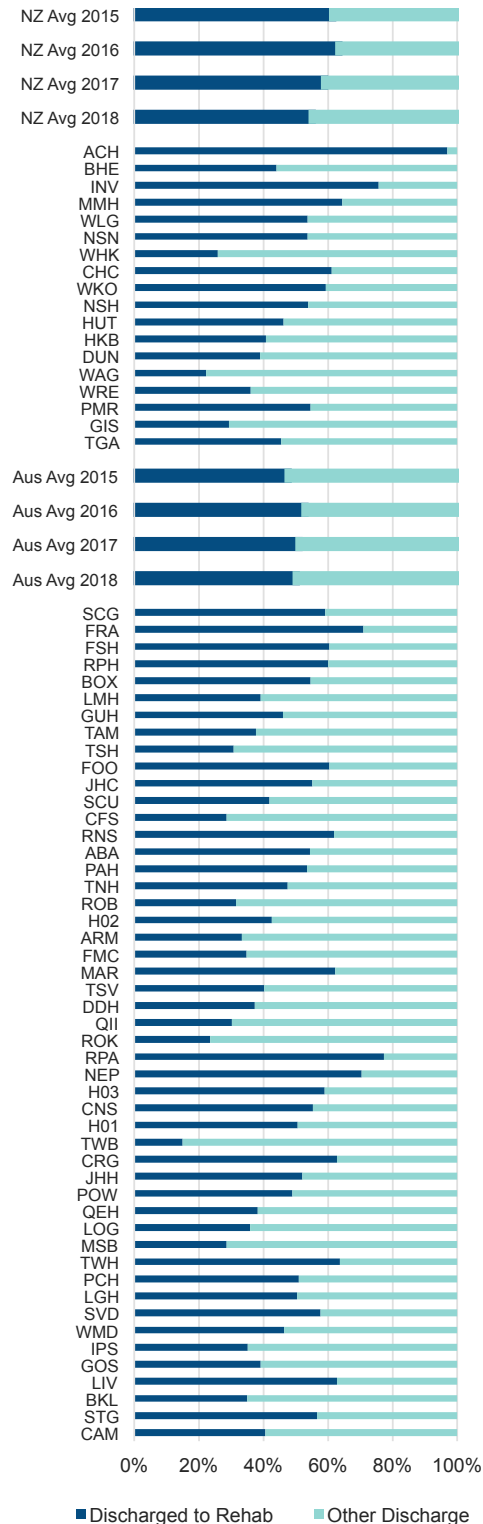
Delirium is an acute change in mental status common among older patients hospitalised with a hip fracture. Assessment of delirium was included in the ANZHFR dataset in 2018 and is reported for the first time. In New Zealand, 42% of patients had an assessment for delirium and 17% were identified as experiencing delirium during the acute hospital stay. In Australia, 54% of patients had an assessment for delirium and 19% were identified as experiencing delirium during the acute hospital stay.



**FIGURE 42 AVERAGE LENGTH OF STAY IN ACUTE WARD**



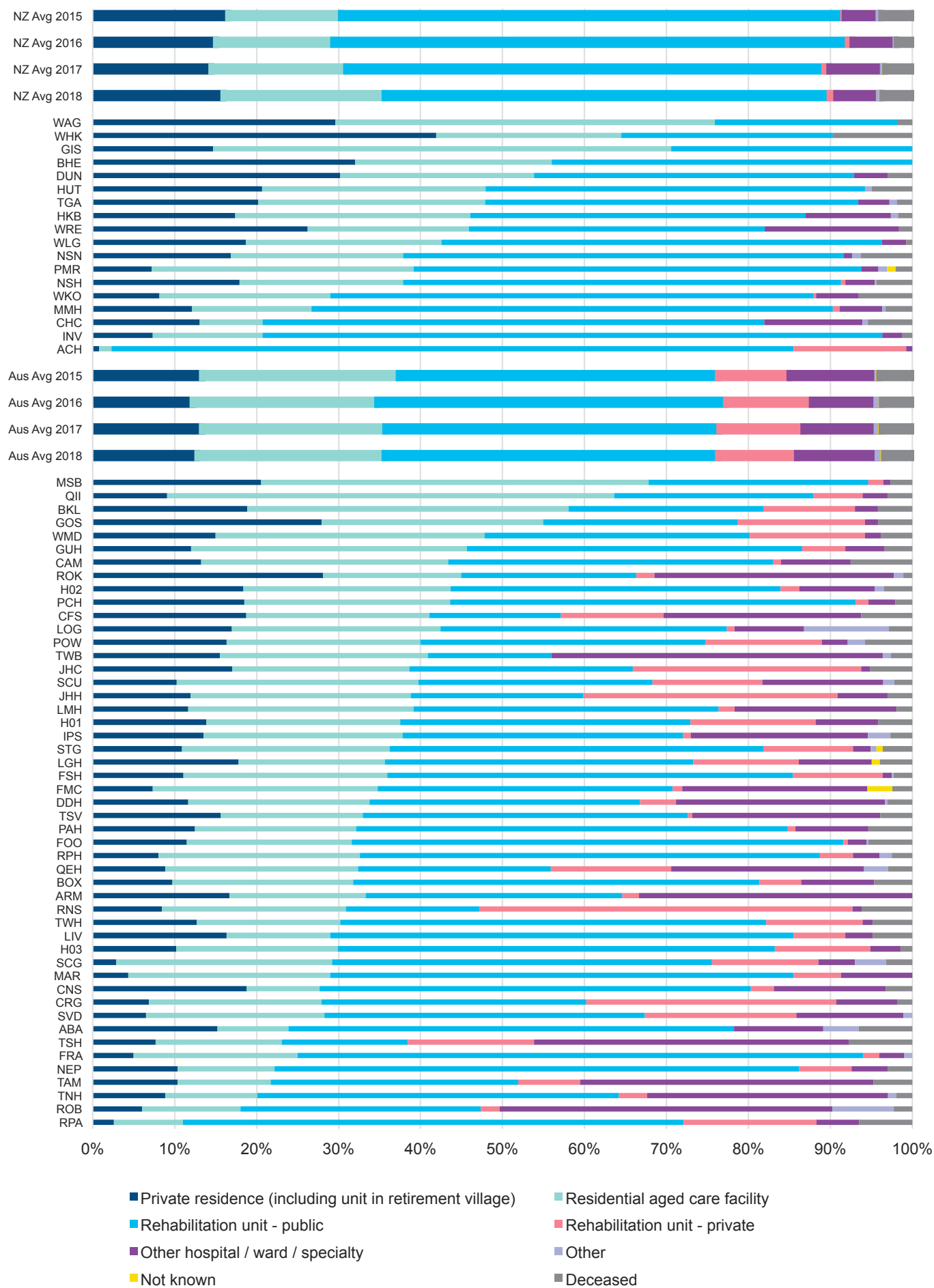
**FIGURE 43 DISCHARGE TO REHABILITATION**



Variation is seen in mean and median length of stay (LOS) in the acute ward although there has been a reduction in LOS since the previous year in both New Zealand and Australia. The median LOS in New Zealand is 6.7 days and 55% of patients are transferred to rehabilitation. In Australia, the median length of stay in the acute ward is 7.5 days and 50% 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. Average 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. Use of linked hospitalisation data in the future will provide a better overall picture.

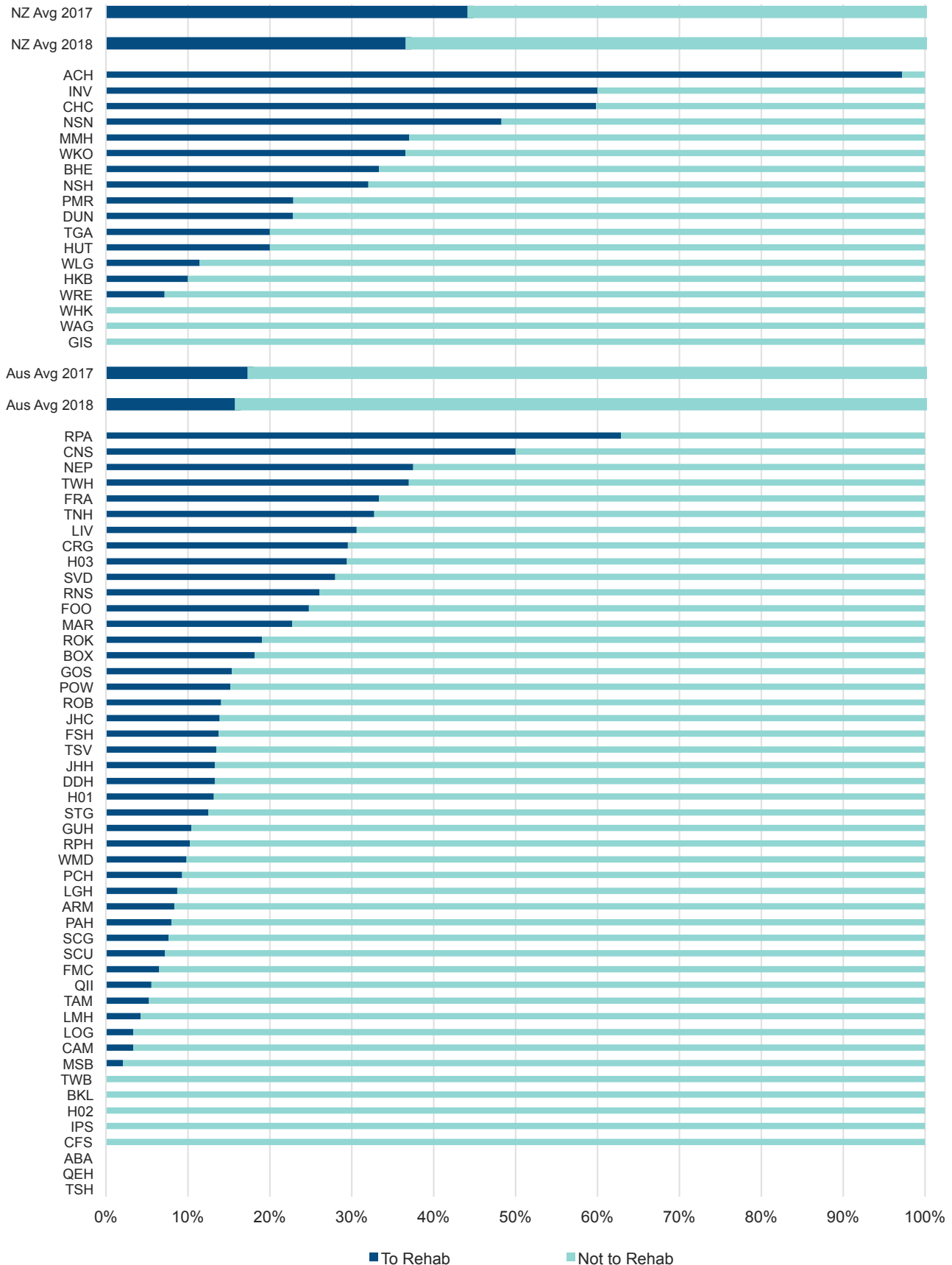
**FIGURE 44 DISCHARGE DESTINATION FROM ACUTE WARD**





