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Health and Welfare

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AGED CARE DATA

# **Residential Aged Care Quality Indicators— January to March 2025**

**Technical notes**

**27 June 2025**

**The Australian Institute of Health and Welfare is an independent statutory Australian Government agency producing authoritative and accessible information and statistics to inform and support better policy and service delivery decisions, leading to better health and wellbeing for all Australians.**

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### **Suggested citation**

Australian Institute of Health and Welfare (2025) *Residential Aged Care Quality Indicators—January to March 2025 Technical notes*, AIHW, Australian Government.

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Published by the Australian Institute of Health and Welfare.

**Please note that there is the potential for minor revisions of data in this report.  
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# National Aged Care Mandatory Quality Indicator Program:

## 1 January to 31 March 2025

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](#) (QI Program Manual).

## Data collection and transmission to AIHW

In accordance with the QI Program 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 QIs App in the Government Provider Management System (GPMS) to the Department of Health, Disability and Ageing (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 for the provision of computation and reporting services for the QI Program. Throughout the life of these contracted periods, the Department have provided the QI data to the AIHW. Raw QI data for the quarter 1 January to 31 March 2025 were provided to the AIHW on 30 April 2025 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., 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 QIs 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 QI 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 QI Program Manual, for all QIs except for Workforce, 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:

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

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.

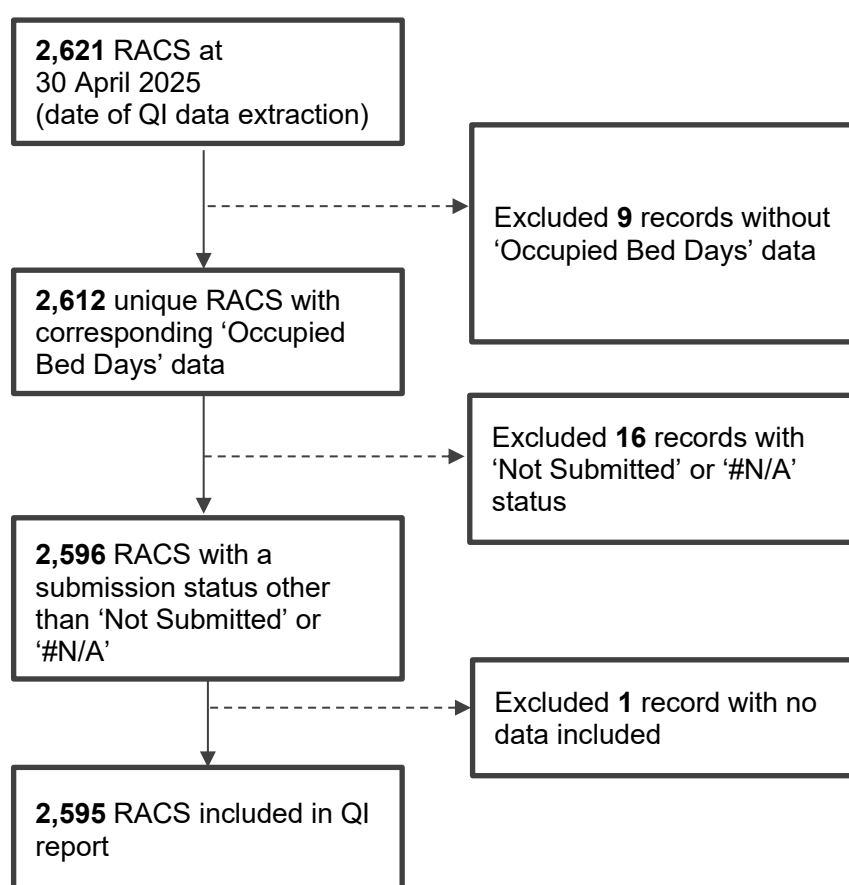
## Service participation, and estimated care recipient coverage

For this quarter, providers were required to submit QI data to the Department by 21 April 2025. The QI raw data were then extracted by the Department on 30 April 2025, comprising data from 2,621 RACS. The QI records were then filtered using Occupied Bed Days (OBD) data to derive an approximate denominator. OBD data were extracted from the Quarterly Financial Report system by the Department on 30 April 2025 and supplied to the AIHW on 2 May 2025. Nine RACS were excluded due to not having available data about Australian Government subsidies for delivering care, services and accommodation (OBD data).

Of the remaining 2,612 RACS, 2,562 (98.1%) had a submission status of 'Submitted' (i.e., QI data were submitted on time), 21 (0.8 %) were 'Submitted - Updated After Due Date', 13 (0.5%) were recorded as a 'Late submission', 14 (0.5%) were recorded as 'Not Submitted' and 2 (0.1%) had '#N/A'. The 16 RACS with a 'Not Submitted' or '#N/A' status were excluded from the analyses presented in this quarterly report.

Finally, 1 (0.04%) of the remaining 2,596 RACS did not submit any QI data and was excluded, resulting in the final data set of 2,595 RACS with at least some QI data submitted. Compared with the previous quarter, this represents a decrease in RACS included in this quarterly report of 0.23%. Of the included 2,595 RACS, 2,562 (98.7%) submitted QI data for all 11 QIs and 26 (1.0%) submitted data for 9 or 10 QIs.

**Figure S1: Flow diagram of including residential age care services in the report**



The QI Program's coverage of the estimated care recipient population ranged from 99.3% for consumer experience to greater than 109.6% for falls and major injury (Table S1). 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 QIs measure one event per individual, the denominator data are calculated using an approximation – dividing the number of 'Occupied Bed Days' (OBD) for a quarter by the number of days in 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. It should also be noted that in the interests of timeliness for the release of this quarterly report, the preliminary OBD data extracted on 30 April 2025 was used in the analysis; prior to finalisation of the quality assurance of these data by the Department.

Preliminary data is considered robust for this purpose as only minor changes to data are expected after the quality assurance process since the date of OBD data extraction.

The number of care recipients excluded (Table S1, Columns C and D) was highest for consumer experience and quality of life (31.6% and 32.0%, respectively). For these QIs, the most common reason for exclusion was that the care recipient did not choose to complete the survey.

