# Australasian Clinical Indicator Report

**23RD EDITION**

2014 - 2021

ACHS

AUSTRALASIAN CLINICAL INDICATOR REPORT: 2014–2021 23RD EDITION.

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Australia

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**Disclaimer**
The expert commentary provided by the colleges, societies, and associations is contributed in response to a request from ACHS.
Although ACHS appreciates the insights provided, it does not necessarily agree with or endorses the views expressed.

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The ACHS Performance and Outcomes Service (POS) would also like to thank its collaborators in the development and review of the Clinical Indicators (CIs), particularly the Working Party Chairs and members. In addition, POS acknowledges the role played by the Health Services Research Group (HSRG) at the University of Newcastle in preparing this report.


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# CLINICAL INDICATOR WORKING PARTIES

ACHS CIs are developed by Working Parties comprising of practising clinicians (medical officers, nurses and allied health professionals in the relevant specialty field), representatives of the relevant Australian and New Zealand colleges, associations and societies, consumer representatives, statisticians and ACHS staff.

Selected Working Parties meet several times throughout the year, both in person and via teleconference, to review the existing CIs and explore areas for new CIs. The revised version of the CI set and its User Manual are then endorsed by the relevant colleges, associations or societies prior to implementation.

CI sets are regularly reviewed to ensure:

- they are relevant for clinicians
- they continue to reflect today's healthcare environment
- there is consensus on collection and reporting requirements
- they are regarded as useful for quality improvement.

**List of Clinical Indicator Working Party Chairs and participating organisations**

| CI set | Working Party Chair | Participating organisations |
|---|---|---|
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# CLINICAL INDICATOR WORKING PARTIES

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# FOREWORD

On behalf of the Australian Council on Healthcare Standards (ACHS), I am delighted to provide this foreword for the *Australasian Clinical Indicator Report 23rd Edition 2014-2021*. The report examines data sourced from a broad range of clinical specialty areas supporting the use of performance data in safety and quality improvement.

As in previous years, the *Australasian Clinical Indicator Report* provides key points on significant trends, strata differences and outlier effects between 2014 and 2021 for a broad range of Clinical Indicators.

The report also includes commentary by professionals within the respective healthcare specialty to provide context to the complex and ever-changing healthcare environment and offers insight for the potential to improve quality and safety within their facility.

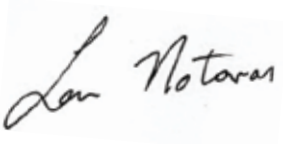
During the 33-year history of the Clinical Indicators and with this new *Australasian Clinical Indicator Report*, ACHS has proudly collaborated with medical colleges, societies, and associations. These key stakeholders have contributed comments within their specialist area for each of the 22 Clinical Indicator sets, which contains 330+ individual Clinical Indicators, and we sincerely thank them for their time and contributions.

Professor Stephen Tobin and Mr. Simon Cooper have written the feature report which discusses the impact of COVID-19 on the performance of several indicators within the ACHS sets showing the changing face of healthcare throughout the pandemic.

The ACHS provides the *Australasian Clinical Indicator Report* to key health industry bodies, Federal and State Governments, our members and assessors, and other interested parties. The report is available to download on the ACHS website. A full retrospective report for each Clinical Indicator set is also available on the website.

I commend the *Australasian Clinical Indicator Report 23rd Edition 2014-2021* as a valuable resource for our healthcare industry.

In providing this insight, I would like to extend my appreciation to all collaborating colleges, associations and societies. Their ongoing support of the Clinical Indicator Program allows us to continue our efforts to improve healthcare standards in Australia and internationally.



Professor Len Notaras AO
President, Board of Directors

# ABOUT THE AUSTRALASIAN CLINICAL INDICATOR REPORT (ACIR)

This *Australasian Clinical Indicator Report 23rd Edition 2014-2021* provides an overview of the results for each CI set for the last eight years, with additional commentary from the collaborating medical colleges, associations, specialist societies and other clinical organisations. Their expertise provides context for the trends or variations observed in the data.

### A Printed Report

This report summarises the CI data submitted to the ACHS Clinical Indicator Program for the years from 2014-2021. The report highlights significant trends or variation in the data over time, which can suggest areas where there is scope to improve practice.

The Summary of Results section, commencing on page 18, describes observations drawn from the data of each CI.

To capture the context and circumstances that influence the data, ACHS draws upon the expertise of the specialist healthcare colleges, societies, and associations, in addition to the other clinical organisations with which it collaborates. Their comments and expert feedback precede the summaries of the data and share subheadings within the Summary of Results and the ACIR Retrospective Data in Full Report, to assist cross-referencing.

The expert commentators review the retrospective data in full and respond to questions from ACHS. The views expressed in the commentaries are those of the authors, and are not necessarily shared by ACHS.

### ACIR Retrospective Data in Full Report

Every year, the Australasian Clinical Indicator Report (ACIR) lists collective performance against each of the ACHS CIs. This information is published on the ACHS website: https://www.achs.org.au/our-services/pos/pos-resources and can be accessed by scanning this QR code with a smartphone or device.

An ACIR Retrospective Data in Full Report is created for every Clinical Indicator set and provides detailed information about each CI collected in 2021. Listed within the report are the CI, its intent, the numerator, and denominator. Tables summarise the data submitted in every year since 2014 that the CI has been available for reporting.

Trends in the rates over time are reported with statistical significance, and the data are displayed in a graph if four or more years of data are available from five or more healthcare organisations (HCOs). There are three measures of variation in rates between HCOs included in this report. These are quantified by the differences between the 20th and 80th centiles.

Where significant differences between strata have occurred in 2021, these data are reported in additional tables, and the information is illustrated graphically using box plots.

The absence of a specific comparator table means that the differences between strata were not statistically significant at three standard deviations or that the minimum number of contributors to enable comparison was not met. Outlier information is displayed through funnel plots.

The full report also statistically estimates the potential improvement (gains) for all eligible CIs, if changes in the distribution of rates were achieved.

### Statistical Methods

The statistical methods used to analyse and report these data are also available online at https://www.achs.org.au/our-services/pos/pos-resources/guides-and-forms, along with a description of how to read, understand and use the retrospective data.

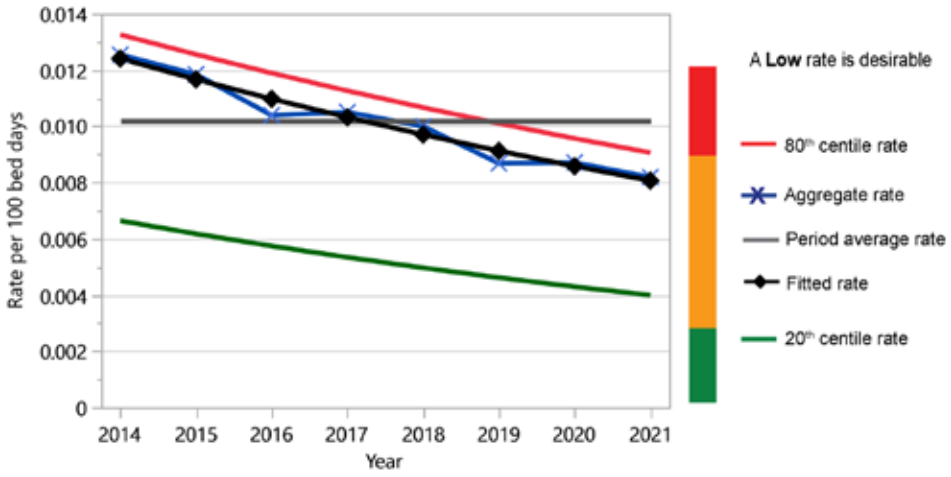
# KEY RESULTS OF 2021 - IMPROVEMENTS

In 2021, there were 101 CIs which showed statistically significant trends in the desired direction. Of these, 59 remained significant after allowing for changes in the HCOs contributing over the period. There were twelve CI sets that had an improvement in at least two-thirds of all trended CIs. They were Anaesthesia and Perioperative Care, Gastrointestinal Endoscopy, Hospital Wide, Infection Control, Intensive Care, Internal Medicine, Mental Health, Oral Health, Paediatrics, Radiology, Rehabilitation Medicine and Radiation Oncology. For the CIs denoted below, (L) means low desirable rate while (H) means high desirable rate. There were noteworthy improvements in the following sets:

## Infection Control

### 6.2 Reported non-parental exposures sustained by staff (L)

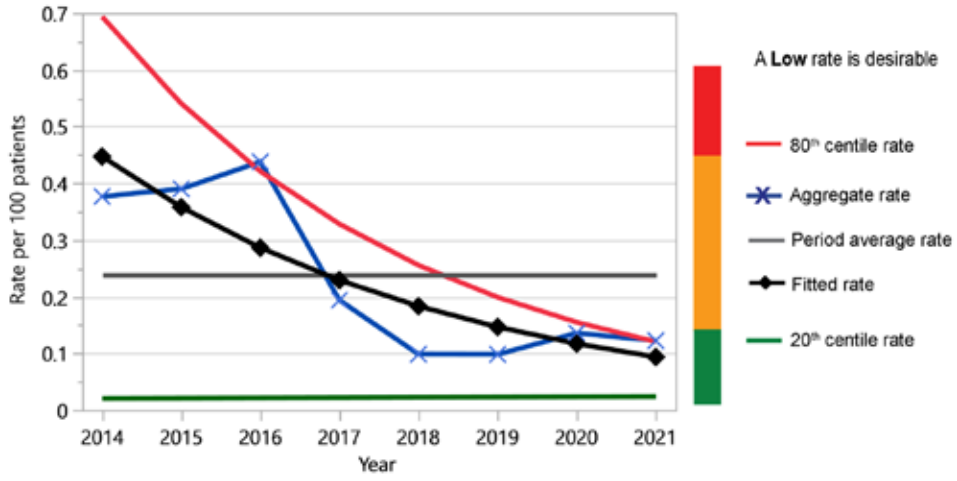
The number of reported non-parental exposures sustained by staff has continued to decrease to its lowest rate of 0.008 in 2021. This indicator has shown a constant decrease in the last seven years. This reflects a growing emphasis on the health and wellbeing of staff, and it is likely that the current COVID-19 pandemic has forced HCOs to implement the use of personal protective equipment for their staff, to reduce exposure to COVID-19 from positive patients.




## Ophthalmology

### 1.3 Cataract surgery - unplanned overnight admission (L)

The number of patients having a discharge intention of one day who had an overnight admission following cataract surgery has significantly decreased from 0.38 in 2014 to its current lowest rate of 0.12 in 2021. System wide variation for this indicator is also at its lowest, as measured by the difference between the 80th (0.20) and 20th (0.026) centiles. This is promising, given that cataract surgery is a common and relatively safe procedure, and unplanned overnight admission may signify complications after surgery.

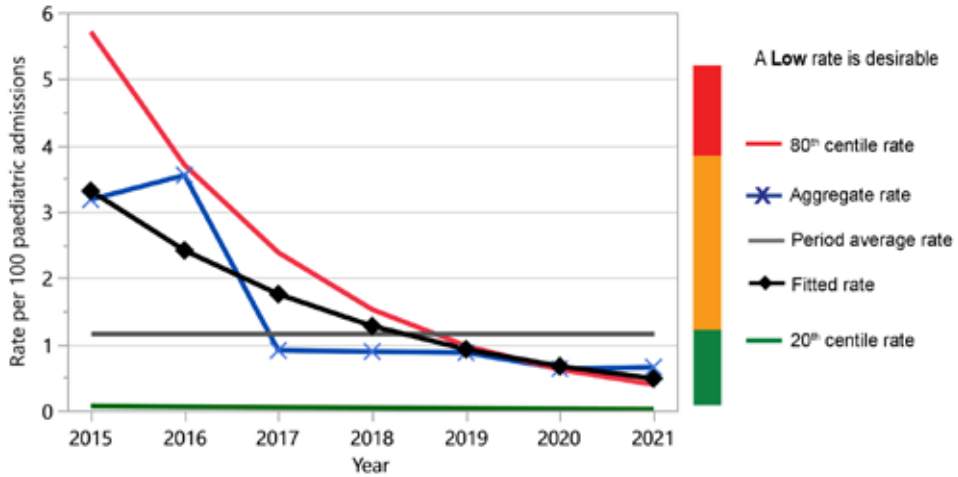


# KEY RESULTS OF 2021 - IMPROVEMENTS

## Paediatrics

### 2.3 Adverse events in a paediatric ward/area (L)

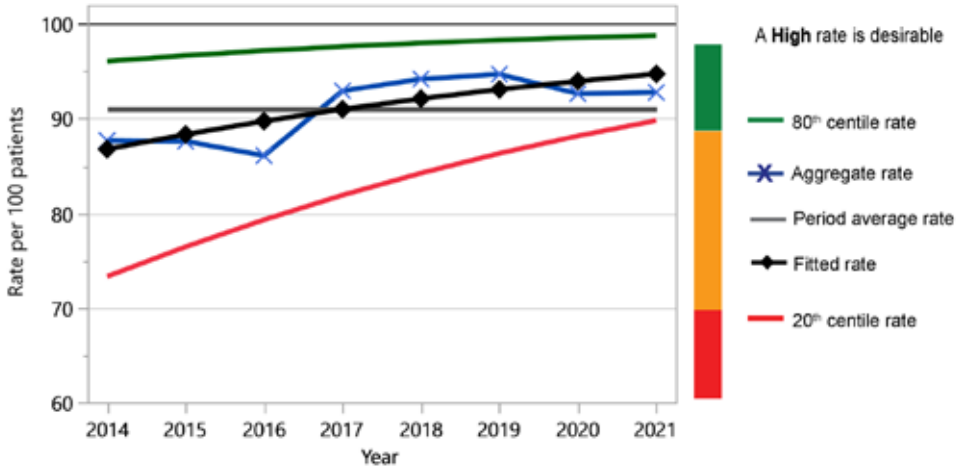
The number of adverse events involving paediatric patients that occur in a ward/area that is specifically dedicated to paediatric patients has continued to decrease to its lowest rate of 0.66 in 2021. Additionally, system wide variation for this indicator has decreased over the years to 0.048 for 20th centile and 0.77 for 80th centile in 2021. This reduction, together with the increase in reporting by a larger number of HCOs (5 HCOs in 2015 compared to 23 in 2021), suggests that there is more emphasis placed on improving supervision and care of paediatric patients.




## Rehabilitation Medicine

### 4.1 Destination after discharge from a rehabilitation program (H)

The number of patients who have completed a rehabilitation program and been discharged to a previous, similar, or improved type of accommodation has increased to 92.8 in 2021 from 87.7 in 2014. It is promising to see that the rate has remained high and continues to increase, implying that the rehabilitation programs in Australia have been successful given the high rate of patients who are discharged to similar or improved types of accommodation.



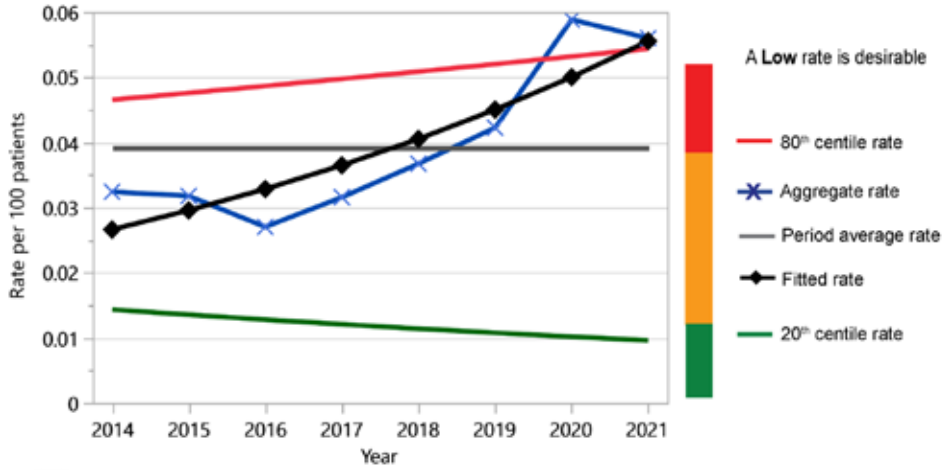
# KEY RESULTS OF 2021 - DETERIORATIONS

In 2021, there were 57 CIs which showed statistically significant trends in the undesirable direction. Of these, 24 remained significant after allowing for changes in the composition of HCOs contributing over the period. It is recommended that HCOs give consideration to determining and to addressing the reasons for the deterioration. For the CIs denoted below, (L) means low desirable rate while (H) means high desirable rate. There were noteworthy deteriorations in the following sets:

## Day Patient

5.1 Unplanned return to the operating room on same day as inital procedure (L)

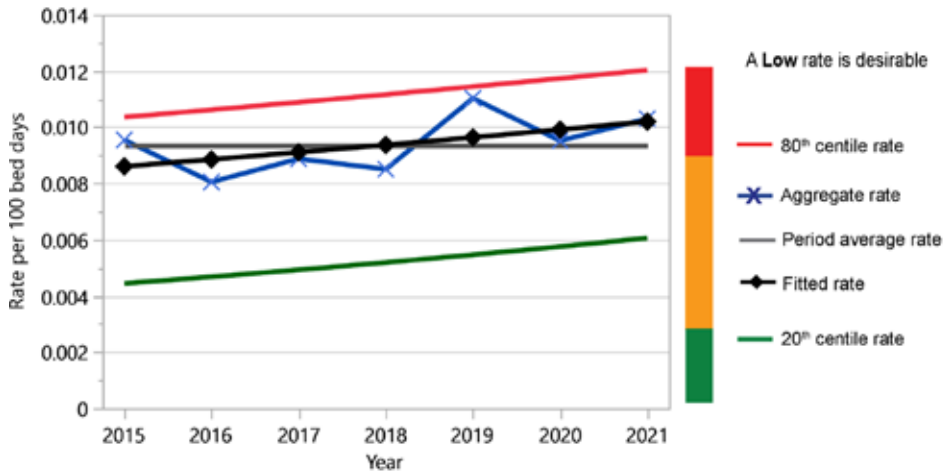
The number of patients having an unplanned return to the operating/procedure room (according to facility policy) during the same admission of the initial procedure has increased to 0.056 in 2021. Interestingly, there was a small spike in 2020 where the rate increased to 0.059 then dropped back in 2021. There were also significant strata differences between public and private HCOs. Unplanned return to the operating room has been associated with increased morbidity. Monitoring this indicator is worthwhile as it can indicate the quality of surgical outcomes.