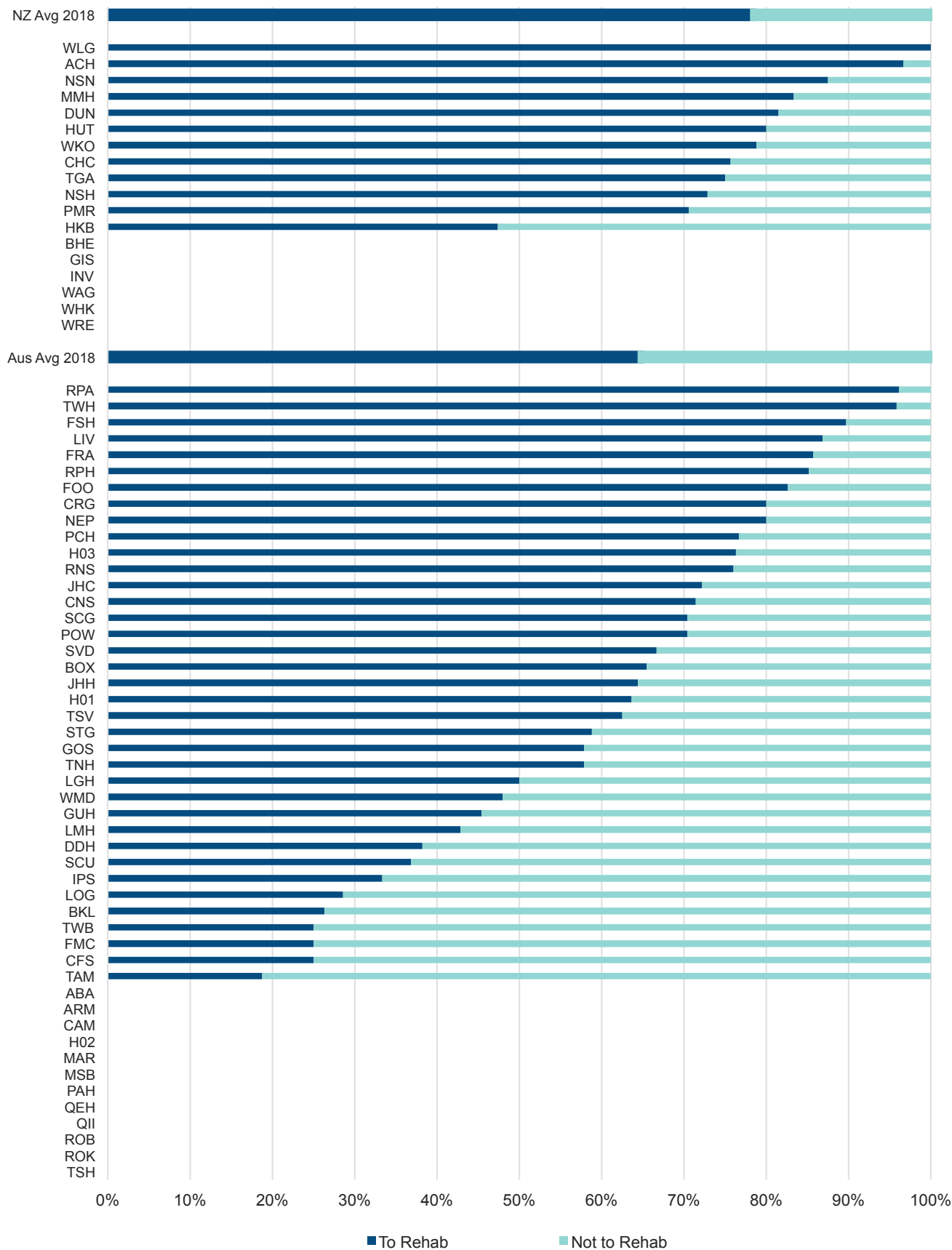
## FIGURE 45 RESIDENTS OF AGED CARE FACILITIES DISCHARGED TO REHABILITATION (PUBLIC OR PRIVATE)

Overall, 37% of people from residential aged care are transferred for rehabilitation after their acute care for their hip fracture in New Zealand. This contrasts with 16% of hip fracture patients 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 ACCESS TO REHABILITATION (PUBLIC OR PRIVATE) FOR PATIENTS FROM PRIVATE RESIDENCE WITH PRE-ADMISSION IMPAIRED COGNITION

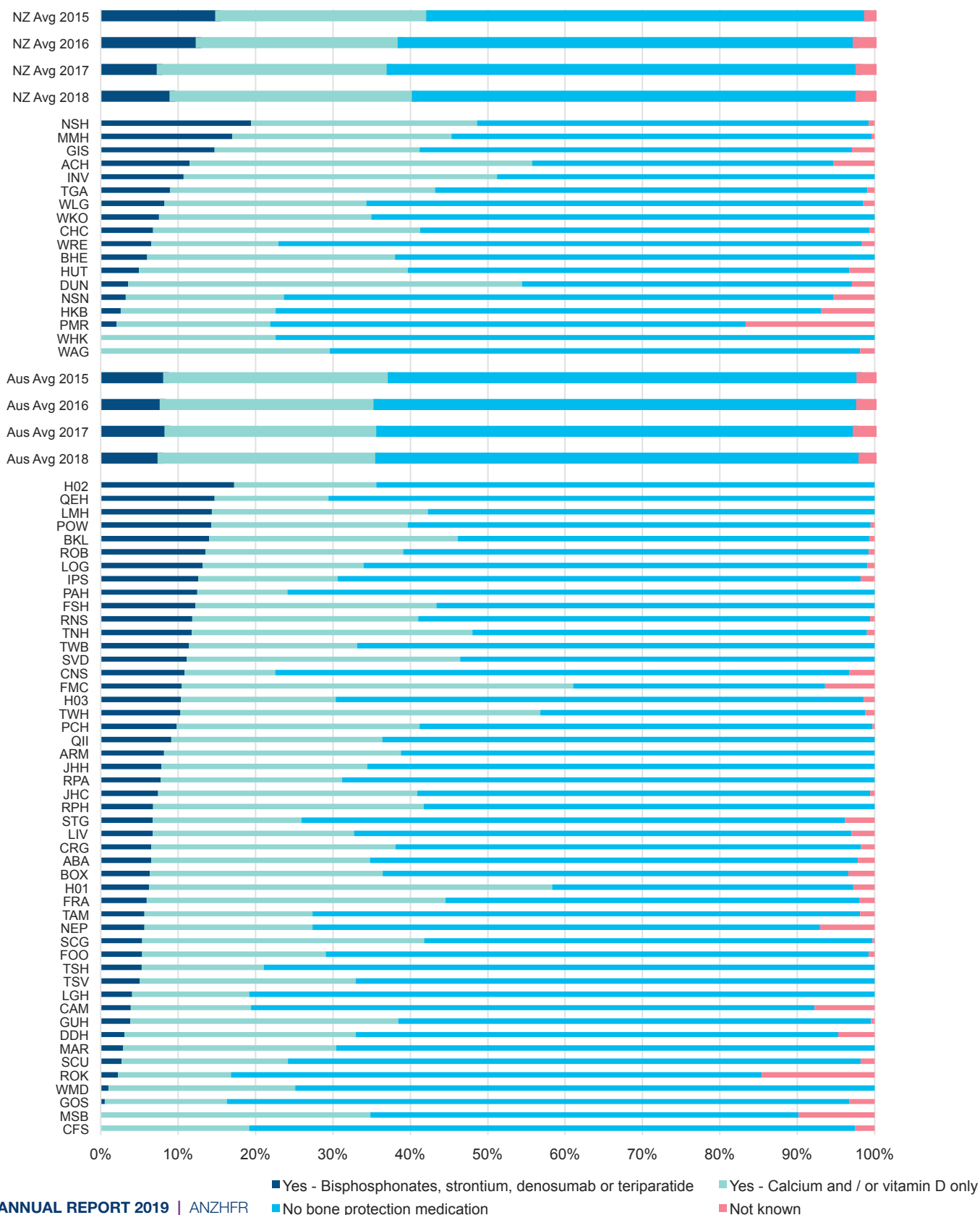
In New Zealand, 78% of people with a pre-existing cognitive impairment, who lived in a private residence before their hip fracture, were transferred for rehabilitation after their acute care. This contrasts with 65% of hip fracture patients with pre-existing cognitive impairment in private residences 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 47 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 despite evidence in the literature demonstrating that up to 50% of these people will have already sustained a minimal trauma fracture.

In New Zealand, 31% of people were recorded as on calcium and/or vitamin D at admission whilst 9% were recorded as taking active treatment for osteoporosis above and beyond calcium and/or vitamin D. In Australia, 28% of people were recorded as on calcium and/or vitamin D at admission whilst 7% were recorded as taking active treatment for osteoporosis above and beyond calcium and/or vitamin D. These proportions suggest a significant and ongoing care gap in secondary fracture prevention in both countries.

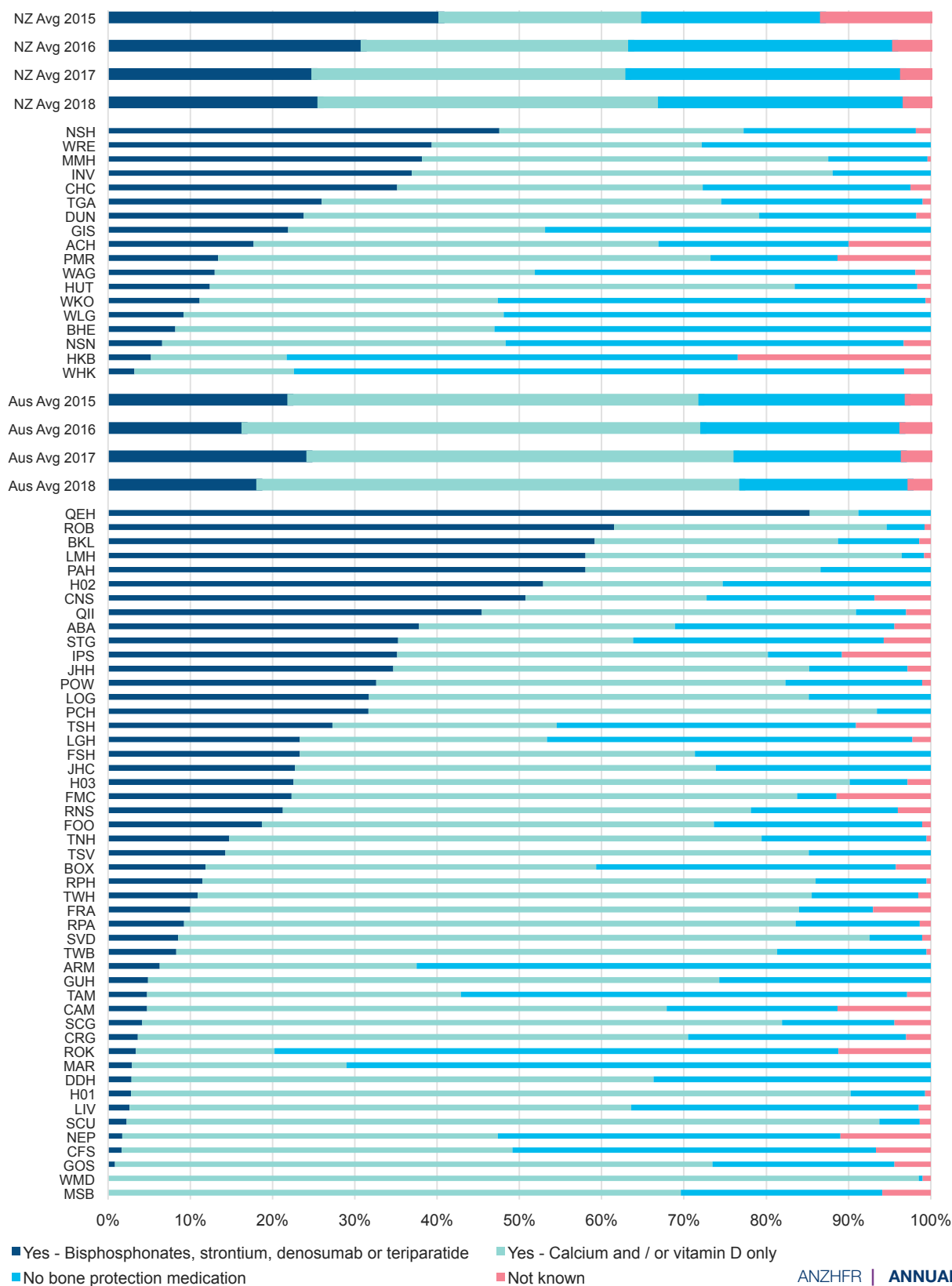


## FIGURE 48 BONE PROTECTION MEDICATION ON DISCHARGE

Quality statement 6 of 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 new treatments initiated on 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, 26% of hip fracture patients left hospital on a bisphosphonate, denosumab or teriparatide compared to 9% on admission. In Australia, 18% of patients left hospital on a bisphosphonate, denosumab or teriparatide compared to 7% on admission. Whilst not always possible to initiate treatment in the acute setting, the data continues to highlight a significant care gap and missed opportunity to improve bone health and contribute towards secondary fracture prevention.

