interRAI New Zealand

Health New Zealand Te Whatu Ora

interRAI Data Quality Report

July 2024 to June 2025

Contents

Executive summary

This report updates quality checks to validate interRAI data for the 2024/2025 government year. In total 140,042 interRAI assessments were completed in the year, with 92% of clients consenting to share their data for planning and research. In aged residential care the frequency of reassessment remained strong with nearly 95% of residents receiving a subsequent LTCF assessment within 230 days. In the community, the time between assessments is far less consistent with a median of 547 days between.

The August 2024 upgrade introduced some new outcome measures and a change to single page application (SPA) assessments. This did result in a temporarily disruption to data quality, as prior values were no longer auto-filled, leading assessors to re-enter information from scratch. We saw an increase in Null values across 119 items in the first quarter, for the most part this had returned to baseline levels by quarter 3. These disruptions flowed into the LTCF incidence Quality Indicators, with both negative and positive measures inflating in the first three quarters post-upgrade before stabilising once most residents had at least two SPA assessments.

Despite these temporary effects, long-term indicators of population and clinical characteristics as well as our convergent validity testing remained consistent, suggesting that the upgrade's impacts were transitional and data integrity has since normalised.

In conclusion the disruption in data quality caused by the upgrade will significantly affect analysis that is sensitive to null values or in change specific to the assessed person, notably the incidence Quality Indicators. Users should be cautious when interpreting results from the immediate post-upgrade period, but overall, the data remains reliable and suitable for planning, monitoring, and research purposes.

By Robinson Spencer - Senior Data Analyst (InterRAI)

Glossary

ADLH	Activities of Daily Living Hierarchy
BMI	Body Mass Index
CA	Contact Assessment
CAPs	Clinical Assessment Protocols
CHESS	Change in Health, End-stage Disease, Signs and Symptoms
CPS	Cognitive Performance Scale
DHB	District Health Board DRS
HC	Home Care assessment
IADL	Instrumental Activities of Daily Living LTCF
LTCF	Long term care facility assessment
MAPLe	Method for Assigning Priority Levels
NHI	National Health Index
RUGs	Resource Utilisation Groups

interRAI data quality overview

Data completeness

In the 2024-25 government year there was a total of 140,042 assessments completed, of which 129,260 (92%) consented to share their assessment information for planning and research purposes. A breakdown of the consent rate by assessment type can be found in Table 1 bellow.

Table 1: Consent Rate by Assessment Type

Assessment Type	Total Assessments	Consenting Assessments	Consent Rate
AC	9997	8319	83%
CA	13056	12671	97%
CHA	90	77	86%
HC	37325	35359	95%
LTCF	78137	71470	91%
PC	1437	1364	95%

It is also important to consider how frequently individuals are being reassessed. For CA and HC assessments completed in the 2024-25 government year: 23,190 were first time assessments. For those that had at least one prior assessment, the median time since the last assessment was 547 days. For LTCF assessments completed in the year, 13,506 were the resident's first assessment in ARC, and the median time since the last assessment was 177 days for those with at least 2 LTCF assessments.

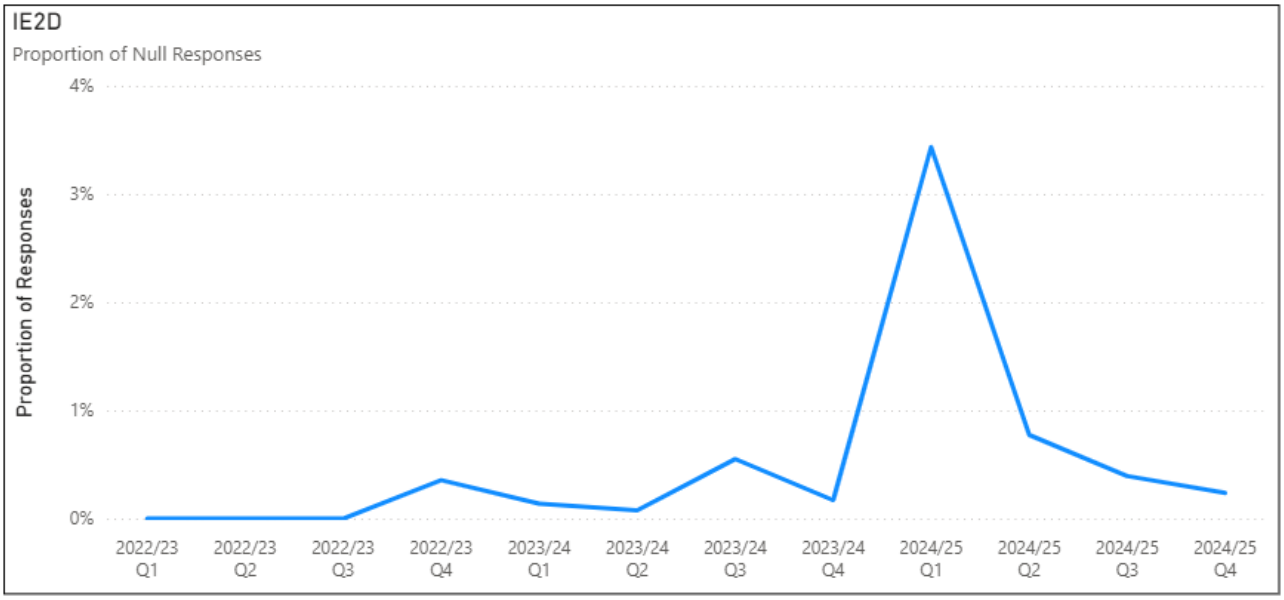
We have compliance reporting set up to monitor the percentage of residents in aged residential care by facility and by District who have a subsequent interRAI long term care facility (LTCF) assessment completed within 230 days of the previous assessment, in 2024-25 this amounted to 94.9%.

August 2024 upgrade and change to Single Page Application (SPA) assessments

In August 2024 interRAI upgraded with new assessment versions and a switch to single page application (SPA) assessments. This meant that until one SPA assessment was completed, data was not auto filled from the person's prior assessment. As a result, we noticed some significant changes in the data since assessors were prompted to enter this information from scratch.

