



National interRAI Data Analysis Annual Report 2014/15

*A report to inform the continuous improvement of health
outcomes for New Zealanders as they age*



*interRAI stands for ‘**international Resident Assessment Instrument**’. As an organisation interRAI is a non-profit collaboration of clinicians and researchers from over 35 countries with the vision of promoting evidence based best practice in the care of the disabled or medically complex.*



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The Annual Report 2014/15 and data tables showing the
interRAI outcome scales and Clinical Assessment Protocols
(CAPs) can be downloaded from:

www.interrai.co.nz

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foreword

interRAI New Zealand Governance Board Chair

As Chair of the interRAI New Zealand Governance Board, it is our pleasure to release the first National interRAI Data Analysis Annual Report.

The first Annual Report 2014/15 provides a high level overview of interRAI assessments in New Zealand for the year July 2014 to June 2015.

This first report is a major step forward in the journey of interRAI in New Zealand. It makes it possible, for the first time, for a large variety of stakeholders in the aged care sector to freely and publicly access interRAI data and information at an aggregated level from a national perspective.

This is the first major publication of the National Data Analysis and Reporting Centre since its establishment in July 2015.

The report directly aligns with the vision of interRAI New Zealand to ensure the continuous improvement of health outcomes for New Zealanders as they age, and the effectiveness and efficiency of our health system by guiding and leading the use of interRAI instruments and the dissemination and use of interRAI information.

The report has huge resonance with the New Zealand Health Strategy Update, particularly enabling and promoting the fifth strategic theme of 'smart systems'.

I encourage District Health Boards, the Ministry of Health, interRAI nurses and assessors, aged residential care providers, home and community support providers, policy makers, researchers, and stakeholders in the wider aged care sector to take the opportunity to use the information presented in this report and to start asking the 'so what?' questions. It is those very questions that will ultimately influence our thinking and our decision making to improve health outcomes for New Zealanders as they age.

Ngā mihi

Professor Paul McDonald

Chair, interRAI New Zealand Governance Board



executive summary

This report provides a high level overview of interRAI assessments in New Zealand for the year July 2014 to June 2015. A list of interRAI terminologies and definitions are provided at the end of the report.

1. In 2014/15, there were approximately 19,600 Contact assessments, 36,900 Home Care assessments and 27,200 Long Term Care Facilities interRAI assessments completed in New Zealand.
2. 85% of assessments were completed at home or in an aged residential care facility, the remainder were completed in hospital.
3. The uptake across the sector of different interRAI assessment tools shows that Waitemata and Auckland District Health Boards undertook a higher number of Contact assessments for their populations. Capital & Coast, Nelson Marlborough and Hawke's Bay District Health Boards had the highest number of Home Care assessments for their populations.
4. Nine out of ten people who had a Home Care or Long Term Care Facilities assessment identified as New Zealand European/Other ethnicity.
5. More females than males were assessed using a Home Care or Long Term Care Facilities assessment. Females were over represented in the proportion of assessments when compared to the New Zealand population census data. Females also had less access to informal support as measured by living alone and presence of a spouse when compared to their male counterparts.
6. Aged residential care residents were more likely to have a diagnosis of dementia, Alzheimer's disease or stroke and were more likely to have multiple diseases diagnosed than home and community clients.
7. About one in four Home Care assessments were for clients with the highest Method of Assigning Priority Level (MAPLe) score and therefore had a high risk of requiring hospital or aged residential care services.
8. The Changes in Health, End-Stage Disease, Signs, and Symptoms (CHESS) scale and Cognitive Performance Scale (CPS) scores showed that there was more health instability among home and community clients but greater cognitive impairment among Long Term Care Facilities residents.
9. The Activities of Daily Living (ADL) Self-Performance Hierarchy Scale scores showed that half of Home Care assessments were for clients who were functionally independent (i.e. in areas of personal hygiene, locomotion, toilet use and eating) compared to only a quarter of Long Term Care Facilities assessments.
10. About 80% of assessments for home and community clients and aged residential care residents had low depression rating scale scores (0-2). About 15% had scores of 3-5 in the 14 point scale and the remaining 5% had higher risk scores (>5).
11. A higher proportion of Home Care assessments were for clients experiencing daily severe or excruciating pain (13%) compared with Long Term Care Facilities assessments (3%).
12. 25% of Long Term Care Facilities assessments were for residents with mid to high risk of pressure ulcer injury (scores 3-8) as measured by Pressure Ulcer Risk Scale. This decreased to 15% for Home Care assessments.
13. On average, about 30% of Clinical Assessment Protocols were triggered for Home Care and Long Term Care Facilities assessments. For both assessment types combined, the top six most common Clinical Assessment Protocols triggered were for urinary incontinence, cognitive loss, activities of daily living, cardiorespiratory conditions, mood and falls.



about interRAI

interRAI stands for 'international Resident Assessment Instrument'. As an organisation interRAI is a non-profit collaboration of clinicians and researchers from over 35 countries with the vision of promoting evidence based best practice in the care of the disabled or medically complex.

interRAI has developed a suite of assessments and the ones commonly in use in New Zealand, to be discussed in this report, are the Contact assessment, Home Care assessment and Long Term Care Facilities (LTCF) assessment¹.

interRAI assessments are an integrated, standardised assessment tool on a common IT platform using a common language. This provides national consistency, improved understanding and communication between different settings such as home, hospital and aged residential care (ARC) facilities.

The assessments use computer algorithms to provide evidence based, best practice outcome scales and Clinical Assessment Protocols (CAPs) to inform care planning. This also provides the ability to track the person's progress to see which interventions have been of benefit and what else needs to be done.

There are a range of assessment tools specific to different care settings, which have at their core a set of items with identical definitions, observation timeframes and scoring. The standardised language and definitions allow instruments to be used in different care settings and for assessments to follow the clients/residents on their continuum of care.

The use of interRAI assessments aligns with the vision of the New Zealand Health Strategy, that all New Zealanders 'live well, stay well and get well'. The suite of assessment tools focus on maintaining and improving health and preventing decline for as long as possible. The interRAI process places the person at the centre of the assessment and includes their needs and the views of family/whānau and support people, so services can be delivered in a responsive way.

In addition, the use of interRAI assessments and the information presented in this report align closely with the vision for interRAI New Zealand, which is to continuously improve health outcomes for New Zealanders as they age, and improve the effectiveness and efficiency of our health system by guiding and leading the use of interRAI instruments and the dissemination and use of interRAI information in conjunction with other information sources.

New Zealand is the first country in the world to implement the use of interRAI tools on a nationwide basis. The use of interRAI assessment tools was made mandatory in the aged care sector in New Zealand from July 2015.

In New Zealand, the intention is to develop an integrated service model, with a joined-up approach to education and support for assessments in the home care and ARC settings. Education and support services are planned to be delivered locally under a national model to ensure consistency across care settings.

¹ Other supported assessments in New Zealand in the early days of development and use are Emergency Screener Assessments, Community Health Assessments and Palliative Care Assessments.

Purpose

The Annual Report 2014/15 is the inaugural report of a series of annual reports.

The Annual Report 2014/15 closely aligns with the vision of both the New Zealand Health Strategy and interRAI New Zealand. It enables, for the first time, a large variety of stakeholders in the aged care sector to freely and publicly access interRAI data and information from a national perspective.

This publication series aims to target a broad audience, including older people accessing health services in New Zealand; DHB staff namely interRAI nurses and assessors; interRAI educators; interRAI lead practitioners and systems clinicians; Needs Assessment and Service Co-ordination Service assessors and managers; ARC facilities and managers; social and health researchers; policy makers such as the Ministry of Health (MoH); ACC; Ministry of Social Development; the New Zealand Aged Care Association; home and community support providers and their representative groups; international users of interRAI data and information.

About the data

The National interRAI Data Analysis and Reporting Centre is part of the Central Region's Technical Advisory Services (TAS) and the author of this report.

All interRAI assessment data for the 2014/15 report² is sourced from the National interRAI Software Service in New Zealand (the host service), unless stated otherwise. The host service is contracted by the Ministry of Health to provide access to the suite of software applications for any service provider contracted by a DHB.

All data in this report refers to assessments rather than clients or residents.

Home and community clients refer to clients who have been assessed using the interRAI Home Care assessment, not Contact assessments. Contact assessments are reported separately from Home Care assessments in this report.

In terms of regional breakdowns, the Northern Region includes Auckland DHB, Counties Manukau DHB, Northland DHB and Waitemata DHB. The Midland Region includes Bay of Plenty DHB, Lakes DHB, Tairāwhiti DHB, Taranaki DHB and Waikato DHB. The Central Region includes Capital and Coast DHB, Hawke's Bay DHB, Hutt Valley DHB, MidCentral DHB, Wairarapa DHB and Whanganui DHB. The South Island Region includes Canterbury DHB, Nelson Marlborough DHB, South Canterbury DHB, Southern DHB and West Coast DHB.

Data sharing agreements across DHBs exist for Home Care assessments but not for LTCF assessments at present. This report shows data at a regional and DHB level for Home Care assessments only. LTCF assessment data is shown only at a regional and national level, not at a DHB level.

While only a selected number of interRAI outcome scales and CAPs are discussed in the body of this report, data on most outcomes scales and CAPs by DHB (only for Home Care assessments) and region (for both Home Care and LTCF assessments) are available for downloading in Excel format from TAS' website (<http://interrai.co.nz/>). The definitions for the interRAI outcome scales and CAPs are provided at the end of the report.

² The data for the 2014/15 report was extracted in December 2015. There may be slight differences in the numbers presented in this report and numbers from the interRAI operational database for 2014/15.

assessments

The interRAI suite of assessments has at its core a number of assessment items with identical definitions, observation timeframes and scoring. Other questions specific to the care setting can then be added to this core. The compatibility of assessment instruments means they can be used across different health care settings, following the client/resident on their continuum of care whether it is at home, in hospital or in an ARC facility.

The use of interRAI LTCF assessments in ARC facilities became mandatory in New Zealand from July 2015.

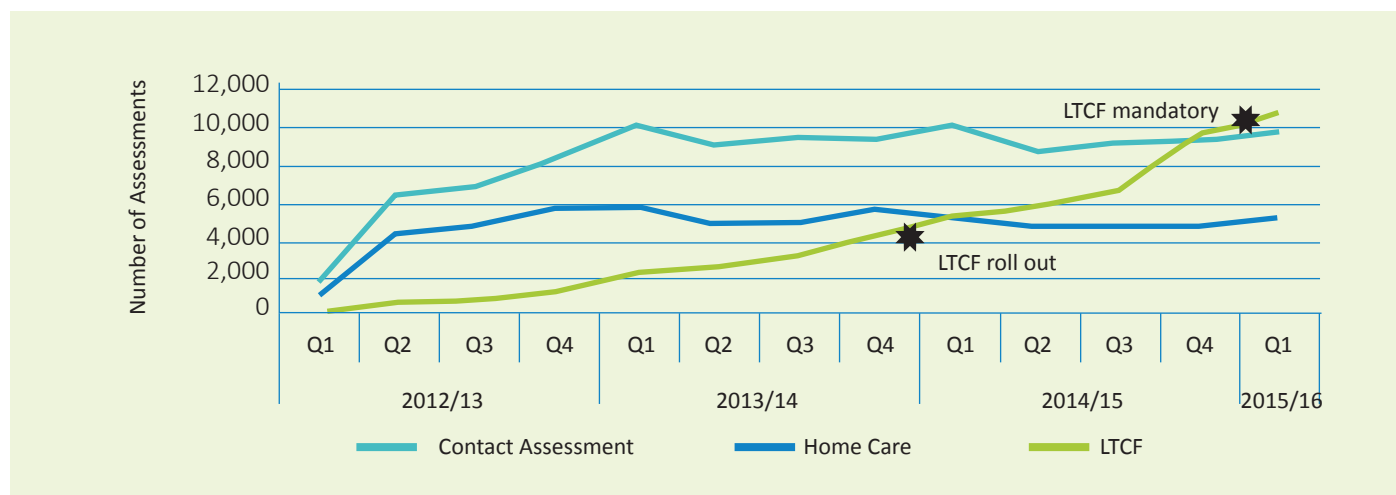
interRAI have developed a range of instruments covering areas such as acute care, community health, mental health, palliative care and intellectual disability.

Three types of assessments are routinely used in New Zealand: the Contact assessment, Home Care assessment and LTCF assessments. Over the last three years the number of completed assessments using an interRAI instrument has increased.

Contact assessments are short, screening assessments to support living at home, for people with short term or non complex needs. Home Care assessments are for people with more complex needs who are able to live at home. This tool can also help identify when a person needs to be referred to aged residential care. LTCF assessments assist care planners in ARC facilities to develop the individual care plan for the resident.

The number of completed Contact and Home Care assessments has been steady over the last two years. As shown in Figure 1, the use of LTCF assessments has been more of a staged approach over the last two years, with all ARC facilities participating in the roll-out of interRAI by June 2014.

Figure 1: Number of completed assessments in New Zealand by type over three years



Source: National interRAI Software Service New Zealand, data 2014/15.

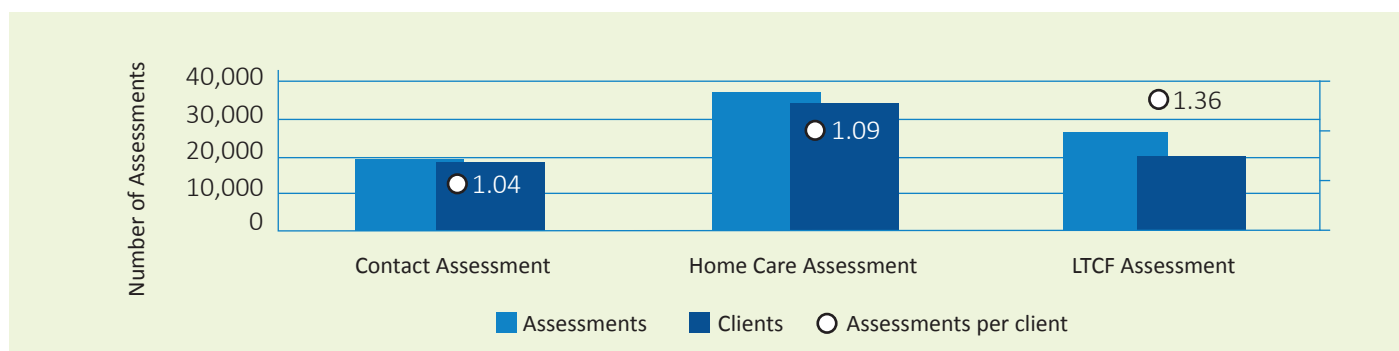
In New Zealand, in financial year 2014/15 the number of completed assessments was:



Aged residential care residents are expected to have an LTCF assessment twice a year, unless there is a change in health status requiring a reassessment before that. As more residents in aged care facilities are assessed using

the interRAI tool, the total number of LTCF assessments and the number of LTCF assessments per resident should continue to increase.

Figure 2: Number of assessments completed per person by type



Source: National interRAI Software Service New Zealand, data 2014/15.

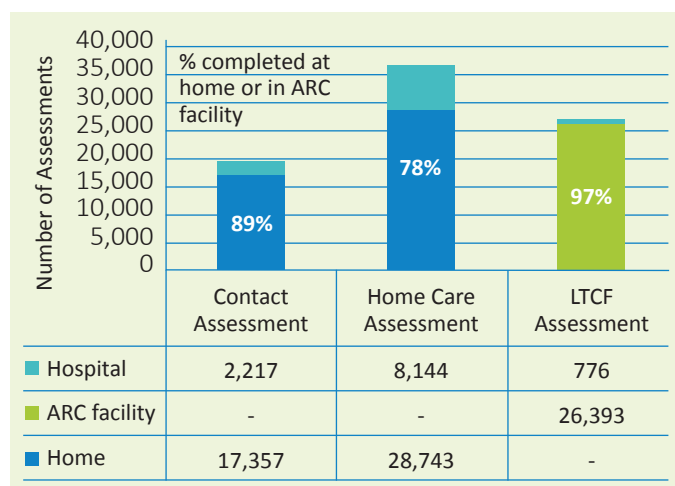
Location of assessment – home, ARC facility or hospital

An interRAI assessment completed in hospital means the person has been admitted to hospital, for example for acute care following a fall. All other settings are in the community where assessments are completed in the person's home, or an ARC facility.

Most Contact and Home Care assessments were completed at the person's home or for LTCF assessments in an ARC facility, rather than in hospital.

A larger proportion of Contact and Home Care assessments were completed in hospital in the Northern Region than elsewhere in New Zealand (see Table 1 over page).

Figure 3: More assessments completed at home or in ARC facilities than hospital



Source: National interRAI Software Service New Zealand, data 2014/15.

Table 1: Proportion of assessments completed by location

Type	Region	Home	Hospital	ARC facility
Contact Assessment	Northern	80%	20%	-
	Midland	92%	8%	-
	Central	92%	8%	-
	South Island	98%	2%	-
	National	89%	11%	-
Home Care	Northern	67%	33%	-
	Midland	83%	17%	-
	Central	83%	17%	-
	South Island	80%	20%	-
	National	78%	22%	-
LTCF	Northern	-	2%	98%
	Midland	-	4%	96%
	Central	-	2%	98%
	South Island	-	3%	97%
	National	-	3%	97%

Source: National interRAI Software Service New Zealand, data 2014/15.

The number of assessments by type, DHB and region

Table 2 shows the number of completed Contact and Home Care assessments by DHB in 2014/15³. It also shows the number of LTCF assessments by region.

Table 2: Number of completed assessments by type, DHB and region, 2014/15

Region	DHB	Contact assessment	Home care	Long Term Care Facility
Northern	Auckland	2,789	2,435	
	Counties Manukau	1,532	2,992	
	Northland	323	1,375	
	Waitemata	3,716	2,393	
Northern total		8,360	9,195	7,260
Midland	Bay of Plenty	624	2,542	
	Lakes	579	719	
	Tairāwhiti	96	363	
	Taranaki	107	1,301	
	Waikato	823	3,144	
Midland total		2,229	8,069	6,214
Central	Capital and Coast	668	3,461	
	Hawke's Bay	948	2,113	
	Hutt Valley	797	1,128	
	MidCentral	701	1,376	
	Wairarapa	53	551	
	Whanganui	431	838	
Central total		3,598	9,467	5,452
South Island	Canterbury	2,532	3,141	
	Nelson Marlborough	362	2,285	
	South Canterbury	418	1,078	
	Southern	1,898	2,995	
	West Coast	107	323	
South Island total		5,317	9,822	8,243
Not assigned		70	334	110
National total		19,574	36,887	27,169

Source: National interRAI Software Service New Zealand, data 2014/15.

³ LTCF assessments are not shown here by DHB as there is no data sharing agreement in place at this time.

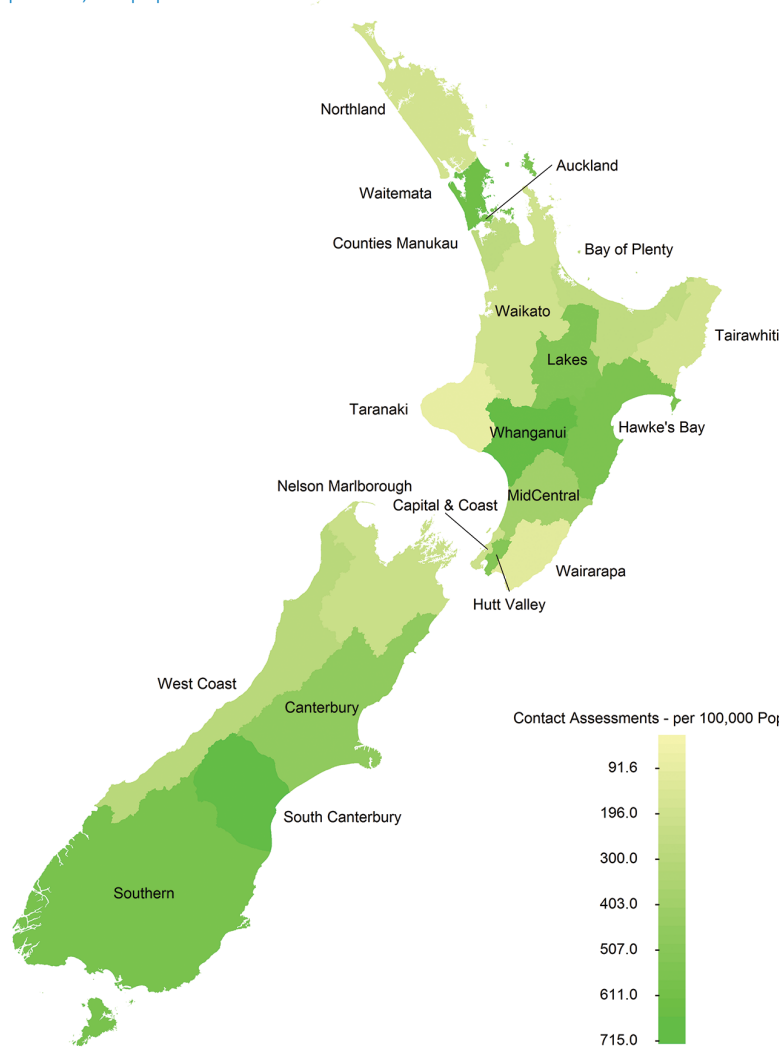
Contact assessments and Home Care assessments relative to DHB population

The following analysis and maps show the provision of assessments for the various DHB populations. The rates per 100,000 population and the expected number of assessments for a DHB population indicate the uptake across the sector of different interRAI assessment types and can be an indicator of access to assessments.

The following maps⁴ for Contact and Home Care assessments show three things:

1. The rate of assessments per 100,000 population (assessment rate)
2. The difference in the number of assessments in a DHB compared with an expected number
3. The percentage difference between the actual and expected number of assessments.