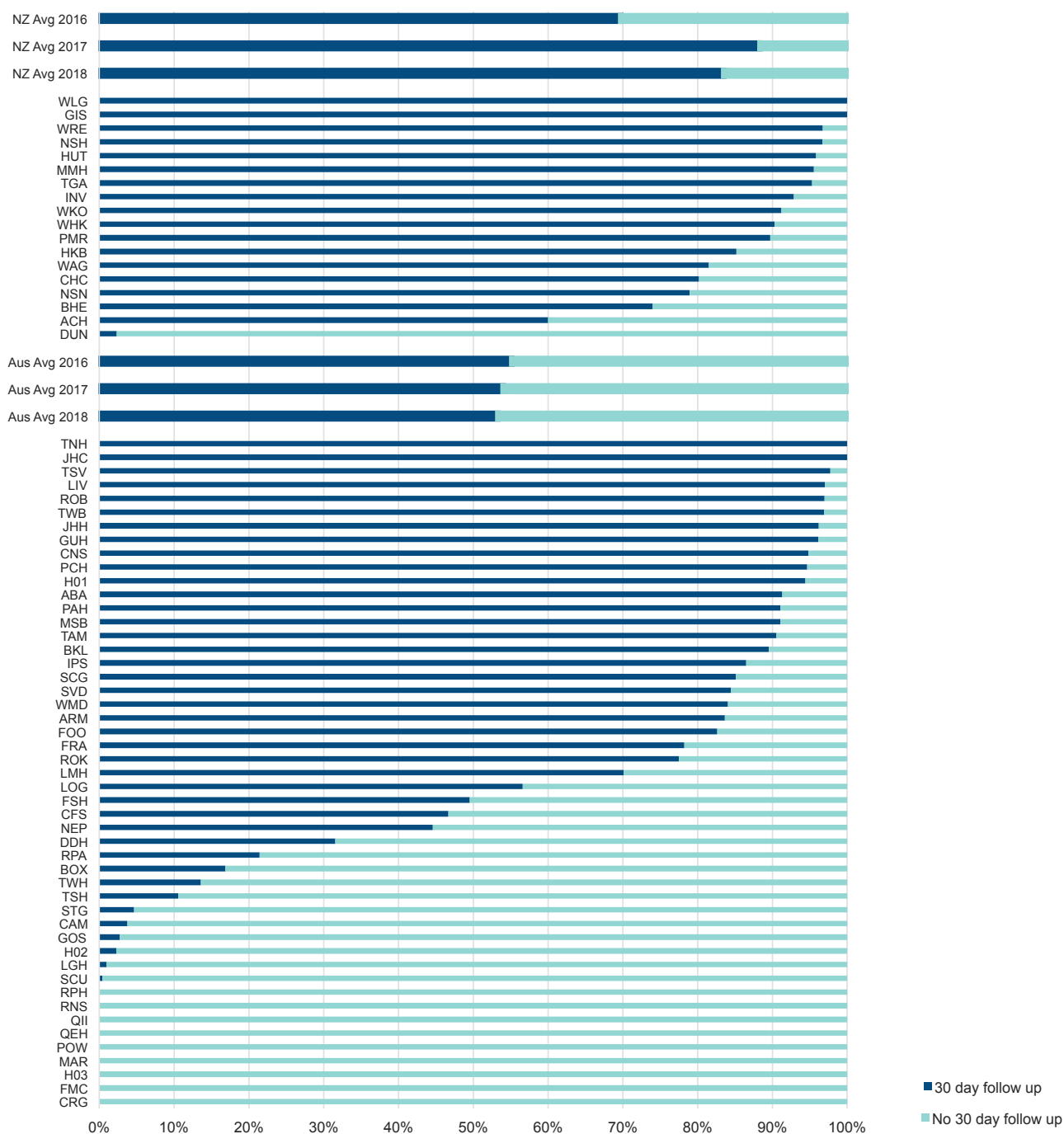


# SECTION 5: 30 AND 120 DAY FOLLOW-UP

Figures 49 and 50 show the rate of 30 day and 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, as this task is labour intensive. In New Zealand, 83% of patient records had 30 day follow up data and 78% had data for 120 days. In Australia, 53% of patient records had 30 day follow up data and 47% had data for 120 days.

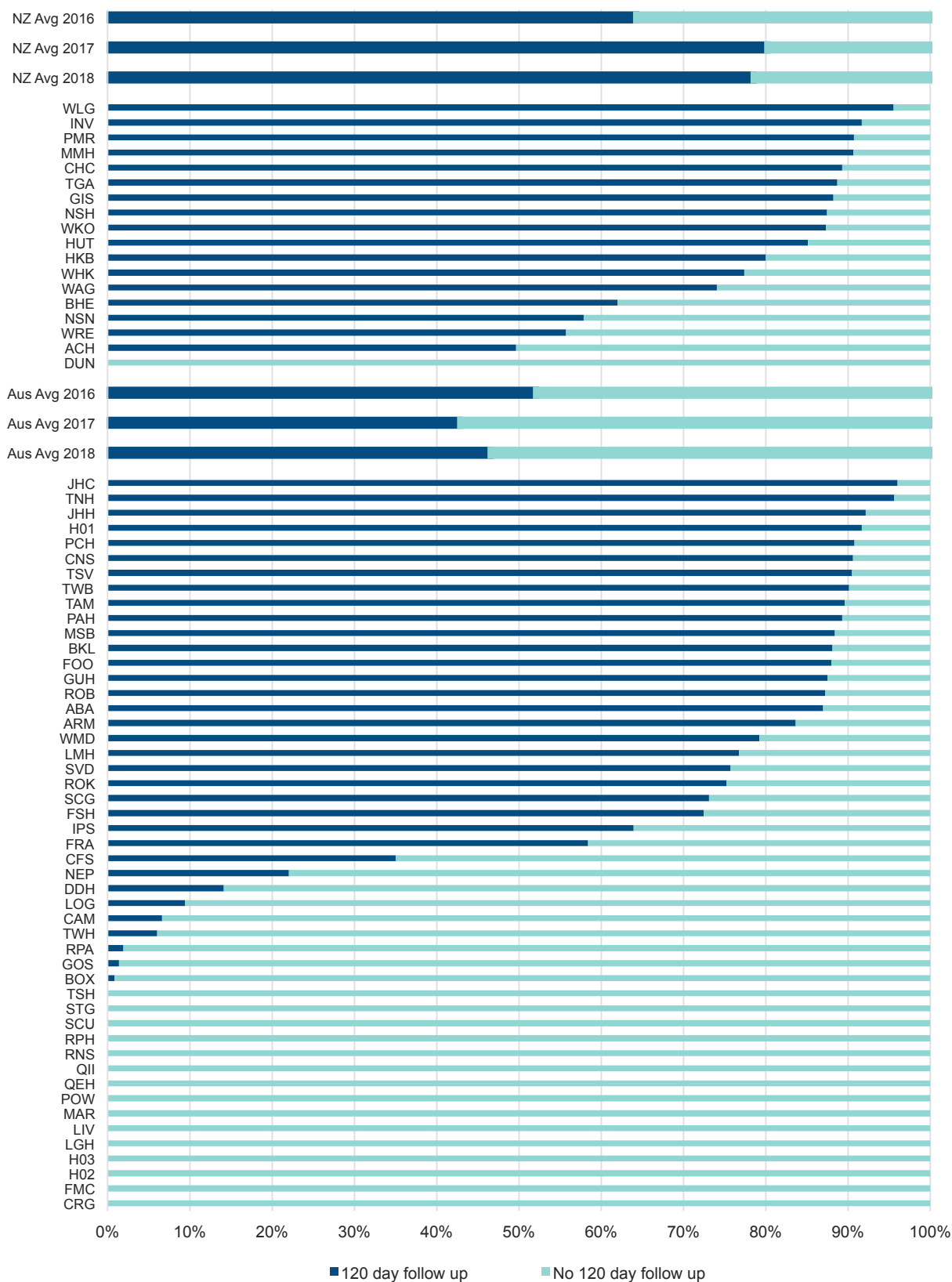
For figures 49 to 59, hospitals are only reported if they have followed up more than 80% of eligible patients. For figures 52, 54, 55, 56 and 57 2016 averages are not shown due to data quality in that year.