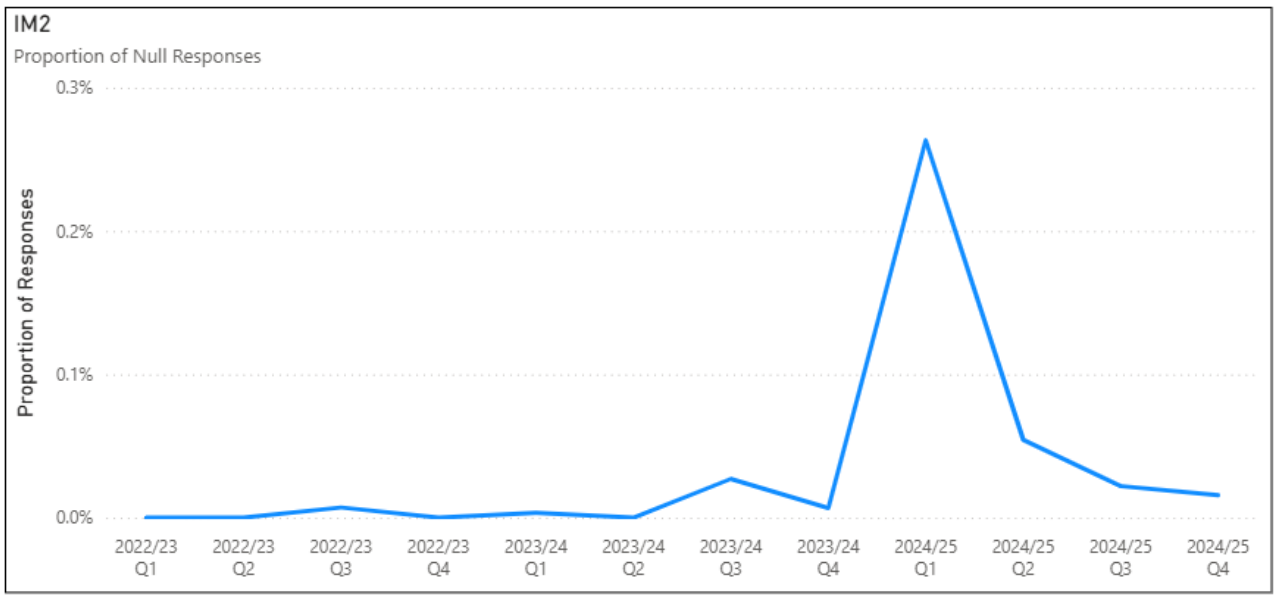
236 items had a significant change in one or more values. For 119 items this was due to an increase in null values as a result of the item being left blank in the assessment.

Figure 1: Percentage of Null responses for iE2d – Little interest or pleasure in things you normally enjoy



Across all assessment types that record the item iE2d – 'Little interest or pleasure in things you normally enjoy?' we observed an increase in null values up to 3.4% of total responses during the first quarter of 24/25 when the upgrade took place. This has since decreased back to around 0.2%

Figure 2: Percentage of Null responses for iM2 – Allergy To Any Drug



For item iM2 – 'Allergy To Any Drug' we see a similar pattern although at a smaller scale, null values increased to 0.26% of total responses during the upgrade quarter before returning to a normal rate of around 0.02% across all assessment types.

Quality indicators

While for the most part these changes were subtle, they did affect our LTCF incidence quality indicator metrics. These metrics are calculated by comparing two consecutive assessments for the same resident and therefore even a small change in their assessment coding can result in that resident counting towards the numerator of the metric.

Table 2 shows the quarterly results for the incidence Quality Indicators. Both the2023/24 and 2024/25 government years are included so we can compare the results before and after the upgrade. Because LTCF assessments are completed every six months for ARC residents we do see that Quarter 1,2, and 3 of 2024/25 have all been affected. By February 2025 most ARC residents would have had at least two SPA assessments and therefore the results for the incidence Quality Indicators return to close to where they were before the upgrade.

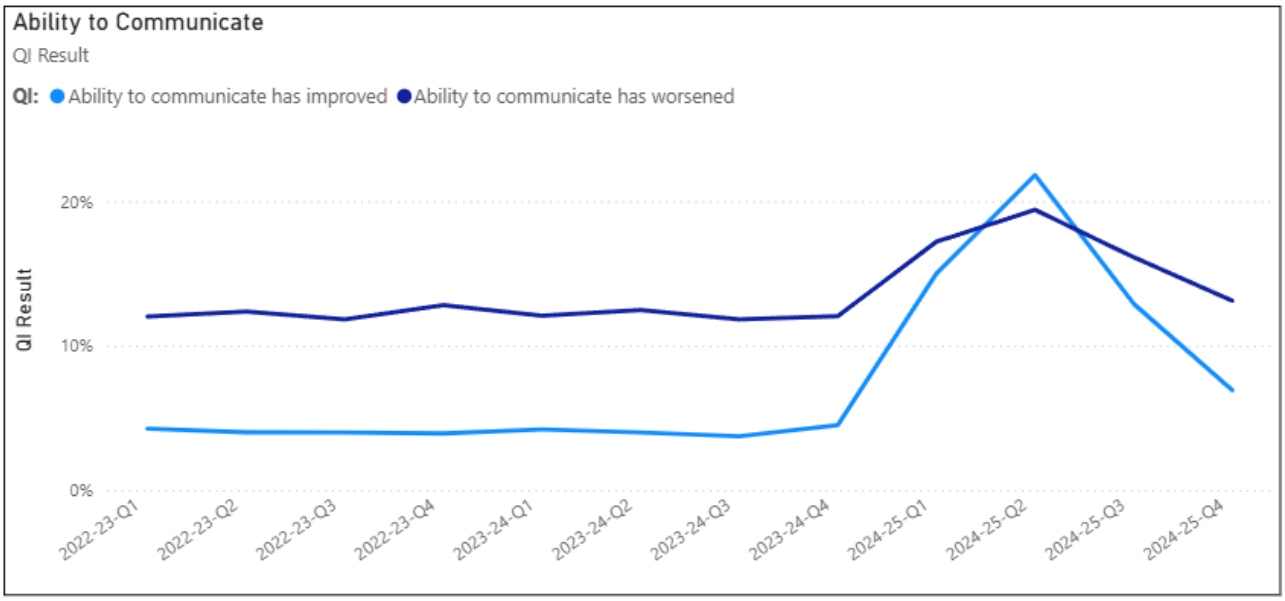
Table 2: LTCF Incidence Quality Indicator Results