Figure 4: Contact assessments – per 100,000 population



The assessment rate does not take into account the different demographics in DHBs such as a DHB population with a large proportion of older people or more Māori. The expected number of assessments for a DHB's population, is based on the national average and takes into account the age, gender and ethnicity of the national and individual DHB populations. Appendix 1 gives an explanation of how the assessment rates and the expected rates are calculated.

Contact assessments

Figure 4 shows the assessment rate was highest in South Canterbury, Whanganui and Waitemata DHBs (darker green) and lowest in Taranaki, Wairarapa and Northland DHBs (lighter green). The rate varied from 90 to 715 contact assessments per 100,000 population.

⁴ The maps are designed to be read online or printed in colour.

Figure 5 shows that Waitemata and Auckland DHBs had a higher number of Contact assessments than expected, that is if the national rate was applied to their population (these rates are calculated by age group, gender and ethnicity). At the other end of the scale, Waikato and Bay of Plenty had a lower number of Contact assessments than expected (darker orange).

Figure 5: Contact assessments – deviation from expected number

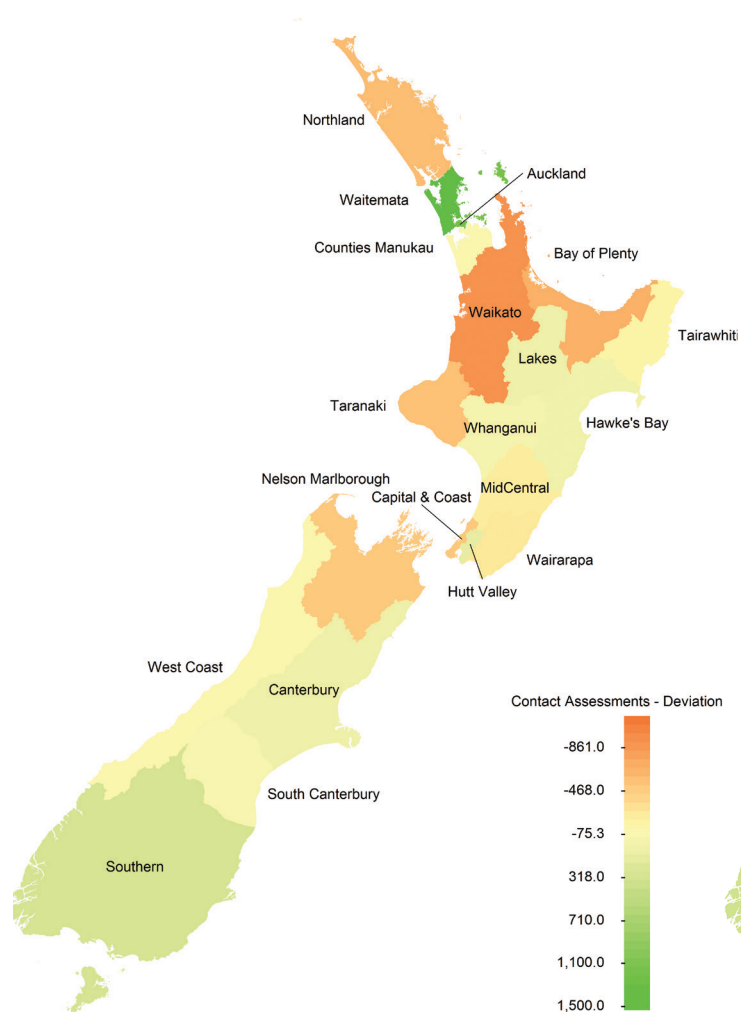
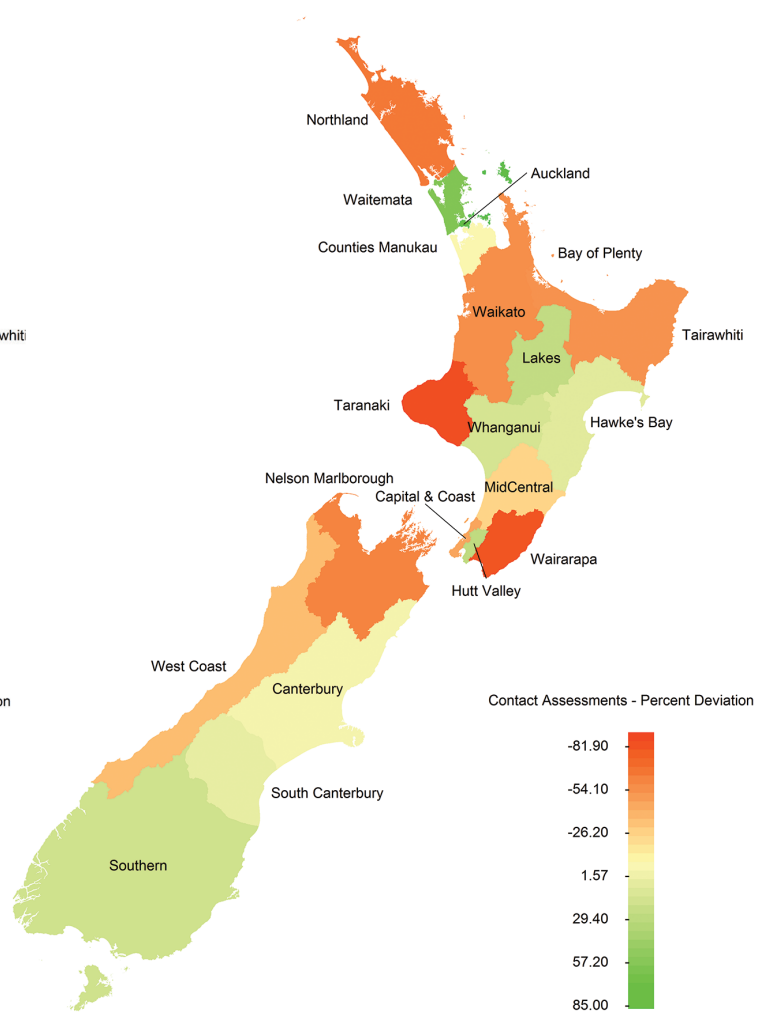


Figure 6 shows the percentage difference and provides a comparison of how different the actual and expected numbers of assessments are for a DHB. Auckland and Waitemata had the biggest percentage difference of more actual than expected assessments (darker green), whereas Taranaki, Wairarapa and Northland had the biggest percentage difference of fewer assessments than expected (darker orange).

Figure 6: Contact assessments – percentage deviation from expected



Home Care assessments

Figure 7 shows that South Canterbury and Nelson Marlborough DHBs had the higher assessment rates (darker green) and Waitemata the lowest (lightest green). The rate varied from 420 to 1,845 Home Care assessments per 100,000 population.

Figure 8 shows that Capital & Coast, Nelson Marlborough and Hawke's Bay DHBs had a higher number of Home Care assessments than the number expected (darker green). This is not necessarily over provision and could indicate a different service model or other DHB's provision may be low relative to the national rate. Waitemata and Canterbury DHBs had a lower number of Home Care assessments than expected (darker orange).

Figure 7: Home Care assessments - per 100,000 population

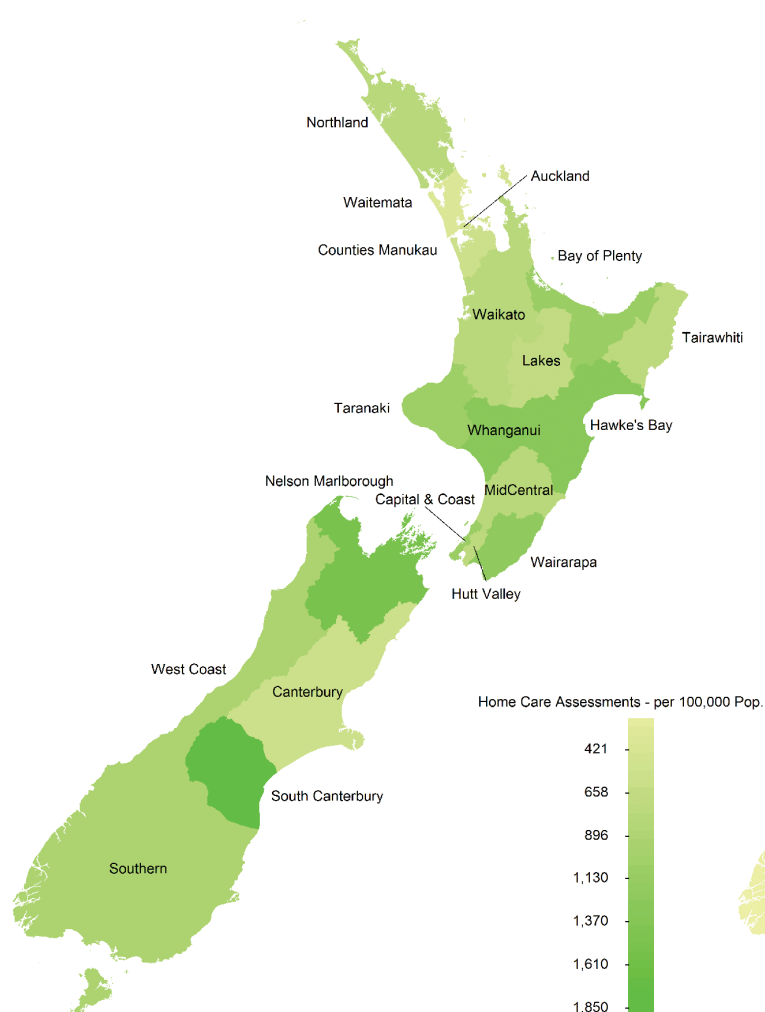
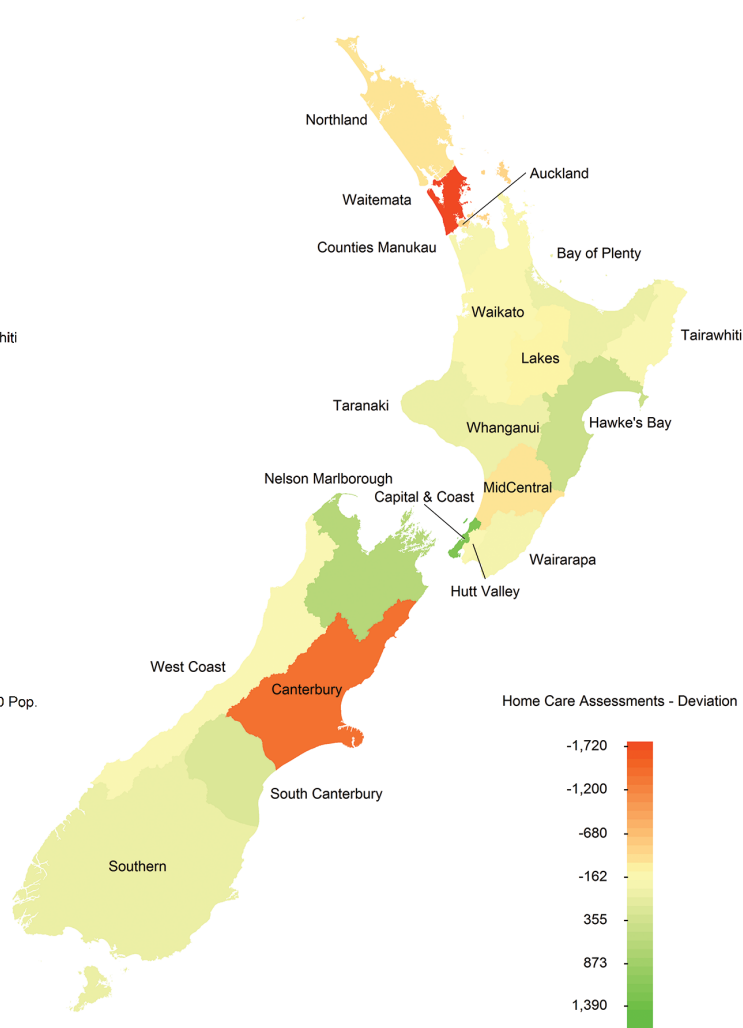


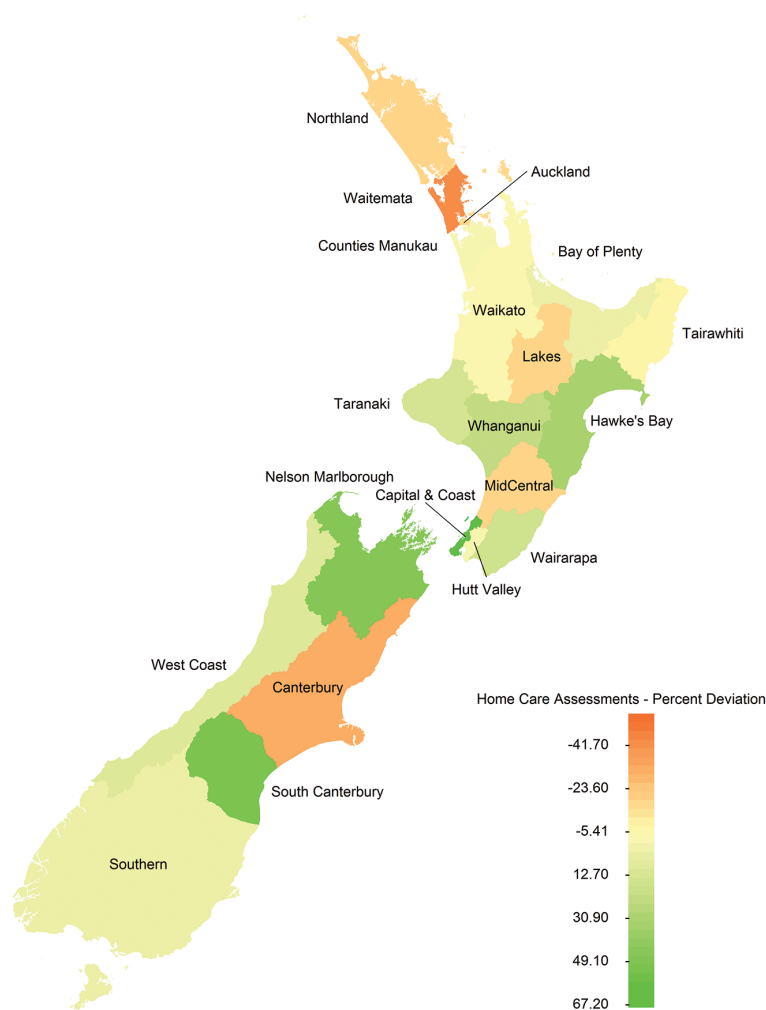
Figure 8: Home Care assessments – deviation from expected number



In Figure 9 the percentage difference gives a comparison of how different the actual and expected numbers of assessments were for a DHB. Capital & Coast, South Canterbury and Nelson Marlborough DHBs had the

biggest percentage difference of more actual than expected assessments (darker green), whereas Waitemata and Canterbury DHBs had the biggest percentage difference of fewer assessments than expected (darker orange).

Figure 9: Home Care assessments – percentage deviation from expected





*“...start asking the ‘so what?’ questions.
It is those very questions that will ultimately
influence our thinking and our decision
making to improve health outcomes for
New Zealanders as they age.”*



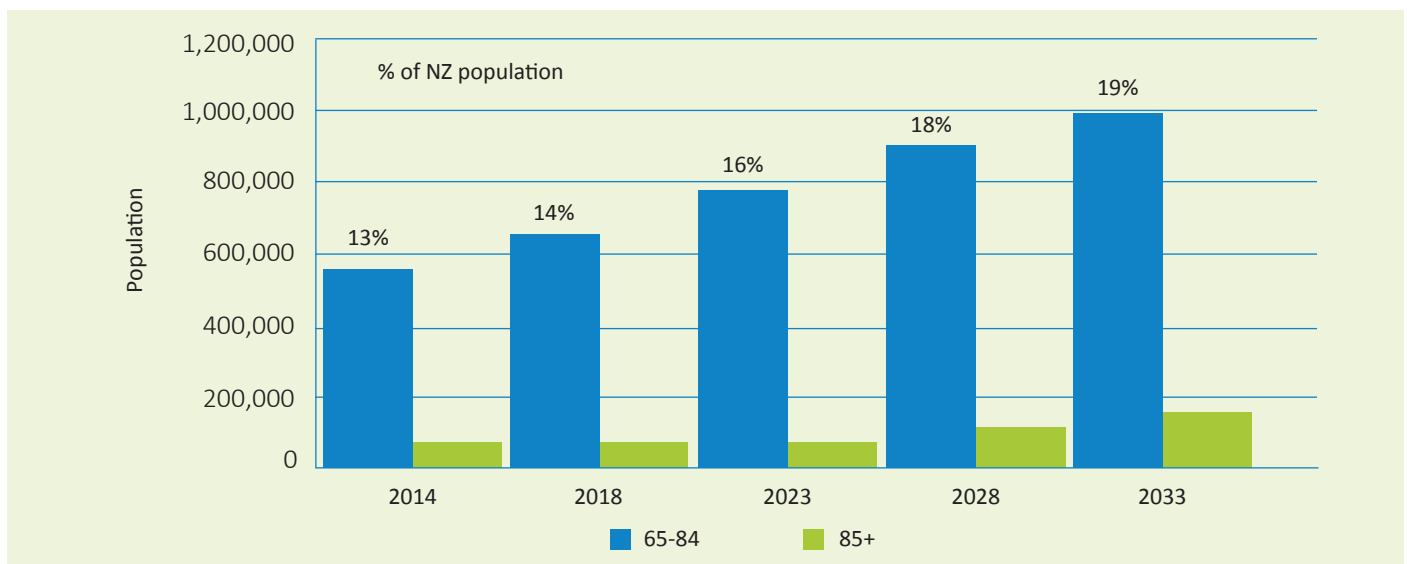
demographics

Understanding the population profile of clients receiving home care assessments and residents in ARC facilities receiving LTCF assessments can help with understanding the drivers behind demand and the planning and development of services. New Zealand is facing a similar dilemma to other developed countries with an ageing population with increasingly complex co-morbidities and people living longer with chronic diseases such as diabetes. The expected growth in the older population will create pressure on services and funding. The interRAI suite of assessments can be used to inform planning and policy in older peoples' services.

Population growth

The number of people aged over 65 is expected to increase over the next 20 years. There will be almost double the number of those aged between 65 and 85 and more than double the number aged over 85 by 2033.

Figure 10: Population growth in the older age groups over the next 20 years



Source: Statistics New Zealand. Dataset: National population projections, by age and sex, 2014(base)-2068.

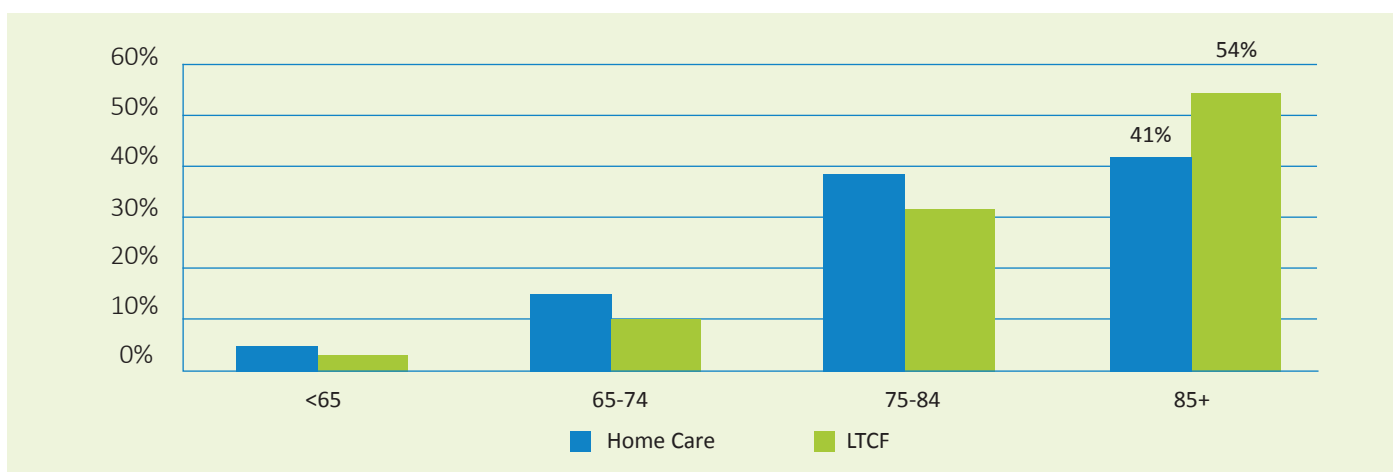
Age

The age profile of people who had a Home Care or LTCF assessment is very similar at a regional level. Figure 11 shows the national picture.

From 1 July 2014 to 30 June 2015, about 40% of Home Care assessments were completed for clients aged over 85, compared with about 55% for LTCF assessments.

A higher proportion of Home Care assessments were for younger clients aged under 85 compared with LTCF assessments. From around the age of 85, a higher proportion of LTCF assessments completed is noticeable as residents become older and less independent, requiring more support in an ARC facility.

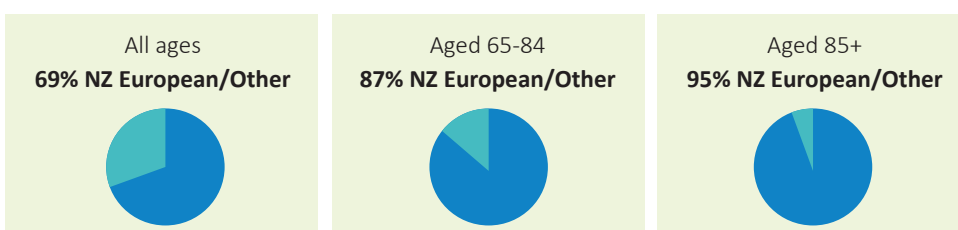
Figure 11: Percentage assessments completed by age group and type



Source: National interRAI Software Service New Zealand, data 2014/15.