**Table S1: Estimated care recipient coverage and exclusions in the RACS QI Program, January to March 2025**

| QI                                     | 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                      | 210,035                                                           | 104.1%                                                          | 1,007 (0.5%)                                                 | 462 (0.2%)                                        | 208,566 (99.3%)                                 |
| Physical restraint                     | 204,729                                                           | 101.5%                                                          | N.A.                                                         | 1,895 (0.9%)                                      | 202,834 (99.1%)                                 |
| Unplanned weight loss — significant    | 220,189                                                           | 109.2%                                                          | 4,686 (2.1%)                                                 | 42,064 (19.1%)                                    | 173,439 (78.8%)                                 |
| Unplanned weight loss — consecutive    | 219,425                                                           | 108.8%                                                          | 5,724 (2.6%)                                                 | 44,646 (20.3%)                                    | 169,055 (77.0%)                                 |
| Falls and major injury                 | 221,052                                                           | 109.6%                                                          | N.A.                                                         | 345 (0.2%)                                        | 220,707 (99.8%)                                 |
| Medication management — polypharmacy   | 203,860                                                           | 101.1%                                                          | N.A.                                                         | 1,490 (0.7%)                                      | 202,370 (99.3%)                                 |
| Medication management — antipsychotics | 204,058                                                           | 101.2%                                                          | N.A.                                                         | 842 (0.4%)                                        | 203,216 (99.6%)                                 |
| Activities of daily living             | 218,894                                                           | 108.5%                                                          | N.A.                                                         | 29,090 (13.3%)                                    | 189,804 (86.7%)                                 |
| Incontinence                           | 208,787                                                           | 103.5%                                                          | N.A.                                                         | 784 (0.4%)                                        | 208,003 (99.6%)                                 |
| Incontinence associated dermatitis     | 208,787                                                           | 103.5%                                                          | N.A.                                                         | 49,827 (23.9%)                                    | 158,960 (76.1%)                                 |
| Hospitalisations                       | 220,178                                                           | 109.1%                                                          | N.A.                                                         | 333 (0.2%)                                        | 219,845 (99.8%)                                 |
| Workforce**                            | N.A.                                                              | N.A.                                                            | N.A.                                                         | N.A.                                              | N.A.                                            |
| Consumer experience                    | 200,410                                                           | 99.3%                                                           | 60,157 (30.0%)                                               | 3,272 (1.6%)                                      | 136,981 (68.4%)                                 |
| Quality of life                        | 201,432                                                           | 99.9%                                                           | 61,327 (30.4%)                                               | 3,158 (1.6%)                                      | 136,947 (68.0%)                                 |

**Notes:**

\* Included RACS were those that had submitted QI data by the date of 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 (201,726) 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, Disability and Ageing, QI and OBD data extracted 30 April 2025, 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 were 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 2024 (the latest available) to bring the QI data together with the Modified Monash Model (MMM) 2019 remoteness classifications for the 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, 2,586 of the 2,595 included records matched with a service identified in the NACDC. Nine records did not match with NACDC service list but could be matched to MMM using the MMM 2019 list.

Remoteness was based on the MMM 2019 classifications obtained from the NACDC 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).

Note that the QI data presented in this report are not risk adjusted for the varying case-mix of service populations. Caution should be exercised in interpreting and comparing QIs in states and territories where smaller populations mean fewer services, such as NT, ACT and TAS, and small differences in counts of QIs from quarter to quarter can cause fluctuations in QI percentages across quarterly reporting.

## Coherence, inconsistencies, and outliers 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. Similar to the QI Program Manual 2 (in place since 1 July 2021), the QI Program Manual 3.0 counts the number of care recipients meeting QI criteria and produces prevalence rates in the form of percentages. This value is calculated by dividing the number of eligible care recipients that meet the criteria to be counted for the QI by the total number of eligible care recipients assessed for that QI and then multiplying by 100.

Due to reporting requirements, measurement and reporting factors, the AIHW does not undertake any data cleaning prior to compiling the figures in this report. For example, QI data are submitted by RACS as aggregated data at the service level and there is no process for independent monitoring or validation against source data. Therefore, the AIHW has no firm basis for determining that an apparent ‘outlier’ (i.e. extreme value) in the distribution of QIs across RACS represents an incorrect data point.

Some variation in the total number of care recipients assessed in a RACS against each of the QIs can be expected given that measurements for different QIs can occur at different times within the quarter, and each QI has different exclusion criteria. However, the magnitude of this variation for some RACS points to possible data entry errors or misinterpretation of the QI Program Manual or reporting template. While in certain situations the reporting of 100% prevalence for a QI may be plausible, in others it may indicate under-reporting of the number of care recipients assessed or over-reporting of the number of care recipients who met the criteria for the QI. Rates of 100% and 0% monitored in this report is to identify any such data quality issues.



For QIs where higher percentages indicate poorer performance, 100% prevalence reporting was most common for physical restraint (0.5%). This is expected as some services that have reported 100% for physical restraint are specialist dementia services within a locked facility. Therefore, all care recipients in these services would be assessed as being physically restrained exclusively through the use of a secure area (as per the manual). For QIs where higher percentages indicate better performance, 100% prevalence reporting was most common for consumer experience (13.3%) (Table S2). Some RACS reported zero care recipients meeting the criteria for individual QIs, which varied between QIs (Table S2).