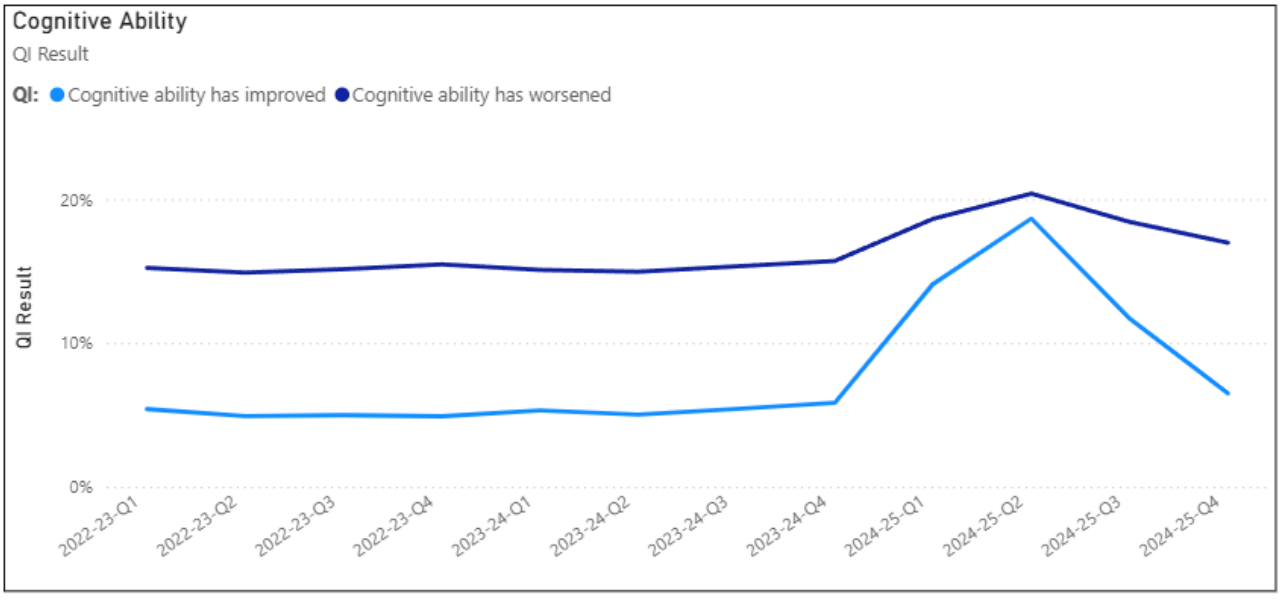
	23/24 Q1	23/24 Q2	23/24 Q3	23/24 Q4	24/25 Q1	24/25 Q2	24/25 Q3	24/25 Q4
QI01 - Unexpected loss of function	20%	19%	20%	21%	25%	27%	23%	22%
QI03 - **Improve status on mid-loss ADL functioning**	46%	45%	45%	45%	49%	51%	49%	47%
QI04 - Improve status on early-loss ADL functioning	23%	23%	23%	24%	29%	32%	29%	25%
QI05 - Improvement of function	8%	7%	7%	8%	15%	21%	16%	9%
QI06 - Declined status on mid-loss ADL functioning	30%	30%	30%	31%	34%	35%	33%	32%
QI07 - Declined status on early-loss ADL functioning	30%	29%	29%	30%	35%	37%	33%	32%
QI08 - Declined in ADLs	32%	31%	31%	32%	38%	40%	35%	34%
QI09 - Declining behavioural symptoms	10%	9%	10%	9%	12%	13%	11%	10%
QI11 - Worsening bowel continence	14%	15%	15%	14%	20%	22%	18%	15%
QI12 - Worsening bladder continence	18%	18%	17%	17%	23%	25%	22%	19%
QI14 - Improving bowel continence	8%	7%	7%	8%	17%	21%	15%	10%
QI15 - Improving bladder continence	6%	6%	6%	6%	16%	20%	14%	8%
QI16 - Cognitive ability has worsened	15%	15%	15%	16%	19%	20%	18%	17%
QI17 - Cognitive ability has improved	5%	5%	5%	6%	14%	19%	12%	7%
QI18 - Ability to communicate has worsened	12%	12%	12%	12%	17%	19%	16%	13%
QI19 - Ability to communicate has improved	4%	4%	4%	4%	15%	22%	13%	7%
QI24 - Declined in their ability to locomote	17%	17%	17%	17%	21%	21%	19%	18%
QI25 - Improved in their ability to locomote	9%	9%	9%	10%	17%	22%	16%	10%
QI26 - Decline in mood from symptoms of depression	16%	16%	16%	17%	20%	21%	19%	18%
QI29 - Worsening pain	10%	10%	10%	11%	13%	14%	13%	11%
QI30 - Worsening stage 2 to 4 pressure sores	2%	2%	2%	2%	2%	2%	2%	1%
QI32 - Newly recurring pressure ulcer stage 2 to 4	2%	2%	2%	2%	2%	2%	2%	1%

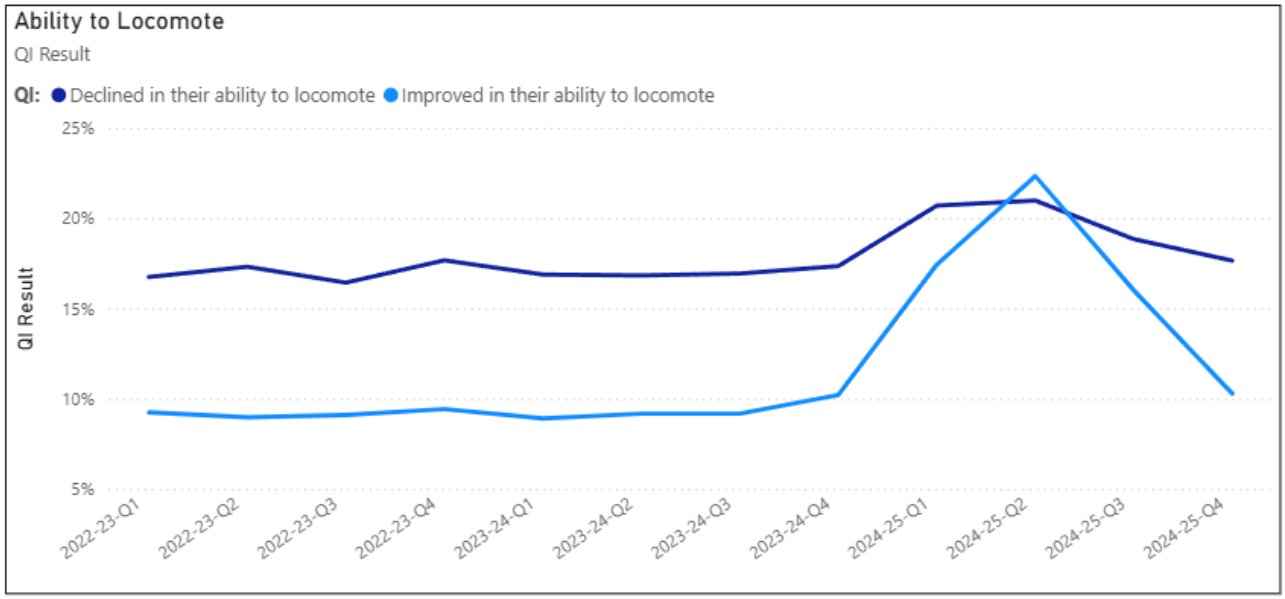
QI36 - Improving behavioural symptoms	6%	6%	6%	6%	11%	13%	9%	7%