Ethnicity

The census 2013 figures show a greater proportion of the population, particularly in the older age groups, identifies with ethnicities in the European/Other ethnic group.

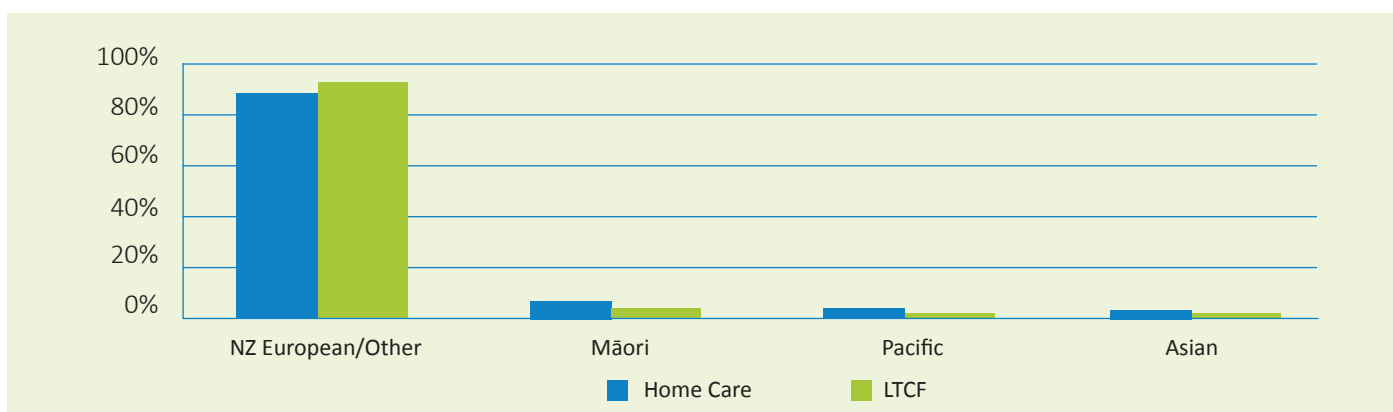


Source: Statistics New Zealand. Dataset: Ethnic group (grouped total responses) by age group, for the census usually resident population count 2013.

Most people who have a Home Care or LTCF assessment identify as NZ European, although there are some differences by region, with greater ethnic diversity in the Northern Region and less in the South Island.

Appendix 2 has a regional breakdown of the ethnic profile of home and community clients.

Figure 12: Ethnicity of clients/residents by assessment type

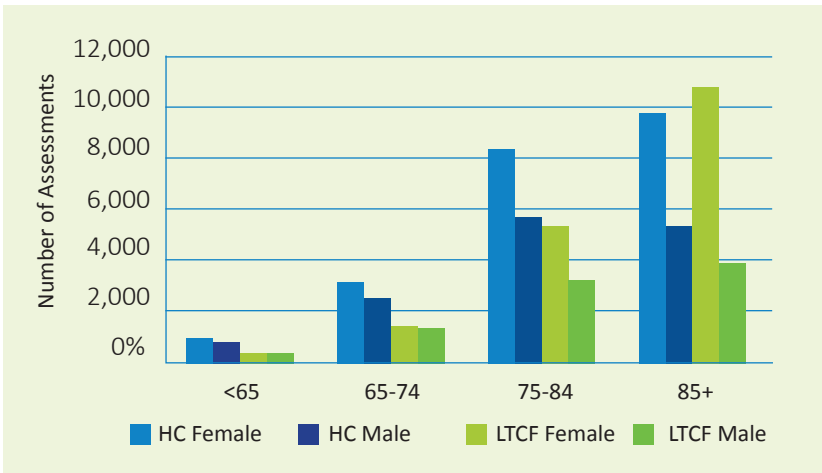


Source: National interRAI Software Service New Zealand, data 2014/15.

Gender

There were more females than males who had been assessed using a Home Care or LTCF assessment, especially in the older age groups. This presentation is similar in each region and is consistent with international comparisons.

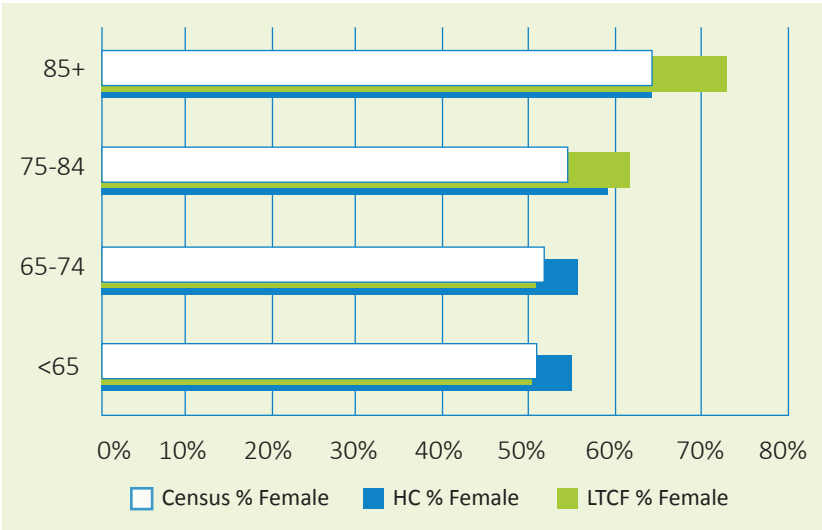
Figure 13: Number of completed assessments by gender and type



Source: National interRAI Software Service New Zealand, data 2014/15.

Females were over represented in the proportion of Home Care and LTCF assessments when compared to the New Zealand population census data (see Figure 14). A similar pattern has been observed in Canada.

Figure 14: Percentage of completed assessments for female clients by type compared to the census population

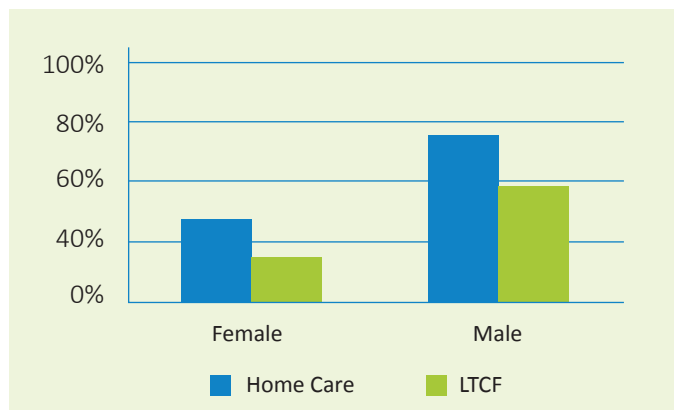


Source: National interRAI Software Service New Zealand, data 2014/15 and Statistics New Zealand dataset: Age by sex, for the census usually resident population count 2013 census.

61% of home care assessments were for females, compared with 67% for LTCF. The gender difference becomes more pronounced in the older age groups.

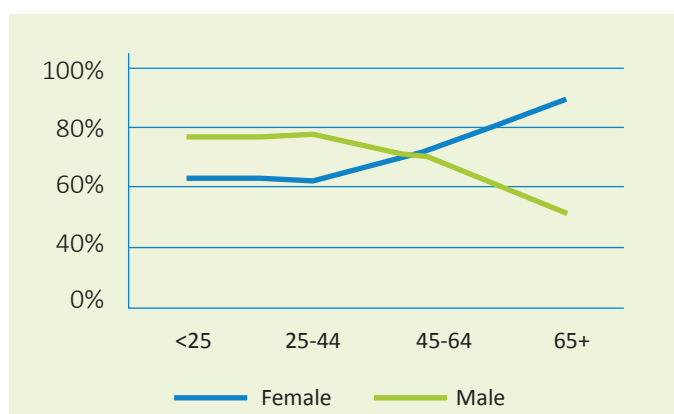


Figure 15: Percentage of assessments for partnered clients by type & gender



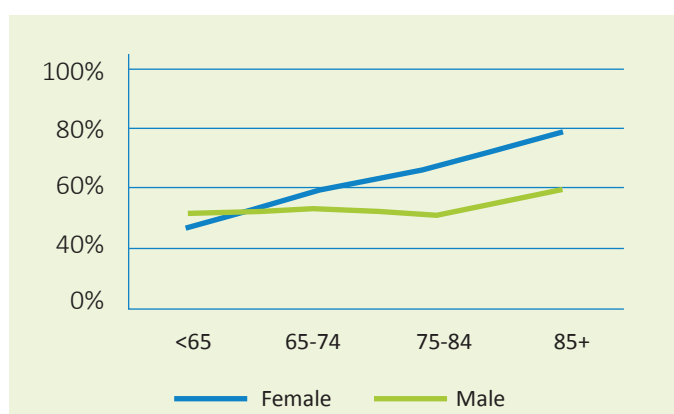
Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 16: One-person households



Source: Statistics NZ 2013 census. Dataset: Sex and age group, for people in one-person households in occupied private dwellings.

Figure 17: Percent living alone – Home Care and LTCF assessments combined



Source: National interRAI Software Service New Zealand, data 2014/15. Note for LTCF this was the living arrangement prior to admission to the ARC facility.

Partnership status and living alone

A client's partnership status can indicate the level of home support and social inclusion. This includes civil union and de facto relationships. Figures 15-17 suggest that females might have had less access to informal support as measured by their living situation and the presence of a spouse compared to their male counterparts.

Female clients/residents were less likely to be partnered than their male equivalents.

Both male and female home and community clients were more likely to be partnered than their LTCF counterparts.

Census data show that older women were more likely to live alone than males of a similar age.

The data from Home Care and LTCF assessments shows that from about the age of 65, women assessed were more likely to live alone than men of the same age.

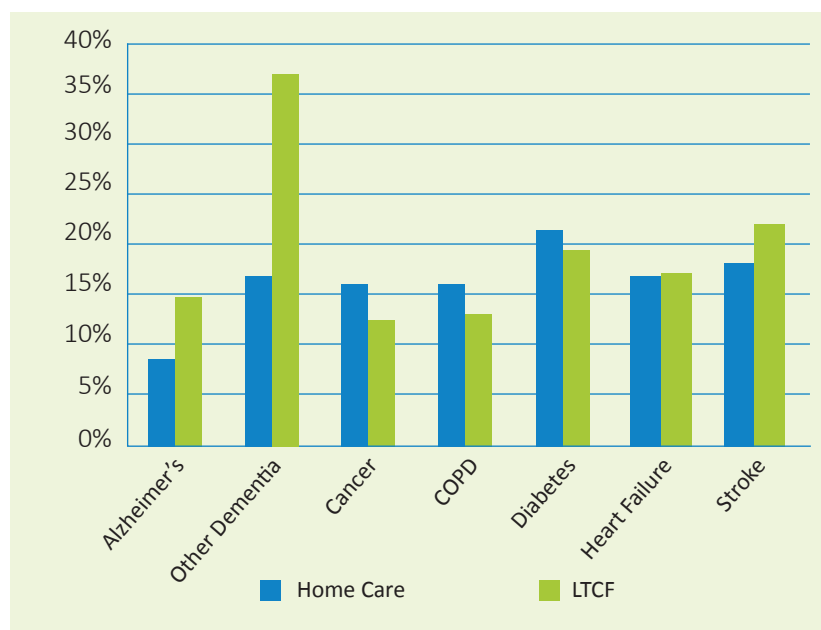
This difference in social isolation and level of support at home may contribute to the higher uptake of assessments by females, but this hypothesis would need to be researched further and is beyond the remit of this report

Disease diagnoses

People are living longer with chronic conditions and co-morbidities such as diabetes and heart failure which impacts on the type and level of services that they require

in older age. This analysis looks at the top seven most common diseases, comparing rates for Home Care and LTCF assessments.

Figure 18: Disease diagnoses recorded for assessments, comparing Home Care & LTCF



Source: National interRAI Software Service New Zealand, data 2014/15.

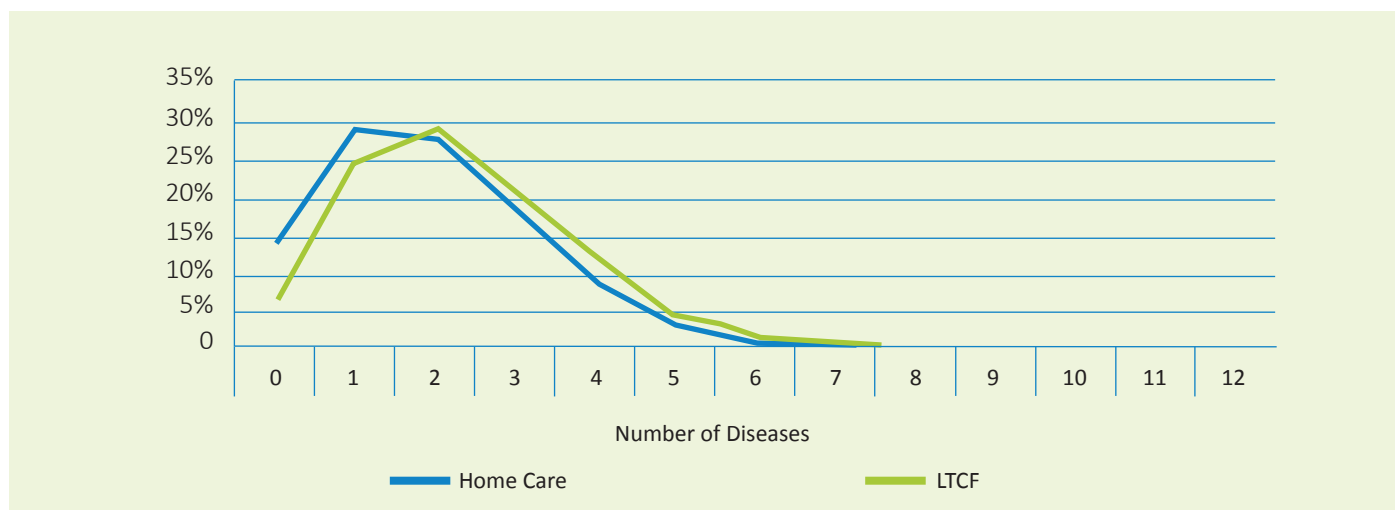
Aged residential care residents were more likely to have a diagnosis of dementia, Alzheimer's or stroke than home and community clients, whereas Home Care assessed clients were more likely to have cancer, chronic obstructive pulmonary disease (COPD) or to a lesser extent diabetes.

Co-morbidities

Looking at the most common diseases listed in the assessment tools, aged residential care residents were more likely to have multiple diseases diagnosed compared

to clients who had a Home Care assessment. 42% of Home Care assessments were for clients with none or one disease diagnosed compared to 31% of LTCF assessments.

Figure 19: Number of diseases diagnosed and what proportion that makes up of all assessments



Source: National interRAI Software Service New Zealand, data 2014/15.

Assessment outputs

interRAI outcome scales and Clinical Assessment Protocols (CAPs) are outputs from the assessment process. The scores for the various outcome scales are automatically generated using built in algorithms in the assessment. Whether a CAP is triggered is also a product of these research based algorithms. Both outcome scores and triggered CAPs can be used to inform the care planning for the home and community client or ARC resident.

interRAI outcome scales

There are various outcome scales and screeners embedded in the assessment. These can be used as a prognosis and screening tool and can provide a measure for outcome monitoring. The outcome scores can help to identify areas to be included in the care plan and the interplay of scores can inform a wider more holistic view. The standardised tool allows assessors, planners and researchers to look at changes in scores over time, and to consider the persons response to change in location of care or service interventions. Scores identify risks and opportunities.

The standardised tools allow comparison between scores in Home Care and LTCF assessments. The following table summarises these scores for assessments in 2014/15.

Table 3: Summarised outcome scores for Home Care and LTCF assessments

Outcome scales	Scores	Home care	LTCF
Method of Assigning Priority Level (MAPLe)	Low priority	17%	NA
	Mild	5%	
	Moderate	22%	
	High	30%	
	Very high priority	26%	
Changes in Health, End-Stage Disease, Signs, and Symptoms (CHESS)	None/low (0-2)	70%	86%
	Moderate (3)	20%	8%
	High instability (4-5)	10%	6%
Cognitive Performance Scale (CPS)	Intact/mild (0-2)	79%	56%
	Moderate (3-4)	14%	22%
	Severe/very severe (5-6)	6%	21%
Activities of daily living (ADL) self-performance hierarchy scale	Independent/ limited assistance (0-2)	79%	55%
	Extensive/ maximal assistance (3-4)	14%	21%
	Very/ total dependence (5-6)	7%	24%
Depression Rating Scale (DRS)	Scores <3	84%	80%
	Scores 3-5	12%	15%
	Scores >5	4%	5%
Pain scale	No pain (0)	40%	47%
	Less than daily pain/ daily but not severe (1-2)	47%	50%
	Daily severe/ excruciating pain (3-4)	13%	3%
Pressure Ulcer Risk Scale (PURS)	Very low to low (0-2)	85%	75%
	Moderate (3)	9%	15%
	High to very high (4-8)	6%	10%

Source: National interRAI Software Service New Zealand, data 2014/15. NA means MAPLe score is not applicable to LTCF assessments.

MAPLe - Method of Assigning Priority Level

The MAPLe score is only used in Home Care assessments, not in Contact assessments or LTCF assessments. It is a priority indicator, with higher scores based on the presence of activities of daily living (ADL) impairment, cognitive impairment, wandering, and behaviour problems. The MAPLe score is also a predictor of carer stress.

The higher the score, the greater the priority for services to be commenced or increased in the community to prevent hospitalisation or admission into residential care. Priorities for service planning and potential risk of institutionalisation can also be predicted using the MAPLe score.

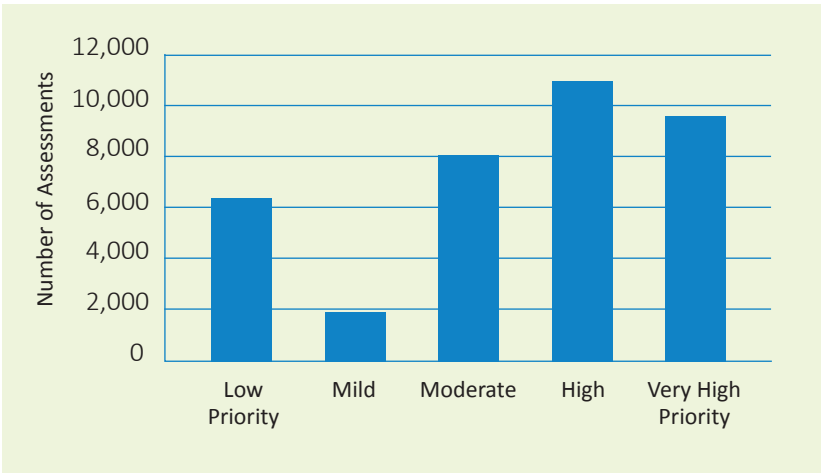
The score ranges from 1 to 5 with the higher the score the worse the health instability:

1 - Low priority, light home care services	2 - Mild priority, personal care and home care	3 - Moderate priority, range of home care services	4 - High priority, risk of adverse outcomes, residential support	5 - Very high, admission to hospital care or in community with support, may need 24 hour supervision.
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About one in four Home Care assessments were for clients with the highest score and greatest risk of requiring hospital or aged residential care services. International research

has shown individuals with the highest score have a much greater risk of being admitted to a residential facility within 90 days than individuals with the lowest score⁵.

Figure 20: MAPLe scores indicating priority for services



Source: National interRAI Software Service New Zealand, data 2014/15.

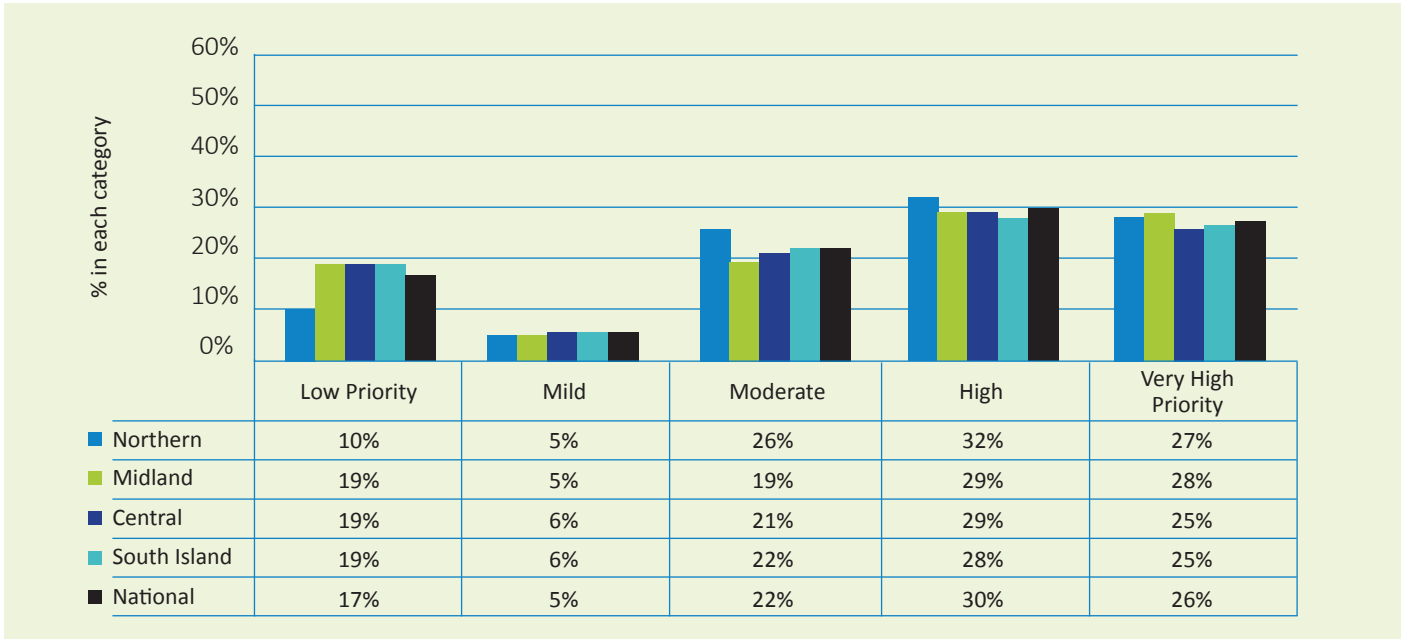
Over 50% of home care assessments were for high to very high priority clients.