**FIGURE 49 30 DAY FOLLOW UP**



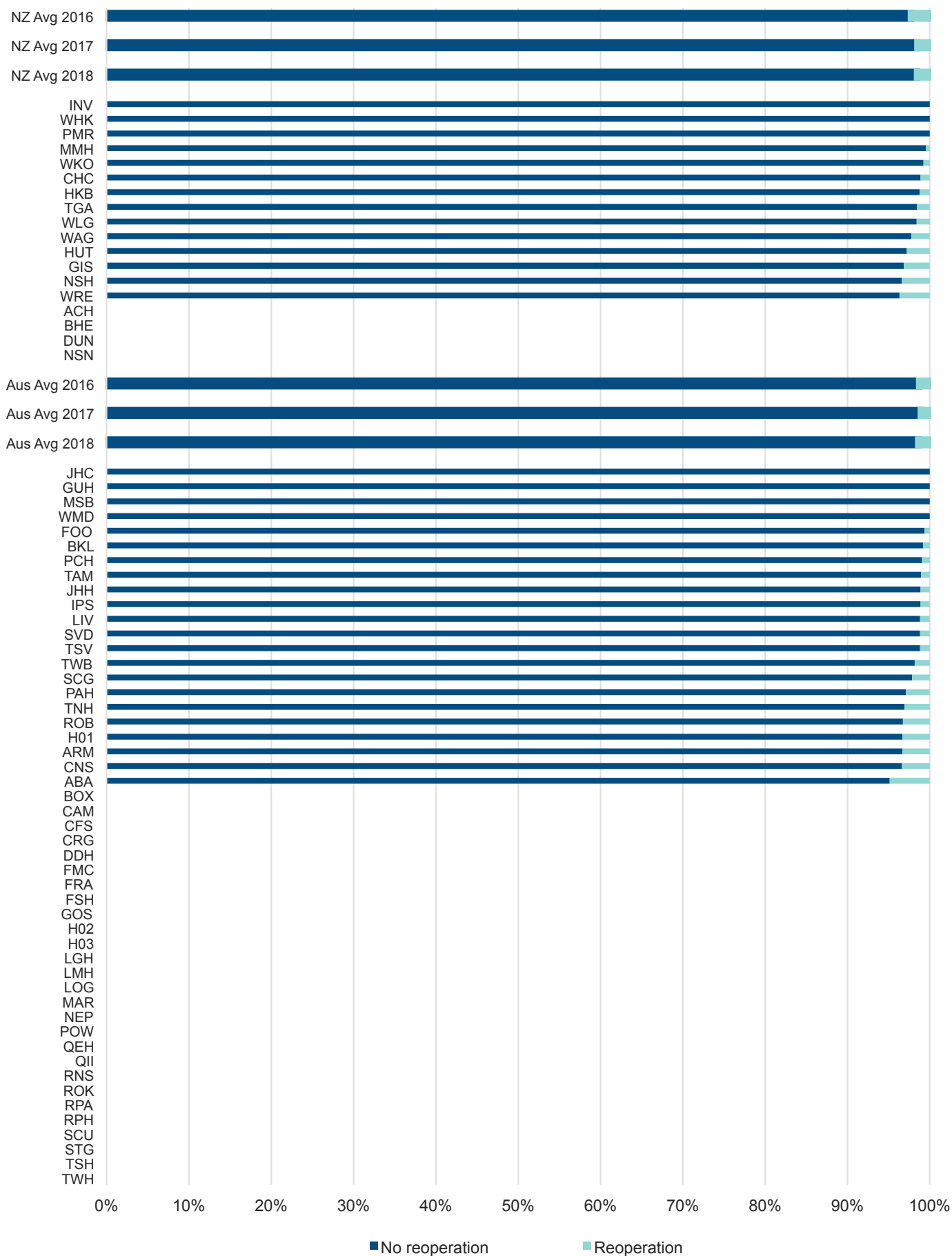


**FIGURE 50 120 DAY FOLLOW UP**



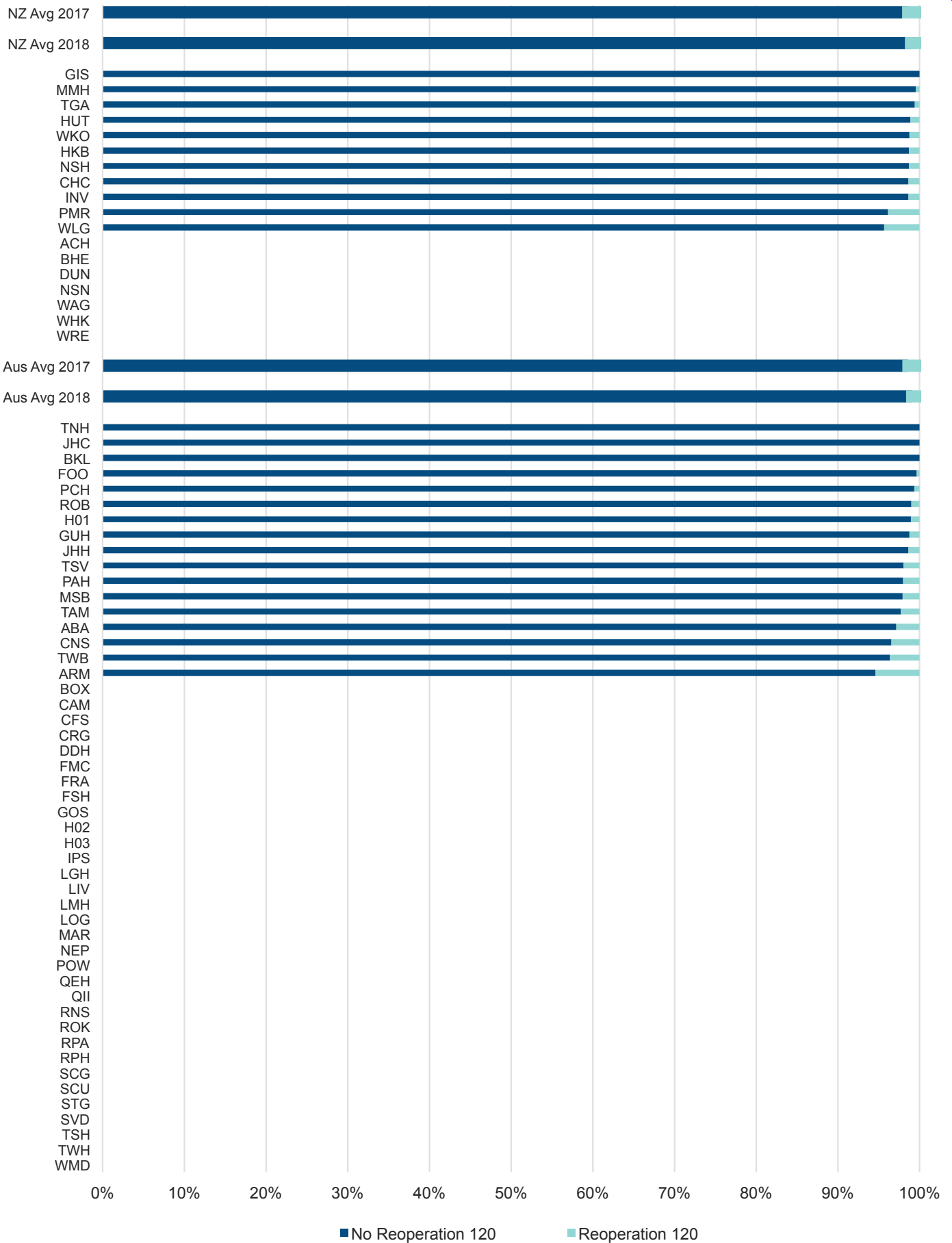
## FIGURE 5I REOPERATION WITHIN 30 DAYS

NOTE: Reports only hospitals with > 80% follow up completed



## FIGURE 52 REOPERATION WITHIN 120 DAYS

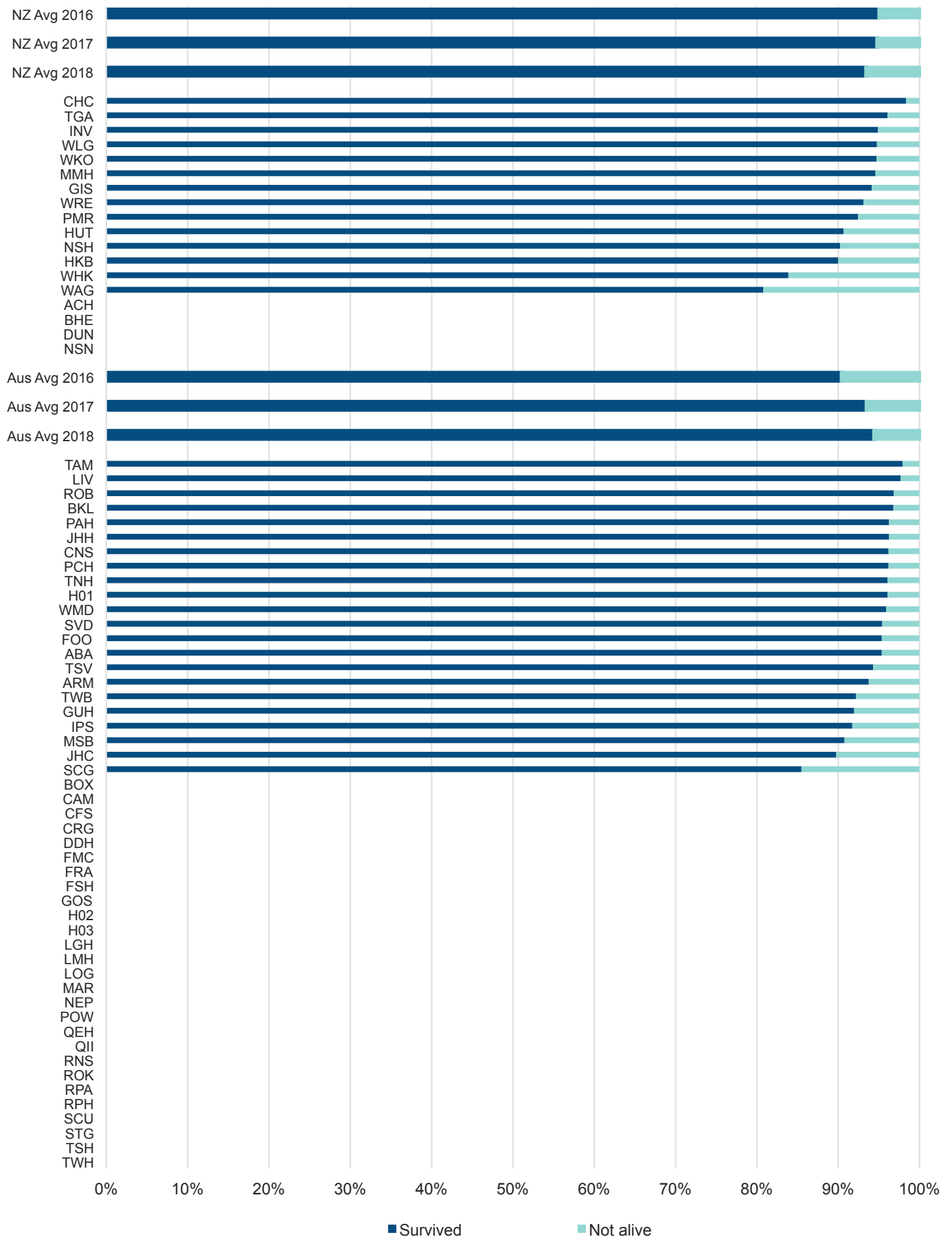
NOTE: Reports only hospitals with > 80% follow up completed.



## FIGURE 53 SURVIVAL AT 30 DAYS

**NOTE: Reports only hospitals with > 80% follow up completed**

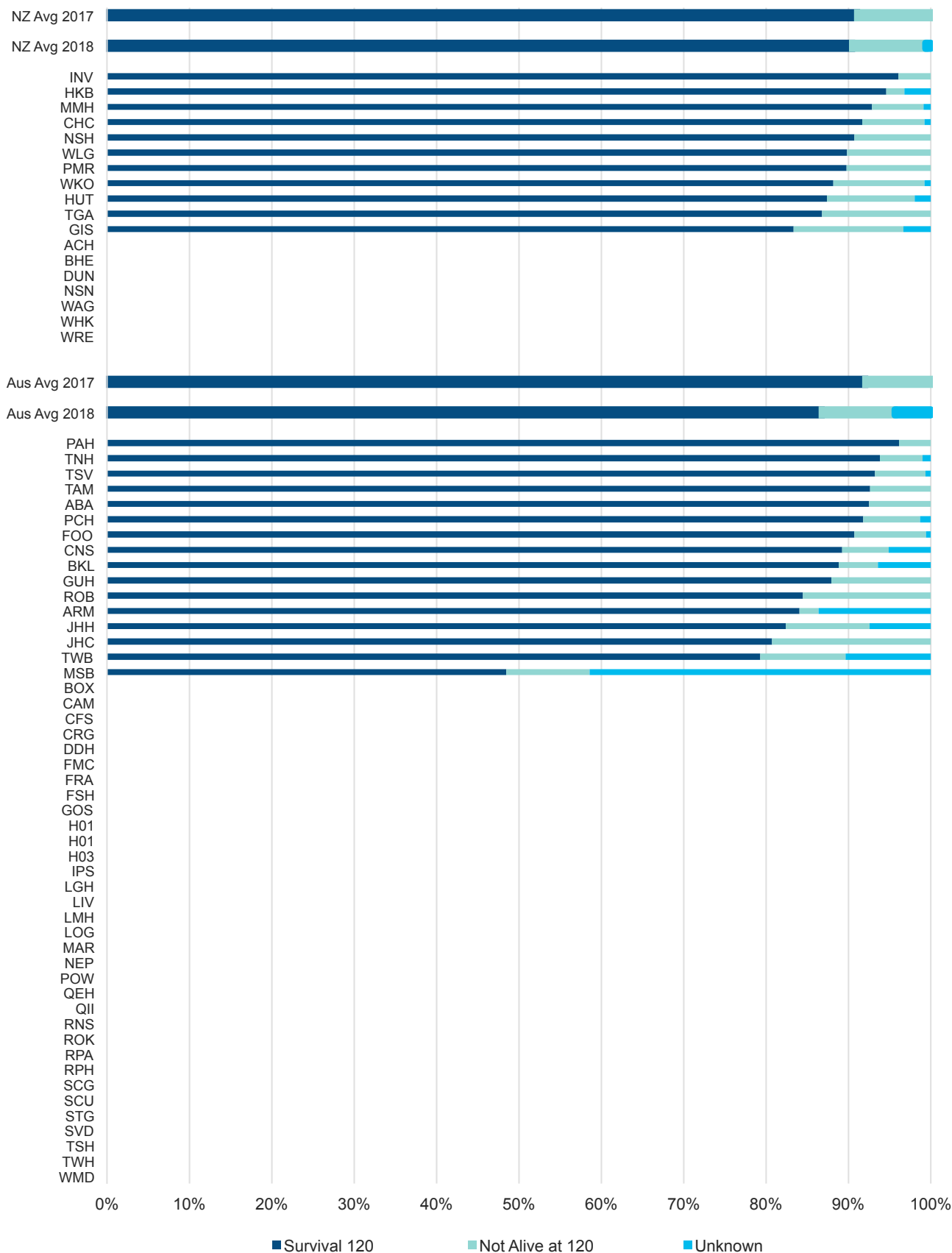
Figure 53 shows the survival (proportion of patients still alive) at 30 days from hospital presentation. The survival at 30 days in 2018 was 94% for New Zealand and 95% for Australian hospitals.