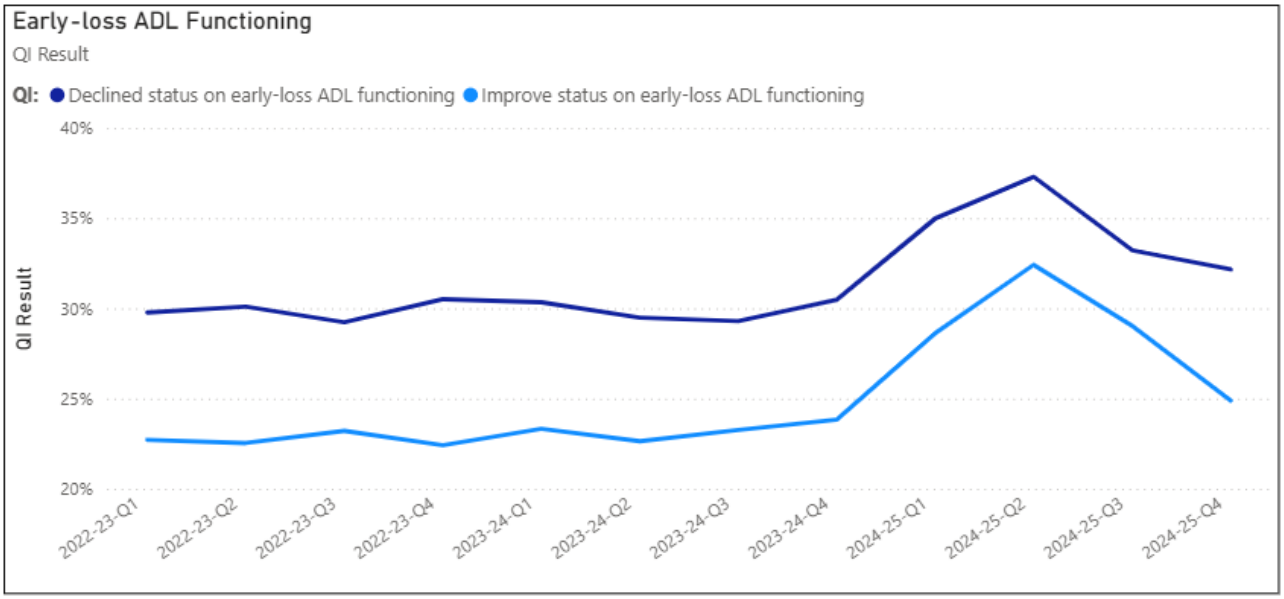
In the bellow figures we have plotted the incidence qualty indicators that have a comparable negative and possitive indicator, for example QI18 - Ability to communicate has worsened and QI19 - Ability to communicate has improved. Generally the negative connotation indicators are always higher than the possitive connotation indicators (with the exception of mid-loss ADL functioning). However, during the quarters following the upgrade we observed that all of the positive connotation metrics increased by proportionally more than the negative connotation metrics.

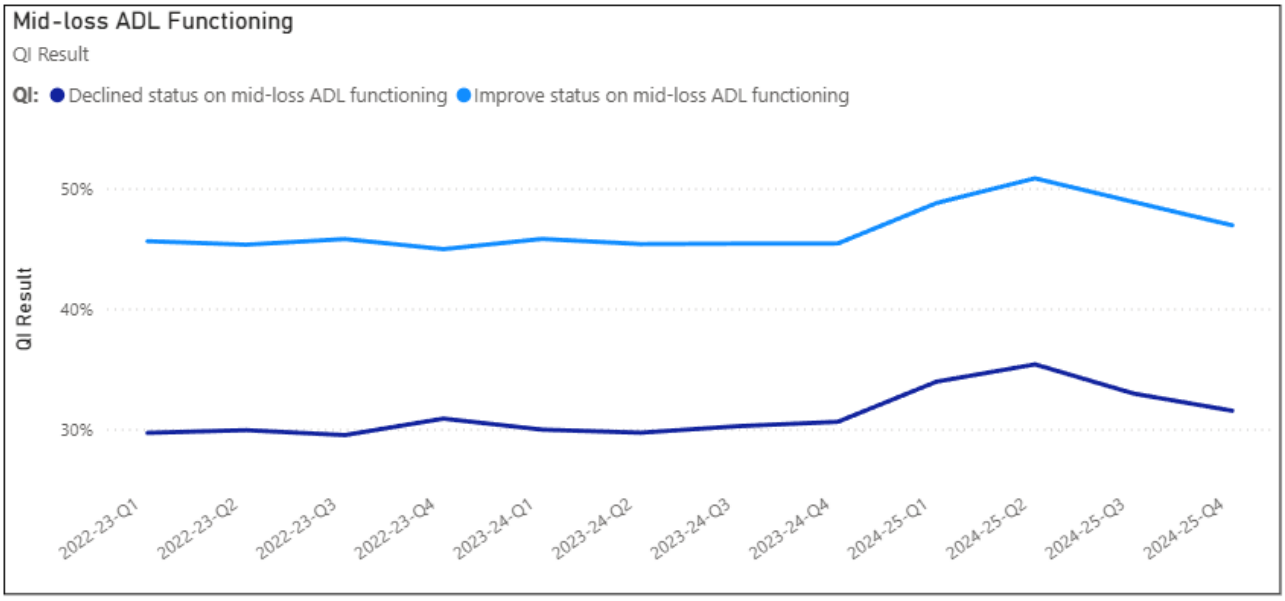
Figures 3 - 10: LTCF Incidence Quality Indicators