⁵ Hirdes, John P., Jeff W. Poss, and Nancy Curtin-Telegdi. "The Method for Assigning Priority Levels (MAPLe): a new decision-support system for allocating home care resources". Bio Med Central Medicine 6.1 (2008): 9.

In 2014/15, the Northern Region had a lower proportion of Home Care assessments for clients with low and mild priority MAPLe scores and a higher proportion with moderate and above priority MAPLe scores, probably

because they had a higher proportion of Contact assessments. A breakdown of the MAPLe scores by DHB for Home Care assessments can be downloaded in Excel format from TAS’s website (<http://interrai.co.nz/>).

Figure 21: MAPLe scores by region for Home Care assessment



Source: National interRAI Software Service New Zealand, data 2014/15.



CHESS - Changes in Health, End-Stage Disease, Signs, and Symptoms

This scale detects frailty and health instability and was designed to identify people with unstable health conditions who are at risk of serious decline. It can also be used as an outcome measure to show whether the person has been stabilised following an intervention. Higher CHESS scores are associated with adverse outcomes such as increased mortality, hospitalisation, pain, caregiver stress and poor self-rated health.

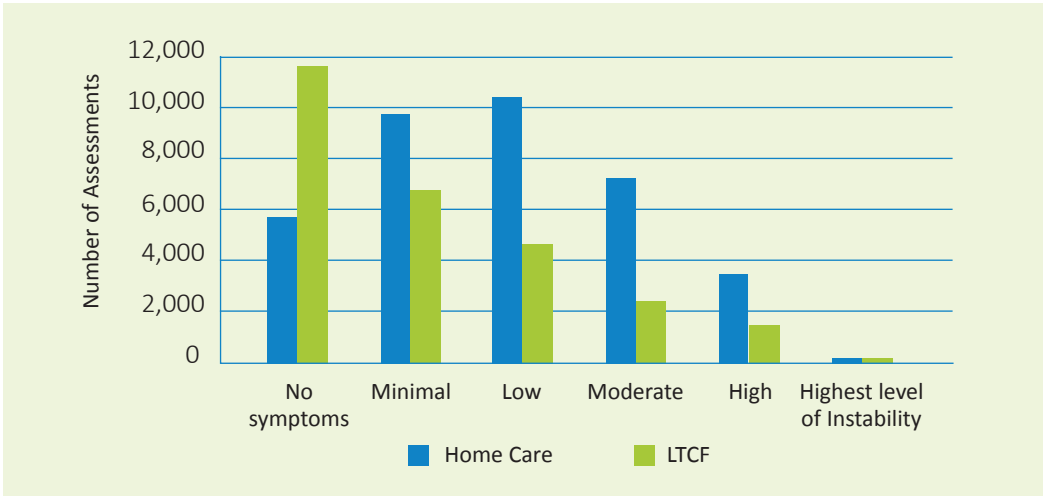
The scale ranges from 0 to 5. The higher the score the worse the health instability:

0 - No symptoms	1 - Minimal health instability	2 - Low health instability	3 - Moderate health instability	4 - High health instability	5 - Highest level of instability
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Figure 22 shows that a higher number of LTCF assessments scored no symptoms on the CHESS scale compared with Home Care assessments⁶. The same was true for each DHB. Aged residential care residents assessed in 2014/15 generally had more stable health than home and community clients, perhaps indicating how interventions can stabilise a person’s health.

CHESS scores can be used to show whether an intervention has stabilised a person’s health.

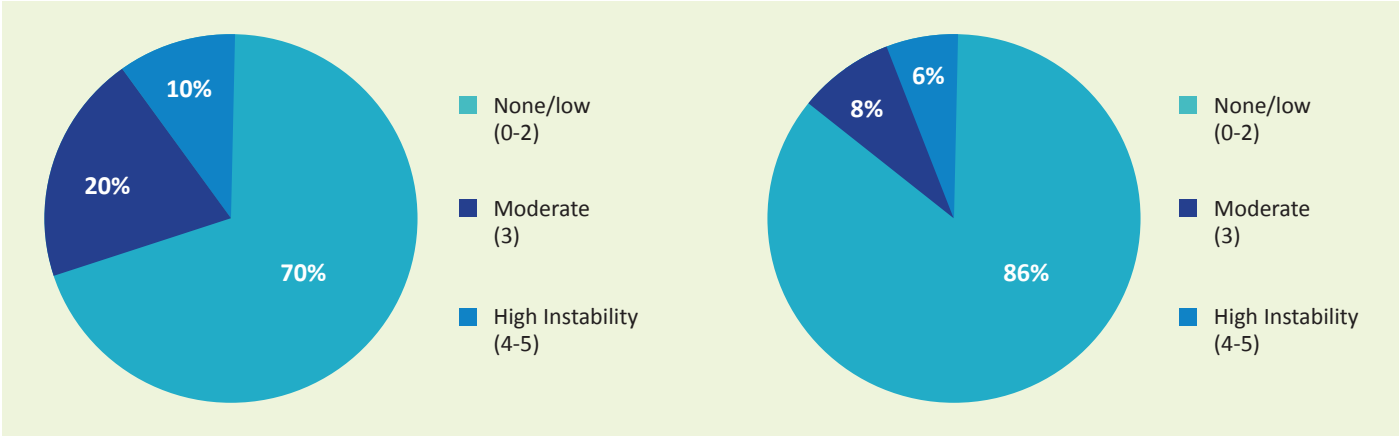
Figure 22: CHESS scores showing no symptoms for almost half of LTCF residents



Source: National InterRAI Software Service New Zealand, data 2014/15.

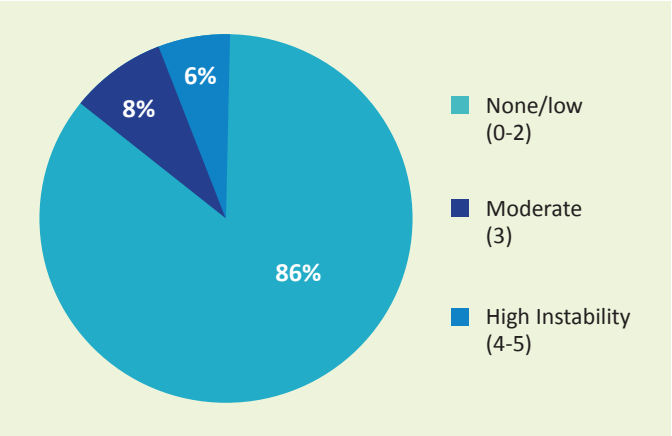
⁶ It is possible that LTCF assessments completed in 2014/15 had a certain bias towards showing more stable health for residents than future year’s data. This is because a number of residents having their first interRAI LTCF assessment have been in an ARC facility for some time and had their health stabilised.

Figure 23: Home Care assessments – CHESS scores



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 24: LTCF assessments – CHESS scores



Location of assessment – home, ARC facility or hospital

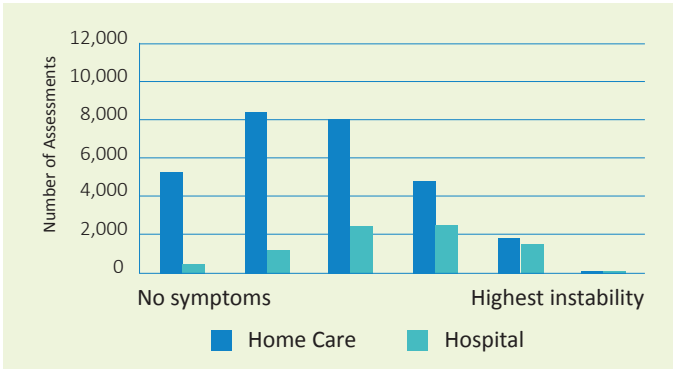
The location of Home Care assessments correlates with different CHESS scores.

In hospital half of home care assessments scored moderate to the highest CHESS scores for health instability and frailty.

In the home three out of four home care assessments scored low to no symptoms on the CHESS scale.

Figure 25 shows three quarters of Home Care assessments were completed in the home, but of those completed in hospital the CHESS scores were more likely to show greater health instability. This is to be expected as these clients are usually experiencing an acute health episode which has destabilised their health status.

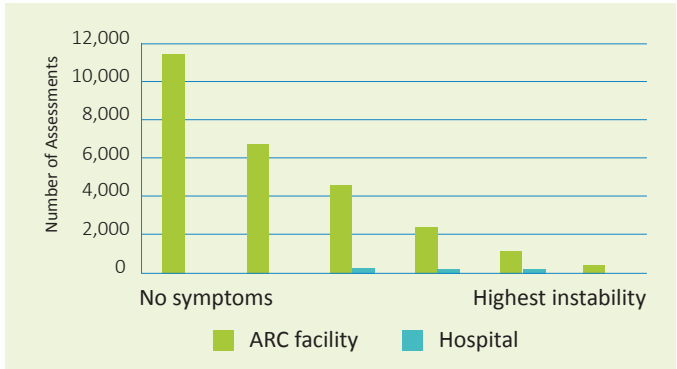
Figure 25: Home Care assessment CHESS scores - location



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 26 shows that the majority of LTCF assessments in 2014/15 were completed in an ARC facility. Of the small number completed in hospital, there was a higher level of health instability with half the assessments scoring moderate to the highest CHESS scores.

Figure 26: LTCF assessment CHESS scores - location

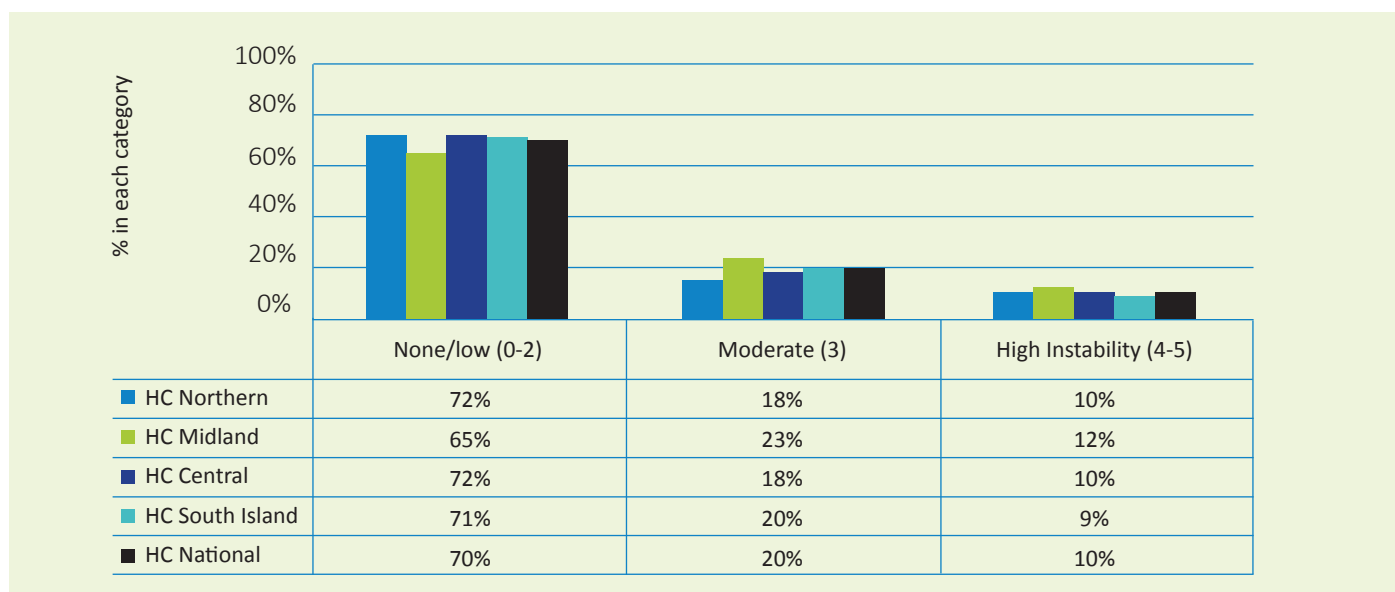


Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 27 shows that Midland had a smaller proportion of home and community clients with no symptoms and a larger proportion with moderate and high health instability compared with other regions.

A breakdown of the CHES scores by DHB for Home Care assessments can be downloaded in Excel format from TAS's website (<http://interrai.co.nz/>).

Figure 27: CHES scores for Home Care assessments by region

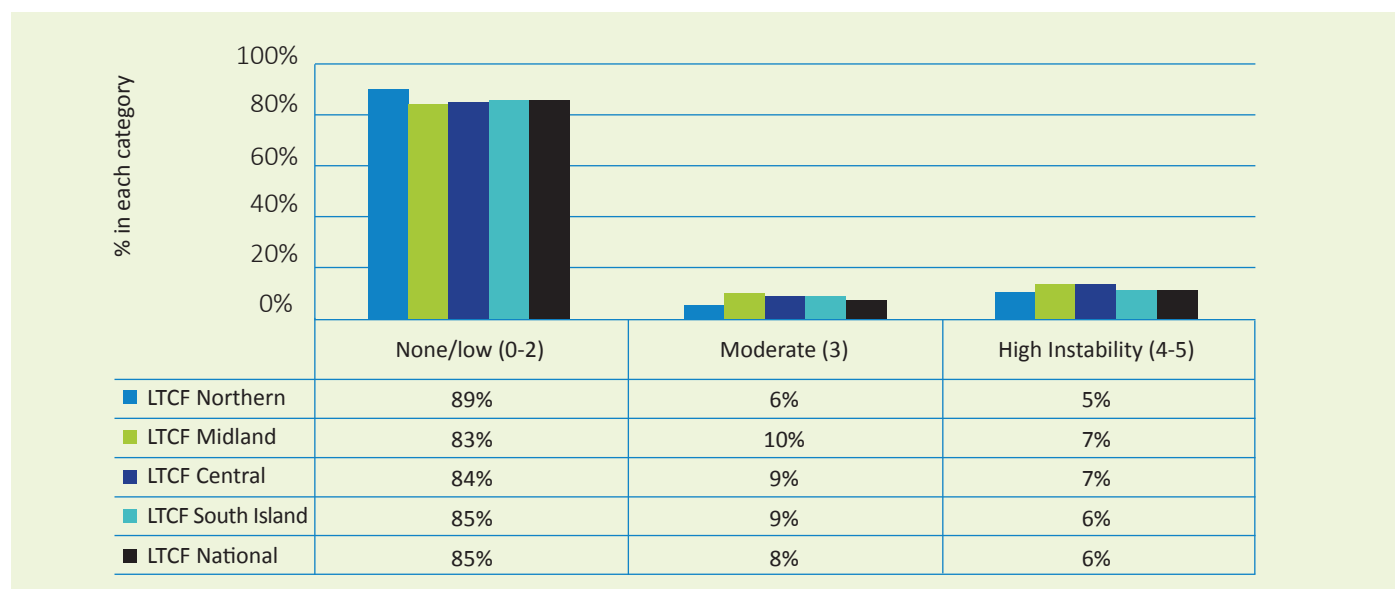


Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 28 shows that there was little variation across regions in CHES scores for LTCF residents, with the

Northern Region having the highest percentage of no or low CHES scores (0-2).

Figure 28: CHES scores for LTCF assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

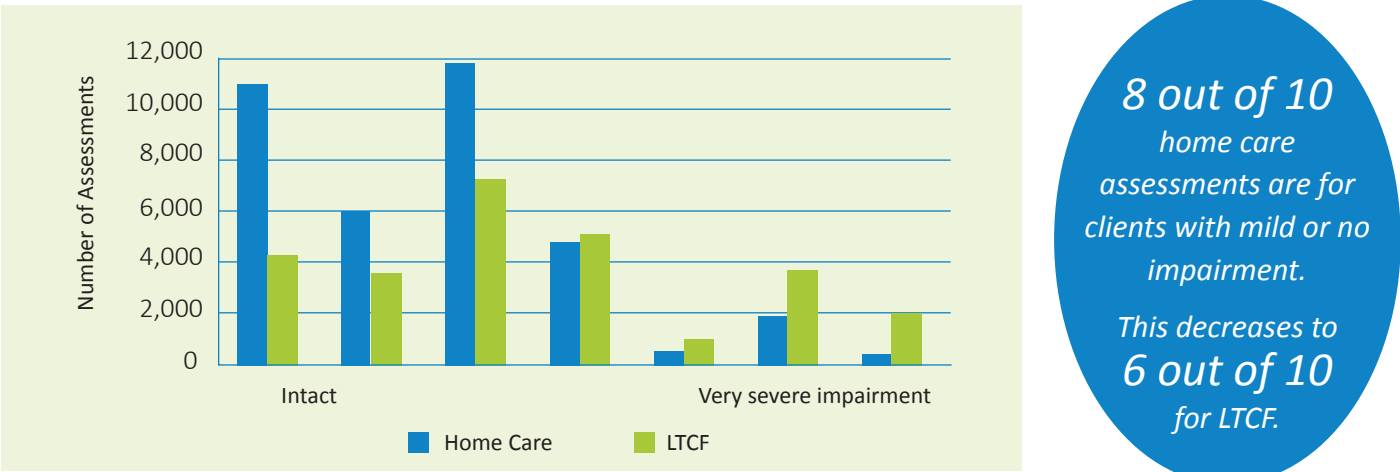
CPS - Cognitive Performance Scale

This scale combines information on memory impairment, level of consciousness and executive functioning.

The score ranges from 1 to 5 with the higher the score the worse the health instability:

0 - Intact	1 - Borderline intact	2 - Mild impairment	3 - Moderate impairment	4 - Moderate / severe impairment	5 - Severe impairment	6 - Very severe impairment
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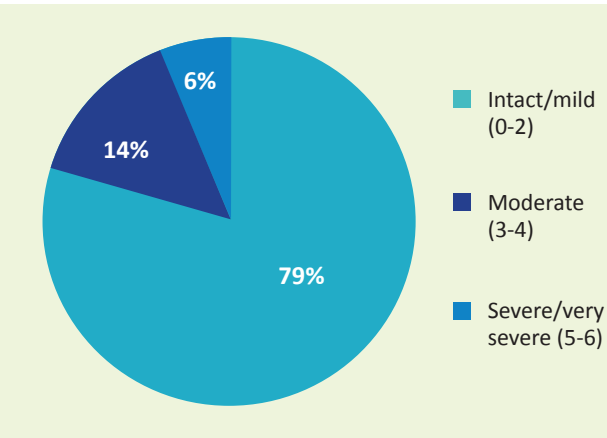
Figure 29: CPS scores show more cognitive impairment in LTCF assessments



Source: National interRAI Software Service New Zealand, data 2014/15.

As expected, a higher proportion of LTCF assessments scored moderate to severe impairment of residents

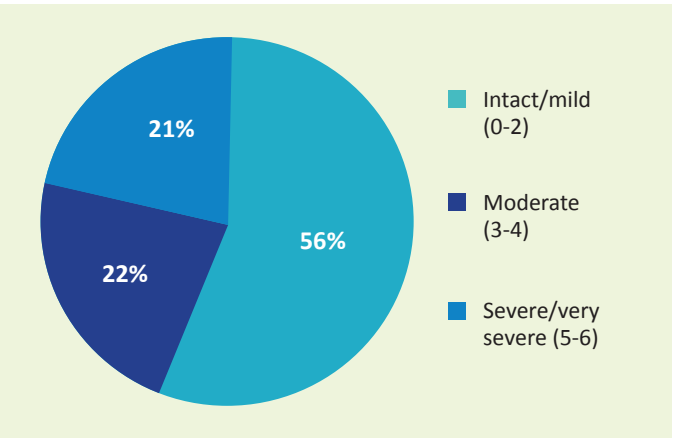
Figure 30: Home Care assessments – CPS scores



Source: National interRAI Software Service New Zealand, data 2014/15.

compared to the Home Care assessments completed in 2014/15.