## Hospital Wide

4.2 Inpatient falls resulting in fracture or closed head injury (L)

The rate of fractures or closed head injuries that result because of an inpatient fall is a well reported indicator that has continued to deteriorate over the last seven years to 0.010 in 2021. Variation between strata was demonstrated between public and private services, as well as between all states. This indicator is worthwhile to report as it may reflect an older and frailer group of patients, who are more at risk of falls.

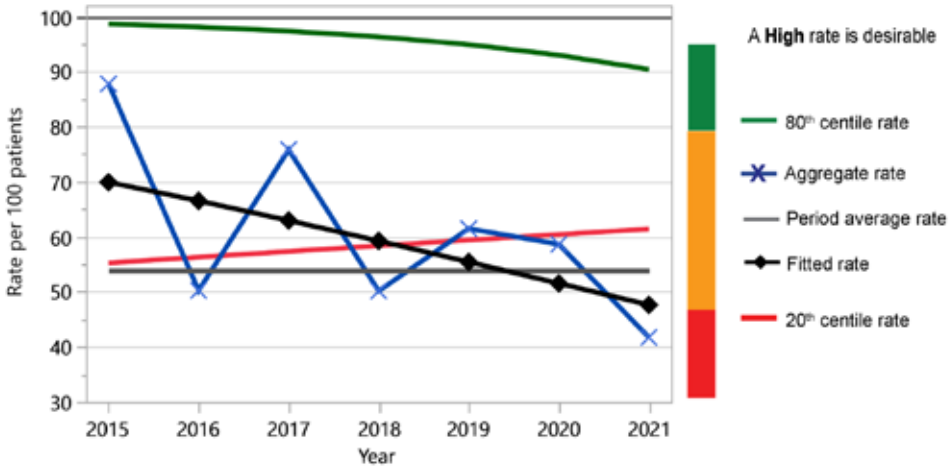


# KEY RESULTS OF 2021 - DETERIORATIONS

## Medication Safety

### 3.1 Percentage of patients whose current medications are documented and reconciled at admission (H)

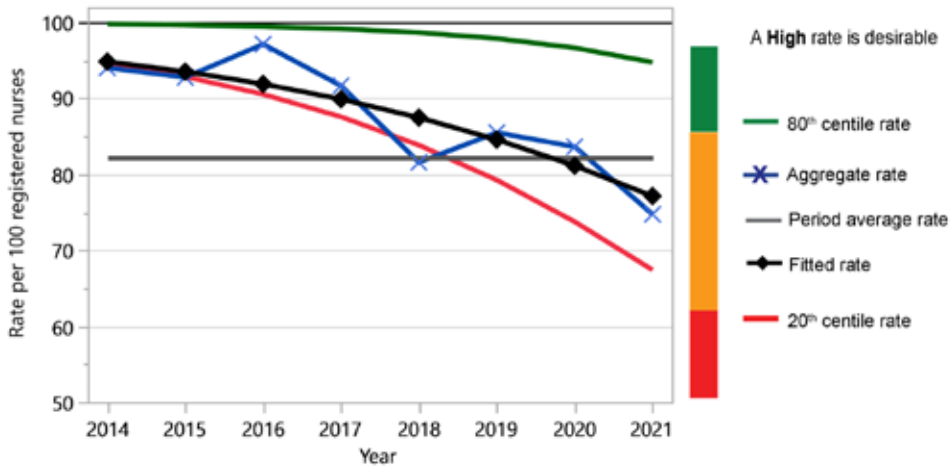
The number of patients whose current medications are documented and reconciled at admission has decreased over time to its lowest rate of 41.7 in 2021. Significant variation between strata was observed, between metropolitan and non-metropolitan services, as well as between almost all states. HCOs must ensure that they re-evaluate their current processes of medical reconciliation at admission so to reduce any potential errors from occurring to patients.




## Paediatrics

### 1.1 Registered nurses with paediatric basic life support qualifications (H)

The number of registered nurses caring for paediatric patients that have up-to-date paediatric basic life support qualifications has decreased significantly since 2014. Additionally, system wide variation for this indicator has increased over the years to 61.9 for 20th centile and 93.6 for 80th centile in 2021, however no significant differences in strata was observed in 2021. Certain factors, such as registered nurses who are trained overseas, lack of oversight from hospital administration or lack of professional development options, may be contributing to the decline in numbers of registered nurses with up-to-date qualifications.



# THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2021

In this *Australasian Clinical Indicator Report 23rd Edition 2014-2021*, there are a total of 22 Clinical Indicator (CI) sets. In 2021 there were data submitted for 320 of the possible 347 CIs across these sets. Data within this report are submitted from healthcare organisations (HCOs) from every state and territory within Australia and HCOs within New Zealand. These HCOs are from both the public and private sectors, and from metropolitan and non-metropolitan regions.

## Clinical Indicators and data submissions

Participation in the Clinical Indicator Program is voluntary for HCOs. An eight-year trend in the number of HCOs participating in the program demonstrates a consistent level of participation in the program. Variation of increased participation is noted in 2014 – 2016, due to the NSW Ministry of Health (MOH) Occupational Exposure initiative, which mandated that NSW public hospitals collect two occupational exposure indicators within the Infection Control clinical indicator set. ACHS was contracted to collate and generate occupational exposure data for the 203 eligible public health organisations in NSW. From 2016, NSW Workcover no longer required the NSW MOH to collect this data.

A review of state by state participation at this time noted that the increase in collection from 2014 – 2016 is only in NSW, and directly related to the NSW MOH project. In this edition of the report, ACHS has excluded HCOs participating only in the NSW MOH project that was running in parallel to the Clinical Indicator program, to more accurately reflect trends of participation. HCOs participating in the MOH project and also collecting one or more other ACHS indicators have been retained in the data, contributing to the increase in HCO participation in 2015. The participation rate of HCOs over the last few years has been heavily impacted by disasters such as COVID-19, floods and bushfires. Early data from 2022 indicates that the recovery has started but it is not reflected in this current dataset.

The number of participating private hospitals remained steady between 2014 to 2021. With recent increased engagement of private hospitals in the program, it is likely that the number of HCOs reporting in this sector will be reflected as an increase in subsequent reports. Recent mergers and reorganisation of smaller individual facilities now reporting as one larger HCO has consolidated the number of HCOs reporting, in some cases. High retention of HCOs participating in the Clinical Indicator program is noted.

While most organisations make two submissions to each of their selected CIs in a year, it should be noted that some organisations submit intermittently. The data is analysed and comparison reports are repared for submitting HCOs every six months. A slight increase in the average number of actual CIs reported by an HCO is noted.

In 2021, the total number data submissions was 26,715. The number of submissions from the private and public sectors were 15,510 and 11,205 respectively, as represented on page 10.

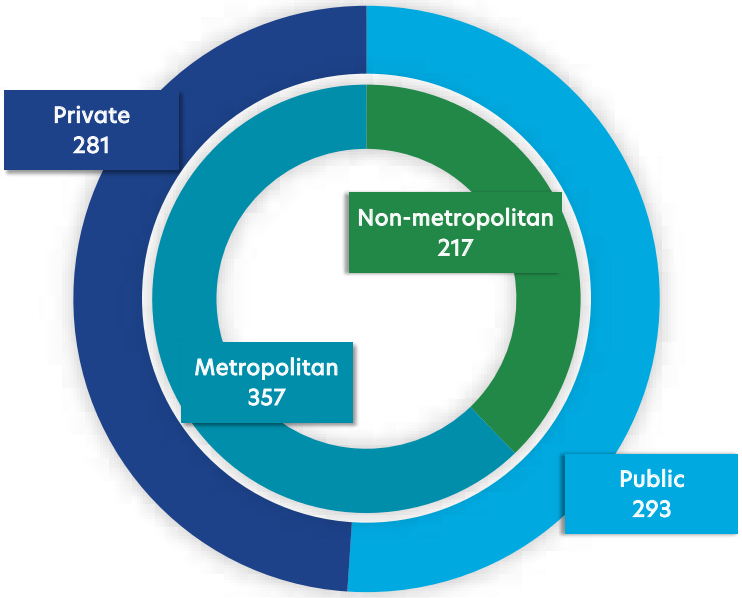
## Clinical Indicators reported by each HCO

In 2021, the average number of individual CIs reported was 24.9, with half of all HCOs reporting between nine and 33 CIs (25th and 75th centiles). The variation in the number of CIs reported by each HCO is mostly due to the different services provided by the HCO. For example, not all HCOs have an emergency department, intensive care unit, obstetrics, paediatrics or other specialities.