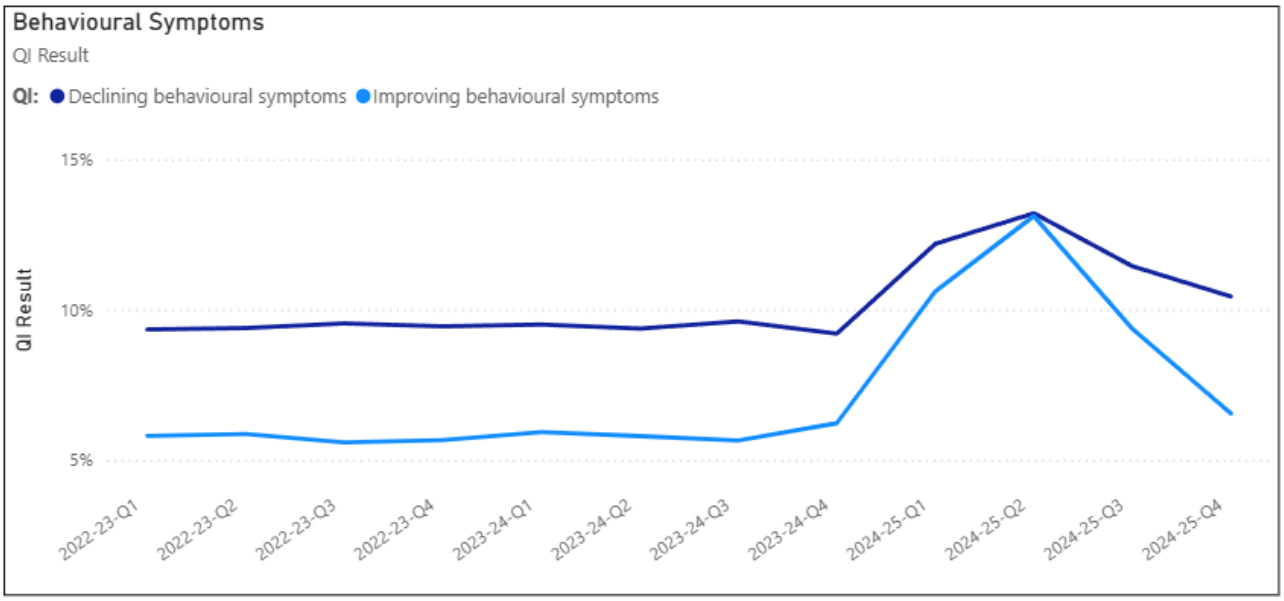


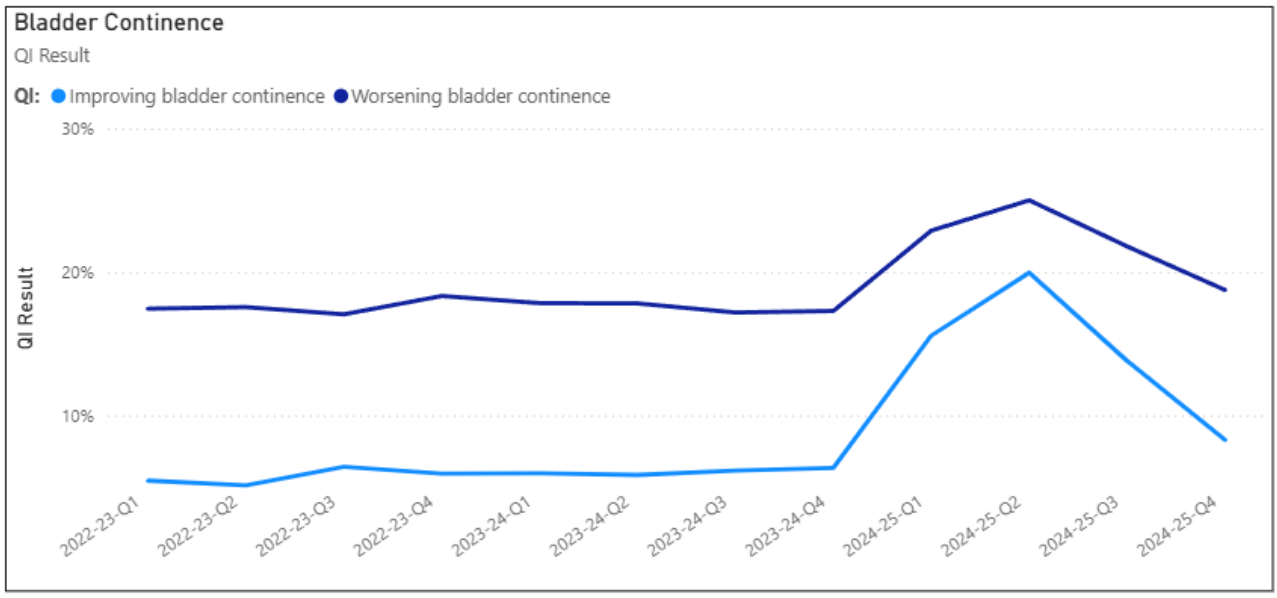


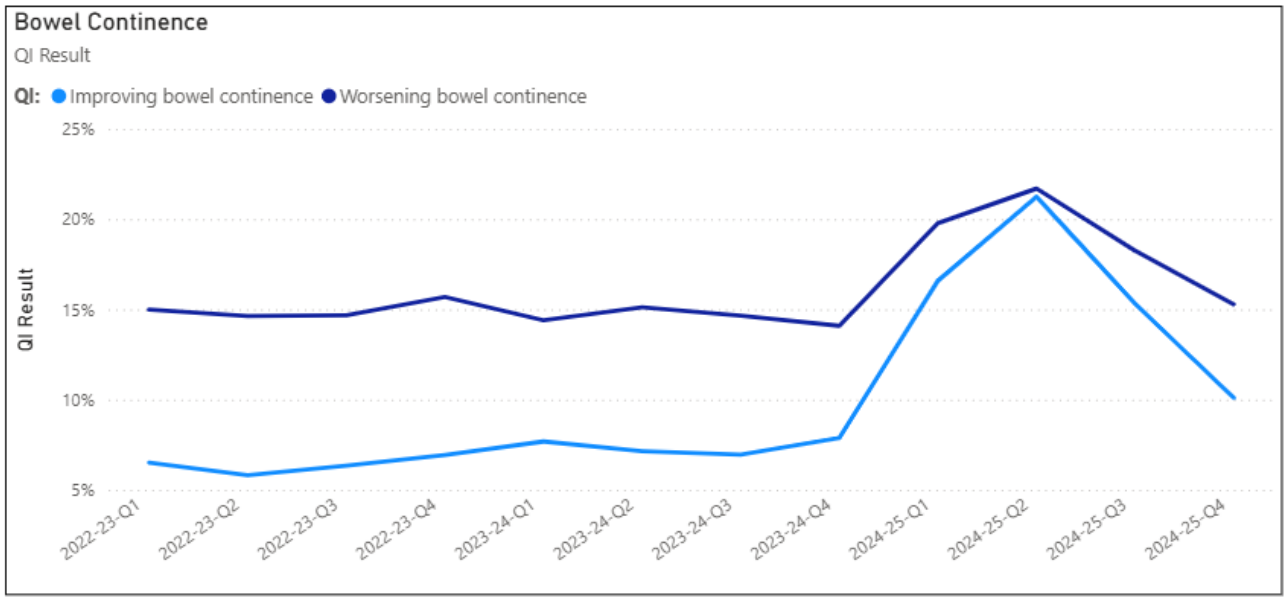

Ability to Locomote
QI Result
QI: Declined in their ability to locomote Improved in their ability to locomote
25%
20%
15%
10%
5%
QI Result
2022-23-Q1
2022-23-Q2
2022-23-Q3
2022-23-Q4
2023-24-Q1
2023-24-Q2
2023-24-Q3
2023-24-Q4
2024-25-Q1
2024-25-Q2
2024-25-Q3
2024-25-Q4