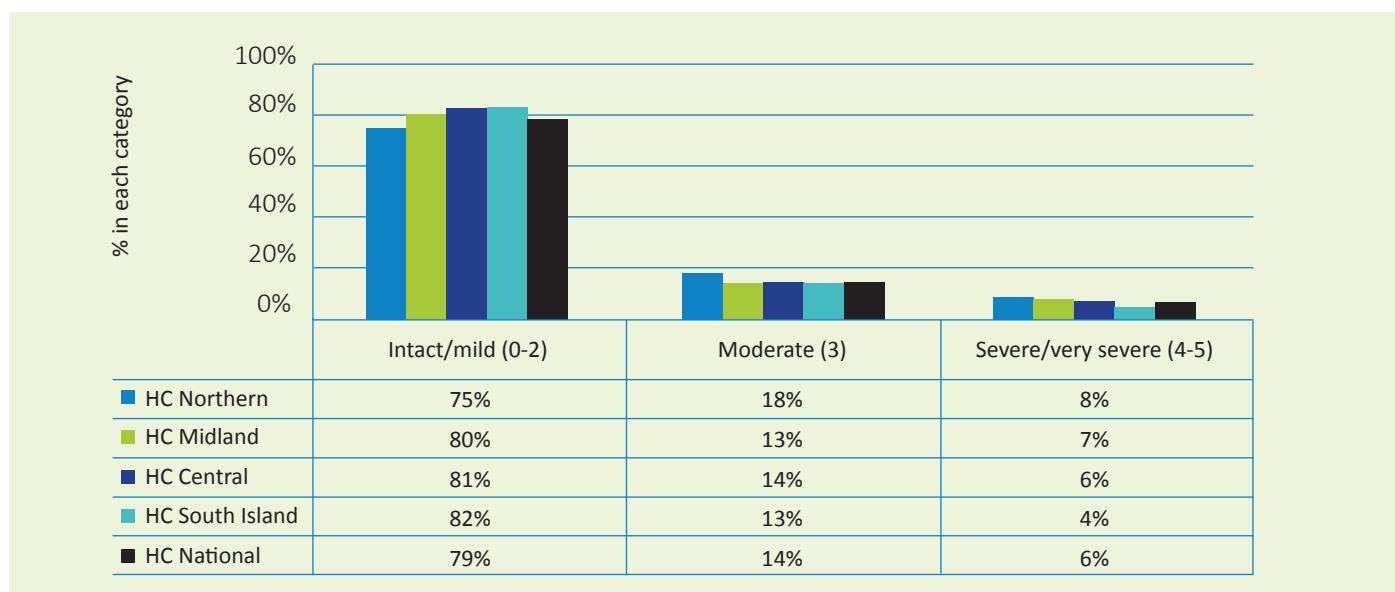
Figure 31: LTCF assessments – CPS scores



The level of cognitive impairment is higher in LTCF assessments than Home Care (see Figures 32 and 33). Twenty one percent of LTCF assessments were for residents with severe or very severe impairment compared to 6%

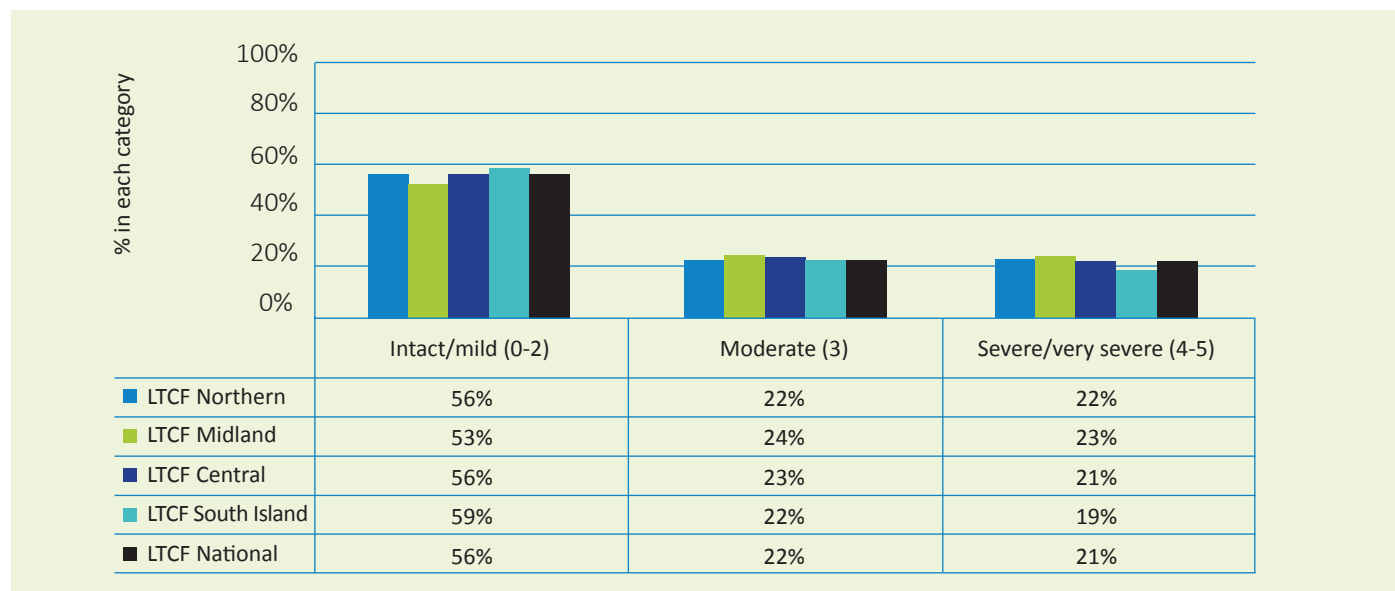
of Home Care assessments. A breakdown of CPS scores by DHB for Home Care assessments can be downloaded in Excel format from TAS's website (<http://interrai.co.nz/>).

Figure 32: CPS scores for Home Care assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 33: CPS scores for LTCF assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

Comparing CHESS and CPS scores

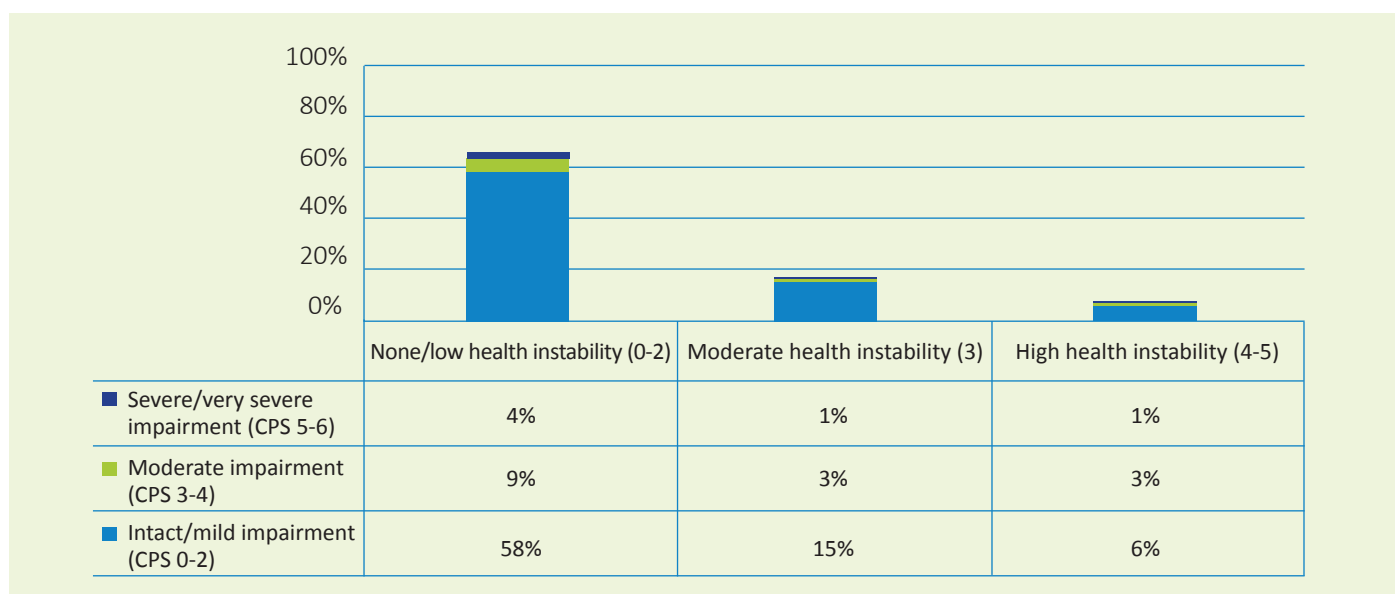
Comparing the CHESS scores of health instability with the CPS scores of cognitive ability shows more health instability

in the home and community clients but a greater cognitive impairment among LTCF residents.

Moderate to high CHESS scores
30% Home Care assessments
15% LTCF assessments

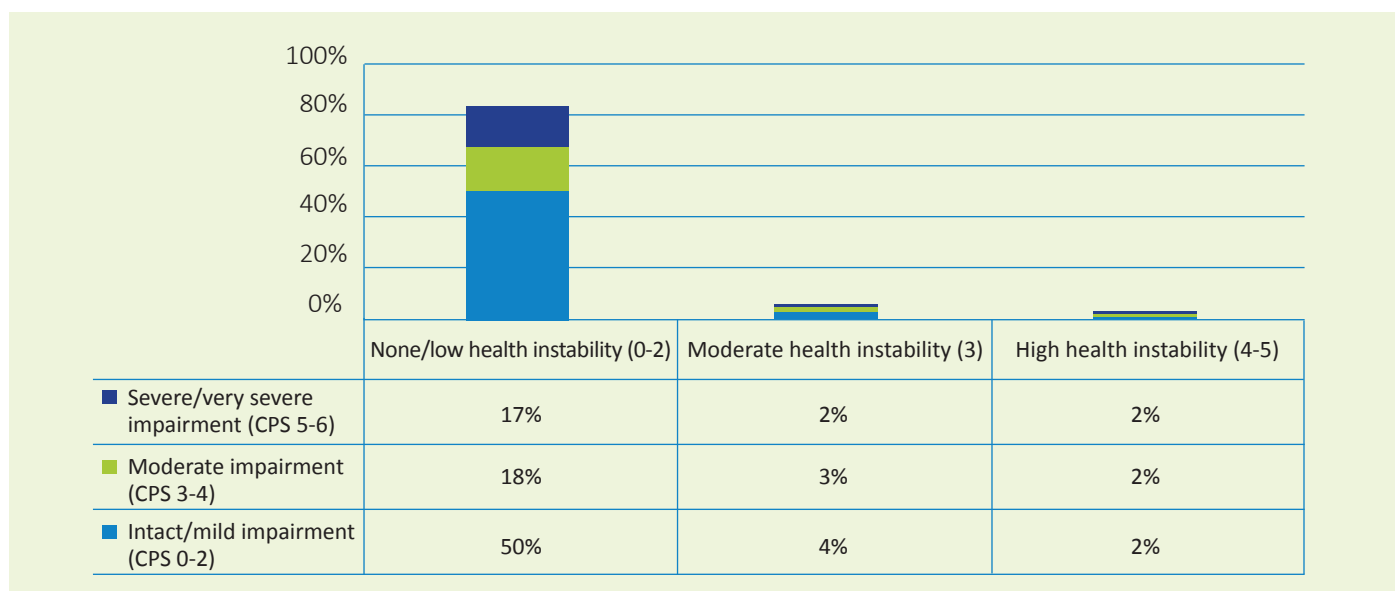
Moderate to very severe cognitive impairment
20% Home Care assessments
44% LTCF assessments

Figure 34: Home Care assessments – showing CHESS and CPS scores



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 35: LTCF assessments – showing CHESS and CPS scores



Source: National interRAI Software Service New Zealand, data 2014/15.

Activities of Daily Living (ADL) Self-Performance Hierarchy Scale

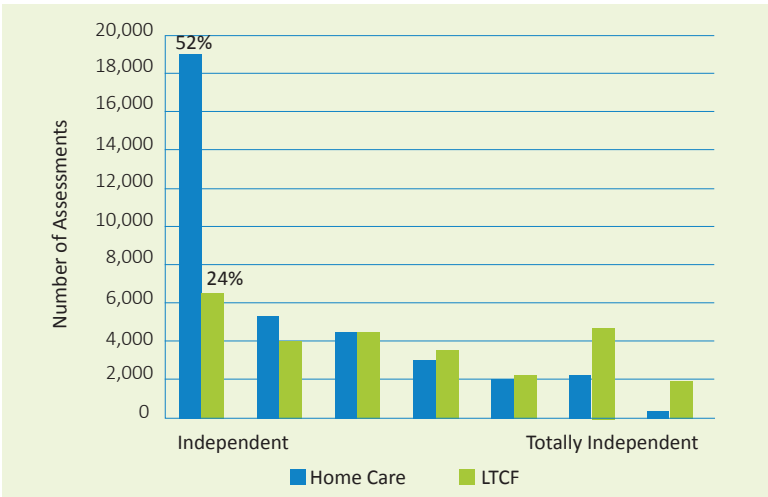
The ADL Self-Performance Hierarchy Scale is a measure of functional performance grouping activities of daily living according to the stage of the disablement process in which they occur.

The scale ranges from 0 to 5. The higher the score the worse the health instability:

0 - Independent	1 - Supervision required	2 - Limited assistance	3 - Extensive assistance required	4 - Maximal assistance required	5 - Very dependent	6 - Total dependence
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Early loss ADLs (e.g. dressing) are assigned lower scores than late loss ADLs (e.g. eating) as per interRAI international methodology.

Figure 36: ADL hierarchy scores showing more functional impairment in LTCF



Half of Home Care assessments were for clients who were functionally independent compared to about a quarter of LTCF assessments.

Eight out of ten Home Care assessments were for independent clients or those requiring only limited assistance. This decreased to less than six out of ten for LTCF assessments. One in four LTCF assessments was for residents who were very or totally dependent.

Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 37: Home Care assessments – ADL hierarchy scores

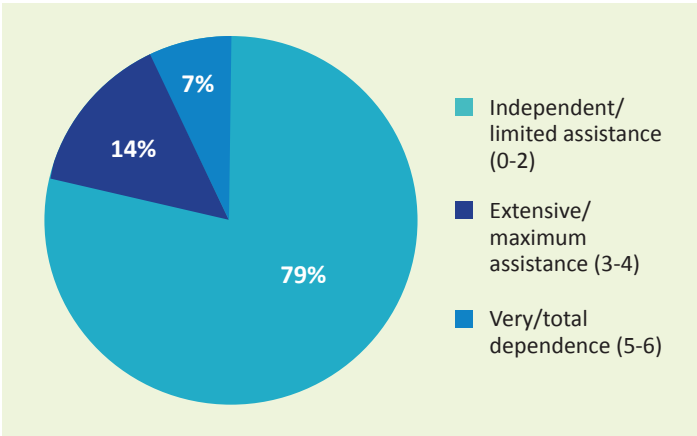
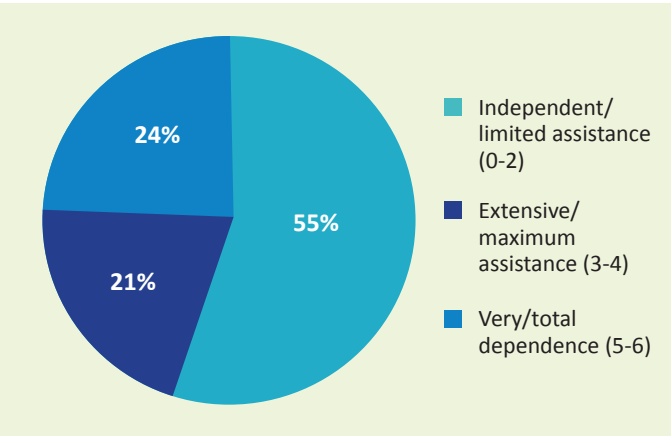


Figure 38: LTCF assessments – ADL hierarchy scores

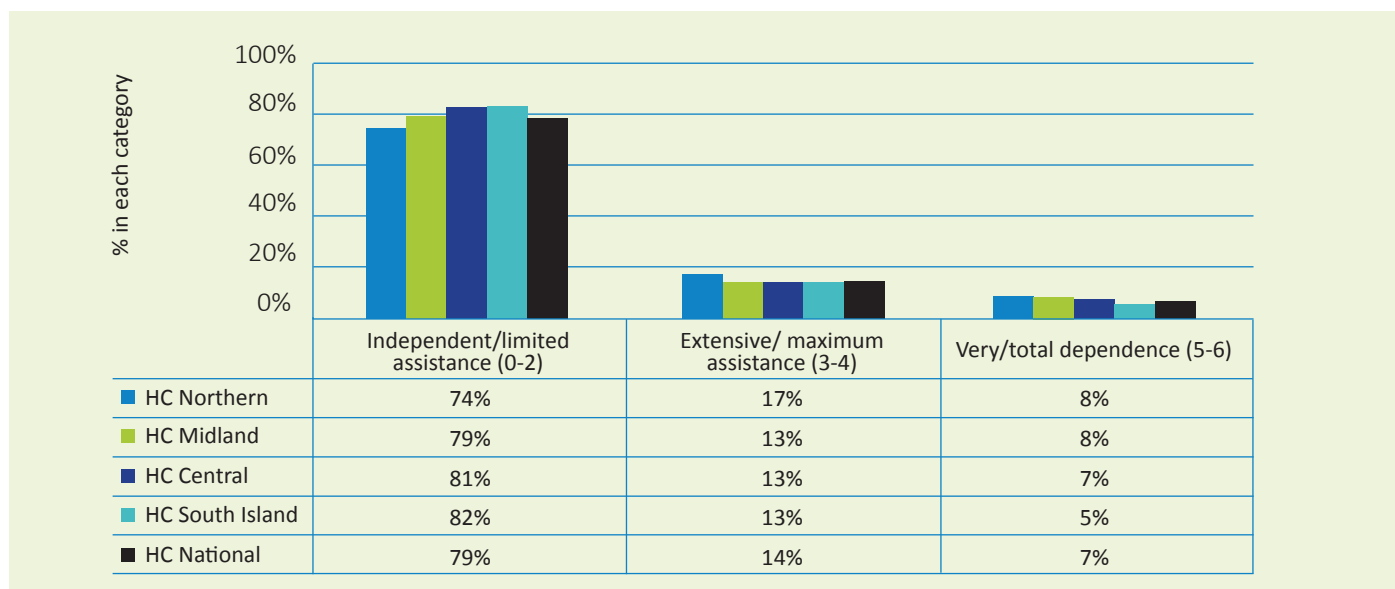


Source: National interRAI Software Service New Zealand, data 2014/15.

Figures 39 and 40 show that 7% of home and community clients were either very dependent or totally dependent on others for performing activities of daily living such

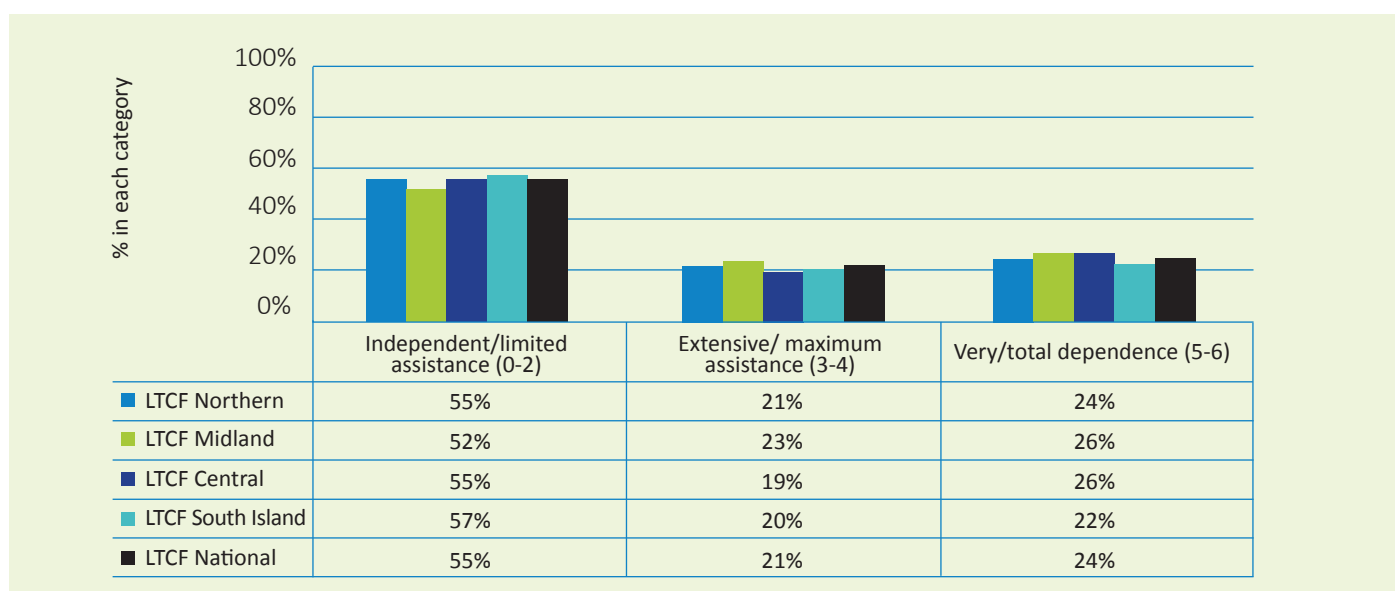
as bathing and eating compared to a quarter of aged residential care residents. Half of LTCF assessments were for residents who required limited or no assistance.

Figure 39: ADL hierarchy scores for Home Care assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 40: ADL hierarchy scores for LTCF assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

Depression Rating Scale (DRS)

This scale is used as a clinical screen for depression and includes seven inputs: levels of negativity, anger, fear, repetitive health complaints, anxiety, sadness and crying. The scale ranges from

0 to 14 with the higher the score the greater the depression. Scores of 3 or more indicate that the person is suffering from some degree of depressive disorder.

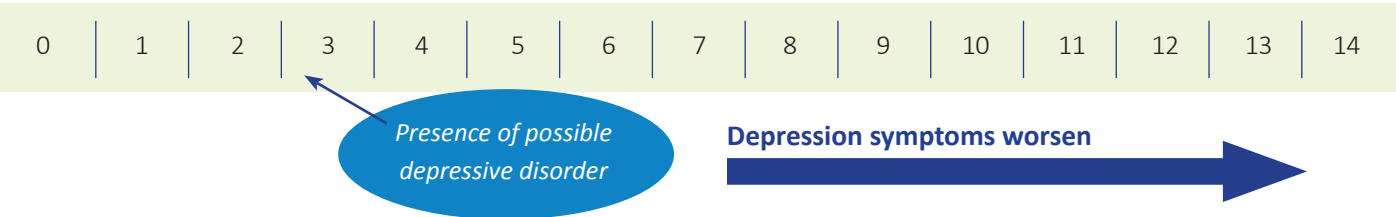
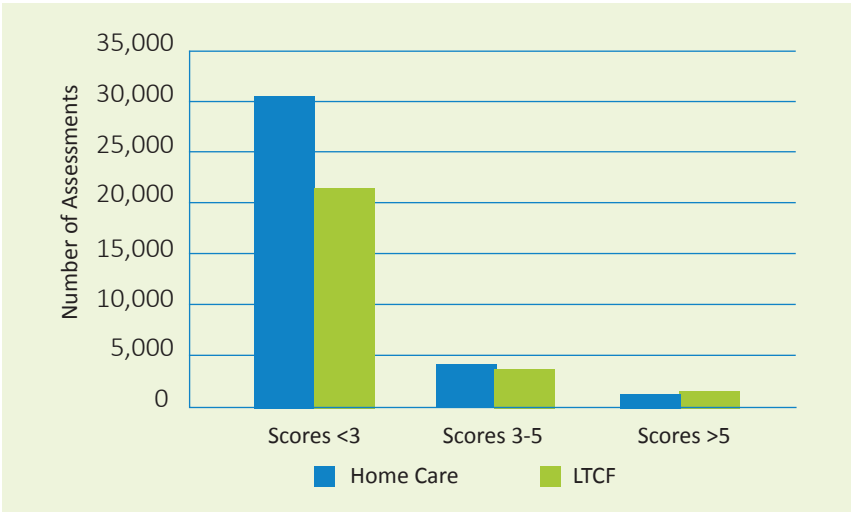


Figure 41 shows that about 80% of assessments for home and community clients and aged care residents assessed

had low DRS scores. About 15% had moderate scores of 3-5 and the remaining 5% had higher risk scores.