**Table S2. Selected RACS reporting characteristics in the Mandatory QI Program, January to March 2025**

| QI                                                                                 | Number of RACS<br>that reported<br>100% QI rate | Percentage of<br>RACS that reported<br>100% QI rate | Number of RACS<br>that reported<br>0% QI rate | Percentage of<br>RACS that reported<br>0% QI rate |
|------------------------------------------------------------------------------------|-------------------------------------------------|-----------------------------------------------------|-----------------------------------------------|---------------------------------------------------|
| One or more pressure injuries                                                      | 1                                               | 0.0%                                                | 306                                           | 11.8%                                             |
| Physical restraint                                                                 | 13                                              | 0.5%                                                | 463                                           | 17.8%                                             |
| Significant unplanned weight loss                                                  | 2                                               | 0.1%                                                | 184                                           | 7.1%                                              |
| Consecutive unplanned weight loss                                                  | 5                                               | 0.2%                                                | 176                                           | 6.8%                                              |
| Falls                                                                              | 0                                               | 0.0%                                                | 10                                            | 0.4%                                              |
| Falls that resulted in major injury                                                | 0                                               | 0.0%                                                | 905                                           | 34.9%                                             |
| Polypharmacy                                                                       | 8                                               | 0.3%                                                | 5                                             | 0.2%                                              |
| Antipsychotics                                                                     | 5                                               | 0.2%                                                | 27                                            | 1.0%                                              |
| Activities of daily living                                                         | 3                                               | 0.1%                                                | 128                                           | 4.9%                                              |
| Incontinence associated dermatitis                                                 | 1                                               | 0.0%                                                | 712                                           | 27.4%                                             |
| Hospitalisations – Emergency<br>department presentations                           | 2                                               | 0.1%                                                | 139                                           | 5.4%                                              |
| Hospitalisations – Emergency<br>department presentations or hospital<br>admissions | 1                                               | 0.0%                                                | 60                                            | 2.3%                                              |
| Workforce                                                                          | 3                                               | 0.1%                                                | 569                                           | 21.9%                                             |
| Consumer experience                                                                | 345                                             | 13.3%                                               | 2                                             | 0.1%                                              |
| Quality of life                                                                    | 175                                             | 6.7%                                                | 3                                             | 0.1%                                              |

Note: Percentages are calculated in relation to 2,595 RACS

Source: Department of Health, Disability and Ageing, data extracted 30 April 2025, published on GEN-agedcaredata.gov.au

# Trend analysis

## Regression model

Analysis to examine trends in QIs over time was conducted using a quasi-Poisson regression model. 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 as outlined in Formula 1 was used to examine the long-term trend in aggregated QIs over all quarters of available data, i.e. since Q1 (July to September) 2021-22 to the latest quarter Q3 (January to March) 2024-25. Quasi-Poisson regression fits an extra dispersion parameter to account for the extra variance. Models were fitted in R 4.2.2 using the `glm()` function with `family = "quasipoisson"`.

$$\log(Y_{ij}) = \log(n_{ij}) + \beta_0 + \beta_1 t_j$$

### Formula 1. Quasi-Poisson regression model

Where:

- $Y_{ij}$  = the count of care recipients who meet the criteria for QI  $i$  (one or more pressure injuries, physical restraint, significant unplanned weight loss, consecutive unplanned weight loss, polypharmacy, antipsychotics) in quarter  $j$ .
- $\beta_0, \beta_1$  = fitted regression coefficients
- $t_j$  = quarter number (i.e.,  $t_j = 1, 2, \dots, J$ ; where  $J$  is the total number of quarters of available data)
- $n_{ij}$  = the number of care recipients assessed for QI  $i$  in quarter  $j$ .

Differences in numbers of care recipients assessed by each service are considered by including an **offset** in the model ( $\log(n_{ij})$ ) 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 S3). 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 QI 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  $100 \times (1 - 0.975) = 2.5\%$  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  $100 \times (1.014 - 1) = 1.4\%$  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.

## Count data used for trend analysis

In previous QI quarterly reports, the trend analysis was performed by fitting the quasi-Poisson regression model to raw service-level count data for each quarter. However, as the QI program has matured and more data have become available, it has become apparent that this approach did not appropriately capture the variability in the data. A slightly amended approach was proposed and endorsed for implementation starting this quarter (Q3 2024-25). The new approach retains the quasi-Poisson regression model but uses quarterly count data that has been aggregated across all services to fit the model instead of the raw service-level count data. This amendment better accounts for variability within the data over time.

### Raw service-level count data (used for trend analysis in previous quarterly reports)

For a given QI indicator, the quarterly raw data consist of:

- the number of care recipients meeting the criteria for the QI in each quarter
- the number of care recipients assessed for the QI in each quarter

**at each service** that submitted QI data.

### Aggregated count data (applied from Q3 2024-25 report)

For a given QI indicator, the quarterly aggregated data consist of:

- the total number of all care recipients meeting the criteria for the QI in each quarter
- the total number of care recipients assessed for the QI in each quarter

**summed over all services** that submitted QI data.

Due to correlations in the raw service level count data, using these data to fit the quasi-Poisson regression model can underestimate the dispersion parameter (which indicates the degree of variance in the data), resulting in 95% confidence intervals that are artificially too narrow. Using the aggregated data model, the dispersion parameter is better estimated, in turn resulting in wider confidence intervals that more appropriately capture the level of variation in the data.

In these Technical Notes for the Q1 Q3 2024-25 quarterly report, both the original and new trend analysis approaches (using raw and aggregate count data, respectively) were applied for comparison while transitioning to the new approach. The results shown in Table S3 below indicate no differences in the estimated long-term QI trends (e.g. from Q1 2020-21 to Q3 2024-25) between the two approaches, with identical risk ratios estimated using both approaches. While the new approach using aggregate data resulted in wider 95% confidence intervals and larger p-values, conclusions relating to the statistical significance of the estimated trends ( $p < 0.05$ ) remain the same. Therefore, the trend graphs and trend conclusion in the main report for Q3 2024-25 are consistent for both approaches.

From the next reporting period (Q4 2024-25), only results produced using the new trend analysis approach will be reported.

**Table S3: Trend analysis outputs using raw service-level count data and aggregated data for QI data from Q1 July–September 2021 to Q3 October–December 2024**