## FIGURE 54 SURVIVAL AT 120 DAYS

**NOTE: Reports only hospitals with > 80% follow up completed**

Survival at 120 days post-surgery is 90% for New Zealand and 87% in Australia, but the accuracy of survival data and possible selection bias in those followed up means that these figures should be interpreted with caution. In the future, data linkage with mortality data may increase the accuracy of reporting survival after-hip fracture, and increase the efficiency of the Registry.

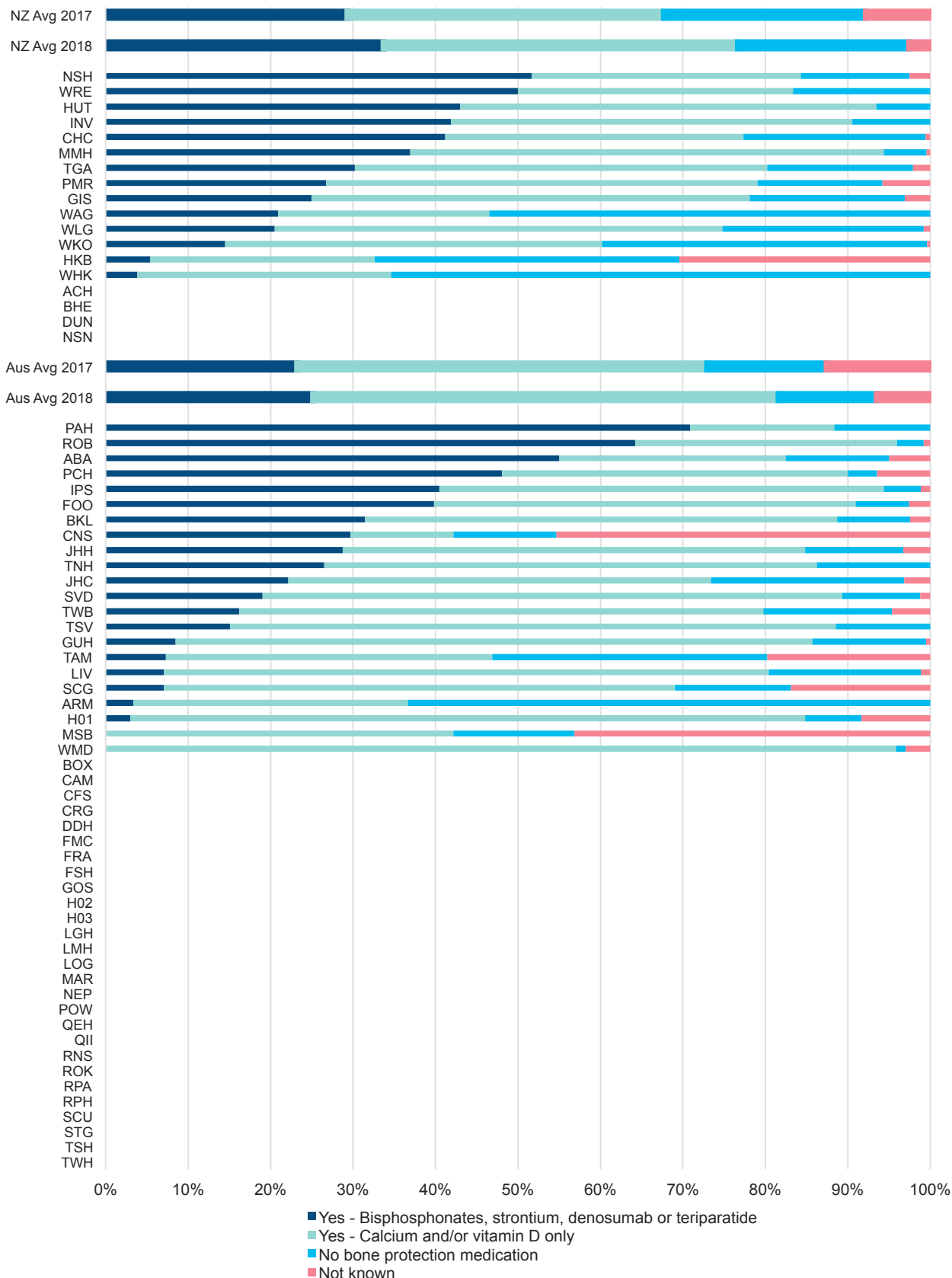




## FIGURE 55 BONE PROTECTION MEDICATION AT 30 DAYS

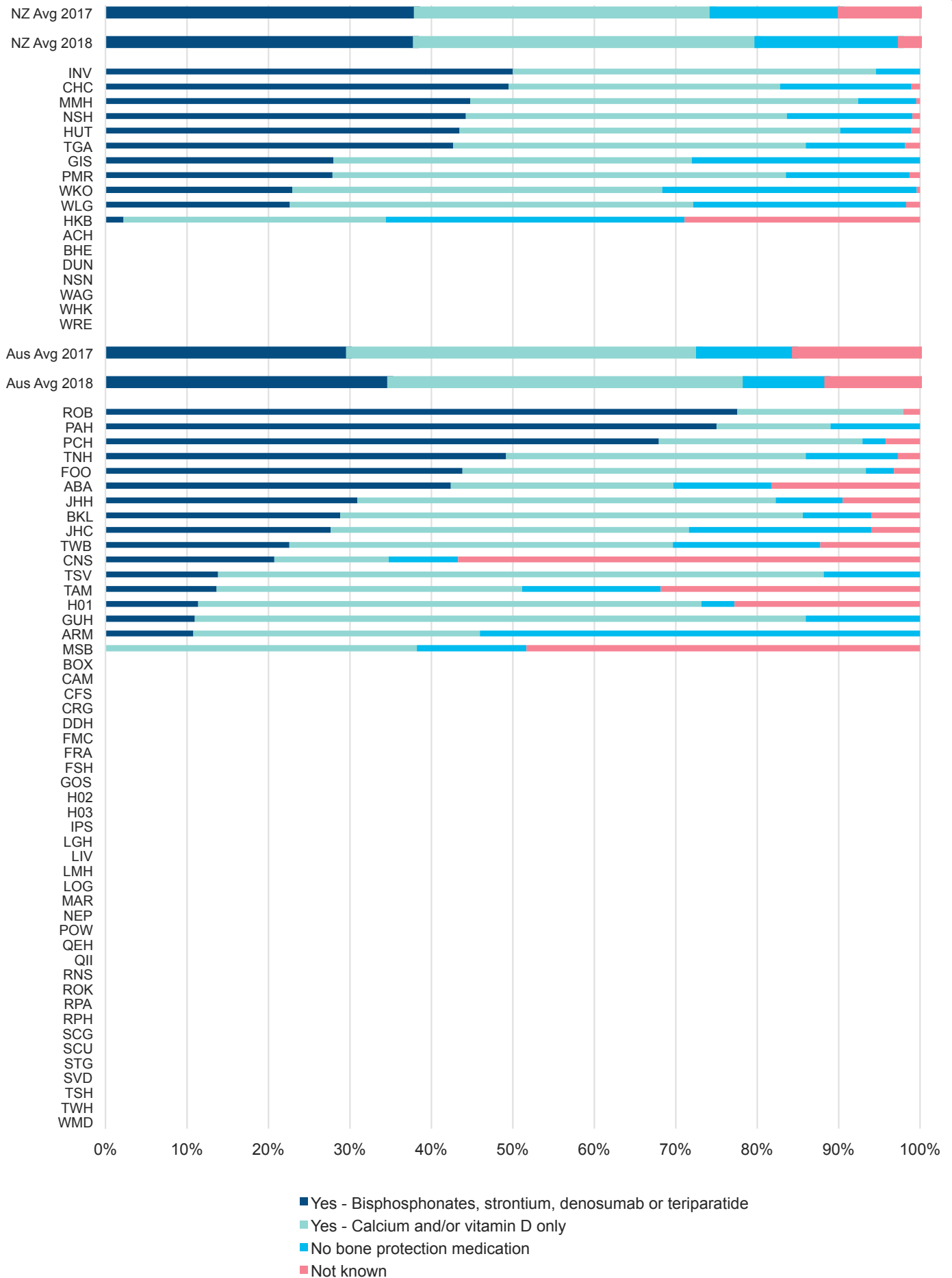
**NOTE: Reports only hospitals with > 80% follow up completed**

Figures 55 and 56 show that most patients are not provided with medication to prevent further fractures at 30 or 120 days after admission to hospital. Of those followed up at 120 days after presentation to hospital, 38% and 35% of patients in New Zealand and Australia, respectively, were receiving bone protection medication to reduce the risk of another fracture. There is considerable variation between hospitals and the data suggests minimal improvement in the care gap in secondary fracture prevention seen at discharge from hospital.



### FIGURE 56 BONE PROTECTION MEDICATION AT 120 DAYS

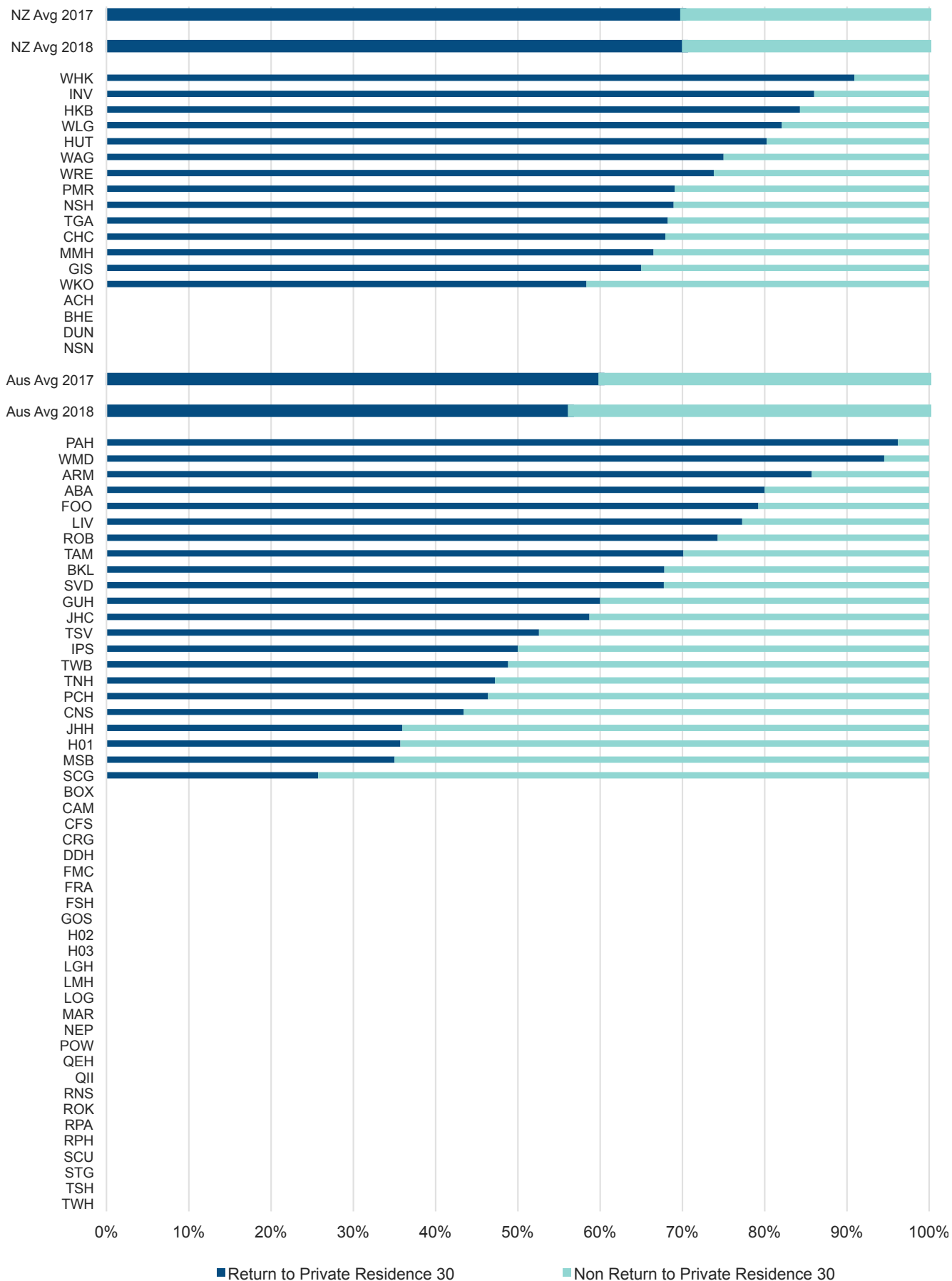
NOTE: Reports only hospitals with > 80% follow up completed