Figure 41: Depression rating scale scores similar across Home Care and LTCF assessments



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 42: Home Care assessments – DRS scores

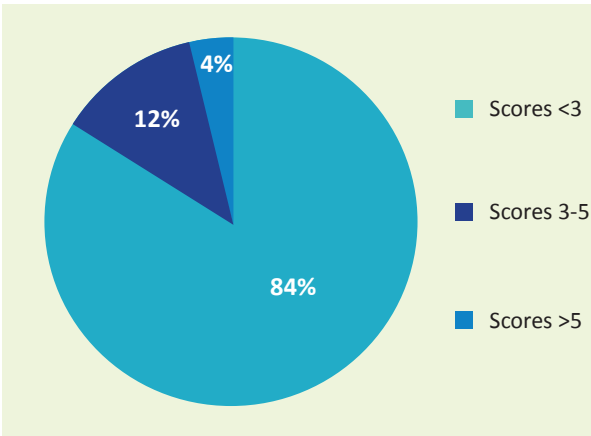
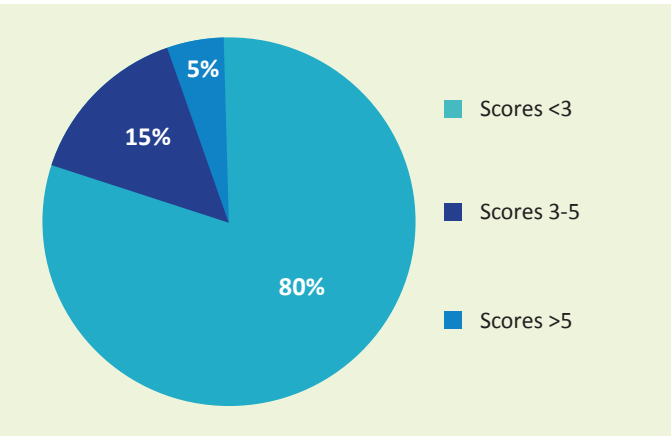


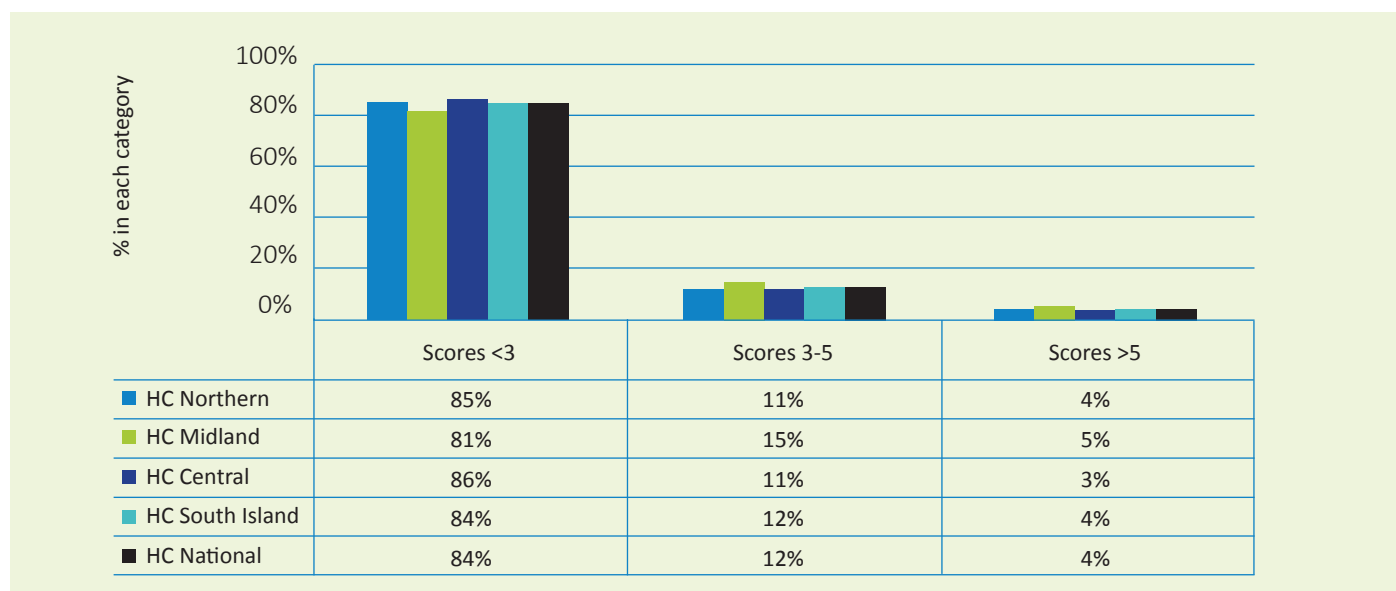
Figure 43: LTCF assessments – DRS scores



Source: National interRAI Software Service New Zealand, data 2014/15.

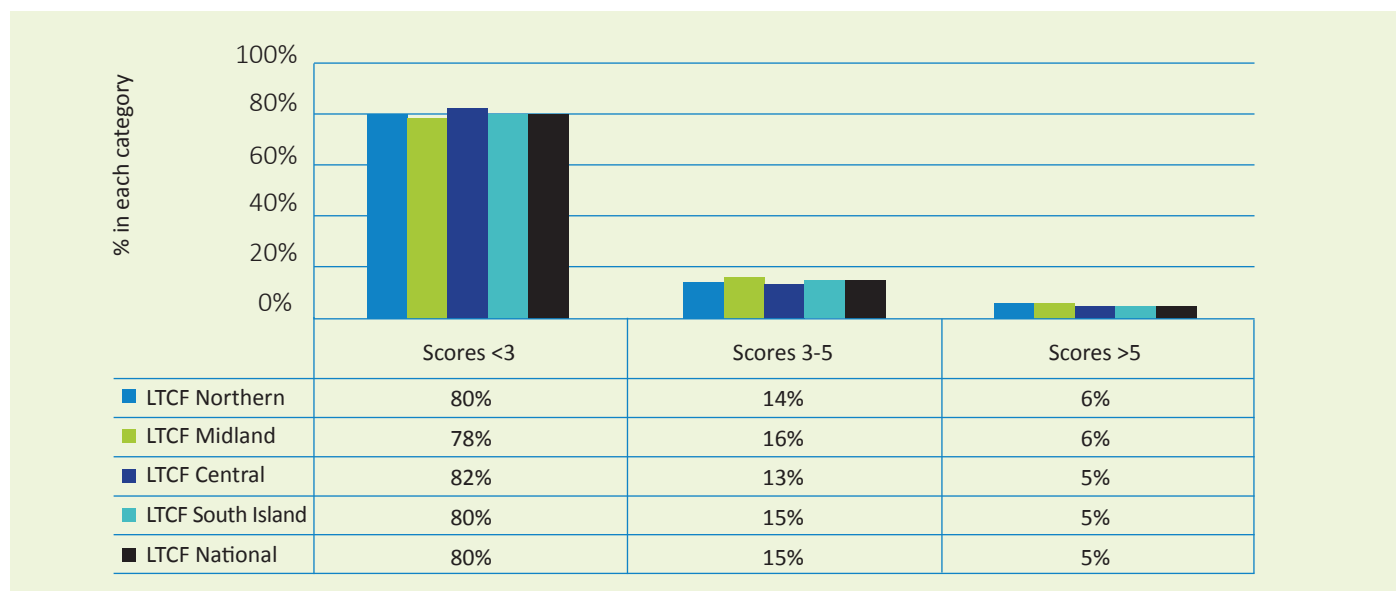
There was little variation between regions or between Home Care and LTCF assessments (see Figures 44 and 45).

Figure 44: Depression rating scale scores for Home Care assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 45: Depression rating scale scores for LTCF assessment by region



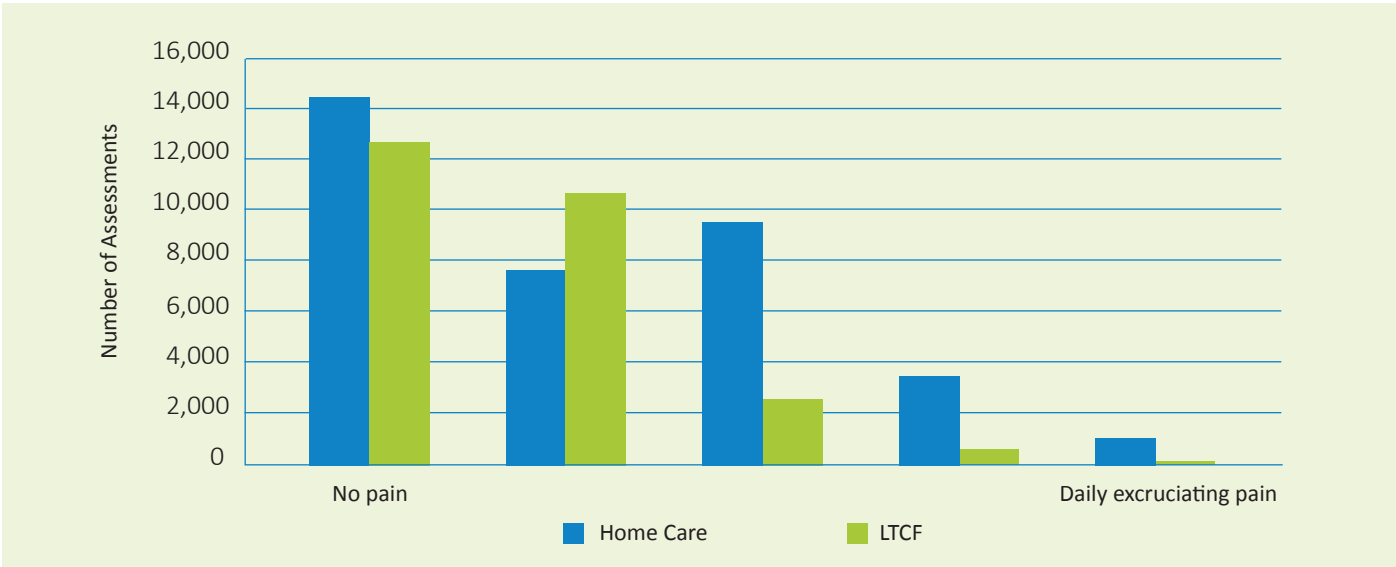
Source: National interRAI Software Service New Zealand, data 2014/15.

Pain Scale

This scale screens for the frequency and severity of pain.

0 - No pain	1 - Less than daily pain	2 - Daily pain but not severe	3 - Daily severe pain	4 - Daily excruciating pain
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Figure 46: Pain scores showing more daily and more severe pain in Home Care assessments



Source: National interRAI Software Service New Zealand, data 2014/15.

Figures 47 and 48 show that a higher proportion of Home Care assessments were for home and community clients with daily severe or excruciating pain compared with LTCF assessments.

Figure 47: Home Care assessments – Pain scores

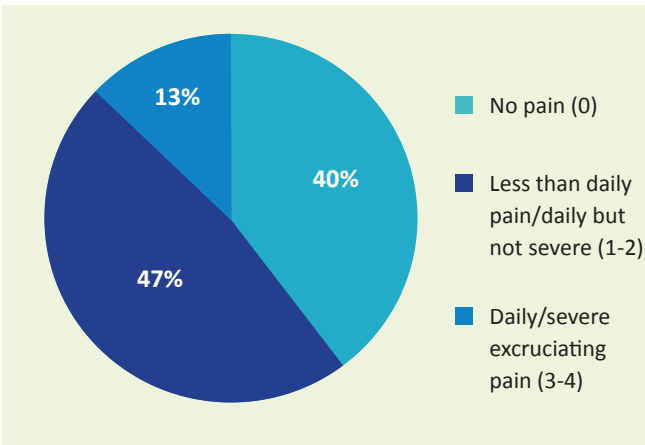
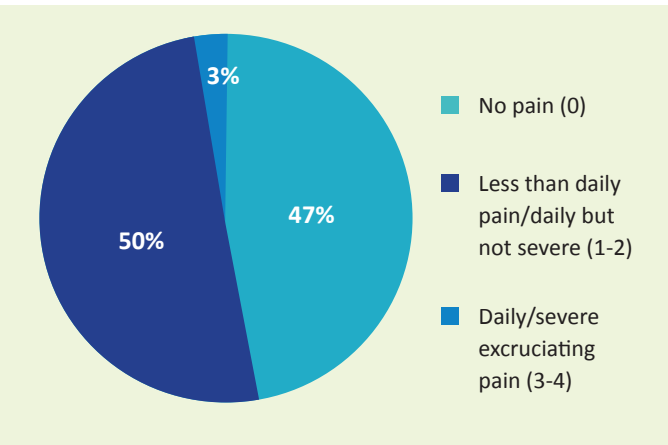


Figure 48: LTCF assessments – Pain scores



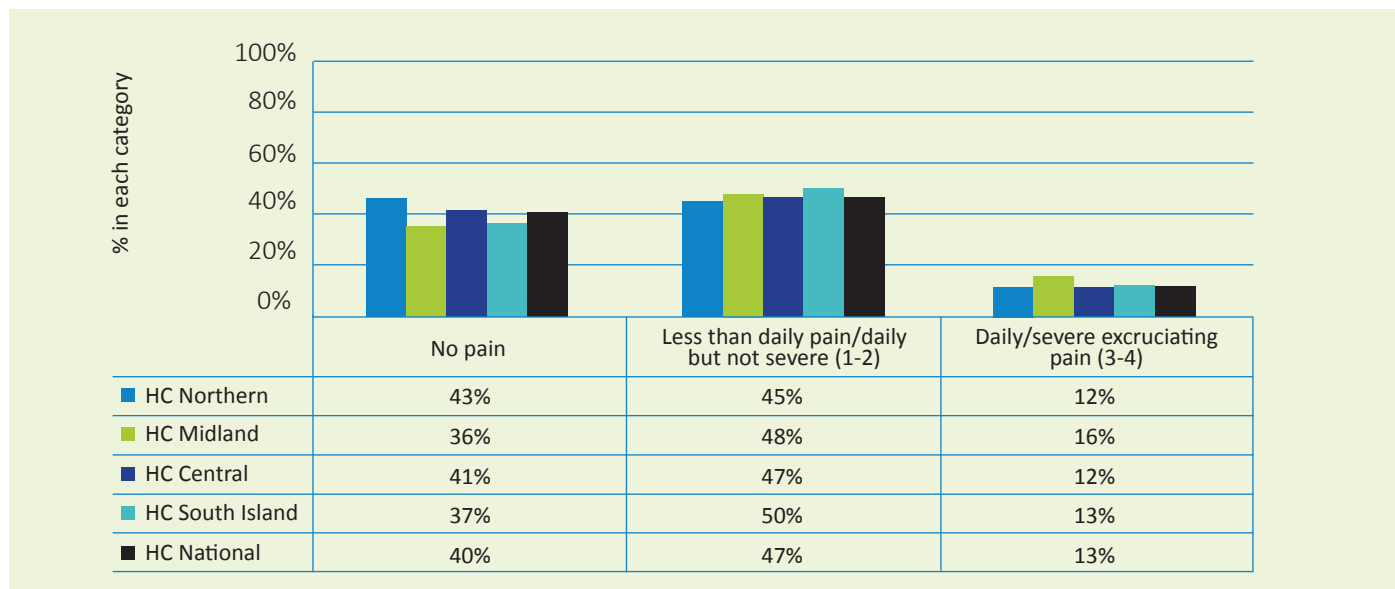
Source: National interRAI Software Service New Zealand, data 2014/15.

Figures 49 and 50 show that 13% of Home Care assessments were for clients experiencing daily severe/excruciating pain compared to 3% of LTCF residents. There was little variation between regions for Home Care and LTCF assessments. For Home Care assessments, in particular, the proportion of assessments for clients with

daily severe/excruciating pain was higher in the Midland region, particularly associated with a higher rate for clients in the Bay of Plenty and Waikato DHBs.

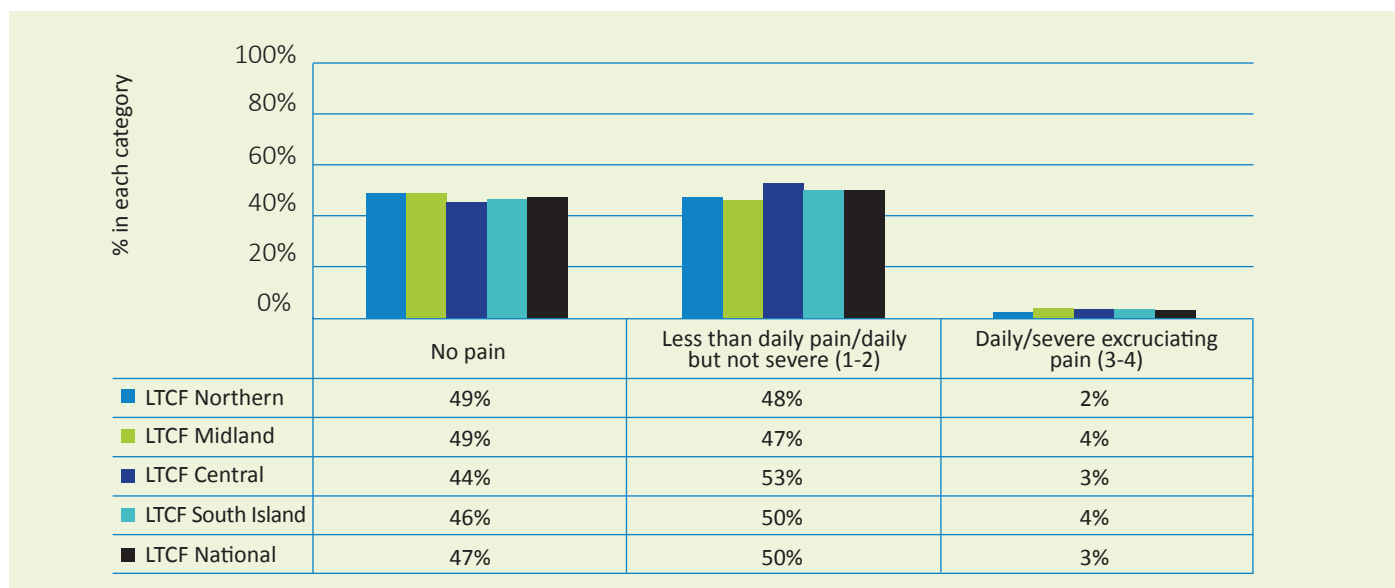
A breakdown of pain scale scores by DHB for Home Care assessments is available for download on TAS' website (<http://interrai.co.nz/>).

Figure 49: Pain scores for Home Care assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 50: Pain scores for LTCF assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

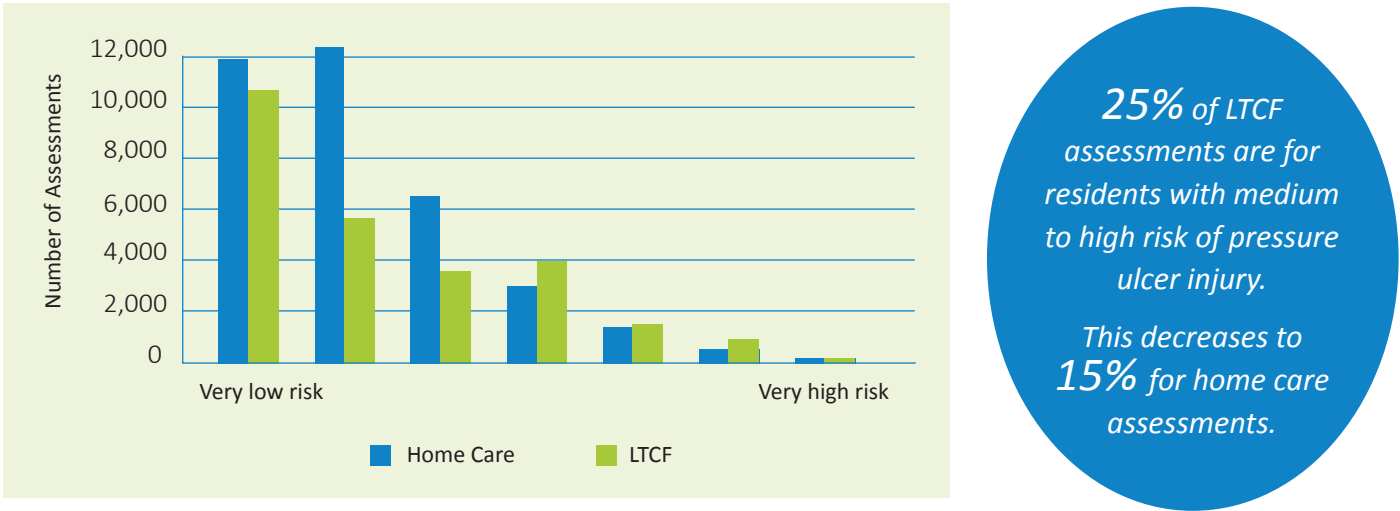
Pressure Ulcer Risk Scale (PURS)

This scale screens for the risk of pressure ulcer injury. It combines information on history of pressure ulcers, impaired bed mobility, impaired walking, bowel incontinence, weight loss and shortness of breath.

