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GEN AGED CARE DATA

Residential Aged Care Quality Indicators – October to December 2023

Technical notes

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Australian Institute of Health and Welfare

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Contents

National Aged Care Mandatory Quality Indicator Program: 1 October to 31 December 2023

These notes provide general information about data arrangements and the AIHW's collation, processing and reporting of residential aged care quality indicators (QIs).

The QI Program collects QI data from 'eligible care recipients' or 'eligible staff' only, meaning that QI events or outcomes experienced by care recipients or staff who met exclusion criteria for QI measurement are not included in the statistics presented in this report. These exclusion criteria are further detailed in the *National Aged Care Mandatory Quality Indicator Program Manual 3.0* (the Manual). Note that collection of QIs in this period was undertaken in the context of ongoing transmission of COVID-19 in Australia.

Data collection and transmission to AIHW

In accordance with the Manual from 1 April 2023, all Australian Government-subsidised residential aged care providers are required to collect specified data at the service level and submit these via the Quality Indicators App in the Government Provider Management System (GPMS) to the Department of Health and Aged Care (the Department). With the prior agreement of the Department, services can submit data through a commercial benchmarking company. Submission of the QI raw data is required by the 21st day of the month after the end of each quarter.

Since 1 July 2023 the AIHW has been contracted by the Department of Health and Aged Care for the provision of computation and reporting services for the QI program. Formerly this relationship was with the Aged Care Quality and Safety Commission (1 October 2020 to 31 June 2023), and the Department of Health and Aged Care (from 1 July 2019 to 30 September 2020). Throughout the life of these contracted periods, the Department of Health and Aged Care have provided the QI data to the AIHW. Raw QI data for the quarter 1 October to 31 December 2023 were provided to the AIHW on 25 January 2024 via secure data transfer from the Department.

Numerator data and QI interpretation

In interpreting the QIs in this report it is important to consider the way in which they were measured.

Most QIs in this report are measured during specified assessment windows (e.g., use of physical restraint is assessed during a review of three days of records in the quarter). The results for some QIs may therefore not represent the occurrence of those events across other, non-assessed periods in the quarter.

In addition, by definition, the indicators in this report provide information about whether a care recipient or staff member met the criteria for the QI during the quarter or assessment window. The indicator measure does not provide information about the frequency or duration of that measure (e.g., frequency or duration of physical restraint, number of falls, duration of polypharmacy).

Denominator data and QI construction

In accordance with the Manual, for all QIs except for the Workforce QI, the total number of care recipients meeting the criteria to be counted for the QI is divided by the total number of care recipients assessed at the service who do not meet exclusion criteria (referred to throughout this report as 'eligible care recipients') and multiplied by 100 to construct each QI category.

For these QIs, the percentage value was derived using the following formula:

$$\text{QI value} = \frac{\text{The total number of care recipients meeting the criteria to be counted (affirmative) for the quality indicator (eligible care recipients)}}{\text{The total number of care recipients assessed at the service (who do not meet exclusion criteria for the quality indicator)}} \times 100$$

For the Workforce QI, the number of staff reported to have stopped working during the quarter is divided by the total number of staff reported to have been employed at the beginning of the quarter.