## FIGURE 57 RETURN TO PRIVATE RESIDENCE AT 30 DAYS

**NOTE: Reports only hospitals with > 80% follow up completed**

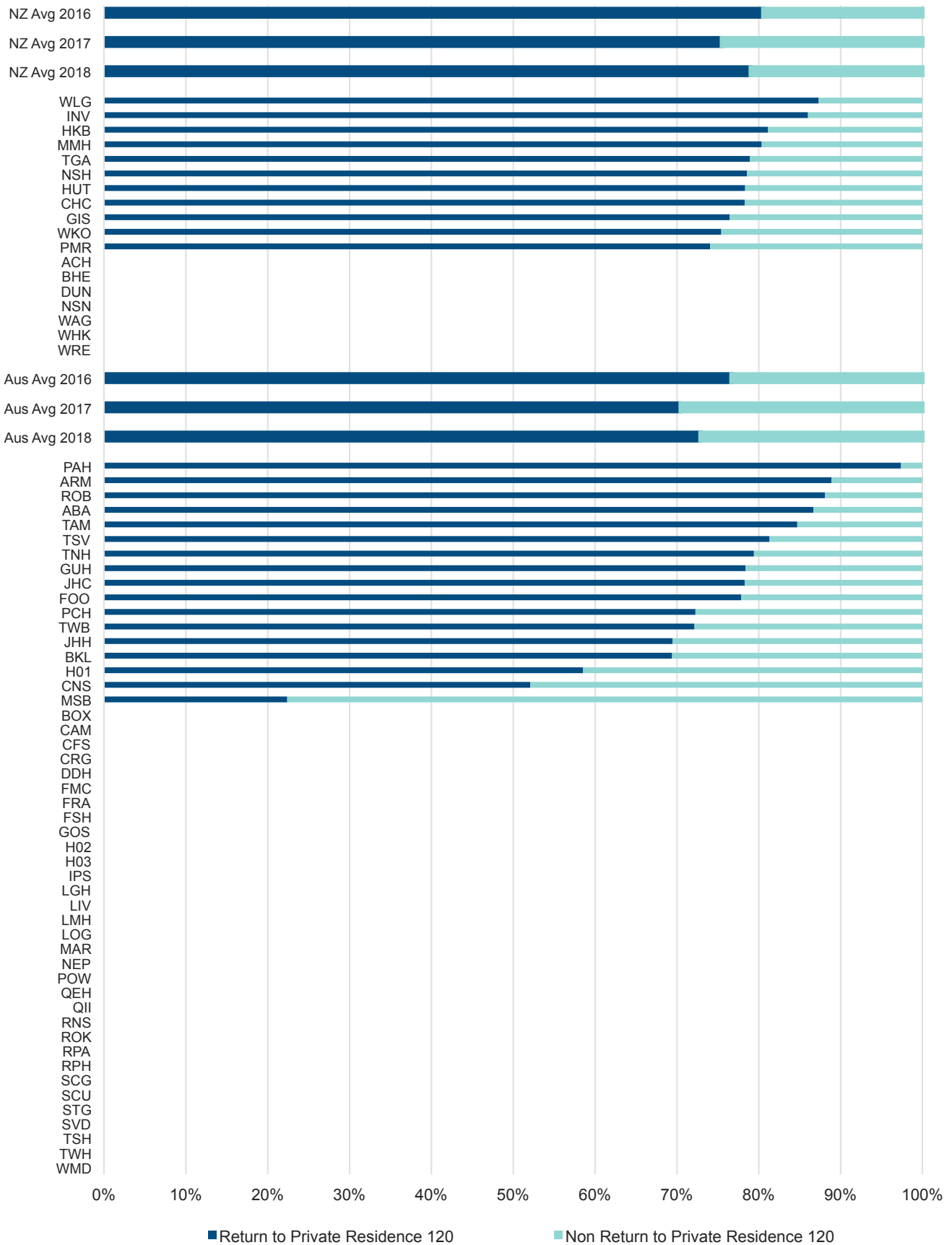
Figure 57 shows that of the group of patients who were living at home prior to admission, 70% and 56% in New Zealand and Australia, respectively, had returned to their place of residence at 30 days after admission for their hip fracture.



## FIGURE 58 RETURN TO PRIVATE RESIDENCE AT 120 DAYS

**NOTE: Reports only hospitals with > 80% follow up completed**

Being able to return home after a hip fracture is one of the most important outcomes for a patient following a hip fracture. Of those who lived at home prior to hip fracture, and were followed-up, 79% of patients in New Zealand and 73% of patients in Australia returned to their own home at 120 days after their hip fracture surgery.

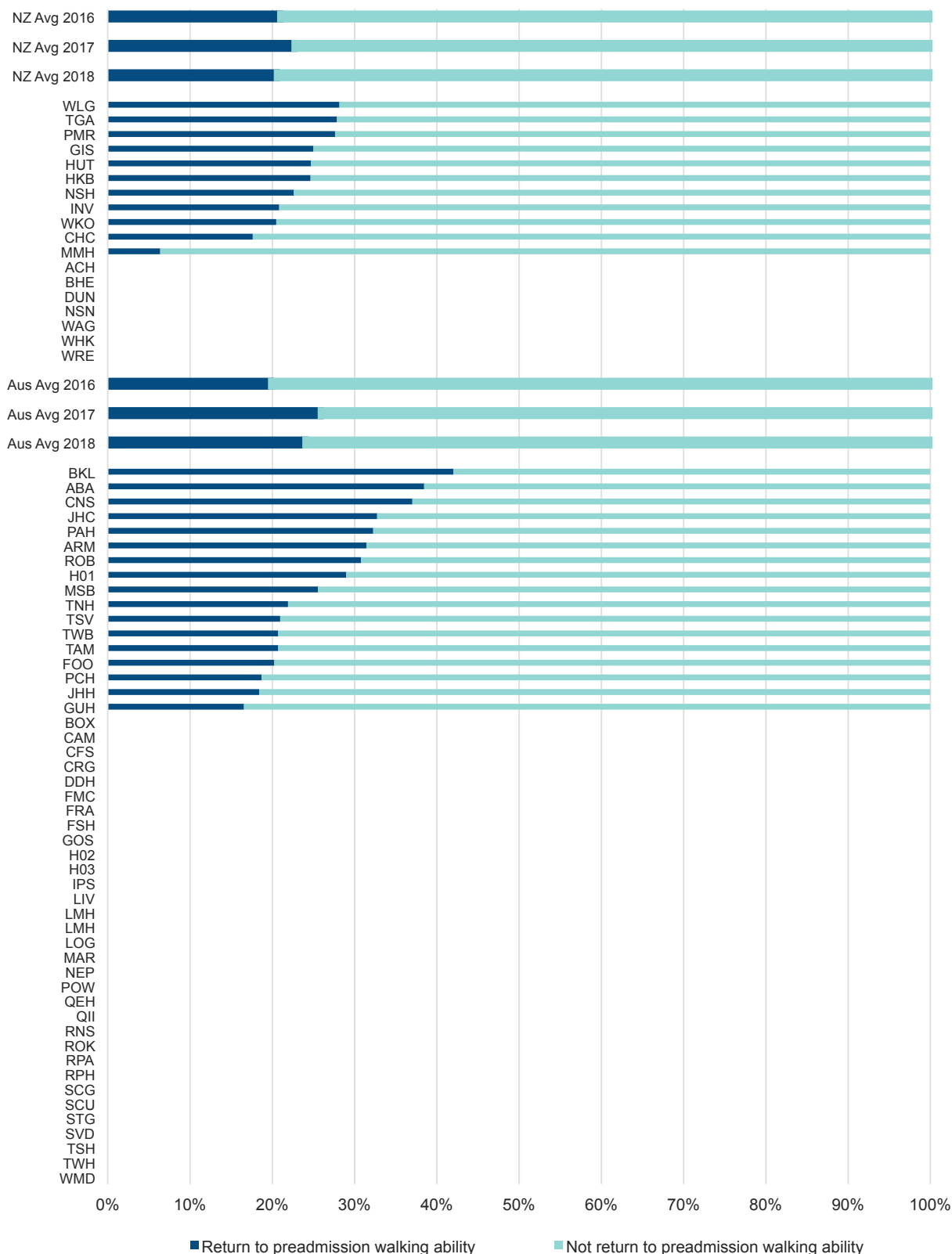


## FIGURE 59 RETURN TO PREADMISSION MOBILITY AT 120 DAYS

**NOTE: Reports only hospitals with > 80% follow up completed**

From a patient perspective, the recovery of function including mobility is a critical outcome following a hip fracture. Mobility at 30 days after presentation is not reported as this is early in the course of recovery. Of those followed up at 120 days in 2018, 21% of patients in New Zealand and 24% of patients in Australia have had returned to their pre-injury level of mobility.

The data should be interpreted with caution, as the overall number followed up is relatively small and those followed up represent a variable percentage of all hip fracture patients at each site. Nonetheless, the impact of a hip fracture appears substantial at 120 days.





**From a patient perspective, the recovery of function including mobility is a critical outcome following a hip fracture.**

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**This is the 7th 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, 118 hospitals have completed the audit and the results are provided here.**

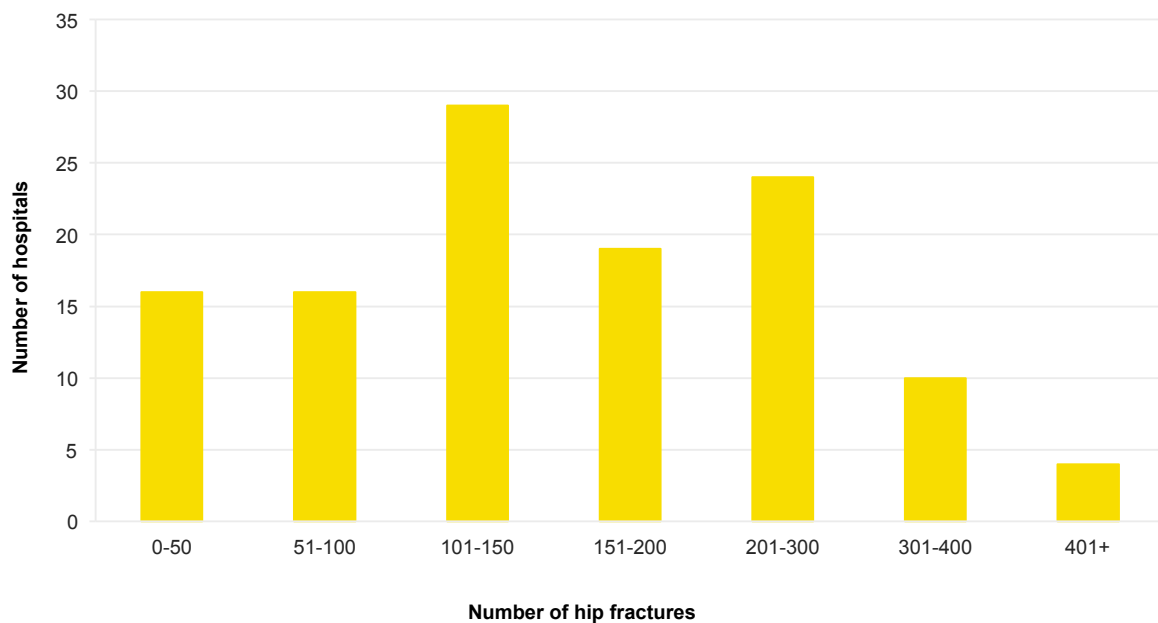
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# FACILITY LEVEL AUDIT