Early-loss ADL Functioning
QI Result
QI: Declined status on early-loss ADL functioning Improve status on early-loss ADL functioning
40%
35%
30%
25%
20%
QI Result
2022-23-Q1
2022-23-Q2
2022-23-Q3
2022-23-Q4
2023-24-Q1
2023-24-Q2
2023-24-Q3
2023-24-Q4
2024-25-Q1
2024-25-Q2
2024-25-Q3
2024-25-Q4


Mid-loss ADL Functioning
QI Result
QI: Declined status on mid-loss ADL functioning
Improve status on mid-loss ADL functioning
50%
40%
30%
QI Result
2022-23-Q1
2022-23-Q2
2022-23-Q3
2022-23-Q4
2023-24-Q1
2023-24-Q2
2023-24-Q3
2023-24-Q4
2024-25-Q1
2024-25-Q2
2024-25-Q3
2024-25-Q4


Behavioural Symptoms
QI Result
QI: Declining behavioural symptoms
Improving behavioural symptoms
15%
10%
5%
QI Result
2022-23-Q1
2022-23-Q2
2022-23-Q3
2022-23-Q4
2023-24-Q1
2023-24-Q2
2023-24-Q3
2023-24-Q4
2024-25-Q1
2024-25-Q2
2024-25-Q3
2024-25-Q4





Missing height and weight information

In previous data quality reports one area we have focused on specifically is the height and weight items being left blank.

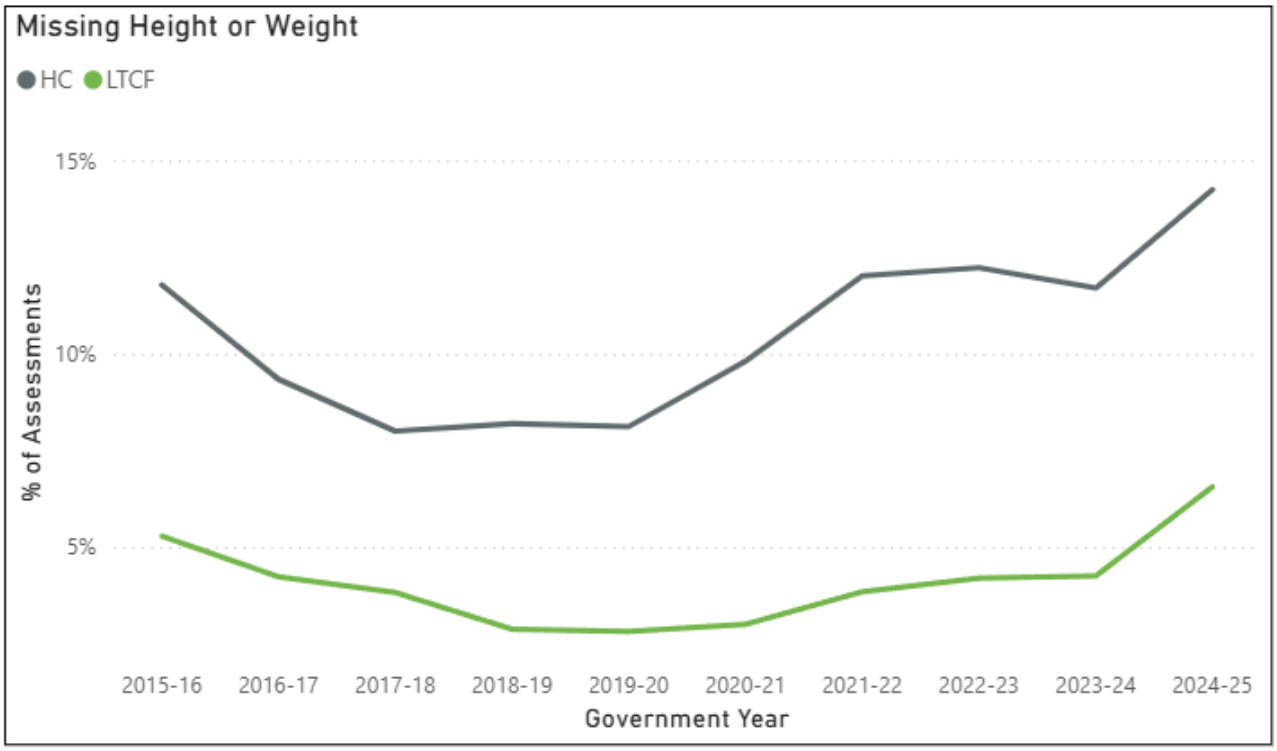
Older adults have an increased risk of mortality associated with undernutrition and a low Body Mass Index (BMI). By recording height and weight in interRAI, assessors can make sure that undernutrition is recognised. Accurate entry of weight and height will trigger the Undernutrition Clinical Assessment Protocol (CAP) when the BMI is less than 21. Low BMI alerts carers that the person is undernourished.

Height and weight information are not mandatory fields and there may be a clinical rationale for these measurements not to be taken, for example, when a person is too frail

to move. However, if these values are not recorded a client's or resident's undernourishment problem may remain undetected.

In Figure 1 we show the percentage of HC and LTCF assessments that are missing either height or weight information. From 2021-22 through to 2023-24 we can see this remained constant at around 12% for HC assessments and 4% for LTCF. However, in 2024-25 we observe an increase to around 14% for HC and 7% for LTCF assessments. This change again corresponds to the change to SPA assessments.

Figure 11: Percentage of missing height and weight information by assessment type over time



Trends in population and clinical characteristics

Trends are mostly consistent for both HC and LTCF assessment types across selected demographic characteristics over the last eight years, there has been an increase in the percentage of people assessed in the community with dementia between 2017-18 and 2019-20. This has stabilised over the last few government years and was 29% in 2024-25.