0	1	2	3	4	5	6	7	8
Very low risk	Low risk		Moderate risk	High risk		Very high risk		

This scale helps identify individuals at risk of developing pressure ulcers, can trigger the pressure ulcer CAP and enables the targeting of pressure ulcer prevention care to protect the person’s quality of life.

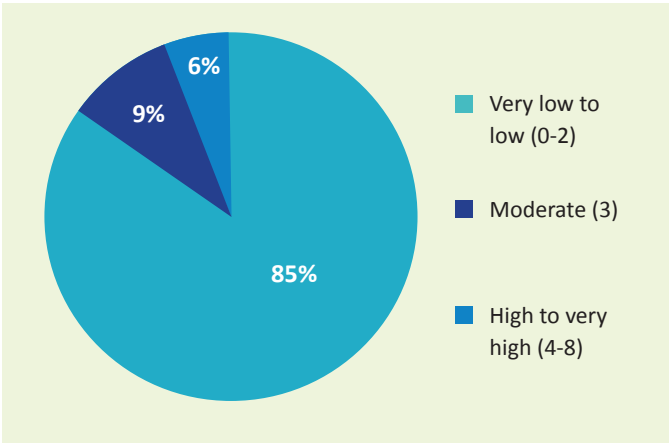
Figure 51: PURS scores showing higher risk of pressure ulcers in LTCF residents



Source: National interRAI Software Service New Zealand, data 2014/15.

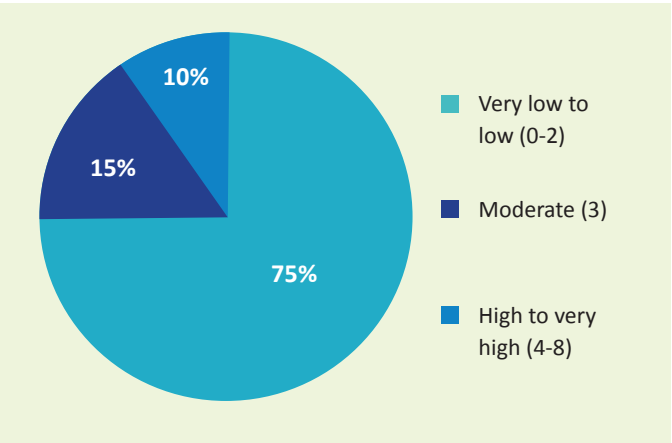
A higher proportion of LTCF assessments were for residents with medium to high/very high risk of pressure ulcer injury, compared with Home Care assessments.

Figure 52: Home Care assessments – PURS scores



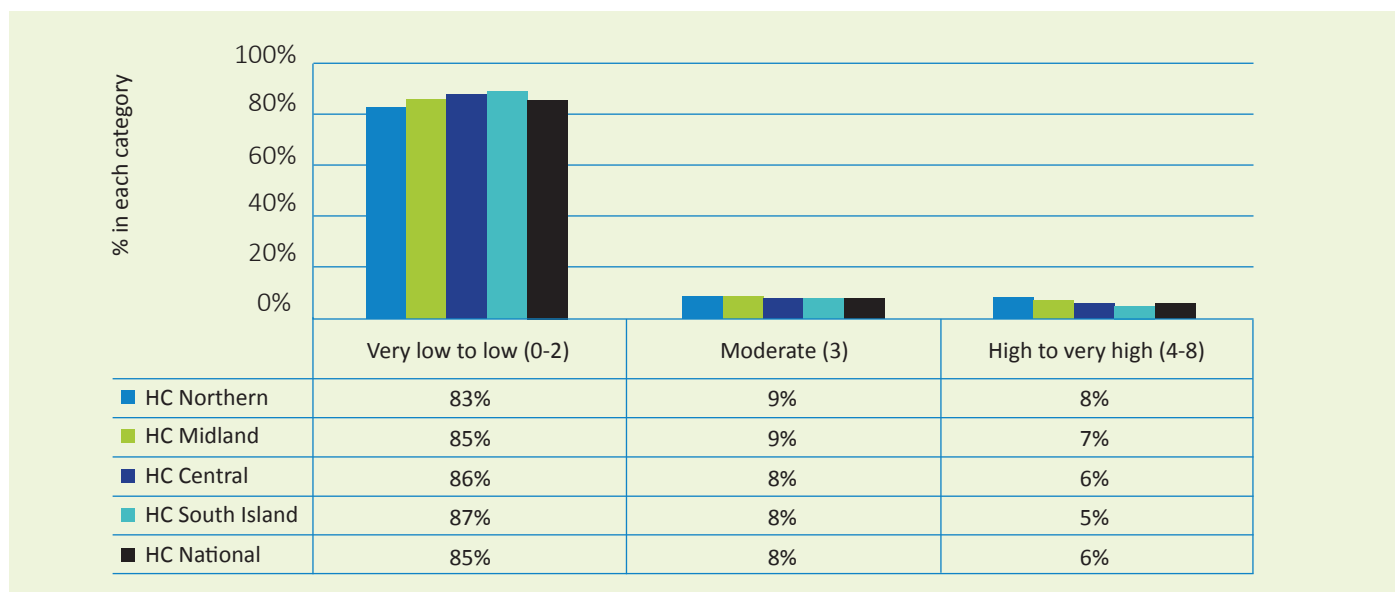
Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 53: LTCF assessments – PURS scores



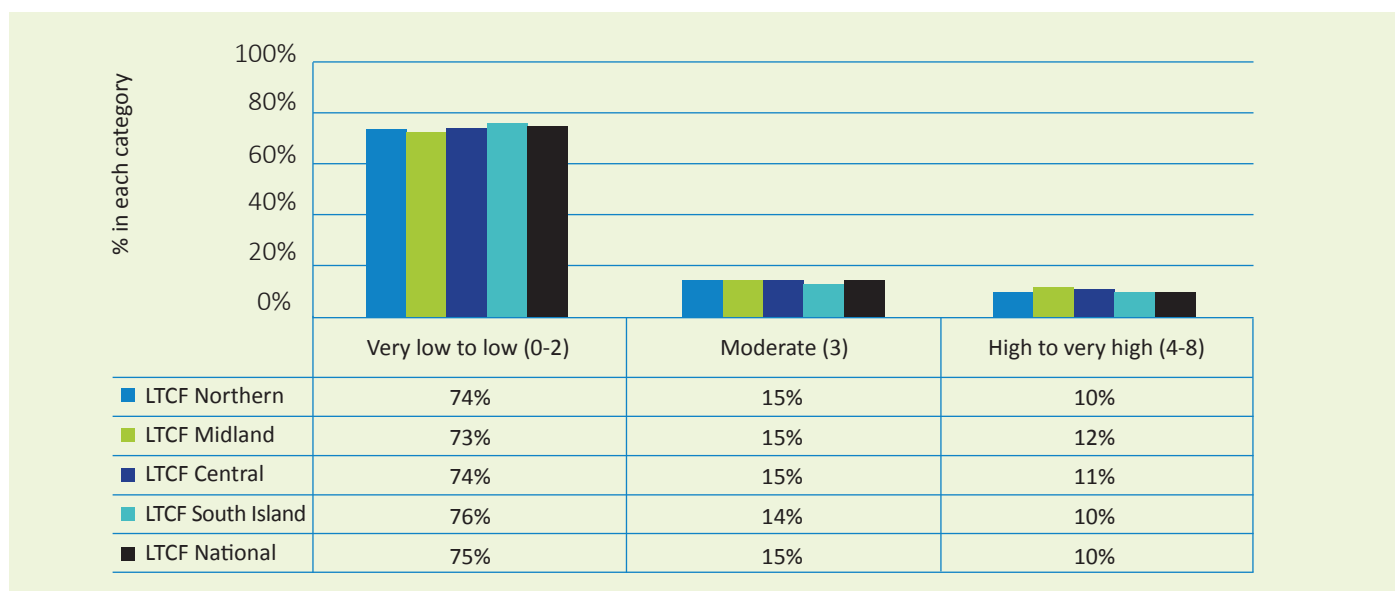
Aged residential care residents were more likely to have a high to very high risk of pressure ulcer injury compared to Home and community clients. There was little variation in PURS scores between regions for Home Care and LTCF assessments (see Figures 54 and 55).

Figure 54: PURS scores for Home Care assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 55: PURS scores for LTCF assessments by region



Source: National interRAI Software Service New Zealand, data 2014/15.



*The use of interRAI assessments aligns with the vision of the updated New Zealand Health Strategy, that New Zealanders...
... “live well, stay well and get well”.*

Clinical Assessment Protocols (CAPs)

CAPs focus on a person's function and quality of life, assessing need, strengths and preferences. Selected items in the assessment can trigger a CAP, indicating a person who may benefit from care and support in that area. There are a total of 27 CAPs; 22 are used in LTCF assessments and 25 in Home Care assessments in New Zealand.

A triggered CAP indicates the possibility of either:

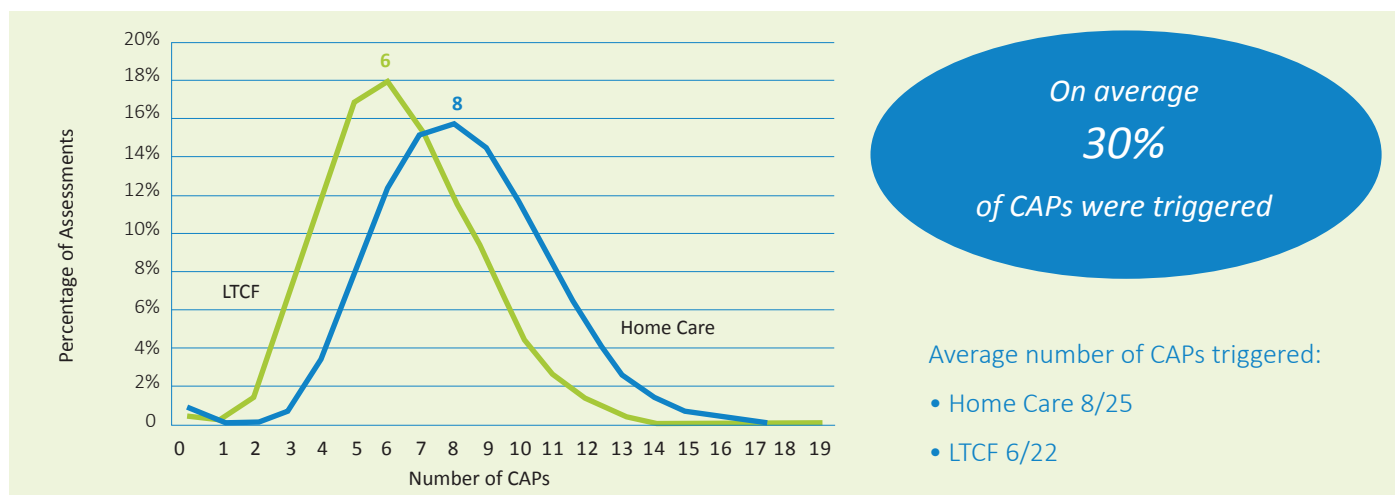
- resolving the problem
- increasing potential for improvement
- reducing the risk of decline.

A triggered CAP coupled with clinical expertise should inform the care plan and where appropriate lead to further referrals. CAP results may also be used to measure

and monitor a person's response to a care intervention or a service, allowing the assessor to reflect on the appropriateness of the care plan in place.

On completing a Home Care or LTCF assessment, most people would have multiple CAPs triggered. On average, home and community clients had 8 CAPs triggered out of a possible total of 25 (33%) and LTCF 6 (out of a possible 22 CAPs, 29%), see Figure 56. So although home and community clients had more CAPs triggered, there were more possible CAPs to be triggered. On an average, about 30% of CAPs were triggered for Home Care and LTCF assessments. About 80% of assessments completed in aged residential care had 8 or fewer CAPs triggered compared to 10 or fewer for Home Care assessments.

Figure 56: Proportion of Home Care and LTCF assessments with CAPs triggered



Source: National interRAI Software Service New Zealand, data 2014/15.

The location of the assessments is a factor in the number of CAPs triggered. A person assessed in hospital is likely to trigger more CAPs than a person assessed at home or in an aged care facility.

Average number of CAPs triggered by location:

- Home Care assessments – home 8 (31%), hospital 9 (35%)
- LTCF assessments – ARC facility 6 (27%), hospital 8 (36%).

The top six most common CAPs triggered were for:

- urinary incontinence
- cognitive loss
- activities of daily living (ADL)
- cardiorespiratory conditions
- mood
- falls.

In addition the Institutional risk CAP was in the top six for Home Care assessments. Table 4 shows the frequency of CAPs triggered by assessment type in 2014/15.

Table 4: How frequently a CAP was triggered in Home Care and LTCF assessments

CAPs triggered	% home care assessments	% LTCF assessments
Prevention*	99%	100%
Urinary incontinence**	94%	79%
Cognitive loss	79%	56%
Activities of daily living (ADL)	44%	66%
Cardiorespiratory	61%	35%
Mood	42%	51%
Falls	41%	34%
Physical activity	44%	20%
Pain	41%	15%
Communication	25%	30%
Institutional risk	55%	NA
Social relationships	21%	26%
Informal support	42%	NA
Undernutrition	16%	25%
Instrumental activities of daily living (IADL)	38%	NA
Bowel conditions	17%	20%
Behaviour	9%	23%
Pressure ulcer	8%	17%
Appropriate medications	15%	7%
Delirium	10%	11%
Activities	NA	15%
Dehydration	7%	6%
Tobacco and alcohol use	7%	4%
Physical restraint	NA	4%
Home environment optimisation	4%	NA
Abusive relationship	3%	NA
Feeding tube	0%	0%

Source: National interRAI Software Service New Zealand, data 2014/15.

* The prevention CAP is excluded from further analysis⁷.

** This CAP includes level 1-3

NA means the CAP is not applicable to the type of interRAI assessment.

⁷ The prevention CAP is not being analysed here as it is almost always triggered in New Zealand as screening and other programmes are not routinely provided in the older ages in this country as anticipated by interRAI which is based on international practice.

Functional CAPs

Activities of daily living (ADL) CAP

The activities of daily living CAP addresses the person's ability to perform basic tasks such as getting dressed, bathing, walking, toileting and eating.

The ADL CAP was triggered more often in LTCF assessments than Home Care (66% compared to 44%). DHB variation is also notable by assessment type as shown in Table 5 below.

Table 5: How frequently the ADL CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	60%	
	Counties Manukau	50%	
	Northland	42%	
	Waitemata	63%	
Northern		55%	64%
Midland	Bay of Plenty	41%	
	Lakes	42%	
	Tairāwhiti	53%	
	Taranaki	35%	
	Waikato	42%	
Midland		41%	69%
Central	Capital and Coast	32%	
	Hawke's Bay	38%	
	Hutt Valley	49%	
	MidCentral	55%	
	Wairarapa	26%	
	Whanganui	47%	
Central		40%	66%
South Island	Canterbury	39%	
	Nelson Marlborough	39%	
	South Canterbury	44%	
	Southern	42%	
	West Coast	43%	
South Island		41%	66%
National average		44%	66%

Source: National interRAI Software Service New Zealand, data 2014/15.

Institutional risk CAP

The institutional risk CAP identifies if the person has an increased risk of entering an aged care facility in the coming months. This CAP is found in Home Care assessments and can indicate issues with physical functioning, memory,

decision making and health. The CAP was triggered for 55% of Home Care assessments completed in 2014/15. The CAP was more likely to be triggered for assessments completed in hospital.

Table 6: How frequently the institutional risk CAP was triggered in Home Care assessments, by DHB and location

Region	DHB	Location of Assessment	
		Home	Hospital
Northern	Auckland	58%	89%
	Counties Manukau	42%	67%
	Northland	47%	84%
	Waitemata	59%	92%
Midland	Bay of Plenty	52%	92%
	Lakes	53%	83%
	Tairāwhiti	63%	94%
	Taranaki	49%	94%
	Waikato	45%	90%
Central	Capital and Coast	40%	94%
	Hawke's Bay	44%	88%
	Hutt Valley	50%	90%
	MidCentral	52%	92%
	Wairarapa	37%	94%
	Whanganui	45%	92%
South Island	Canterbury	43%	86%
	Nelson Marlborough	38%	66%
	South Canterbury	44%	90%
	Southern	49%	89%
	West Coast	46%	84%
National		47%	86%

Source: National interRAI Software Service New Zealand, data 2014/15.

Cognition/Mental Health CAPs

Cognitive Loss CAP

This CAP will be triggered to identify a person who has mild to no cognitive impairment (a score of two or less on the cognitive performance scale – see page 27) and the presence of two or more of clinical risk factors for cognitive decline such as Alzheimer’s disease, dementia, wandering, inability to understand others and so on.

This CAP was triggered more often in Home Care assessments than LTCF (79% compared to 56%), as eight out of ten Home Care assessments were for clients with mild to no impairment, this reduces to six out of ten for LTCF assessments.

Table 7: How frequently the cognitive loss CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	73%	
	Counties Manukau	83%	
	Northland	80%	
	Waitemata	63%	
Northern		75%	56%
Midland	Bay of Plenty	78%	
	Lakes	78%	
	Tairāwhiti	82%	
	Taranaki	82%	
	Waikato	81%	
Midland		80%	53%
Central	Capital and Coast	84%	
	Hawke’s Bay	86%	
	Hutt Valley	76%	
	MidCentral	70%	
	Wairarapa	84%	
	Whanganui	77%	
Central		81%	56%
South Island	Canterbury	83%	
	Nelson Marlborough	83%	
	South Canterbury	79%	
	Southern	82%	
	West Coast	77%	
South Island		82%	59%
National average		79%	56%

Source: National InterRAI Software Service New Zealand, data 2014/15.

Mood CAP

This CAP focusses on identifying depression and a depressed mood state such as sadness and anxiety. Depression is a common problem in the community and aged care setting. The mood CAP is triggered more often in LTCF than

Home Care assessments. When the CAP is triggered, about six out of ten were for low risk in both Home Care and LTCF assessments.

Table 8: How frequently the mood CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	35%	
	Counties Manukau	32%	
	Northland	46%	
	Waitemata	55%	
Northern		41%	49%
Midland	Bay of Plenty	47%	
	Lakes	56%	
	Tairāwhiti	44%	
	Taranaki	46%	
	Waikato	45%	
Midland		47%	52%
Central	Capital and Coast	39%	
	Hawke's Bay	37%	
	Hutt Valley	42%	
	MidCentral	44%	
	Wairarapa	36%	
	Whanganui	36%	
Central		39%	51%
South Island	Canterbury	38%	
	Nelson Marlborough	38%	
	South Canterbury	43%	
	Southern	48%	
	West Coast	26%	
South Island		41%	51%
National average		42%	51%

Source: National interRAI Software Service New Zealand, data 2014/15.

Behaviour CAP

The behaviour CAP focusses on removing daily troubling behaviours such as wandering, being verbally or physically abusive, inappropriate or disruptive social behaviour and resisting care. There is a strong link with declining cognitive ability or mental health issues so underlying causes need to be understood and addressed.

The rate of Alzheimer's disease and other dementia in ARC facilities tends to be higher than in home care so it is to be expected that the behaviour CAP is triggered more often in LTCF than Home Care assessments (23% compared to 9%).

Table 9: How frequently the behaviour CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	10%	
	Counties Manukau	8%	
	Northland	11%	
	Waitemata	18%	
Northern		12%	24%
Midland	Bay of Plenty	7%	
	Lakes	13%	
	Tairāwhiti	12%	
	Taranaki	9%	
	Waikato	8%	
Midland		8%	25%
Central	Capital and Coast	7%	
	Hawke's Bay	6%	
	Hutt Valley	11%	
	MidCentral	8%	
	Wairarapa	2%	
	Whanganui	9%	
Central		7%	22%
South Island	Canterbury	8%	
	Nelson Marlborough	7%	
	South Canterbury	9%	
	Southern	8%	
	West Coast	6%	
South Island		8%	23%
National average		9%	23%

Source: National interRAI Software Service New Zealand, data 2014/15.

Clinical issues

Falls CAP

The Falls CAP is triggered if the person has a history of falling, as they are at a higher risk of falling again. Preventing falls protects the person from injury such as hip fracture which can reduce mobility, physical functioning and independence.

The CAP was triggered more often in Home Care assessments than LTCF (42% compared to 34%). International data shows a higher risk of falling in the home care environment where clients are more mobile and exposed to more risk than in ARC facilities⁸.

Table 10: How frequently the falls CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	44%	
	Counties Manukau	33%	
	Northland	45%	
	Waitemata	50%	
Northern		42%	32%
Midland	Bay of Plenty	43%	
	Lakes	43%	
	Tairāwhiti	45%	
	Taranaki	41%	
	Waikato	44%	
Midland		43%	35%
Central	Capital and Coast	38%	
	Hawke's Bay	38%	
	Hutt Valley	40%	
	MidCentral	50%	
	Wairarapa	38%	
	Whanganui	45%	
Central		41%	34%
South Island	Canterbury	40%	
	Nelson Marlborough	37%	
	South Canterbury	38%	
	Southern	45%	
	West Coast	33%	
South Island		41%	36%
National average		42%	34%

Source: National interRAI Software Service New Zealand, data 2014/15.

⁸ A Good Life in Old Age? Monitoring and Improving Quality in Long-term Care © OECD/European Commission 2013, p 113 and 137-139.

Pain CAP

The rates and severity of pain were recorded as higher in Home Care assessments compared to LTCF (41% compared to 15%).