| QI                                                                        | Previous approach:<br>Using raw service-level count data |                                                                |                                                 | Current approach:<br>Using aggregated data |                                                                |                                                 |
|---------------------------------------------------------------------------|----------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------|--------------------------------------------|----------------------------------------------------------------|-------------------------------------------------|
|                                                                           | Risk ratio (95%<br>Confidence<br>Interval)               | Relative<br>quarterly<br>change in<br>prevalence<br>proportion | Statistically<br>significant<br>trend (p <0.05) | Risk ratio (95%<br>Confidence<br>Interval) | Relative<br>quarterly<br>change in<br>prevalence<br>proportion | Statistically<br>significant<br>trend (p <0.05) |
| Pressure injuries                                                         | 0.988 (0.987-0.990)                                      | -1.2%*                                                         | Decrease                                        | 0.988 (0.983-0.994)                        | -1.2%*                                                         | Decrease                                        |
| Physical restraint                                                        | 0.987 (0.985-0.989)                                      | -1.3%*                                                         | Decrease                                        | 0.987 (0.980-0.994)                        | -1.3%*                                                         | Decrease                                        |
| Physical restraint exclusively through the use of a secure area           | 0.988 (0.985-0.991)                                      | -1.2%*                                                         | Decrease                                        | 0.988 (0.981-0.995)                        | -1.2%*                                                         | Decrease                                        |
| Significant unplanned weight loss                                         | 0.985 (0.983-0.986)                                      | -1.5%*                                                         | Decrease                                        | 0.985 (0.975-0.995)                        | -1.5%*                                                         | Decrease                                        |
| Consecutive unplanned weight loss                                         | 0.986 (0.984-0.987)                                      | -1.4%*                                                         | Decrease                                        | 0.986 (0.975-0.996)                        | -1.4%*                                                         | Decrease                                        |
| Falls (total)                                                             | 0.999 (0.999-1.000)                                      | -0.1%                                                          | No change                                       | 0.999 (0.998-1.001)                        | -0.1%                                                          | No change                                       |
| Falls that resulted in major injury                                       | 0.979 (0.977-0.982)                                      | -2.1%*                                                         | Decrease                                        | 0.979 (0.975-0.984)                        | -2.1%*                                                         | Decrease                                        |
| Medication management - Polypharmacy                                      | 0.991 (0.990-0.991)                                      | -0.9%*                                                         | Decrease                                        | 0.991 (0.988-0.994)                        | -0.9%*                                                         | Decrease                                        |
| Medication management - Antipsychotics                                    | 0.986 (0.985-0.988)                                      | -1.4%*                                                         | Decrease                                        | 0.986 (0.983-0.990)                        | -1.4%*                                                         | Decrease                                        |
| Activities of daily living                                                | 0.997 (0.992-1.002)                                      | -0.3%                                                          | No change                                       | 0.997 (0.977-1.017)                        | -0.3%                                                          | No change                                       |
| Incontinence                                                              | 0.996 (0.994-0.997)                                      | -0.4%*                                                         | Decrease                                        | 0.996 (0.992-0.999)                        | -0.4%*                                                         | Decrease                                        |
| Incontinence associated dermatitis                                        | 1.004 (0.996-1.012)                                      | 0.4%                                                           | No change                                       | 1.004 (0.997-1.011)                        | 0.4%                                                           | No change                                       |
| Hospitalisations - Emergency department presentations                     | 1.011 (1.007-1.015)                                      | 1.1%*                                                          | Increase                                        | 1.011 (1.006-1.016)                        | 1.1%*                                                          | Increase                                        |
| Hospitalisations - Emergency department presentations or hospitalisations | 1.009 (1.006-1.012)                                      | 0.9%*                                                          | Increase                                        | 1.009 (1.003-1.015)                        | 0.9%*                                                          | Increase                                        |
| Workforce                                                                 | 0.966 (0.958-0.973)                                      | -3.4%*                                                         | Decrease                                        | 0.966 (0.946-0.986)                        | -3.4%*                                                         | Decrease                                        |
| Consumer experience                                                       | 1.008 (1.006-1.009)                                      | 0.8%*                                                          | Increase                                        | 1.008 (1.006-1.010)                        | 0.8%*                                                          | Increase                                        |
| Quality of life                                                           | 1.010 (1.008-1.011)                                      | 1.0%*                                                          | Increase                                        | 1.010 (1.007-1.013)                        | 1.0%*                                                          | Increase                                        |

\*Statistically significant to  $p < 0.05$ .

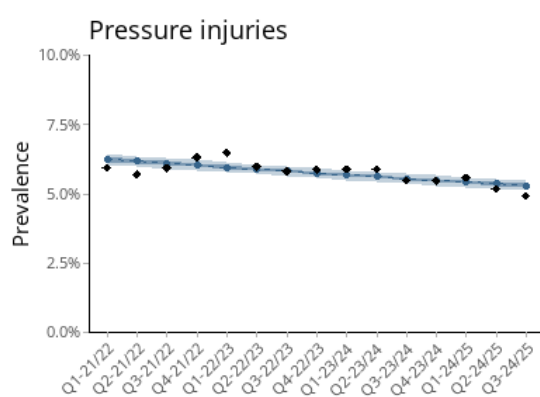
Source: Department of Health, Disability and Ageing, data extracted 30 April 2025, published on GEN-agedcaredata.gov.au

Figure S1 below provides a visual comparison of the trend analysis outputs produced using the quasi-Poisson model fitted to raw service-level count data and aggregated count data for 15 quarters of data, from July-September 2021 to January-March 2025. This figure demonstrates that the use of aggregated data better captures the variability of the data around the fitted trend line, with the majority of data points falling within the 95% prediction limits for all QIs.

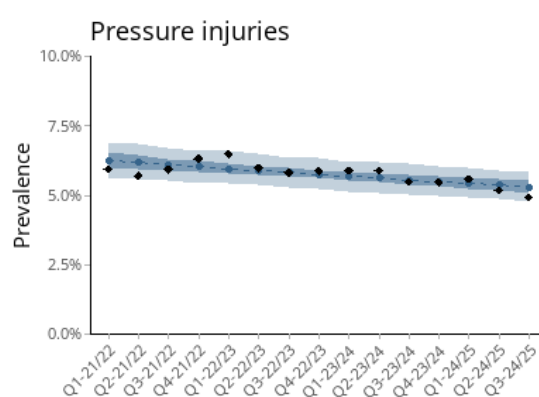
**Figure S1: Trend analyses outputs using raw service-level count data and aggregated count data for QI data, from July-September 2021 to January-March 2025**

Dashed line (in the middle): estimated trend line  
Darker shaded band: 95% confidence intervals  
Light shaded band: 95% prediction limits  
Black points: observed data