Table 3: Trends in demographic characteristics

Assessment Type	Govt Year	% Female	% Married	% Under 65	% Over 85	% Dementia	% Heart Failure
HC	2017-18	59%	39%	5%	42%	25%	16%
HC	2018-19	59%	39%	6%	41%	26%	16%
HC	2019-20	59%	39%	6%	42%	28%	16%
HC	2020-21	58%	39%	6%	41%	28%	15%
HC	2021-22	58%	39%	6%	42%	29%	16%
HC	2022-23	58%	39%	6%	40%	28%	15%
HC	2023-24	57%	40%	6%	40%	29%	15%
HC	2024-25	58%	40%	6%	40%	29%	15%
LTCF	2017-18	65%	25%	4%	54%	48%	16%
LTCF	2018-19	65%	24%	4%	54%	49%	16%
LTCF	2019-20	65%	25%	4%	53%	49%	16%
LTCF	2020-21	64%	25%	4%	53%	49%	16%
LTCF	2021-22	64%	26%	4%	53%	50%	15%
LTCF	2022-23	64%	26%	4%	52%	49%	15%
LTCF	2023-24	63%	26%	4%	51%	49%	15%
LTCF	2024-25	63%	26%	4%	51%	49%	15%

Overall, the trends in clinical characteristics as shown in Table 4 remain stable over time. There is an increase in MAPle 3+ % from 2019-20 which is related to changes in the MAPle algorithm. In 2024-25 we did see a small decrease in CPS and DRS scores of 3+.

Table 4: Trends in clinical characteristics

Assessment Type	**Govt Year**	**% CPS 3+**	**% DRS 3+**	**% ADLH 3+**	**% MAPLe3+**
HC	2017-18	22%	18%	21%	80%
HC	2018-19	23%	19%	20%	81%
HC	2019-20	23%	20%	21%	84%
HC	2020-21	23%	20%	21%	83%
HC	2021-22	24%	20%	22%	84%
HC	2022-23	22%	20%	21%	83%
HC	2023-24	21%	19%	21%	83%
HC	2024-25	20%	18%	22%	83%
LTCF	2017-18	44%	21%	43%	NA
LTCF	2018-19	44%	22%	44%	NA
LTCF	2019-20	44%	24%	44%	NA
LTCF	2020-21	44%	24%	44%	NA
LTCF	2021-22	44%	24%	45%	NA
LTCF	2022-23	43%	24%	44%	NA
LTCF	2023-24	43%	23%	44%	NA
LTCF	2024-25	41%	20%	44%	NA

Trends in service utilisation

Table 3 shows trends in service utilisation measures including the receipt of any physical therapy time or occupational therapy time for both HC and LTCF assessments.

HC assessment specific measures are:

- any home support services (this includes physical therapy, occupational therapy, home health aide, home nurse and homemaking services) in the past 7 days.
- any informal care in the past 3 days.
- median hours of informal care in the past 3 days.

Of people who received a HC assessment in 2024-25 the median hours of informal home support services in the last 3 days was 9 hours. This means that half received 9 or more hours, and half received less than 9 hours. There has been a notable decrease year by year in the percentage of people assessed where home support services have been provided. In 2024-25 this was 39% of HC assessments, down 2% from the previous year. HC Assessments with Physical Therapy and Occupation Therapy services did both increase by 1% in 2024-25.

Table 5: Trends in service utilisation

Assessment Type	Govt Year	% Any physical therapy	% Any occupational therapy	% Any home support services	% Any informal care	Median hours of informal care in the past 3 days
HC	2017-18	11%	8%	51%	71%	6
HC	2018-19	9%	6%	51%	72%	8
HC	2019-20	9%	6%	47%	71%	8
HC	2020-21	9%	6%	47%	71%	8
HC	2021-22	9%	6%	44%	69%	8
HC	2022-23	8%	5%	42%	71%	9
HC	2023-24	9%	6%	41%	70%	9
HC	2024-25	10%	7%	39%	67%	9
LTCF	2017-18	8%	1%	NA	NA	NA
LTCF	2018-19	8%	1%	NA	NA	NA
LTCF	2019-20	8%	1%	NA	NA	NA
LTCF	2020-21	8%	1%	NA	NA	NA
LTCF	2021-22	8%	1%	NA	NA	NA
LTCF	2022-23	9%	1%	NA	NA	NA
LTCF	2023-24	10%	1%	NA	NA	NA
LTCF	2024-25	10%	1%	NA	NA	NA

Trends in service intensity

There has been increasing interest in the use of interRAI Resource Utilisation Groups (RUGs) to derive case-mix funding. Table 6 shows trends in the clinical categories into which RUGs are grouped. The clinical categories are ordered from lowest clinical complexity

(physical function) to highest clinical complexity (rehabilitation). In 2024-25 we saw a sharp decrease in the Clinically Complex group for both assessment types; this corresponded with in an increase from 3% to 8% for Special Care in the HC assessments and an increase from 43% to 49% for Physical Function. It should be noted when interpreting these results that the RUGS have not been modified to the New Zealand settings.

Table 6: Trends in service intensity

		Increasing Clinical Complexity →						
Assessment Type	**Govt Year**	**Physical Function**	**Cognitive Impairment**	**Behaviour Problem**	**Clinically Complex**	**Special Care**	**Extensive Care**	**Rehabilitation**
HC	2017-18	45%	11%	3%	32%	3%	1%	5%
HC	2018-19	44%	12%	3%	32%	3%	1%	4%
HC	2019-20	44%	12%	3%	32%	3%	1%	4%
HC	2020-21	44%	12%	3%	32%	3%	1%	4%
HC	2021-22	44%	12%	3%	32%	4%	1%	4%
HC	2022-23	45%	11%	3%	32%	4%	1%	3%
HC	2023-24	45%	11%	3%	32%	3%	1%	4%
HC	2024-25	45%	10%	4%	28%	8%	1%	4%
LTCF	2017-18	43%	16%	3%	30%	5%	1%	2%
LTCF	2018-19	43%	16%	3%	30%	5%	0%	2%
LTCF	2019-20	43%	16%	3%	30%	6%	0%	2%
LTCF	2020-21	43%	16%	4%	30%	6%	0%	2%
LTCF	2021-22	43%	16%	4%	29%	6%	0%	2%
LTCF	2022-23	43%	16%	4%	29%	5%	0%	2%
LTCF	2023-24	43%	16%	4%	29%	6%	0%	2%
LTCF	2024-25	49%	16%	0%	22%	7%	0%	2%

Trends in convergent validity

Table 5 reports on trends in indicators of convergent validity, this is a method of monitoring data quality by examining the correlations between the following variables: ADLH and CPS; Pain and DRS; Pain and CHESS; Pain and CPS; MAPLe and CPS.

Pearson's R correlation coefficient was used to measure the strength of the association between two interRAI variables. This methodology was used by Hirdes, Poss, Caldarelli, Fries, Morris, Teare & Jutan (2013) in one of their data quality research articles[1].