During the last three years, the mean and median number of CIs collected by individual HCOs in each year has remained relatively stable. The median number of CIs collected varied between 15 and 18 and the mean varied between 21.9 and 24.9.

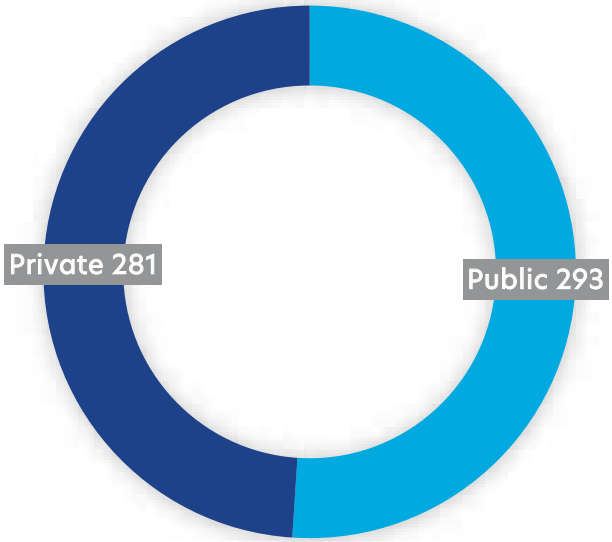
Page 12 shows that in 2021 there were five CI sets with at least 150 HCOs providing data. While there are eight CI sets where fewer than 50 HCOs participated, a small number of HCOs may still provide a representative sample of all HCOs in Australia and New Zealand for some CIs. However, from a quality improvement perspective, it means that these HCOs have less data with which to determine whether the clinical areas in these sets could potentially improve their performance.

**No. of HCOs that submitted in 2021**

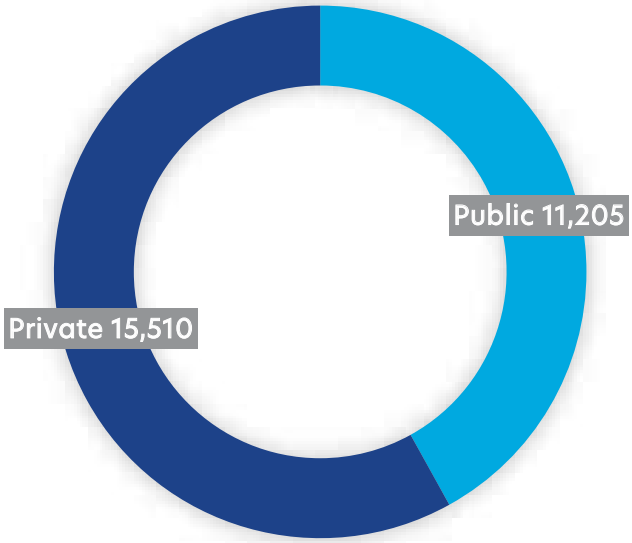


# THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2021

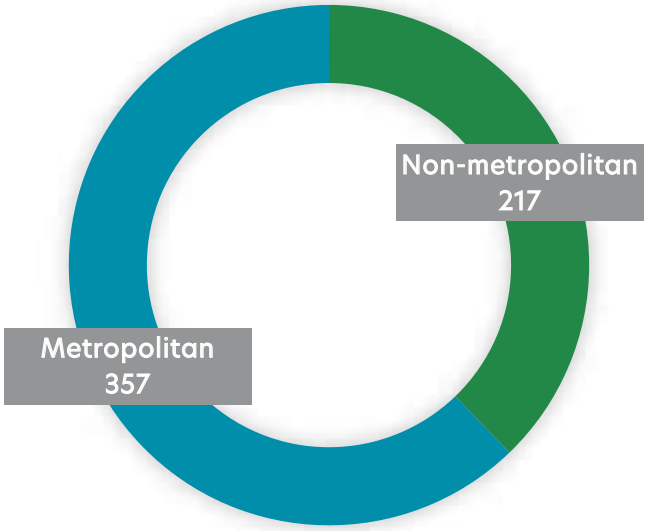
**No. of HCOs that submitted in 2021**



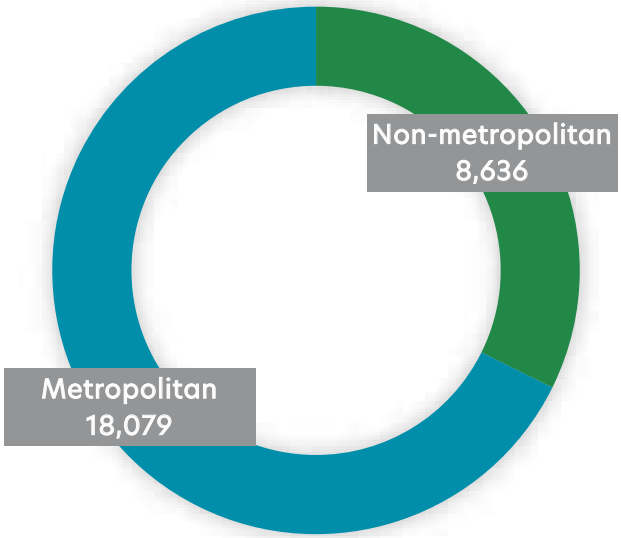

**No. of submissions in 2021**




**No. of HCOs that submitted in 2021**




**No. of submissions in 2021**

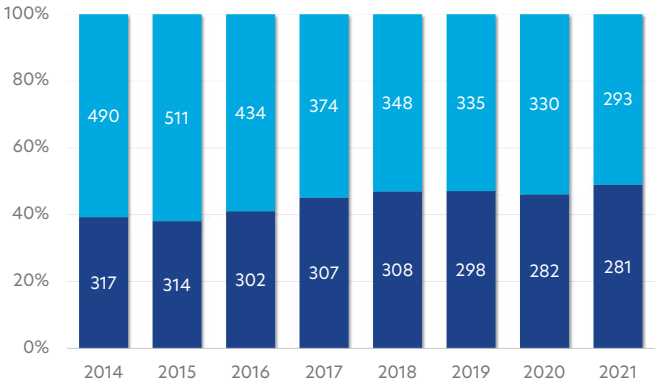



Public
Private
Non-metropolitan
Metropolitan

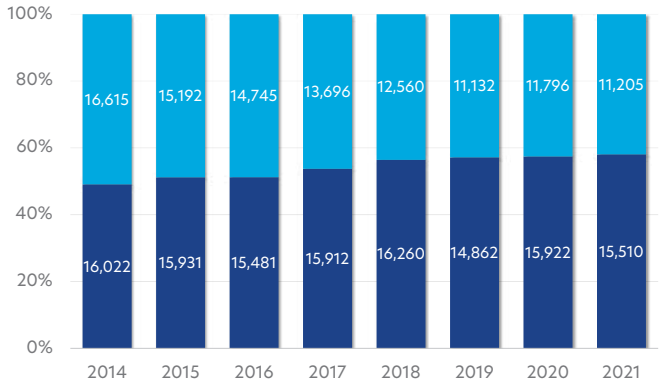
# THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2021

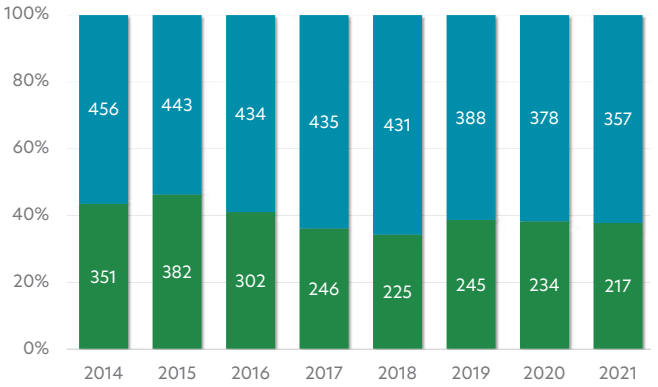
Public Private Non-metropolitan Metropolitan