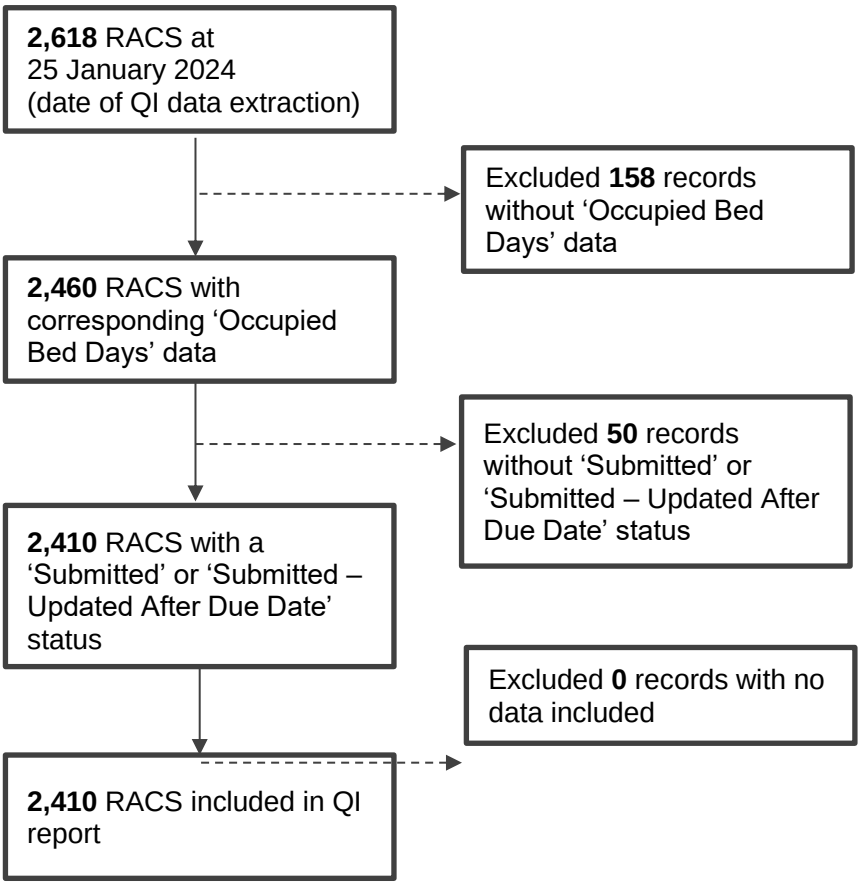
In this report, aggregation for all QIs was across all RACS for the main tables, or disaggregated across state and territory and remoteness regions.

Service participation, and estimated care recipient coverage

For this quarter, providers were required to submit QI data to the Department by 21 January 2024. The QI raw data were then extracted by the Department on 25 January 2024, comprising data from 2,618 RACS after removal of four duplicate records. The QI records were then filtered using Occupied Bed Days (OBD) data to derive an approximate denominator. 158 RACS were excluded due to not having available data about Australian Government subsidies for delivering care, services and accommodation (OBD data). Of the remaining 2,460 RACS, 2,410 (98%) were recorded as submitting QI data on time or submitting on time and updating the data after the due date. Although RACS that submitted after the due date are usually excluded from quarterly reporting, they were included in this quarterly report because the due date fell on a Sunday when administrative staff may not have been working and able to submit data.

All of these 2,410 RACS submitted at least some QI data and none were excluded, resulting in the final data set of 2,410 RACS.

Among the remaining 50 of the 2,460 RACS, 6 (12%) were recorded as 'late submission', and 44 (88%) were recorded as 'Not submitted'. The RACS analysed in this quarterly report include only the 2,410 RACS with a 'Submitted' or 'Submitted – Updated After Submission Date' status and with data for at least one QI.



Compared with the previous quarter, this represents a decrease in RACS included in this quarterly report of 5.0%. Of the included 2,410 RACS, 2,336 (96.9%) submitted QI data for all 11 QIs. Of the 74 RACS that did not submit data for all QIs, 67 (90.5%) submitted data for 9 or 10 QIs.

The QI Program's coverage of the estimated care recipient population ranged from 97.7% for consumer experience to greater than 110% for activities of daily living (Table 1). It was not possible to calculate coverage for the Workforce QI, because population data for the aged care workforce are not available.

When interpreting these coverage data, it is important to note that the calculations are based on an approximation of the denominator using data that shows how many bed days were funded for each service in that period. While the numerator data for quality indicators measure one event per individual, the denominator data are calculated using an approximation – dividing the number of days in a quarter by the number of 'Occupied Bed Days' (OBD) for that quarter to get an estimate of how many individuals occupied beds per quarter. This approximation assumes that individuals occupy beds for the same number of days per quarter, but this may not be the case. There are various reasons an individual may not occupy a bed for an entire quarter, including entering or exiting care mid-quarter. As the numerator and denominator for the coverage calculation are not aligned at the individual level, there is the possibility for proportions to exceed one hundred per cent. Additional factors contribute to the misalignment of the numerator and denominator, including lagged claims, retrospective adjustments, measurement timings, absent care recipients (e.g. hospitalisations) and care recipient deaths.