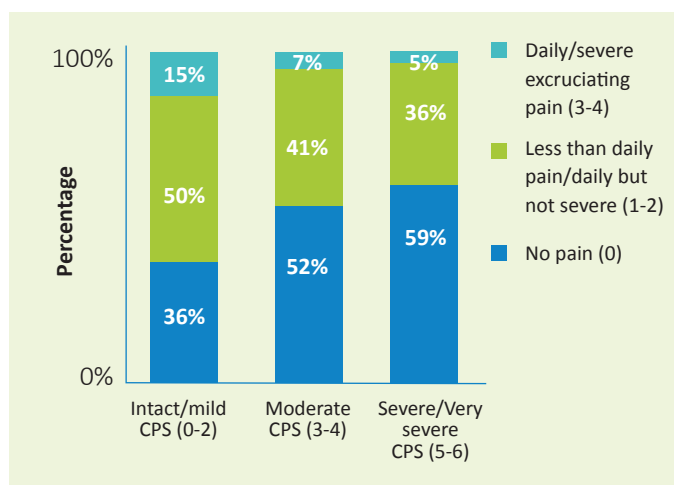
Table 11: How frequently the Pain CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	31%	
	Counties Manukau	37%	
	Northland	45%	
	Waitemata	38%	
Northern		37%	14%
Midland	Bay of Plenty	54%	
	Lakes	43%	
	Tairāwhiti	40%	
	Taranaki	45%	
	Waikato	44%	
Midland		47%	16%
Central	Capital and Coast	48%	
	Hawke's Bay	39%	
	Hutt Valley	29%	
	MidCentral	33%	
	Wairarapa	44%	
	Whanganui	41%	
Central		40%	16%
South Island	Canterbury	36%	
	Nelson Marlborough	46%	
	South Canterbury	37%	
	Southern	45%	
	West Coast	35%	
South Island		41%	15%
National average		41%	15%

Source: National interRAI Software Service New Zealand, data 2014/15.

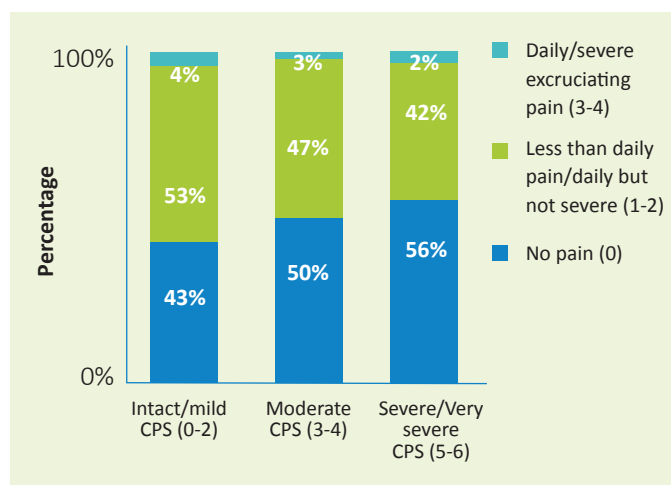
Some of this difference is associated with the higher level of cognitive impairment in residents assessed with the LTCF tool.

Figure 57: Home Care assessments – CPS and pain scores



Source: National interRAI Software Service New Zealand, data 2014/15.

Figure 58: LTCF assessments – CPS and pain scores



Not all of the difference is due to CPS scores. Other factors to consider include increasing health instability (see CHES scores), falls and adequacy of pain control in home and community clients.

Pressure Ulcer CAP

The pressure ulcer CAP was triggered more often in LTCF assessments than in Home Care assessments (17% compared to 9%), with the biggest difference being a higher risk of developing an ulcer for ARC residents. The risk is determined

by dependency and inactivity around bed mobility or transfer, plus another risk factor such as a history of pressure ulcers, indwelling catheter, stasis ulcer or wound.

Table 12: How frequently the pressure ulcer CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	11%	
	Counties Manukau	8%	
	Northland	10%	
	Waitemata	14%	
Northern		11%	17%
Midland	Bay of Plenty	8%	
	Lakes	7%	
	Tairāwhiti	13%	
	Taranaki	7%	
	Waikato	8%	
Midland		8%	17%
Central	Capital and Coast	6%	
	Hawke's Bay	9%	
	Hutt Valley	9%	
	MidCentral	11%	
	Wairarapa	5%	
	Whanganui	9%	
Central		8%	19%
South Island	Canterbury	7%	
	Nelson Marlborough	6%	
	South Canterbury	9%	
	Southern	9%	
	West Coast	6%	
South Island		8%	16%
National average		9%	17%

Source: National interRAI Software Service New Zealand, data 2014/15.

Cardiorespiratory conditions CAP

When this CAP triggers it indicates the need to assess and manage the individual for possible cardiovascular or respiratory problems. This CAP is more likely to trigger in Home Care assessments than LTCF (61% compared to 35%).

Table 13: How frequently the cardiorespiratory CAP was triggered by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	57%	
	Counties Manukau	56%	
	Northland	58%	
	Waitemata	59%	
Northern		58%	29%
Midland	Bay of Plenty	68%	
	Lakes	67%	
	Tairāwhiti	72%	
	Taranaki	69%	
	Waikato	61%	
Midland		66%	37%
Central	Capital and Coast	62%	
	Hawke's Bay	57%	
	Hutt Valley	61%	
	MidCentral	56%	
	Wairarapa	65%	
	Whanganui	71%	
Central		61%	36%
South Island	Canterbury	59%	
	Nelson Marlborough	63%	
	South Canterbury	67%	
	Southern	64%	
	West Coast	52%	
South Island		62%	37%
National average		61%	35%

Source: National interRAI Software Service New Zealand, data 2014/15.

Urinary incontinence CAP

Home and community clients were more likely to be continent (at level 1) at the time of assessment (56%) compared with LTCF residents (34%). This CAP triggers (at level 2 and 3) where there is the opportunity to either improve bladder function or prevent further decline. It does not trigger (level 0) for those with severely impaired

cognitive skills as this group do not have the required decision making ability to make change possible (21% LTCF assessments compared to 6% in Home Care).

The CAP is triggered (at level 2 and 3) more in LTCF assessments than Home Care (LTCF 45% compared to 37%).

Table 14: How frequently the urinary incontinence CAP was triggered (at level 2 and 3) by assessment type, DHB and region

Region	DHB	% home care assessments	% LTCF assessments
Northern	Auckland	42%	
	Counties Manukau	36%	
	Northland	40%	
	Waitemata	40%	
Northern		39%	43%
Midland	Bay of Plenty	38%	
	Lakes	41%	
	Tairāwhiti	39%	
	Taranaki	41%	
	Waikato	37%	
Midland		38%	45%
Central	Capital and Coast	34%	
	Hawke's Bay	34%	
	Hutt Valley	35%	
	MidCentral	42%	
	Wairarapa	36%	
	Whanganui	41%	
Central		36%	44%
South Island	Canterbury	37%	
	Nelson Marlborough	33%	
	South Canterbury	38%	
	Southern	39%	
	West Coast	32%	
South Island		37%	46%
National average		37%	45%

Source: National interRAI Software Service New Zealand, data 2014/15.



The interRAI process places the person at the centre of the assessment and includes their needs and the views of family/whānau and support people, so services can be delivered in a responsive way.

appendices

Appendix 1: Assessment provision calculations

These calculations use data from the National interRAI Software Service New Zealand for the financial year 2014/15 and the census usually resident population count 2013 from Statistics New Zealand. The interRAI assessment data is a count of the number of Contact assessments and Home Care assessments by DHB.

Rate of assessments per 100,000 population

To calculate this rate, the number of completed assessments in a DHB (either Contact assessment or Home Care) are divided by that DHB's population and then multiplied by one hundred thousand. This is a crude rate which means it has not been adjusted for differences in a DHB's demographics, such as differences in age, gender or ethnicity proportions.

$$\text{Rate of assessments per 100,000 population} = \frac{\text{Number of completed assessments for the DHB}}{\text{DHB population}} \times 100,000$$

Expected number

This number is calculated to allow comparisons to be made between DHBs. It describes the question, 'if a DHB had the same rate as the national rate for their population by each five year age group, gender and ethnicity group, then how many assessments would you expect the DHB to have completed?' This expected number can then be compared to the actual number of assessments the DHB completed.

A national rate of assessments is calculated for each age group, gender and ethnicity group. Then this rate is applied to each corresponding age group, gender and ethnicity group in a DHB to derive an expected number of assessments for that group in that DHB. The expected number of assessments for each age group is then summed to derive a total number of expected assessments for a DHB.

$$\text{Expected number} = \text{SUM (National rate of assessments for each 5 year age group, gender and ethnicity groupings)} \times \text{Equivalent DHB population}$$

$$\text{Difference in number of assessments} = \text{Expected number} - \text{Actual number}$$

$$\text{Percentage difference} = \frac{\text{Actual number} - \text{Expected number}}{\text{Expected number}} \times 100$$

Appendix 2: Demographics

Table 15: Home Care assessments 2014/15

Characteristics	Northern	Midland	Central	South Island	Unknown	National
Number	9,195	8,069	9,467	9,822	334	36,887
Female	60%	61%	61%	60%	65%	61%
Age group						
<65	6%	3%	6%	4%	2%	5%
65-74	15%	17%	15%	15%	13%	16%
75-84	37%	40%	39%	39%	37%	38%
85+	42%	40%	40%	43%	48%	41%
Married						
Male	56%	55%	54%	56%	34%	55%
Female	27%	28%	26%	29%	25%	27%
Total	39%	38%	37%	40%	28%	38%
Ethnicity						
NZ European/Other	77%	87%	89%	97%	92%	88%
Māori	7%	11%	6%	2%	4%	7%
Pacific	10%	1%	2%	1%	2%	3%
Asian	6%	1%	3%	1%	2%	3%
Diagnosis						
Alzheimer's	11%	7%	6%	9%	12%	9%
Other dementia	20%	16%	16%	15%	22%	17%
Cancer	14%	16%	18%	16%	16%	16%
COPD	14%	17%	16%	16%	13%	16%
Diabetes	24%	21%	21%	20%	19%	21%
Heart failure	15%	21%	16%	16%	17%	17%
Stroke	19%	17%	18%	18%	19%	18%

Source: National interRAI Software Service New Zealand, data 2014/15. Note that ethnicity is grouped as prioritised ethnicity. In a given assessment, a client/resident can have more than one disease diagnosis.

Table 16: LTCF assessments 2014/15

Characteristics	Northern	Midland	Central	South Island	Unknown	National
Number	7,260	6,214	5,452	8,133	110	27,169
Female	67%	66%	65%	67%	70%	67%
Age group						
<65	4%	3%	3%	3%	1%	3%
65-74	12%	10%	10%	10%	12%	11%
75-84	30%	32%	32%	33%	35%	32%
85+	54%	55%	54%	54%	52%	54%
Married						
Male	38%	41%	39%	39%	39%	39%
Female	14%	16%	16%	17%	14%	16%
Total	22%	24%	24%	24%	22%	23%
Ethnicity						
NZ European/Other	86%	92%	93%	98%	89%	92%
Māori	4%	7%	4%	1%	8%	4%
Pacific	5%	0%	1%	0%	0%	2%
Asian	5%	0%	2%	1%	3%	2%
Diagnosis						
Alzheimer's	16%	16%	10%	15%	10%	15%
Other dementia	39%	37%	38%	35%	42%	37%
Cancer	12%	12%	13%	12%	15%	12%
COPD	11%	15%	13%	13%	16%	13%
Diabetes	19%	20%	19%	20%	21%	19%
Heart failure	14%	20%	18%	17%	15%	17%
Stroke	22%	20%	24%	22%	21%	22%

Source: National interRAI Software Service New Zealand, data 2014/15. Note that ethnicity is grouped as prioritised ethnicity. In a given assessment, a client/resident can have more than one disease diagnosis.

Glossary of Terms

ADL	Activities of daily living
ARC	Aged Residential Care
Assessor	A person who uses the interRAI tools to undertake care needs assessments
CAPs	Clinical Assessment Protocols
CHESS	Changes in Health, End-Stage Disease, Signs, and Symptoms
Contact assessment (CA)	An interRAI Contact assessment is a brief standardised clinical assessment that provides information to support the home care assessment intake and emergency department referral. It is not a substitute for a comprehensive interRAI assessment. The Contact assessment can be done face to face or over the phone and takes about 30 minutes to complete.
COPD	Chronic obstructive pulmonary disease
CPS	Cognitive Performance Scale
DHB	District Health Board
DRS	Depression Rating Scale
Home Care (HC) assessment	An interRAI Home Care assessment is a comprehensive clinical assessment designed for people with more complex needs who are able to live at home.
IADL	Instrumental activities of daily living
interRAI	International Resident Assessment Instrument
Long Term Care Facilities (LTCF) assessment	An LTCF assessment is a comprehensive clinical assessment designed for people in residential care to inform their care plans.
MAPLe	Method of Assigning Priority Level
NZ	New Zealand
PURS	Pressure Ulcer Risk Scale

Outcome Scale Definitions

Activities of Daily Living (ADL) Self-Performance Hierarchy Scale

The ADL Self-Performance Hierarchy Scale aims to describe the disablement process rather than to simply provide a summary of functional impairment. The scale shows the level of difficulty of the client/resident in relation to personal hygiene, locomotion, toilet use and eating.

Range of Values:
0-6

Aggressive Behaviour Scale

The Aggressive Behaviour Scale (ABS) is a measure of aggressive behaviour based on the occurrence of verbal abuse, physical abuse, socially disruptive behaviour and resistance of care. Scale scores range from 0-12 with higher scores indicative of greater frequency and diversity of aggressive behaviour.

A score of 1 to 4 on the ABS indicates mild to moderate aggressive behaviour, whereas scores of 5 or more represents the presence of more severe aggression. This scale has been validated against the Cohen Mansfield Agitation Inventory.

Range of Values:
0-12

Body Mass Index (BMI)

The Body Mass Index (BMI) is a measurement which represents the ratio of a person's height to weight. In the interRAI assessment suite it is recorded to monitor nutrition, hydration status and weight stability over time. The Under nutrition CAP triggers (3 levels) are based on the BMI. It is defined as the weight in kilograms divided by the square of the height in metres (kg/m²).

Range of Values:
Usually 15-40

CHESS (Changes in Health, End-Stage Disease, Signs, and Symptoms Scale)

The CHESS scale is designed to identify individuals at risk of serious decline and their level of medical instability. It has a 6 point scale from 0 (not at all unstable) to 5 (highly unstable) with higher levels predictive of adverse outcomes such as mortality, hospitalisation, pain, caregiver stress, and poor self-rated health.

Range of Values:
0-5

Cognitive Performance Scale (CPS)

The Cognitive Performance Scale (CPS) combines information on memory impairment, level of consciousness, and executive function, with scores ranging from 0 (intact) to 6 (very severe impairment). The CPS has been shown to be highly correlated with the MMSE in a number of validation studies.

Range of Values:
0-6

Communication

The higher the score on the communication scale, the poorer the communication. This scale is derived from expressive and receptive communication.

Range of Values:
0-8

<p>Depression Rating Scale (DRS)</p> <p>The Depression Rating Scale (DRS) is used as a clinical screen for depression. The higher the score the stronger the clinical indicator. Validation studies were based on a comparison of the DRS with the Hamilton Depression Rating Scale and the Cornell Scale for Depression.</p>	<p>Range of Values: 0-14</p>
<p>Instrumental Activities of Daily Living (IADL) Capacity</p> <p>The Instrumental ADL Scale is based on a sum of eight items: meal preparation, ordinary housework, managing finances, medications, phone use, stairs, shopping, and transportation. Individual items are summed to produce a scale that ranges from 0 to 48, with higher scores indicating a greater difficulty for a person to carry out an activity.</p>	<p>Range of Values: 0-48</p>
<p>Instrumental Activities of Daily Living (IADL) Performance</p> <p>The Instrumental ADL Scale is based on a sum of eight items: meal preparation, ordinary housework, managing finances, medications, phone use, stairs, shopping, and transportation. Individual items are summed to produce a scale that ranges from 0 to 48, with higher scores indicating greater dependence on others for instrumental activities for daily living.</p>	<p>Range of Values: 0-48</p>
<p>Method of Assigning Priority Level (MAPLe)</p> <p>The MAPLe score (1-5) is a priority indicator. Higher scores are based on the presence of ADL impairment, cognitive impairment, wandering, and behaviour problems. The MAPLe is also a predictor of carer stress. The higher the score the higher the priority for services to be commenced or increased in the community, to prevent hospitalisation or admission into residential care.</p>	<p>Range of Values: 1-5</p>
<p>Pain</p> <p>The Pain Scale attempts to define levels of pain. The scale is highly predictive of pain on the Visual Analogue Scale (Fries et al 2001). Pain that is adequately managed does not feature in the scale.</p>	<p>Range of Values: 0-4</p>
<p>Pressure Ulcer Risk Scale (PURS)</p> <p>The PURS scores range from 0 (lowest risk) to 8 (highest risk) for development of pressure ulcers. This scale considers such things as any history of pressure ulcers, impaired bed mobility, impaired walking, bowel incontinence, weight loss and dyspnoea. This scale complements the Pressure Area CAP and should always be reviewed when that CAP is triggered.</p>	<p>Range of Values: 0-8</p>

Clinical Assessment Protocols (CAPs) Definitions

Physical Activities Promotion To increase levels of exercise and physical activity - person does <2 hrs activity/day; moves and goes up/down stairs without help; increased independence possible.	Range of Values: 0-1
Instrumental Activities of Daily Living To improve IADL self-performance and capacity – decline in IADL function; increased independence possible	Range of Values: 0-1
Activities of Daily Living To improve ADL performance or prevent avoidable functional decline – receive some ADL help; potential to improve self performance	Range of Values: 0-2
Home Environment Optimisation To improve safety of environment – Problems with lighting, flooring, bathroom, toilet, kitchen, heating, disrepair, squalor and indicators of frailty	Range of Values: 0-1
Institutional Risk To avoid premature admission to LTCF - Identifies persons with impaired functioning who are at high risk of institutional placement	Range of Values: 0-1
Physical Restraints This CAP identifies persons who are physically restrained.	Range of Values: 0-2
Cognitive Loss To maintain independence, prevent and monitor cognitive decline - Identifies persons with CPS of 0,1,2 and associated clinical risk factors	Range of Values: 0-1
Delirium To identify persons with active symptoms of delirium—acute change in mental status and behaviour appears different from usual functioning	Range of Values: 0-1
Communication To improve communication ability and to prevent avoidable communication decline – Moderate-severe communication issues in understanding/expression	Range of Values: 0-2
Mood To identify, treat, monitor mood issues - negative statements, persistent anger, expressions of unrealistic fears, repetitive health complaints, repetitive anxious complaints, sad, crying, tearfulness. DRS score medium to high risk.	Range of Values: 0-2
Behaviour To prevent, manage behavioural problems - Wandering, verbally abusing others, physically abusing others, socially inappropriate, disruptive behaviour, inappropriate disrobing or public sexual behaviour, resisting care	Range of Values: 0-2
Abusive Relationship To identify potential abuse/neglect situations - fearful of family member, caregiver, close acquaintance, unusually poor hygiene, unkempt appearance, neglected, abused, mistreated—plus stressors	Range of Values: 0-2
Activities This CAP identifies persons with some cognitive reserve who have either withdrawn from activities or who are uneasy entering into activities and social relationships.	Range of Values: 0-1

Informal Support To identify where a person needs help - not independent with meals/housework/shopping/transport and alone for long periods or lives alone and no primary informal helper present	Range of Values: 0-1
Social Relationship To identify reduced social relationships and facilitate engagement - feels lonely, cognition adequate able to understand others	Range of Values: 0-1
Falls To identify and change any underlying risk factors for falls - report of multiple falls/report of a single fall	Range of Values: 0-2
Pain To identify and treat underlying reasons for pain - High risk trigger - severe, horrible or excruciating pain; medium risk trigger - daily mild/moderate pain	Range of Values: 0-2
Pressure Ulcer To prevent, identify and treat pressure ulcers – Has or is at risk of developing a pressure ulcer	Range of Values: 0-3
Cardiorespiratory Conditions To assess and manage cardiorespiratory conditions - Symptoms of chest pain, shortness of breath, irregular pulse, dizziness and test results—BP, respiratory rate, heart rate ,oxygen saturation	Range of Values: 0-1
Under nutrition To address and manage under nutrition - based on a person's BMI score	Range of Values: 0-2
Dehydration To identify and treat underlying causes of dehydration – insufficient fluid intake; and diarrhoea, vomiting, delirium, fever, dizziness, syncope, constipation, weight loss	Range of Values: 0-2
Feeding Tube To identify persons with a feeding tube and manage – has feeding tube and some residual cognitive abilities/absence of cognitive abilities	Range of Values: 0-2
Prevention To prevent illness and disability- BP, Colonoscopy, dental exam, hearing exam, flu vax, mammogram, pneumovax	Range of Values: 0-2
Appropriate Medications To identify and promote appropriate medication management - 9+ medications and 2 of the following - chest pain, dizziness, oedema, shortness of breath, poor health, recent deterioration	Range of Values: 0-1
Tobacco and Alcohol Use To identify strategies to help people cease smoking/ cut back on excessive drinking – daily smoker; alcohol intake, pressure to cut back	Range of Values: 0-1
Urinary Incontinence To facilitate improvement and prevent decline in bladder function - reoccurring episodes of incontinence, minimal cognitive abilities, locomotion impaired; possibility of improvement	Range of Values: 0-3
Bowel Conditions To facilitate improvement and prevent decline in bowel function – risk of decline and improvement and bowel continence	Range of Values: 0-2



This first report is a major step forward in the journey of interRAI in New Zealand. It makes it possible, for the first time, for a large variety of stakeholders in the aged care sector to freely and publicly access interRAI data and information at an aggregated level from a national perspective.