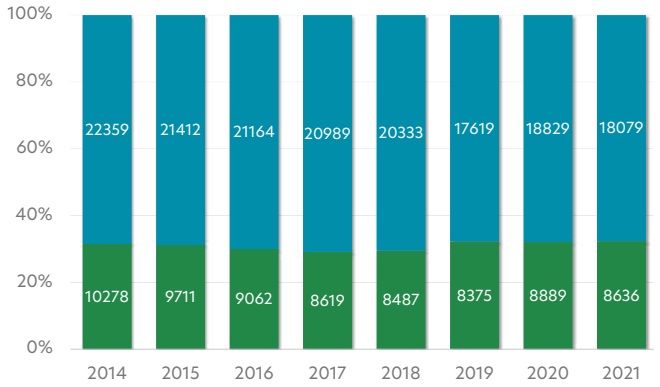
**HCOS THAT SUBMITTED CIS IN 2014-2021**




**TOTAL SUBMISSIONS IN 2014-2021**



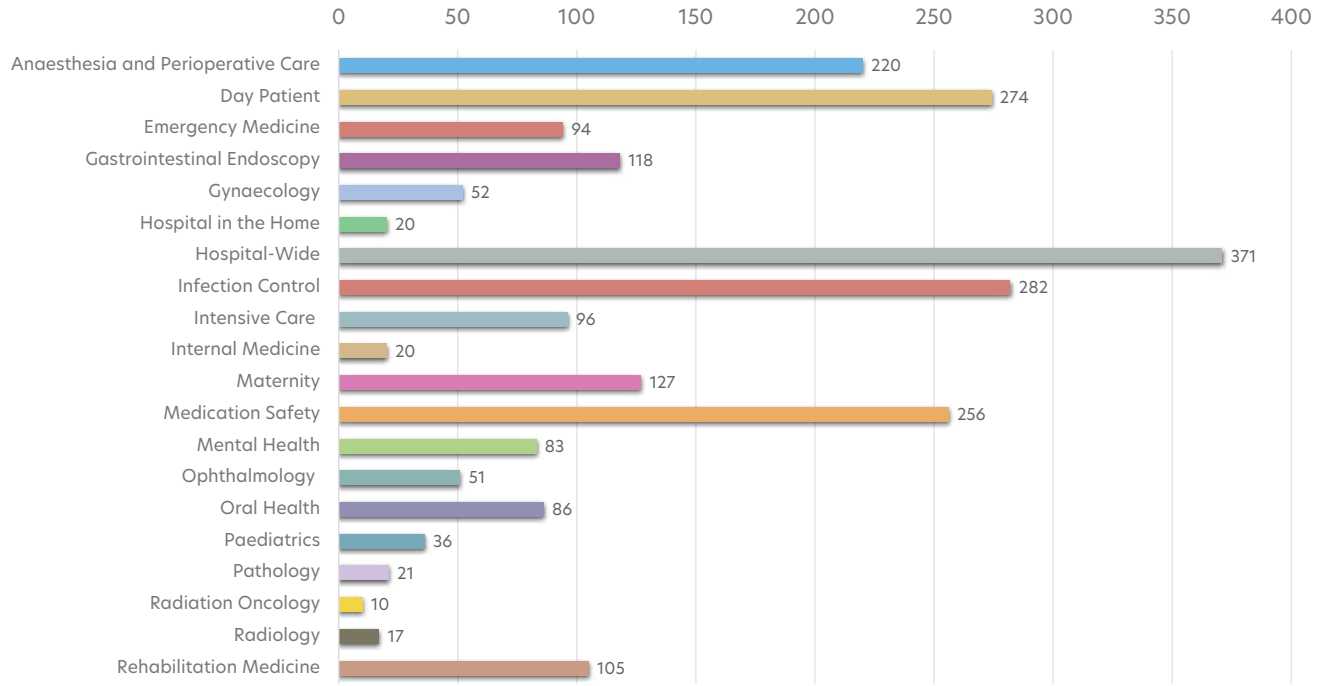




**Locations of Submitting HCOs**

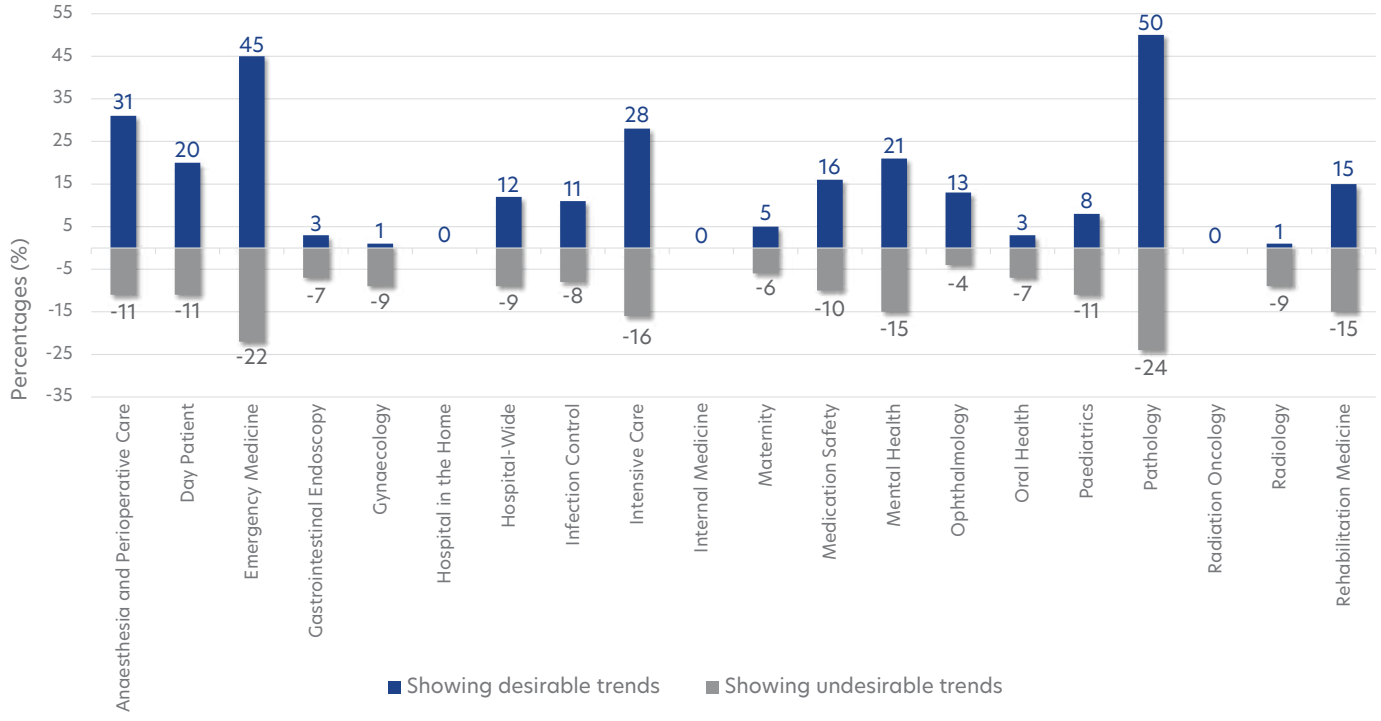
| | |
|---|---|
| NEW SOUTH WALES | 35.5% |
| VICTORIA | 25.6% |
| QUEENSLAND | 15.0% |
| SOUTH AUSTRALIA | 13.4% |
| WESTERN AUSTRALIA | 5.2% |
| TASMANIA | 1.9% |
| AUSTRALIAN CAPITAL TERRITORY | 1.6% |
| NORTHERN TERRITORY | 1.0% |

# THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2021

## Number of HCOs that submitted CIs in the following sets in 2021




## Percentage of submissions that were outliers in 2021 for each CI set



# FEATURE REPORT

## The impacts of COVID-19 on the Healthcare System

### *A review of ACHS Clinical Indicator data*

The ongoing COVID-19 pandemic has been caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2 and variants). The first outbreak was reported in December 2019 in Wuhan in China, however, despite control attempts, it evaded quarantine measures and spread throughout the world.[1, 2] The World Health Organisation (WHO) recognised the epidemic on 31 January 2020 and declared it as a public health emergency of international concern on 11 March 2020, meaning that the outbreak was a pandemic.[3]

The first confirmed case of COVID-19 in Australia was identified on 25 January 2020 in Victoria, with a national human biosecurity emergency declared on 20 March 2020. In response, the Australian government introduced strict intervention measures to limit the pandemic spreading, aiming to prevent the devastating growth seen in other COVID-19-affected nations.[4] Each State and Territory announced their own restrictions, which impacted health services across Australasia significantly. These restrictions included periods of cessation of non-urgent elective surgery, redeployment of staff, and re-allocation of healthcare resources to support Australians during the outbreak.[5]

As the outbreak progressed, governments, healthcare systems and organisations prepared for the potential major outbreak of COVID-19 through several measures such as:[6]

- Shifting to virtual care where possible;
- Postponement of non-urgent scheduled care;
- Utilisation of private hospital beds for spillover care;
- Increased resourcing of intensive care with creation of new temporary intensive care wards;
- Major purchases of equipment including ventilators;
- Redeployment of staff from usual duties to focus on COVID-19 care, triage and eventually vaccination programs;
- Significantly increased personal protection equipment (PPE) usage.