The number of care recipients excluded (Table 1, Column D) was highest for quality of life and consumer experience (both 32.7%). For these QIs, the most common reason for exclusion was that the care recipient did not choose to complete the assessment.

Table 1: Estimated care recipient coverage and exclusions in the RACS QI Program, October to December 2023

Quality indicator	Estimated care recipient coverage in QI Program		Exclusions and measurements of care recipients in QI Program		
	Care recipients assessed for QI eligibility in included RACS* (A)	Coverage of estimated care recipient population in all RACS (B)	Care recipients excluded due to not providing consent (C)	Care recipients excluded due to ineligibility (D)	Care recipients eligible for QI measurement (E)
Pressure injuries	184,227	101.39%	1,033 (0.6%)	315 (0.2%)	182,879 (99.3%)
Use of physical restraint	180,394	99.28%	N/A	1,223 (0.7%)	179,171 (99.3%)
Unplanned weight loss — significant	194,849	107.24%	3,013 (1.5%)	35,682 (18.3%)	156,154 (80.1%)
Unplanned weight loss — consecutive	195,256	107.46%	4,121 (2.1%)	38,368 (19.7%)	152,767 (78.2%)
Falls and major injury	197,172	108.52%	N/A	333 (0.2%)	196,839 (99.8%)
Medication management — polypharmacy	180,824	99.52%	N/A	1,124 (0.6%)	179,700 (99.4%)
Medication management — antipsychotics	180,686	99.45%	N/A	644 (0.4%)	180,042 (99.6%)
Activities of daily living	199,981	110.06%	N/A	33,311 (16.7%)	166,670 (83.3%)
Incontinence	184,183	101.37%	N/A	805 (0.4%)	183,378 (99.6%)
Incontinence associated dermatitis	184,183	101.37%	N/A	40,946 (22.2%)	143,237 (77.8%)
Hospitalisations	195,372	107.53%	N/A	512 (0.3%)	194,860 (99.7%)
Workforce **	N/A	N/A	N/A	N/A	N/A
Consumer experience	177,462	97.67%	53,529 (30.2%)	4,427 (2.5%)	119,506 (67.3%)
Quality of life	177,652	97.78%	53,855 (30.3%)	4,198 (2.4%)	119,599 (67.3%)

Notes:

* Included RACS were those that had: submitted QI data by the due date or had submitted QI data by the due date and amended those data by the date of QI data extraction; and received Australian Government subsidies for delivering care, services and accommodation in the quarter. Services not meeting these criteria, and the care recipients that may or may not have been assessed for QI eligibility at those services, were excluded from these calculations. **A** (*Care recipients assessed for QI eligibility in included* RACS), and therefore **B** (*Coverage of estimated care recipient population in all RACS*), is higher than these figures when these excluded RACS are included (data not shown). Reasons for ineligibility for measurement differ by QI and are detailed in the QI Program Manual.

** It is not possible to calculate estimations of coverage for the Workforce QI because population data are not available.

A (*Care recipients assessed for QI eligibility in included RACS*) was calculated as the sum of **C** (*Care recipients excluded due to not providing consent*), **D** (*Care recipients excluded due to ineligibility*) and **E** (*Care recipients eligible for QI measurement*).

B (*Coverage of estimated care recipient population in all RACS*) was calculated by dividing **A** (*Care recipients assessed for QI eligibility in included RACS*) by an estimate of the total RACS care recipient population for this quarter (181,694 care recipients—calculated by summing the total number of 'Occupied Bed Days' (OBD) for which an Australian Government residential aged care subsidy was claimed by all RACS and dividing by the number of days in the quarter).