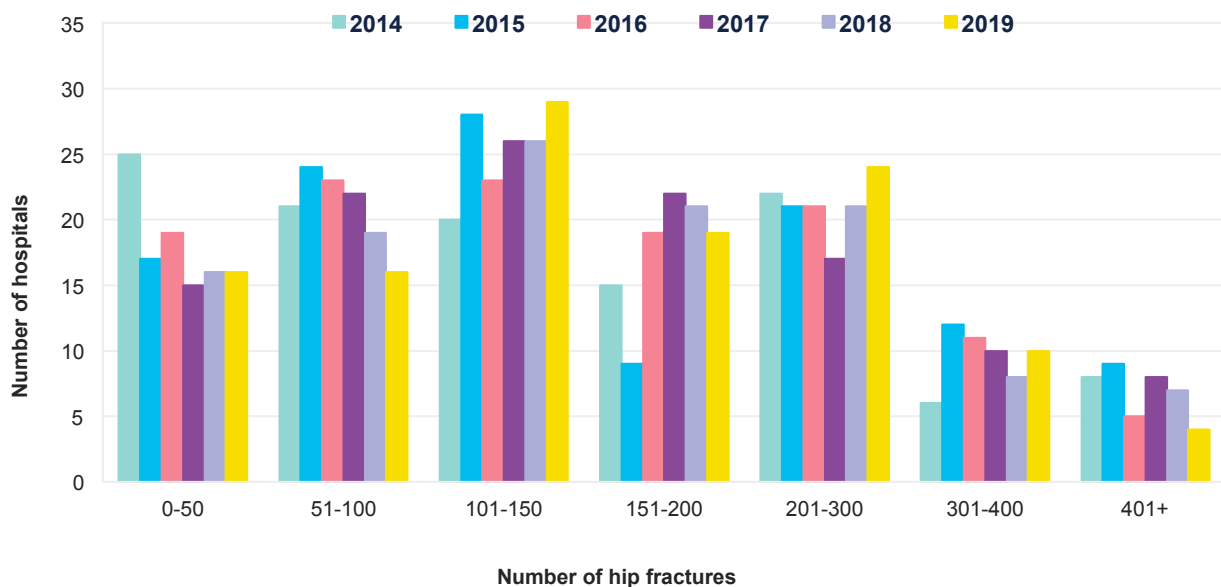
# RESULTS I: GENERAL INFORMATION

Hospitals were asked to estimate how many hip fractures were treated in the 2018 calendar year: 0-50; 51-100; 101-150; 151-200; 201-300; 301-400; and 401+. Figure 60 shows that 73% of hospitals (86/118) reported treating more than 100 hip fracture patients during 2018. Figure 61 shows that over the years of reporting, there has been a decline in the number of hospitals treating 100 or fewer hip fracture patients annually.

**FIGURE 60 NUMBER OF HIP FRACTURES TREATED 2018**



**FIGURE 61 NUMBER OF HIP FRACTURES TREATED 2014-2019**



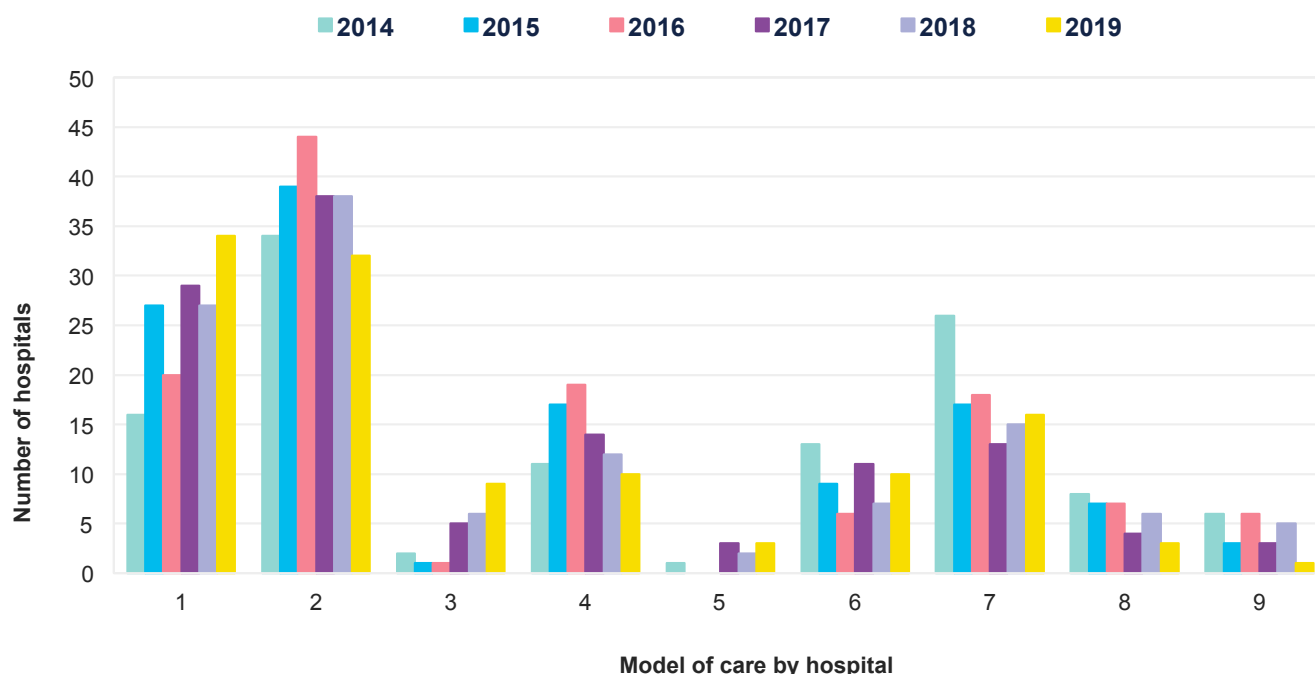


# RESULTS 2: MODEL OF CARE

Orthogeriatric care involves a shared care arrangement for hip fracture patients between the specialties of orthopaedics and geriatric medicine. The geriatrician is involved in the pre-operative 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 a model of orthogeriatric care that utilises alternative medical practitioners, such as orthopaedic surgeons, anaesthetists, general physicians and general practitioners.

In 2019, shared care arrangements were present in 29% (34/118) of hospitals. For the first time, this is the most common model for the provision of care to patients suffering a hip fracture. A weekday, orthogeriatric liaison service occurs in 27% (32/118) of hospitals. Similar to 2018, 56% of hip fracture patients have access to an orthogeriatric service at least daily during the working week (Figure 62).

**FIGURE 62 MODEL OF CARE FOR OLDER HIP FRACTURE PATIENTS 2014–2019**



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

Systems and protocols support clinicians to provide hip fracture patients with high quality care. Investigation, assessment and management of a patient's injury and their other medical conditions must be provided in a timely and effective way throughout a patient's admission. Health services are encouraged to develop protocols for specific aspects of care aligned with the ANZ Guideline for Hip Fracture Care and the Hip Fracture Care Clinical Care Standard. Figures 64 and 65 show the reported elements of care for each country for seven years of the Facility Level Audit.

## HIP FRACTURE PATHWAY

In 2019, 78% (92/118) reported having a pathway for hip fracture patients: 24% in the emergency department only and 54% for the whole acute journey. There has been a steady increase in the proportion of hospitals that report a pathway for the management of a patient with a hip fracture through the whole acute journey.

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

In 2019, the presence of a protocol or pathway to access either CT or MRI for inconclusive plain imaging of hip fracture was available in 61% (72/118) of hospitals, an increase from 55% in 2018. This question was first asked in 2014 with 46% (54/117) of sites reporting presence of a protocol: in 2013, the audit question listed MRI as the only imaging modality hence comparison must be done with caution.

## VENOUS THROMBOEMBOLISM (VTE)

This question has remained constant over the seven years of the audit. In 2019, 93% (110/118) of respondents said "yes" when asked if their hospital had a VTE protocol. This is similar to 87% (103/118) in 2018, 91% (109/120) in 2017 and 88% (107/121) in 2016.

## PAIN PATHWAY

In 2019, a protocol or pathway for pain was available at 72% (85/118) of hospitals: 25% in the emergency department only and 47% for the whole acute journey. The results this year show an increase in the overall proportion of hospitals using a pathway and the proportion using a pathway for the patient's whole acute journey.

In 2018, 56% (66/118) of hospitals reported using a pain pathway: 24% in the emergency department only and 32% for the whole acute journey.

The Facility Level Audit also asks respondents if patients are offered local nerve blocks as part of preoperative and postoperative pain management. This year, 94% (111/118) responded that patients were offered nerve blocks preoperatively "always" or "frequently" and 85% (99/118) responded that patients were offered nerve blocks for postoperative pain relief "always" or "frequently". Both these results are increased on the previous year at 89% and 81% respectively.

## CHOICE OF ANAESTHESIA

This question has remained constant since 2014, and asks if hip fracture patients are routinely offered a choice of anaesthesia. In 2019, 81% (95/118) of hospitals reported routinely offering a choice of anaesthesia "always" or "frequently", continuing the steady increase since 2015. In 2018, 76% (90/118) of hospitals were reported as routinely offering a choice of anaesthesia "always" or "frequently", and in 2017 it was 73% (88/120).

## PLANNED THEATRE LIST

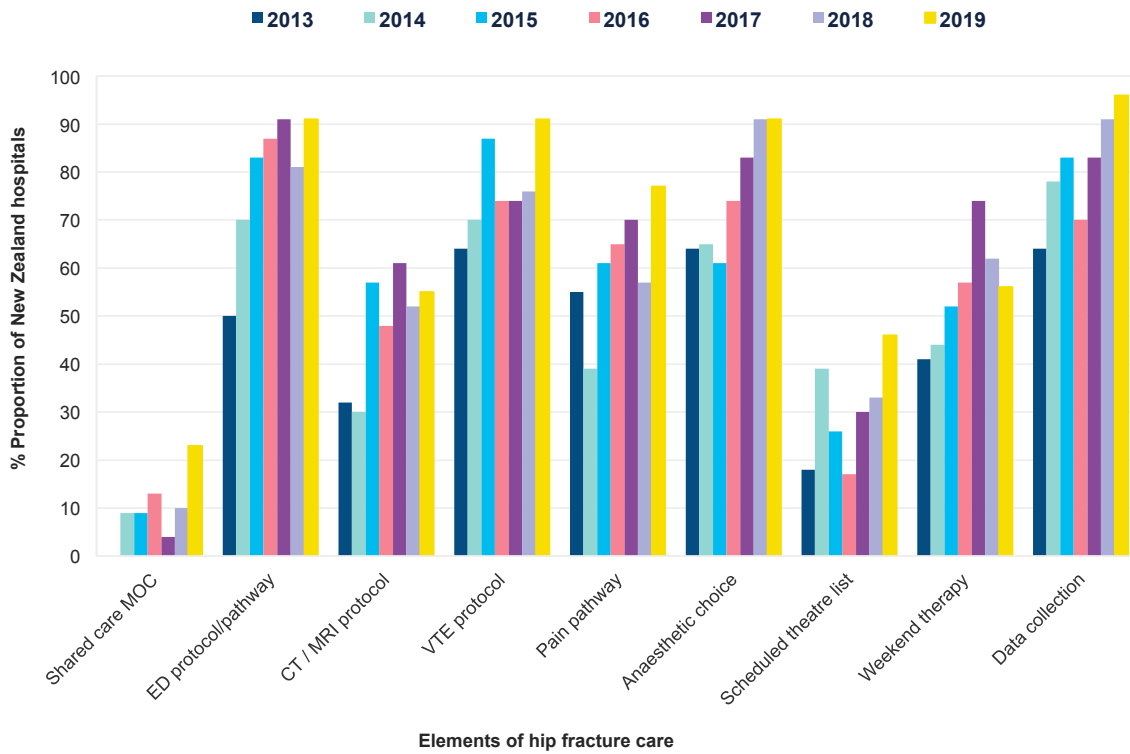
In 2019, 45% (53/118) of respondents reported having access to a planned operating theatre list or planned trauma list for hip fracture patients. This is similar to previous years: 40% (47/118) in 2018; 39% (47/120) in 2017; 39% (47/121) in 2016; 40% (48/120) in 2015 and 42% (49/117) in 2014.