The first wave of COVID-19 peaked on the 4 April 2020 at 490 hospitalisations Australia-wide, after which followed the second wave which peaked at 694 hospitalisations on the 18 August 2020. These two waves were well prepared for, not overwhelming the health system. It was the third Delta variant wave which caused major issues with the health system in 2021. This wave peaked at 1,551 hospitalisations, 297 patients admitted to the ICU and 177 patients on ventilation due to COVID-19 infection. This third wave significantly impacted the Australian health system. Staff became furloughed with COVID-19 at the same time as demands on hospitals, community practice and vaccination centres were extreme. Australia has relied on healthcare workers from overseas to supplement the workforce: such professionals could not enter Australia during 2020-21.

The impact of COVID-19 is also evident in the Clinical Indicator data as it is both a measure of activity and resource allocation. These impacts are discussed below to highlight how the COVID-19 pandemic has impacted the delivery of quality healthcare and the maintenance of healthcare improvements through resource setbacks based on the available data to date which ends at the start of 2022, when the largest of the waves occurred (January and July peaks).

#### Data submission

The submission of clinical indicator data is an important measurement of organisational performance and due to the ACHS Clinical Indicator program being patient centred, this impact was heavily felt. This not only impacted the volume of data received during waves of the pandemic but also the ability of many healthcare facilities to submit data, even in the face of greater flexibility around data submission. Due to these demands, ACHS offered one month of extra time thus delaying the reporting, until organisations had enough staffing available to make the submission. This increased flexibility was required for 15% of ACHS member organisations.

# FEATURE REPORT

## Indicators Affected

Anaesthesia & Perioperative Care

Anaesthesia and Perioperative Care indicators cover the preanaesthesia, intraoperative, post-operative and recovery periods. Of the 13 indicators in this set, two appear to be measurably impacted by COVID-19, with the patient recovery period indicators 3.1 and 3.5 affected (see figures 1 and 2). The indicator 3.1 measures the relief of respiratory distress in the recovery period, while indicator 3.5 measures the unplanned stay in the recovery room longer than 2 hours.

The relief of respiratory distress may be due to COVID-19 affected patients requiring increased oxygen post anaesthesia due to the impact of the virus on their lung function and the differences in airway management at this time. The change between 2020 and 2021 was subtle with a difference of 5 per 100,000 patients, with over 1.2 million patient episodes examined.

With regard to unplanned stay in the recovery room, the rate increased from 1.0% to 1.37%, which is approximately a 73% increase during the third COVID wave, thought likely due to bed management issues caused by finding a suitable bed to discharge from the recovery room.

**Figure 1: CI 3.1 Relief of respiratory distress in the recovery period (L)**

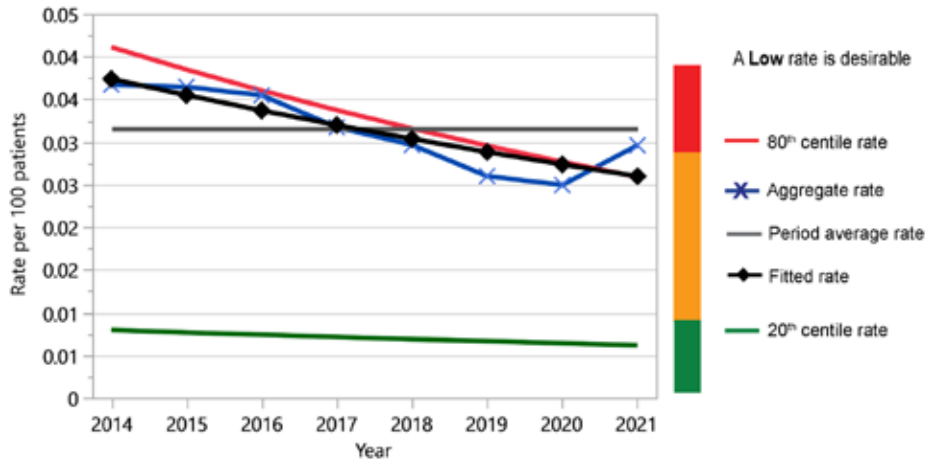
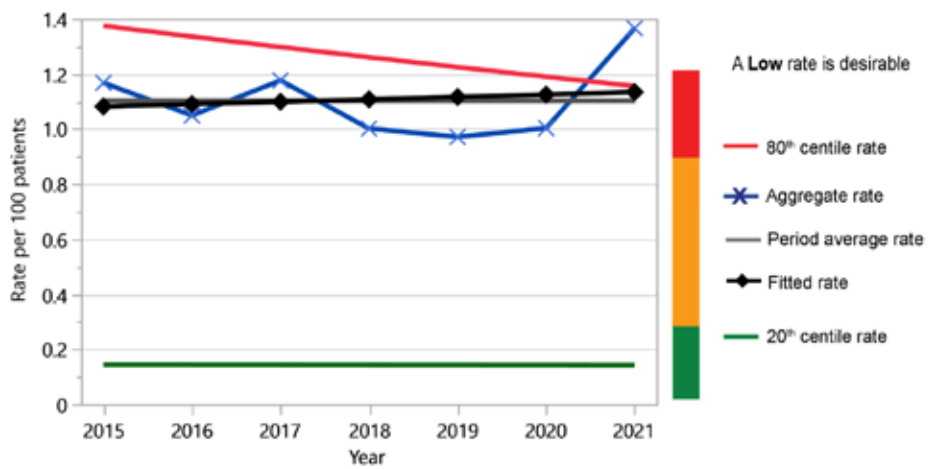


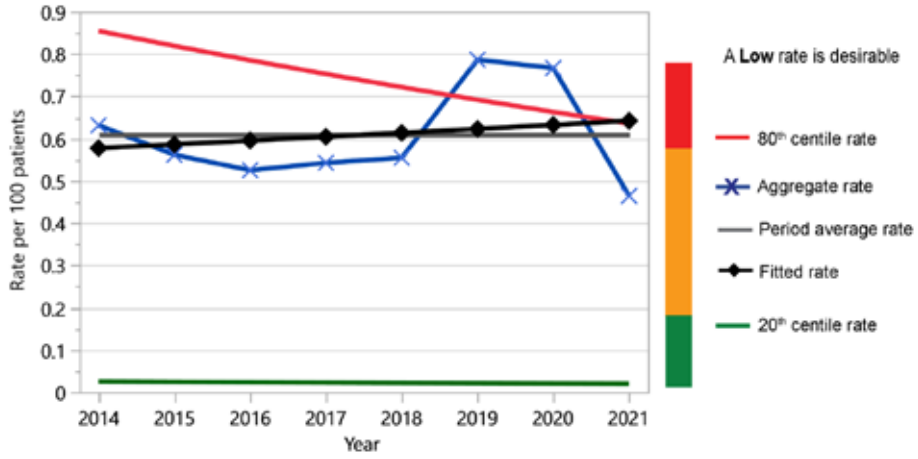

**Figure 2: CI 3.5 Unplanned stay in the recovery room longer than 2 hours (L)**



Day Patient

Of the Day Patient set, the measure affected by COVID was indicator 2.1 Booked patients who fail to arrive. For this indicator, the impacts may have been due to COVID-19 infections, and the government lock downs. There were substantial increases in 2019 and 2020, which resolved by the end of 2021, when the lockdowns were progressively lifted due to the success of the vaccination program. The data shows that there was a two-year deterioration of approximately 70% which recovered in 2021 to the long-term forecast level (see Figure 3). Due to the poor performance in 2019 it is difficult to determine if this transient poor performance was linked to COVID-19 in 2020 or to a few organisations which were poor performers not able to report indicator data in 2021.

**Figure 3: CI 2.1 Booked patients who fail to arrive (L)**




Intensive Care

The Intensive Care set has three indicators which appear to be affected by resourcing issues surrounding COVID-19: indicator 1.1 Adult non-admissions to ICU due to inadequate resources, indicator 1.2 Elective adult surgical cases deferred or cancelled due to unavailability of bed, and indicator 1.3 Adult transfer to another facility / ICU due to unavailability of bed.

Non-admission of adults to ICU due to inadequate resources was trending downward from 2017 with a sharp change in 2021 of 48% on 2020 data (Figure 4). While there was a spike in ICU admissions in 2020, there was a significant effort at the time to reinforce ICUs with resources, so non-admission was proportionately less. While the third wave at the end of 2021 was three times larger, even with the same extra ICU resources, this data demonstrates deterioration in access due to inadequate resources. As expected, this was overwhelmingly felt by the public system rather than the private system, as evidenced in the stratification of CI 1.1 by public/private measures (Figure 5).