### Pressure injuries



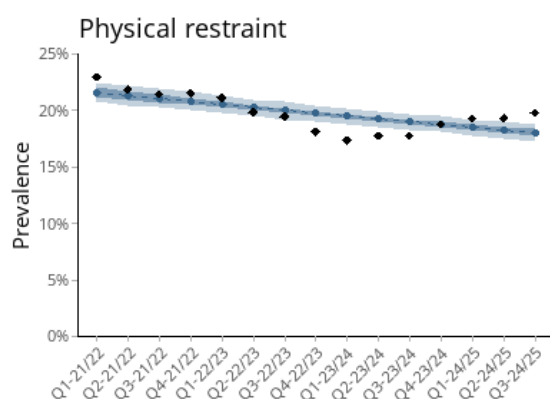
Using raw service-level count data



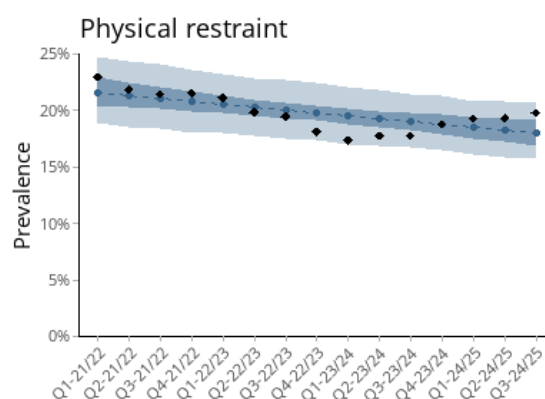
Using aggregated data

Trend in both approaches: decrease

### Physical restraint



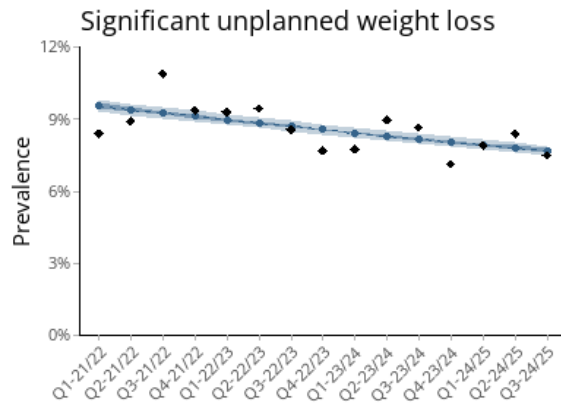
Using raw service-level count data



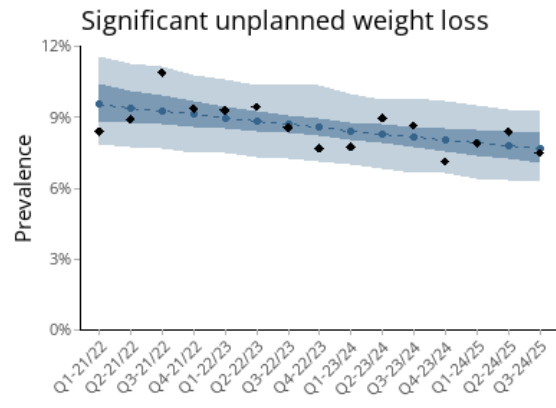
Using aggregated data

Trend in both approaches: decrease

## Unplanned weight loss

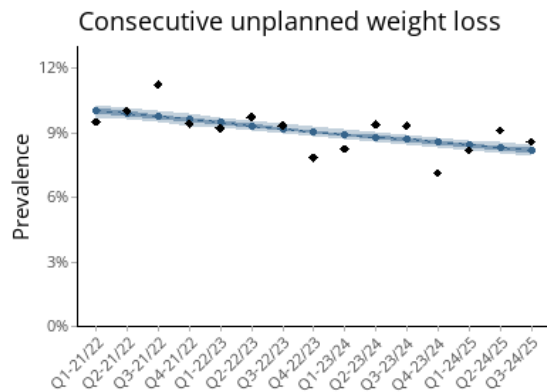


Using raw service-level count data

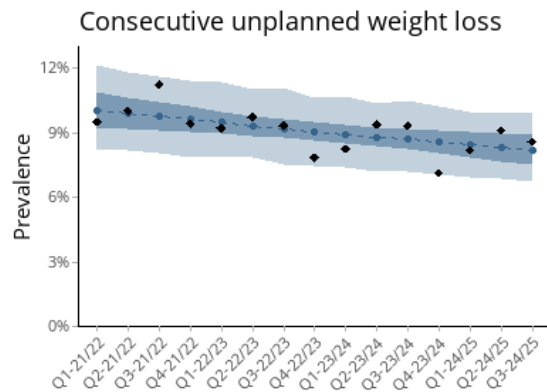


Using aggregated data

Trend in both approaches: decrease



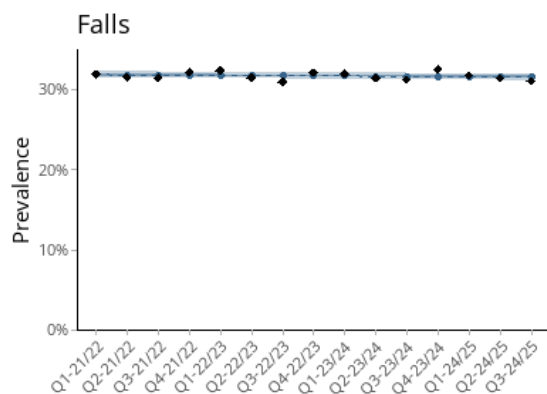
Using raw service-level count data



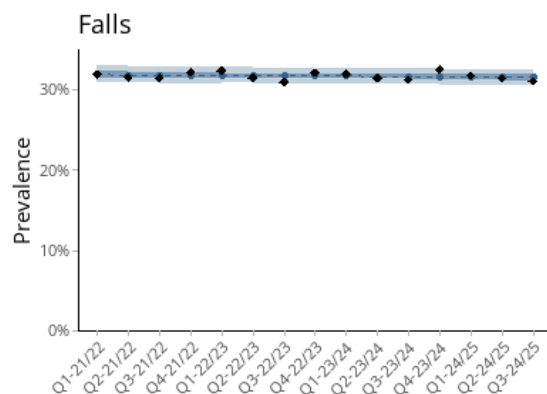
Using aggregated data

Trend in both approaches: decrease.