The correlation between ADLH and CPS decreased from 31% to 29% in 2024-25 for HC assessments, but for LTCF assessments it remained stable at 47%. The correlation between

[1] Hirdes, J. P., Poss, J. W., Caldarelli, H., Fries, B. E., Morris, J. N., Teare, G. F., ... & Jutan, N. (2013). An evaluation of data quality in Canada's Continuing Care Reporting System (CCRS): secondary analyses of Ontario data submitted between 1996 and 2011. BMC medical informatics and decision making, 13(1), 27.

Pain and CPS increased from -21% to -20% for HC (the negative correlation means that as Pain scores increase CPS decreases) and increased -15% to -14% for LTCF assessments.

The other reported Correlations did fluctuate but remained within the normal range of values.

*Table 7: Trends in convergent validity between interRAI outcome measures over time**

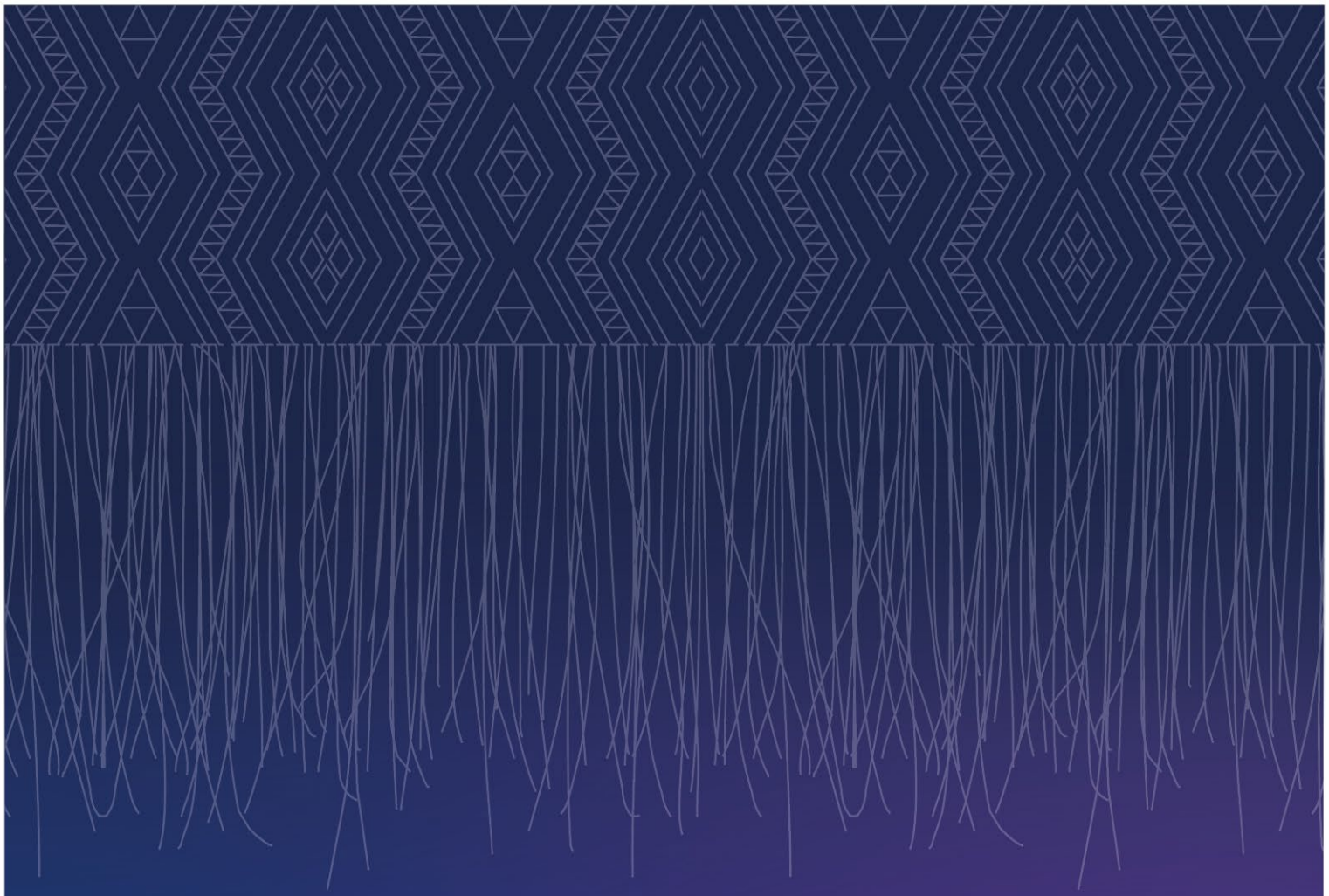
Assessment Type	Govt Year	ADLH & CPS	Pain & DRS	Pain & CHESS	Pain & CPS	MAPLe & CPS
HC	2017-18	33%	10%	14%	-21%	68%
HC	2018-19	35%	10%	13%	-22%	68%
HC	2019-20	33%	11%	13%	-21%	67%
HC	2020-21	35%	13%	14%	-22%	67%
HC	2021-22	35%	12%	13%	-21%	73%
HC	2022-23	33%	13%	13%	-20%	72%
HC	2023-24	31%	12%	15%	-21%	72%
HC	2024-25	29%	12%	14%	-20%	67%
LTCF	2017-18	54%	16%	18%	-15%	
LTCF	2018-19	52%	16%	17%	-16%	
LTCF	2019-20	51%	18%	18%	-15%	
LTCF	2020-21	52%	17%	18%	-16%	
LTCF	2021-22	50%	15%	15%	-16%	
LTCF	2022-23	47%	14%	16%	-16%	
LTCF	2023-24	47%	15%	16%	-15%	
LTCF	2024-25	47%	17%	18%	-14%	

* Note MAPLe is not used in LTCF

Consistency Report

The Consistency Report is an internal report that allows interRAI educators to quality check completed assessments and allows assessors to check their assessments for coding inconsistencies and making changes before they mark it complete. The report looks at items in a completed assessments and searches for contradictory coding over a number of items. For example, if the item 'Pain Frequency' has been answered as 'Exhibited on 1-2 of last 3 days' or 'Exhibited daily in last 3 days' and follow up item in the same assessment, 'Pain intensity', is answered as 'No Pain', one of these items has been answered in error, either there was no pain, or the pain has had some intensity. The Consistency Report picks up errors like this over items in the assessments and the educators can follow up with the individual assessor, especially if multiple assessments over time are coded with the same error. If the error is a common mistake that a number of assessors make, the educators may also amend the training materials to mitigate the error.

In 2024-25 3% of AC, 11% of CA, 35% of HC 53% of LTCF and 55% of PC assessments had at least one consistency error. These figures are consistent with previous years.



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Te Whatu Ora