**Figure 4: CI 1.1 ICU - Adult non-admission due to inadequate resources (L)**

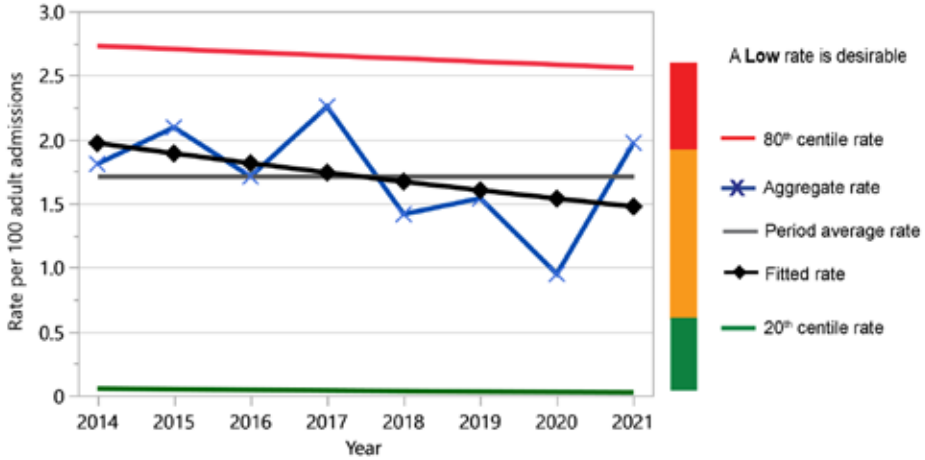
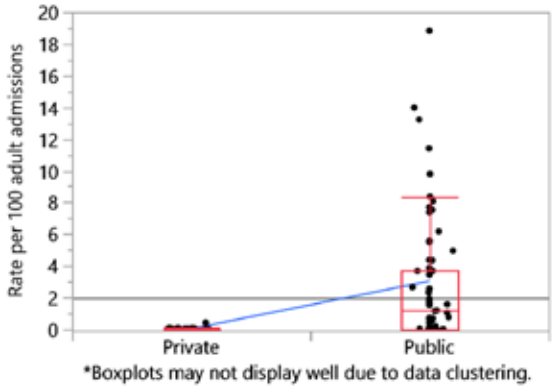


Figure 5: Breakdown of public/private healthcare organisations submitting 2021 data for Intensive Care CI 1.1




Bed availability and transfers are captured by indicators 1.2 (Figure 6) and 1.3 (Figure 7). These two figures represent deterioration in 2021 from relatively stable measures across prior years. The deterioration of elective adult surgical cases deferred or cancelled due to unavailability of beds rose approximately 40% in 2021 compared to 2020. Adults in ICU transferred to another facility due to bed unavailability increased by 50% in the same period.

Figure 6: CI 1.2 ICU - elective adult surgical cases deferred or cancelled due to unavailability of bed (L)

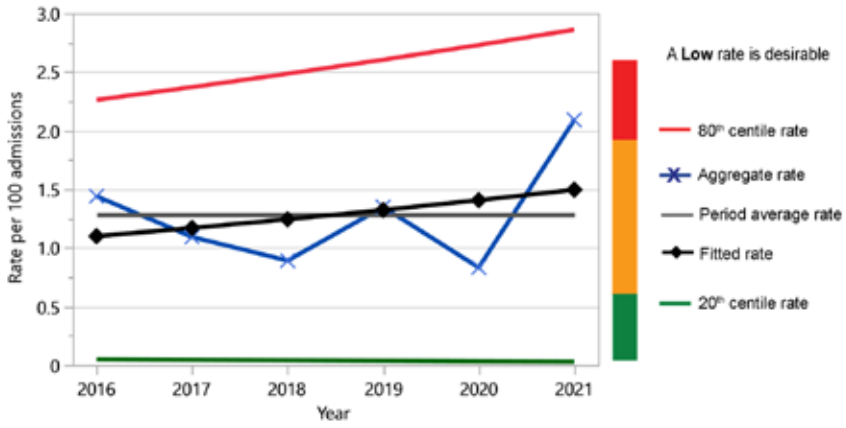
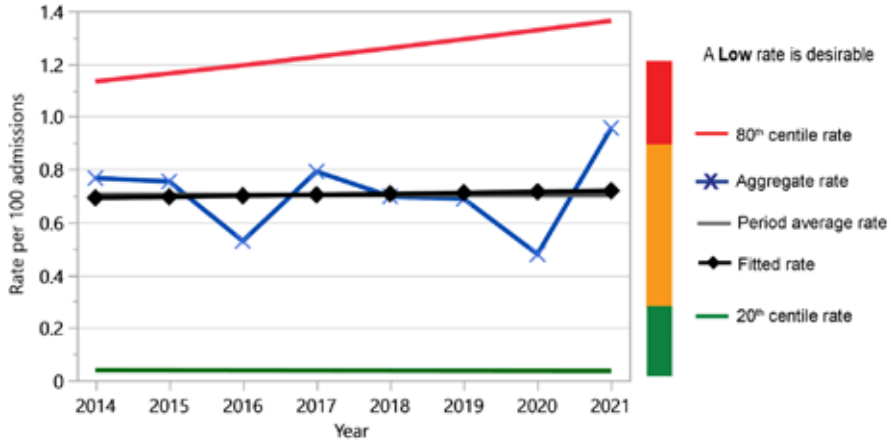



Figure 7: CI 1.3 ICU - adult transfer to another facility / ICU due to unavailability of bed (L)



Emergency

Some of the ACHS Emergency indicators measure the Australasian Triage Scale (ATS). This scale is broken down into 5 indicators based on maximum waiting time for medical assessment and treatment. The most critical measures ATS 1 and 2 were not affected by COVID-19, with the most critically ill patients not having any change to the standard of care they received throughout the measured period. There was a spike in the 2020 data for ATS categories 3, 4 and 5, which showed a small improvement of approximately 5 per 100 patients. These three categories deteriorated in 2021, back to historical levels. This change is thought to result from the COVID response, meaning Emergency Departments received a boost in resources, which then reduced during 2021. This is matched in the admissions data which showed that admissions during the 2019-20 COVID-19 period declined 2.8% which then climbed back to the 3% historical increase in the 2020-21 (AIHW).[7] During 2021, with the efforts towards vaccination, ED presentations with COVID-19 disease began to improve, lockdowns started to lift, and Australian society slowly resumed along normal lines.

## Staff immunisation

There has been a large increase in the reporting of staff immunisation (Infection Control indicators 5.1 to 5.5) since the start of the pandemic in 2019. There has been an approximately 70% increase in the reporting of staff immunisations amongst healthcare organisations. However, this increased reporting has seen the compliance numbers overall actually drop across the following: Influenza, Hepatitis B, Measles, Mumps, Rubella, Pertussis and Varicella. This increase in reporting is likely due to organisations having an increased focus on recording the COVID vaccination status of their employees, which led to increased reporting of employees' overall vaccination status.

## Pathology

ACHS implemented a new measure during the update of the Pathology indicators in 2020 with their release in 2021 for data collection. The new measure (Pathology indicator 4.3 - COVID-19 testing - PCR result in hospitalised patients from receipt in testing laboratory to reporting <24 hours) specifically measured the time between receipt of the sample for testing and reporting of the result. This measure aimed to ensure that laboratories were providing results to patients and clinicians in a less than 24 hours timeframe using the gold standard PCR test. The results from only 6 months of reporting in 2021 show that they have achieved a rate of 96.6%.

## Conclusion

The ACHS indicator set data is a retrospective dataset and as such has not collected all the data to date for the current Omicron wave of COVID-19, which is both the largest wave in terms of hospitalisations, ICU admissions and total infections. Due to this, it will be interesting to see the impact of that wave in the next edition of the Australasian Clinical Indicator Report, in contrast to the government policy changes which occurred earlier in the pandemic such as lockdowns, vaccination programs, closure of elective surgery and targeted resourcing. The Clinical Indicator program run by ACHS provides a view of some of the impacts to a wide range of clinical areas within the Australian healthcare system related to metrics and data collection, but it does tell a story of impact and the challenges faced by the Healthcare system over this time.