Percentages in **C**–**E** are in relation to values in **A** (*Care recipients assessed for QI eligibility in included RACS*).

N.A., not applicable.

Source: Department of Health and Aged Care, QI data extracted 25 January 2024, OBD data extracted 30 November 2023, published on GEN-agedcaredata.gov.au

Geographic characteristics

Two separate disaggregations are reported for the location of RACS—state and territory and remoteness. State and territory was taken from location address information reported on the QI data file and reflects standard sub-national administrative areas.

The QI data set was merged with service-level data from the National Aged Care Data Clearinghouse (NACDC) as at 30 June 2023 (the latest available) to bring the QI data together with Modified Monash Model (MMM) 2019 remoteness classifications for analysis presented in this report. This merge used as its linkage key the National Approved Provider System (NAPS) service identification number, the identifier used in the NACDC. In this step, 2,401 of the 2,410 records matched with a service identified in the NACDC. Nine records did not match with NACDC service list, but could be matched with the MMM 2019 list.

Remoteness was based on the MMM 2019 collapsed into 3 categories—metropolitan areas (MM1); regional centres (MM2); and a category combining large rural towns (MM3), medium rural towns (MM4), small rural towns (MM5), remote communities (MM6) and very remote communities (MM7), and was obtained predominantly from the NACDC.

As with the national QI data in this report, it is important to note that QI data presented by state and territory and remoteness are not risk-adjusted to account for possible differences in the care complexity of care recipients.

Outliers and inconsistencies in calculated QIs

This data collection was conducted under the National Aged Care Mandatory Quality Indicator Program Manual 3.0, which has been in place since 1 April 2023. Program Manual 1.0 applied for previous collections between 1 July 2019 and 30 June 2021, and Program Manual 2.0 applied for previous collections between 1 July 2021 and 31 March 2023. There are important differences between Manual 1.0 and Manuals 2.0 and 3.0 (detailed below) and for this reason comparisons across the two program periods are not recommended.

Quality indicator reporting under Program Manuals 2.0 and 3.0 requires services to report the total number of eligible care recipients assessed for each QI, which is then used as the denominator when compiling QI percentages. This differs to the original QI Program (Manual 1.0), where QI rates were compiled using the number of care recipient days in which an Australian Government subsidy was claimed as the denominator (referred to as ‘Occupied Bed Days’ in Program Manual 1.0).

The AIHW has noted in previous QI data reports that it has no firm basis for determining that an apparent ‘outlier’ in the distribution of QIs across RACS represents an incorrect data point. Therefore, no data cleaning is undertaken by AIHW prior to compiling the figures in this report.

While this remains the case, the AIHW will continue to conduct analysis to identify the most extreme upper-level outliers along the service size continuum, the extent of zero reporting and apparent internal inconsistencies that appear to reflect varied interpretation of reporting requirements. Consultation with the Department of Health and Aged Care on these matters may be expected to contribute, through education of providers and improvements to data collection methods, to improved quality of reporting and to development of the QI Program over time.

Some services included in this report had probable discrepancies in the total number of care recipients assessed for inclusion in each QI. While some variation in the total number of care recipients assessed in a RACS can be expected given that measurements for different QIs

can occur at different times, the magnitude of this variation for some RACS points to possible data entry errors or misinterpretation of the Program Manual or reporting template.

There are discrepancies in the total number of care recipients assessed by a service for inclusion in each QI. Some of this is to be expected because measurement can occur at different times for different QIs. However some of the discrepancy may be attributable to data entry errors or misinterpretation of the Program Manual. In particular, some services may not account for people assessed for but not meeting criteria for a QI. For example, when assessing care recipients for use of physical restraint QI, some services only accounted for those who had been physically restrained, without accounting for those who had not been physically restrained. That service may record 5 care recipients assessed as meeting the criteria for the use of physical restraint indicator out of 5 care recipients assessed (or 100%), rather than 5 care recipients assessed as meeting the criteria out of 81 assessed, 76 of whom were found not to meet the criteria. This type of error means that QI percentages are overestimated for some RACS.