## WEEKEND THERAPY

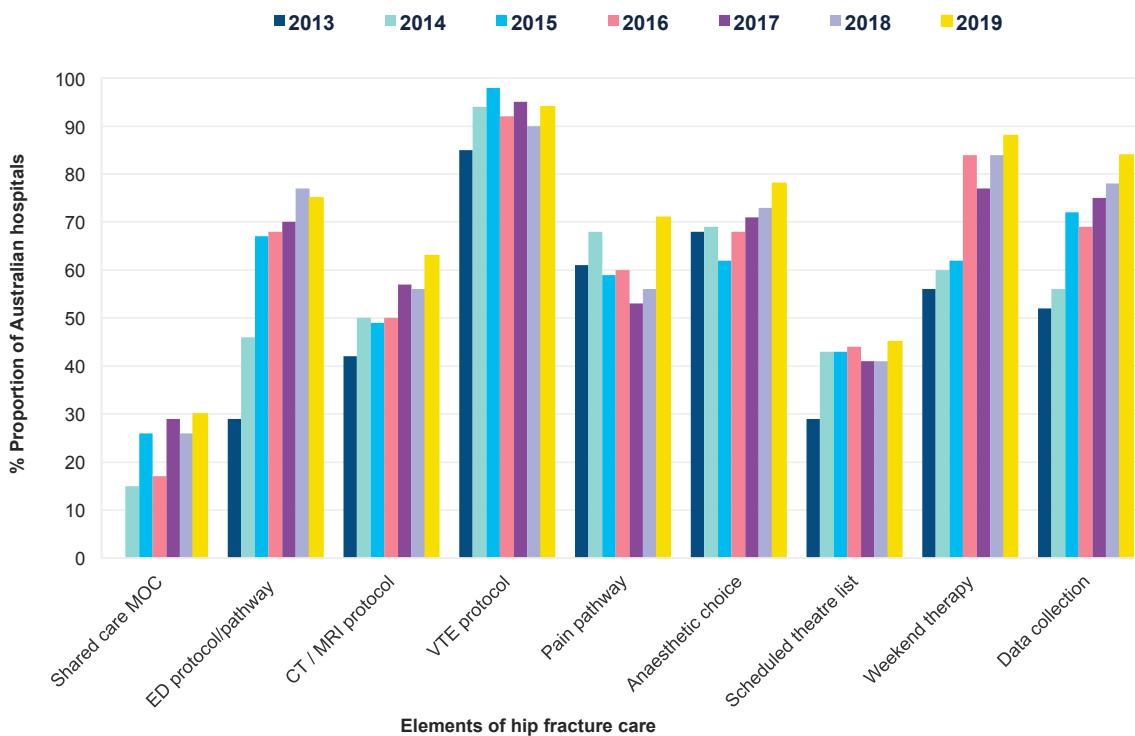
In 2019, 83% (98/118) of hospitals reported having routine access to weekend physiotherapy services. Whilst this is similar to previous years, there has been a decrease in the provision of a weekend therapy service in New Zealand and a small increase reported in Australia. Mobilisation on the day of, or day after, hip fracture

surgery helps to restore movement and function and prevent complications. Provision of access to weekend therapy provides the opportunity to mobilise early and ensures the day of surgery does not impact the rehabilitation process.

**FIGURE 63 NEW ZEALAND HOSPITALS REPORTED ELEMENTS OF CARE 2013–2019**



**FIGURE 64 AUSTRALIAN HOSPITALS REPORTED ELEMENTS OF CARE 2013–2019**





# RESULTS 4: BEYOND THE ACUTE HOSPITAL STAY

The Facility Level Audit asked respondents to report on access for hip fracture patients to rehabilitation services and publicly funded outpatient clinics for the management of their injury and the prevention of future falls and fractures. Information from the 2019 audit is provided below with comparison to previous years in Table 1 and Figure 65.

## REHABILITATION

In 2019, 41% (48/118) of responding hospitals reported access to both onsite and offsite rehabilitation services, an increase from 36% (42/118) in 2018 and 33% (40/120) reported in 2017. Access to onsite rehabilitation only is reported by 35% (41/118), and access to offsite rehabilitation only was reported by 25% (29/118). Access to an early, supported home-based rehabilitation service was reported by 41% (48/118) of hospitals this year, similar to 2018.

## FRACTURE LIAISON SERVICE (FLS)

It has been shown that dedicated resources allocated to the identification, management, and follow-up of minimal trauma fractures reduces re-fracture rates in people with osteopenia and osteoporosis. The availability of fracture liaison services remains limited, however, the steady increase seen in previous years has continued and access to a FLS was reported by 42% (49/118) of hospitals compared with 36% (43/118) in 2018. In 2019, 34% (40/118) were for patients with any minimal trauma fracture (including hip fracture) and 8% (9/118) were specifically for hip fracture patients only.

## OUTPATIENT CLINICS

In 2019, variable access to public outpatient clinics was observed. There is widespread access to orthopaedic clinics at most sites with 96% (113/118) reporting access for hip fracture patients. Access to clinics targeting secondary fracture prevention and the prevention of future falls and fractures remains limited. In 2019, access to a public falls clinic is reported at 62% (73/118) of hospitals, access to an osteoporosis clinic at 50% (59/118) of hospitals and access to a combined falls and bone health clinic at 20% (23/118).

## PATIENT AND CARER INFORMATION

Hip fracture patients and their carers must be active partners in any decisions made about their care and recovery from injury. Information and advice on treatment and recovery, and the prevention of future falls and fractures, should be provided verbally and in writing. In 2019, 51% (60/118) of hospitals responded “yes” to the provision of written information to patients about their hip fracture treatment, an increase from 47% in 2018 and 39% in 2017. Only 22% (26/118) of respondents said they provided written information to patients on discharge that included recommendations for future falls and fracture prevention (not the same as a discharge summary): 14% (3/21) in New Zealand and 24% (23/96) in Australia.

“From the very beginning I was determined not to have a hip replacement, as my doctor said it would be likely. I was afraid to lose my own bone. Following all the doctor’s orders, I invested in three months of rehabilitation to return to my own independence. It was a huge commitment. I had a fear that immobility loses both bone and muscle. It was a big deal to stay active but not push beyond my doctors’ orders. On each hospital visit, the team gave me hope and were very proactive with care and solutions to help me cope.”

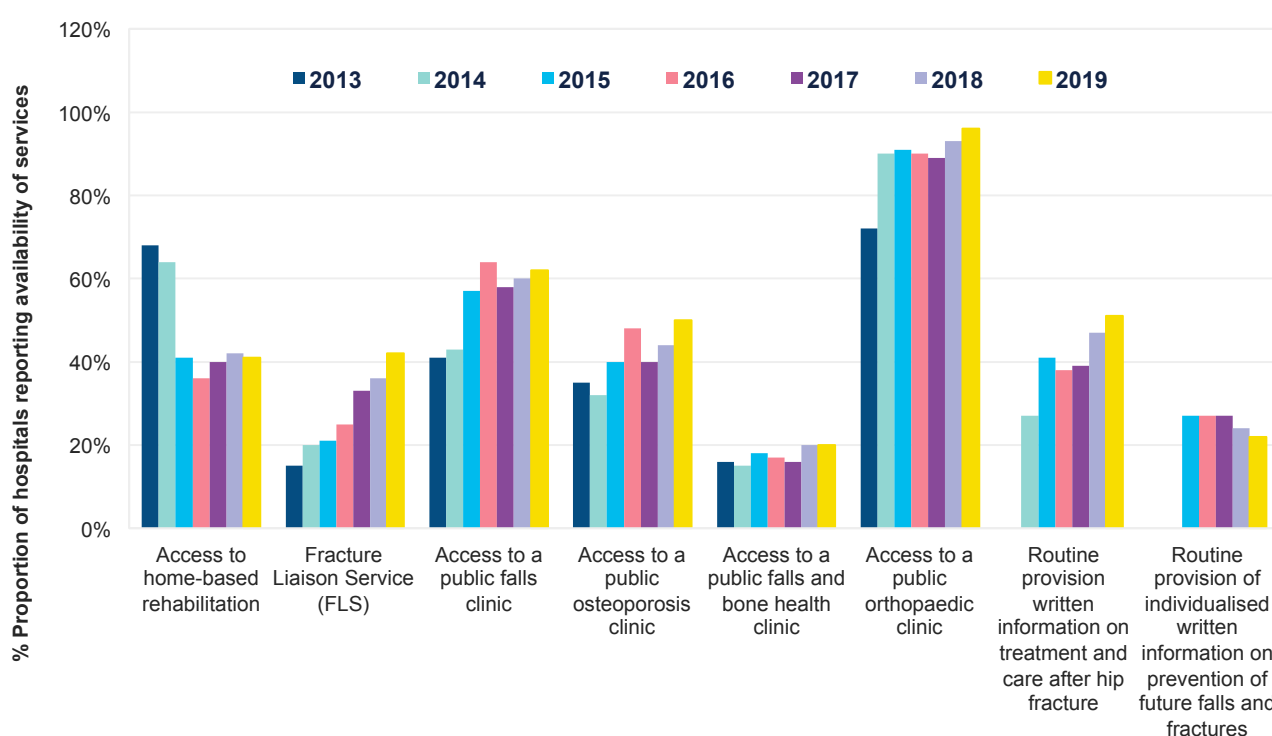
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**TABLE I REPORTED SERVICES AVAILABLE BEYOND THE ACUTE HOSPITAL STAY: AUSTRALIAN AND NEW ZEALAND HOSPITALS 2013–2019**

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

n/a = not asked

**FIGURE 65 REPORTED SERVICES BEYOND THE ACUTE HOSPITAL STAY: AUSTRALIAN AND NEW ZEALAND HOSPITALS 2013–2019**



Reported services beyond the acute hospital stay

# APPENDIX I:

# ANZHFR

# STEERING GROUP

THE ANZHFR is based at the Falls, Balance 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)

**Dr John Barry** (Anaesthetist, Australian and New Zealand College of Anaesthetists)

**Mr Brett Baxter** (Physiotherapist, Australian Physiotherapy Association)

**Dr Jack Bell** (Advanced Accredited Practising Dietitian, Dietitians Association of 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 Kris Dalzell** (Orthopaedic Surgeon, New Zealand Orthopaedic Association)

**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)

**A/Prof Raphael Hau** (Orthopaedic Surgeon, Victoria)

**Dr Angel Lee** (Geriatrician, Royal Australasian College of Physicians)

**Dr Catherine McDougall** (Orthopaedic Surgeon, Australian Orthopaedic Association)

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

**Dr Gretchen Poiner** (Consumer Representative)

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

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

**Ms Nicola Ward** (New Zealand National Coordinator)

**Dr Mark Wright** (Orthopaedic Surgeon, New Zealand)

## ATTENDEES

**Ms Linda Roylance** (Secretariat)

A photograph of two surgeons in a sterile operating room. They are wearing blue scrubs, surgical masks, and clear face shields. The surgeon on the left is focused on a surgical site, using various instruments. The surgeon on the right is also working on the same site. The background shows surgical lights and equipment, creating a professional and clinical atmosphere.

**The care of people  
with hip fractures has  
improved over time, and  
we remain committed  
to driving and reporting  
that improvement  
into the future.**

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**ANZHF**

Australian & New Zealand Hip Fracture Registry