## Falls and major injury

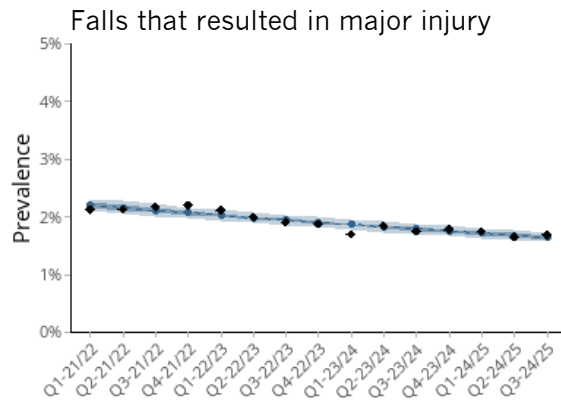


Using raw service-level count data

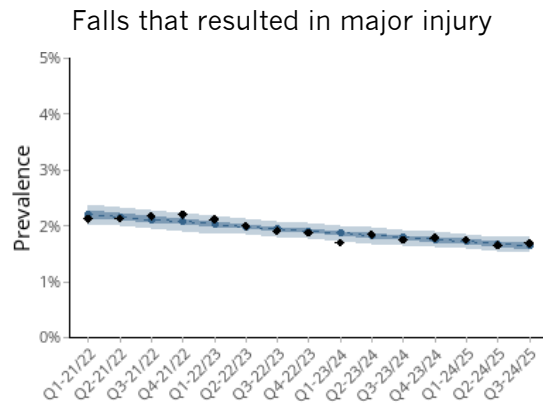


Using aggregated data

Trend in both approaches: no change.



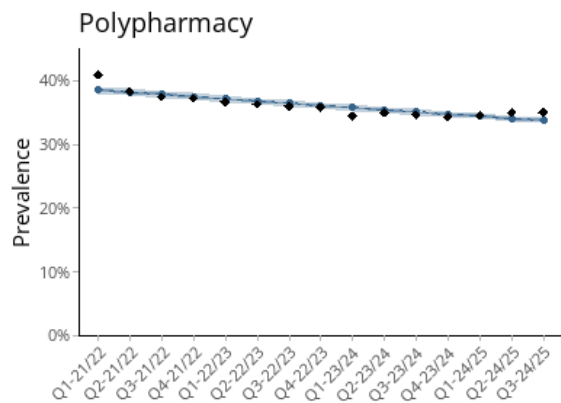
Using raw service-level count data



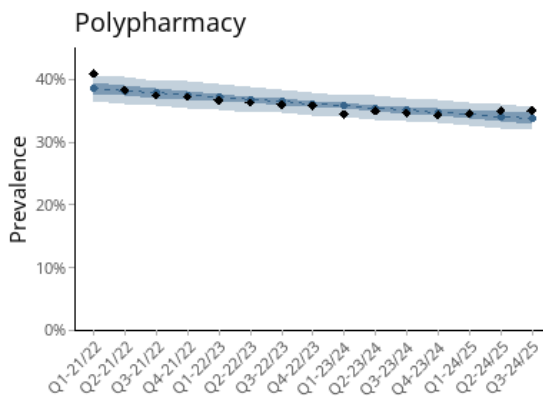
Using aggregated data

Trend in both approaches: decrease.

## Medication management

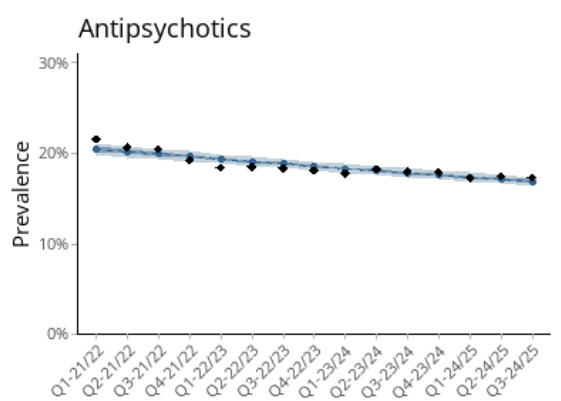


Using raw service-level count data

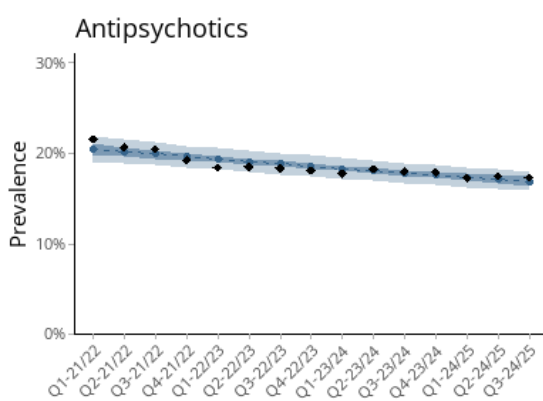


Using aggregated data

Trend in both approaches: decrease.



Using raw service-level count data

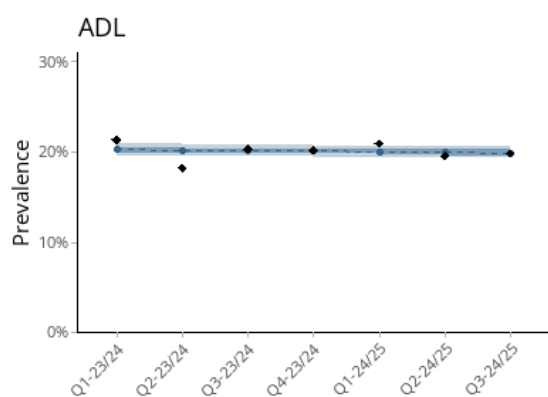


Using aggregated data

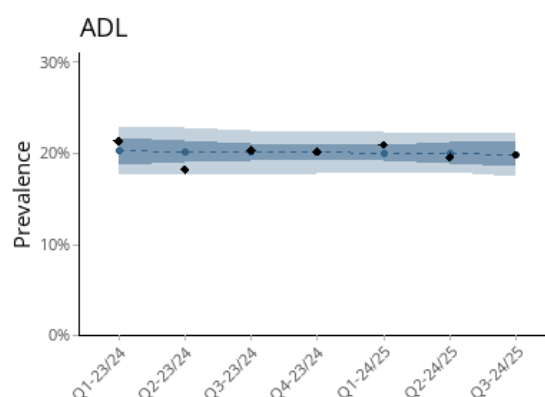
Trend in both approaches: decrease.