For QIs where higher percentages indicate poorer performance, 100% prevalence reporting was most common for use of physical restraint (0.9%). For QIs where higher percentages indicate better performance, 100% prevalence reporting was most common for quality of life (6.7%) (Table 2). Some RACS reported zero care recipients meeting the criteria for individual QIs, which varied between QIs (Table 2).

Table 2. Selected RACS reporting characteristics in the Mandatory QI Program, October to December 2023

Quality indicator	Number of RACS that reported 100% QI rate	Percentage of RACS that reported 100% QI rate	Number of RACS that reported 0% QI rate	Percentage of RACS that reported 0% QI rate
One or more pressure injuries	0	0.0%	240	10.0%
Use of physical restraint	22	0.9%	529	22.0%
Significant unplanned weight loss	2	0.1%	166	6.9%
Consecutive unplanned weight loss	1	0.0%	165	6.8%
Falls	3	0.1%	8	0.3%
Falls that resulted in major injury	0	0.0%	841	34.9%
Polypharmacy	5	0.2%	4	0.2%
Antipsychotics	9	0.4%	33	1.4%
Activities of daily living	3	0.1%	242	10.0%
Incontinence associated dermatitis	5	0.2%	767	31.8%
Hospitalisations – Emergency department presentations	0	0.0%	193	8.0%
Hospitalisations – Emergency department presentations and hospitalisations	2	0.1%	73	3.0%
Workforce	5	0.2%	586	24.3%
Consumer experience	293	12.2%	4	0.2%
Quality of life	161	6.7%	5	0.2%

Note: Percentages are calculated in relation to 2,410 RACS
Source: Department of Health and Aged Care, data extracted 25 January 2024, published on GEN-agedcaredata.gov.au

Trend analysis

Analysis to examine trends in QI performance over time was conducted using a quasi-Poisson regression model. Only the 5 indicators included in the program since 1 July 2021 are included in trend analysis. The 6 new QIs will be included in trend analysis once there are 6 or more quarters of data available

Poisson regression is commonly used to model counts and rates. With a traditional Poisson regression model we would expect the conditional means and variances of the event counts to be about the same in various groups. To account for potential over-dispersion (e.g. where the variance is larger than the mean) in the data, a quasi-Poisson regression method was used to test the trend of aggregated quality indicators over 10 quarters from Q1 (July to September) 2021 to Q2 (October to December) 2023 as outlined in Formula 1. Quasi-Poisson regression fits an extra dispersion parameter to account for the extra variance. Models were fitted in SAS using *PROC GENMOD*.

$$\log(\mu_i) = \log t_i + \beta_0 + \beta_1 X_i$$

Formula 1. Quasi-Poisson regression model

Where:

- $\mu = E(Y_i)=Var(Y_i)$: The main feature of a Poisson model is that the expected value of the random variable Y_i (counts of care recipients who meet criteria) for subject I (one or more pressure injuries, use of physical restraint, significant unplanned weight loss, consecutive unplanned weight loss, polypharmacy, antipsychotics) is equal to its variance.
- β_0 = regression constant
- β_1 = vector of regression coefficients
- X_i = vector of covariates for subject I (number of quarter for each quality indicator)
- Log t_i = offset variable (numbers of care recipients assessed for quality indicator i).

The differences in numbers of care recipients assessed by the service are considered by including an **offset** in the model so that the care recipient count is adjusted to be comparable across services of different sizes.

Interpreting risk ratios

A quasi-Poisson regression model generates risk ratios. In this analysis, risk ratios describe the average change in QI performance per quarter (Table 3). A risk ratio greater than 1.0 indicates an increasing trend over time, and a risk ratio less than 1.0 indicates a declining trend over time. 95% confidence intervals indicate the precision of the risk ratio. Where a 95% confidence interval crosses 1.0, this indicates that the risk ratio is not statistically significant to $p < 0.05$ and there has been no meaningful change in indicator performance over time.