## Activities of daily living (ADL)



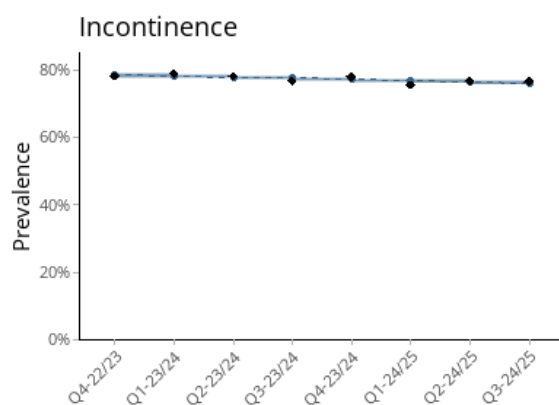
Using raw service-level count data



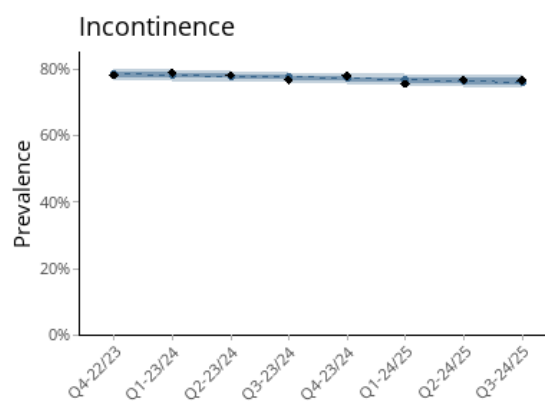
Using aggregated data

Trend in both approaches: no change.

## Incontinence care

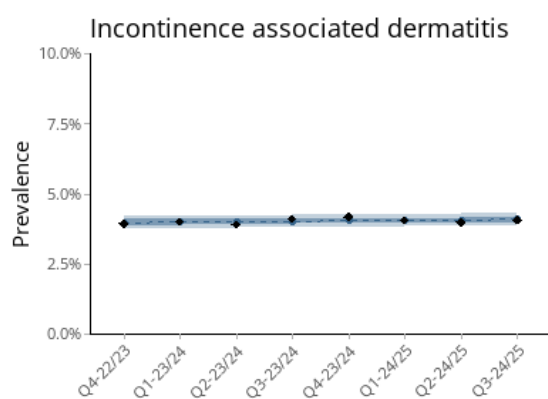


Using raw service-level count data

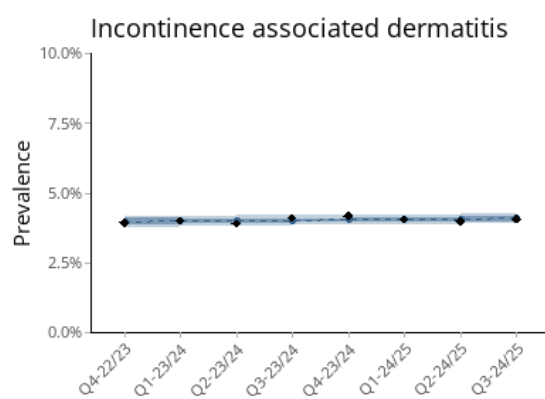


Using aggregated data

Trend in both approaches: decrease.



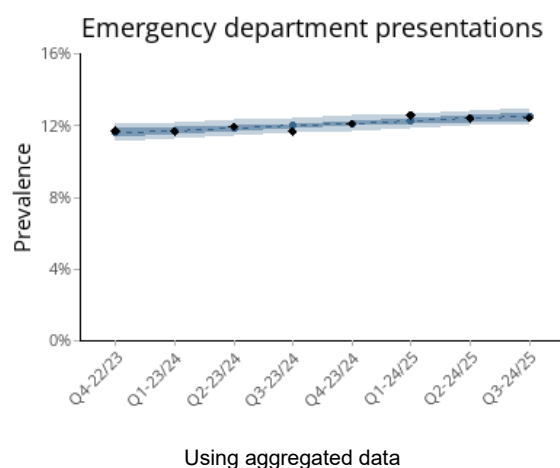
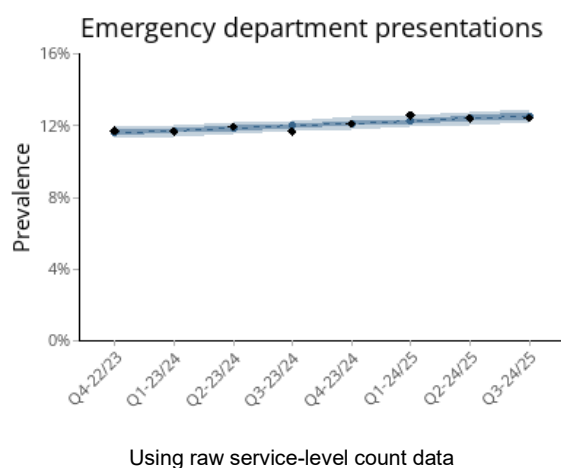
Using raw service-level count data



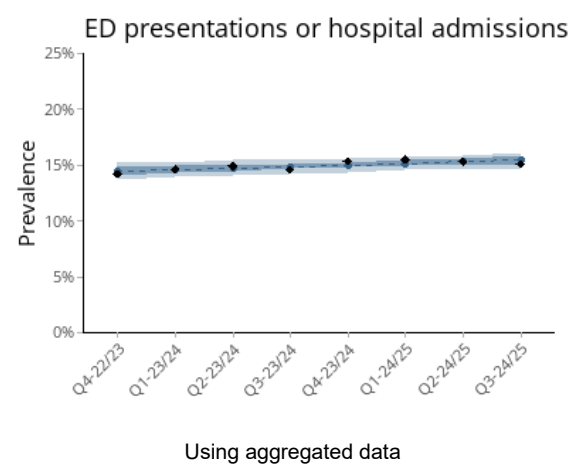
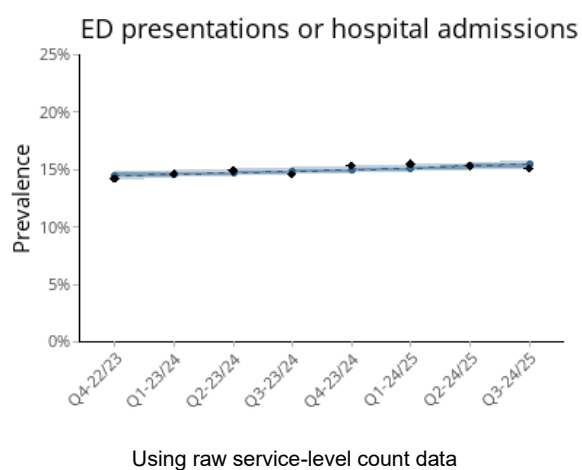
Using aggregated data

Trend in both approaches: no change.

## Hospitalisation

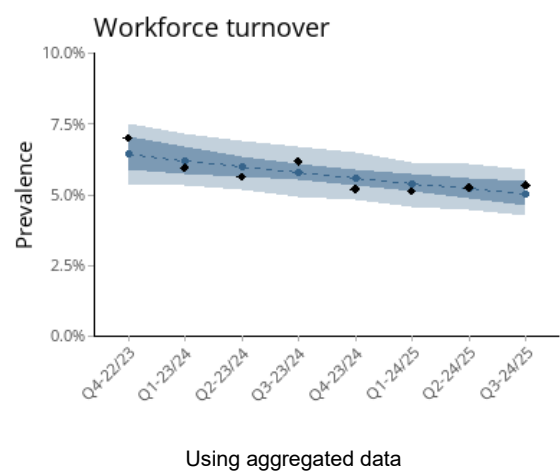
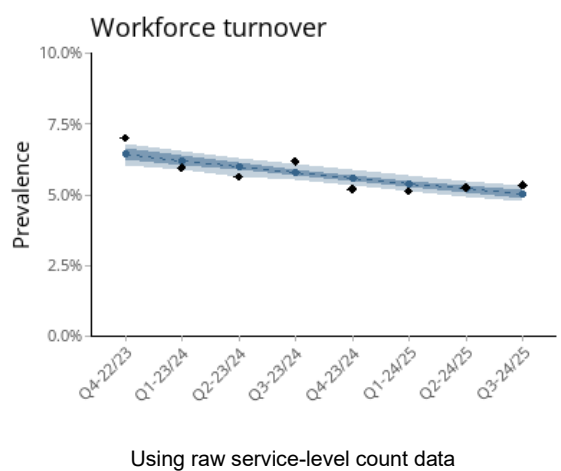


Trend in both approaches: increase.



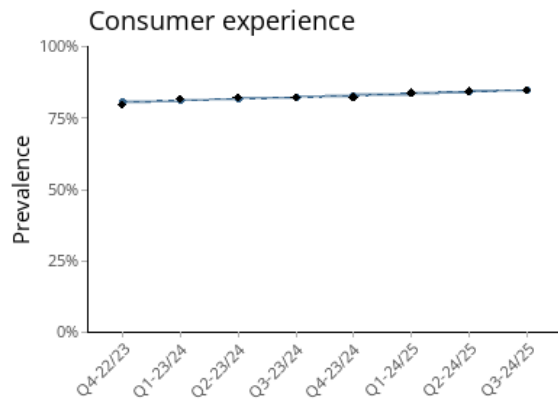
Trend in both approaches: increase.

## Workforce

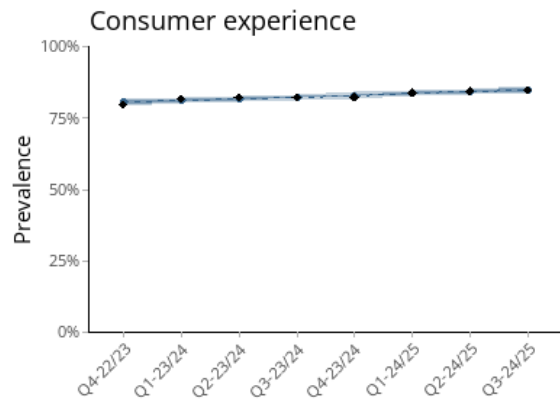


Trend in both approaches: decrease.

## Consumer experience



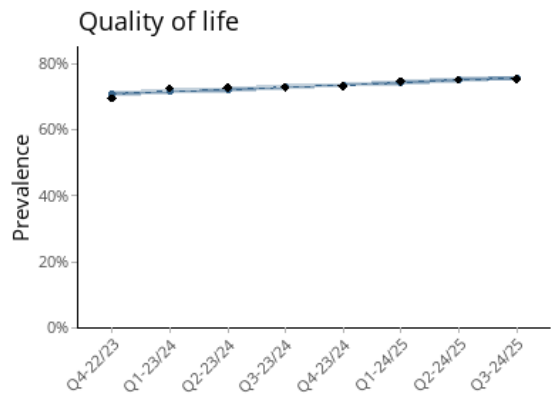
Using raw service-level count data



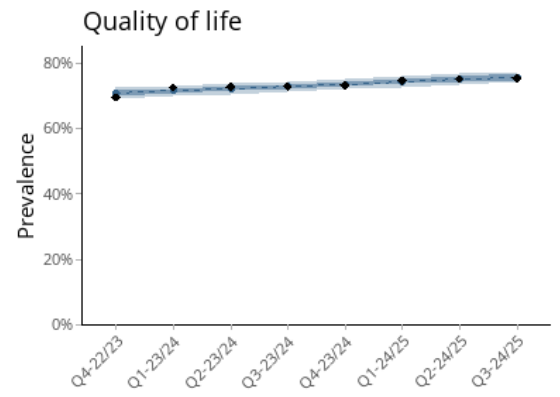
Using aggregated data

Trend in both approaches: increase.

## Quality of life



Using raw service-level count data



Using aggregated data

Trend in both approaches: increase.

## References

Department of Health 2019. Modified Monash Model (MMM)-Suburb and Locality Classification. Department of Health.

Department of Health 2021. Modified Monash Model – fact sheet. Canberra: Department of Health.

Department of Health and Aged Care 2024. [National Aged Care Mandatory Quality Indicator Program Manual 3.0](#). Canberra: Department of Health and Aged Care.

Department of Health and Aged Care 2024. [National Aged Care Mandatory Quality Indicator Program Manual 4.0](#). Canberra: Department of Health and Aged Care.