For example:

- A risk ratio of 0.975 indicates that the prevalence proportion of aged care recipients who experienced the event **declined** by an average of 100 x (1-0.975) = 2.5% per quarter over the reporting period. A 95% confidence interval (0.968-0.982) tells us

that there is a 95% likelihood that the true average decline per quarter lies between 1.8% and 3.2%.

- A risk ratio of 1.014 indicates that the prevalence proportion of aged care recipients who experienced the event **increased** by an average of 100 x (1.014-1) = 1.4% per quarter over the reporting period. A 95% confidence interval (1.009-1.021) tells us that there is a 95% likelihood that the true average increase per quarter lies between 0.9% and 2.1%

Note that trend analyses are unadjusted and therefore do not consider factors that may influence QI performance (e.g. service size, type, location).

In modelling with large sample sizes, even very small differences over time can be statistically significant. It is important to consider clinical significance (i.e. real-world impact) of the change.

Table 3: Prevalence proportion of care recipients reported by RACS as meeting criteria for quality indicators, Q1 July–September 2021 to Q2 October–December 2023

	Prevalence proportion											
Indicator	**Q1 21/22**	**Q2 21/22**	**Q3 21/22**	**Q4 21/22**	**Q1 22/23**	**Q2 22/23**	**Q3 22/23**	**Q4 22/23**	**Q1 23/24**	**Q2 23/24**	**Risk ratio (95% Confidence Interval)**	**Relative quarterly change in prevalence proportion**
One or more pressure injuries	5.9	5.7	5.9	6.3	6.5	6.0	5.8	5.9	5.9	5.9	0.998 (0.995-1.001)	0.2%
Use of physical restraint	23.0	21.9	21.4	21.5	21.2	19.8	19.5	18.1	17.4	17.8	0.970 (0.965-0.974)	3.0%*
Significant unplanned weight loss	8.4	8.9	10.9	9.4	9.3	9.4	8.6	7.7	7.8	9.0	0.986 (0.983-0.988)	1.4%*
Consecutive unplanned weight loss	9.5	10.0	11.2	9.4	9.2	9.7	9.3	7.8	8.2	9.4	0.981 (0.978-0.984)	1.9%*
Falls	31.9	31.5	31.5	32.2	32.4	31.5	31.0	32.1	32.0	31.5	1.000 (0.998-1.001)	0.0%
Falls that resulted in major injury	2.1	2.1	2.2	2.2	2.1	2.0	1.9	1.9	1.7	1.8	0.976 (0.971-0.980)	2.4%*
Polypharmacy	41.0	38.3	37.4	37.3	36.7	36.3	36.0	35.8	34.4	35.1	0.985 (0.983-0.987)	1.5%*
Antipsychotic use	21.6	20.7	20.5	19.3	18.4	18.5	18.4	18.1	17.7	18.2	0.980 (0.977-0.982)	2.0%*

*Statistically significant to $p < 0.05$.

Source: Department of Health and Aged Care published on GEN-agedcaredata.gov.au

Conclusion

This quarterly report uses data collected under the National Aged Care Mandatory Quality Indicator Program Manual 3.0. In this quarter, 92% of services that claimed Australian Government subsidies for delivering care provided QI data, less than the previous quarter (97%).

Measurement and reporting factors impacting on data quality remain and some are described earlier in these technical notes. For example, QI data are submitted by residential

aged care providers as aggregated data at the service level and there is no mechanism for independent monitoring or validation against source data. In addition, QIs are not risk adjusted at the service level to account for different case-mix of residents. Similarly, analyses to compare QI data between geographic regions and over time are not risk adjusted and do not consider factors that might affect differences (e.g. case mix, service size).

Because of these limitations, AIHW advise that caution should be exercised in interpreting compiled QI values. Caution also needs to be taken when interpreting changes in QI values across quarters, and when comparing QIs in less populated states and territories where small differences in counts of QIs can cause fluctuations in QI percentages from quarter to quarter.

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