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# SUMMARY OF RESULTS

A summary of the main observations for each set of Clinical Indicators (CIs) follows.


| | | |
|---|---|---|
| | Anaesthesia and Perioperative Care | 19 |
| | Day Patient | 25 |
| | Emergency Medicine | 29 |
| | Gastrointestinal Endoscopy | 37 |
| | Gynaecology | 43 |
| | Hospital in the Home | 47 |
| | Hospital-Wide | 51 |
| | Infection Control | 57 |
| | Intensive Care | 63 |
| | Internal Medicine | 69 |
| | Maternity | 75 |
| | Medication Safety | 81 |
| | Mental Health | 87 |
| | Ophthalmology | 93 |
| | Oral Health | 97 |
| | Paediatrics | 101 |
|  | Pathology | 107 |
|  | Radiation Oncology | 113 |
| | Radiology | 117 |
| | Rehabilitation Medicine | 121 |


### Symbol used in each Clinical Indicator Session

| | |
|---|---|
| | Rates Improving |
| | Rates Deteriorating |
| | Increasing/Decreasing (Desirable rate non-specified) |

# ANAESTHESIA AND PERIOPERATIVE CARE

# General Comments

*Dr Nayana Vootakuru*
*Member, Safety and Quality Committee*
*Australian and New Zealand College of Anaesthetists*

Fellow of the Australian and New Zealand College of Anaesthetists

ANZCA FPM

The 2021 quality indicator trends for anaesthesia and perioperative care reflect the disruption of the COVID-19 pandemic and its effect on the health system over the preceding years. There is a paucity of data available on the comparative effects of the COVID-19 pandemic on the public and private health system, but the 2020-2021 anaesthesia and perioperative care indicator set is suggestive of key differences across multiple performance measures.

Pre-operative care, assessed through CI 1.1 Pre-anaesthesia consultation completed by anaesthetist, shows a notable improvement of 2%. It now reflects excellent compliance overall despite poorer performance from a new contributor in Victoria. A new addition to the intraoperative indicator set, CI 2.2 Temperature less than 36 degrees in the holding bay, continues to be problematic with regards to standardisation of the site, mode and equipment used for temperature measurement. Despite this, the data seems to indicate worsening of pre-operative hypothermia with a significant increase in rate from 2020.

CI 3.1 Relief of respiratory distress in the recovery period showed excellent improvement over the last five years. However, a deterioration was seen over the 2020-2021 period with notable variation across the public system. This is potentially a reflection of the effects of COVID-19 on respiratory pathology and significant variability in airway management practices.

CI 3.2 PONV treatment in the recovery room and CI 3.3 Temperature less than 36 degrees in the recovery period showed improvement by the lowest performers. CI 3.3 also reflected that the variance between the public and private hospitals was pronounced this year – this is significantly different from the preceding year. A possible cause for the change is the more obvious diversion of resources, such as staff, in public institutions towards the support of COVID-19 infrastructure. CI 3.5 unplanned stay in the recovery room longer than 2 hours showed an enormous increase over the last year. It also shows increased variability in the public system, potentially also due to the disparate effects of the pandemic on the public system compared to private.

The post-operative indicator CI 4.1 Unplanned ICU admission within 24 hours after procedure demonstrated an increase in 2020 but stabilised in 2021. The change likely reflects a more enthusiastic approach to ICU admissions during the initial phase of the pandemic, followed by fewer admissions as case load increased and COVID variants reduced in severity. CI 4.2 documents patient handover from operating suite to recovery area. Compliance was excellent and has little room for overall improvement probably reflecting the beneficial effects of electronic medical records.

The only obstetric anaesthesia indicator CI 5.1 Obstetric patients experiencing post-dural puncture headache, demonstrated an increase in variation between the highest and lowest performers. A major drawback of this data set is that the majority of submissions are from public hospitals, whilst most of obstetric care in Australia is provided in a private setting. The variation could be explained by trainees of differing levels inserting epidurals; however, a higher rate of data submission is required to draw conclusions on this indicator.

A timely and important addition to the ACHS data collection activity are the opioid stewardship indicators developed by the ACSQHC. The Opioid Analgesic Stewardship in Acute Pain Clinical Care Standard was released in 2022[1] and encompasses the entire spectrum of opioid prescribing including patient assessment, risk management pathways, use of best practice guidelines (prescribing of an immediate release formulation at the lowest appropriate dose, for a limited duration), management of adverse effects, appropriate documentation, review of care and handover to local care providers. The indicators are comprehensive

and important in measuring the impact of a major public health crisis over which anaesthetists have a significant leadership role to play.

Since the end of 2009, there has been a general increase in opioid prescriptions, from roughly 10 to 14 million annually. Australia currently ranks eighth internationally on the numbers of daily doses of prescription opioids per million population. This is about 40% the level of the USA where opioid analgesics are the most frequently prescribed class of medications.[2] From 2017-18, prescription opioids were identified in 71% of opioid-induced deaths. Natural and semi-synthetic opioids, including codeine, oxycodone and morphine were the most common prescription opioids present, followed by synthetic opioids.[3]

In 2020 (there is a data lag for opioid related deaths), there were 1842 registered drug-induced deaths among Australians, excluding deaths from alcohol and tobacco use, which is equivalent to approximately 5 drug-induced deaths per day. Of these, 1073 deaths were opioid induced. These deaths typically occurred among males (68%) and in the 35-44 (29%) and 45-54 (25%) age groups. 78% were considered unintentional and the rate of unintentional drug overdose deaths nearly doubled from 2006 to 2017.[4] For Australians in their 30s, overdose was the second most common cause of death in 2020 behind only suicide.[5] As such, the new ACSQHC indicators and collection of data on opioid prescribing practices is vitally important, which is why the ACHS supports the collection and reporting of these ACSQHC indicators.

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# ANAESTHESIA AND PERIOPERATIVE CARE

## Summary Of Results

In 2021 there were 1,639 submissions from 217 HCOs for 13 CIs. Of the nine indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- six improved
- two deteriorated
- and the remainder showed no evidence of trend.

Of the two trended process indicators, both improved. The one trended structure indicator improved.

Of the five trended outcome indicators:

- three improved
- two deteriorated.

Ten indicators had outlier gains in excess of 25% of undesirable events. Eleven indicators had potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in six indicators.See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Pre-anaesthesia period | | | | | | | |
| 1.1 Preanaesthesia consultation completed by anaesthetist (H) | 97.0 | Private | 3 (9%) | 2,942 (82%) | 3,601 (100%) | 3,604 | ↑✓ |
| Intraoperative period | | | | | | | |
| 2.1 Presence of a trained assistant (H) | 97.6 | Metropolitan | 4 (15%) | 1,818 (72%) | 2,510 (100%) | 2,512 | ↑✓ |
| 2.2 Temperature of <36° C in holding bay (L) | 0.30 | | 2 (20%) | 41 (87%) | 46 (98%) | 47 | |
| Patient recovery period | | | | | | | |
| 3.1 Relief of respiratory distress in the recovery period (L) | 0.03 | Private | 11 (7%) | 165 (45%) | 306 (83%) | 368 | ↓✓ |
| 3.2 PONV treatment in the recovery period (L) | 0.74 | Private | 21 (20%) | 2,440 (54%) | 4.284 (95%) | 4,490 | ↓✓ |
| 3.3 Temperature of <36° C in the recovery period (L) | 1.61 | Private | 19 (16%) | 9,368 (76%) | 12,330 (100%) | 12,383 | ↓✓ |
| 3.4 Severe pain not responding to pain protocol in the recovery period (N) | 0.32 | | | | | | ↓ |
| 3.5 Unplanned stay in recovery room >2 hours (L) | 1.37 | Private | 20 (16%) | 5,694 (51%) | 10,317 (92%) | 11,184 | ↑✗ |
| 3.6 Adult patients with documented systolic blood pressure of <100mm Hg in the postanaesthesia recovery room (L) | 4.88 | | 5 (36%) | 2,351 (61%) | 3,649 (95%) | 3,824 | |
| 3.7 Presence of a trained recovery room nurse (H) | 100.0 | | | | | 2 | |

## Summary of Indicator Results continued

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Postoperative period | | | | | | | |
| 4.1 Unplanned ICU admission within 24 hours after procedure (L) | 0.14 | | 15 (14%) | 374 (30%) | 1,005 (81%) | 1,238 | |
| 4.2 Documented patient handover - operating suite to recovery area (H) | 99.8 | | 3 (11%) | 74 (59%) | 123 (98%) | 125 | |
| Obstetric anaesthesia care | | | | | | | |
| 5.1 Obstetric patients experiencing postdural puncture headache (L) | 0.92 | | 1 (8%) | 7 (7%) | 64 (68%) | 94 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# ANAESTHESIA AND PERIOPERATIVE CARE

# DAY PATIENT

# General Comments

*Ms Gabby Moreland*
*Director, Day Hospitals Australia*

We experienced social upheaval, again, in 2021. Australia has been impacted by supply chain issues, workforce shortages and burnout, as well as further environmental disasters such as the Queensland floods. The ability and speed of COVID-19 and its mutated forms has changed our National strategy to deal with the pandemic from one of eradication to that of 'learning to live with it'. Therefore it is not surprising that these factors are reflected in the slightly poorer outcomes of the Day Patient clinical indicators in 2021.

Nursing care underpins the safe service delivery of day procedures. Without thorough patient assessment, pre-procedure planning, planned discharge and aftercare, the ability to deliver complex procedures in a minimal impact setting would be lost. The nursing shortage in Australia is a factor of a higher turnover than seen in other sectors.[1] One of the reasons for the higher rate of turnover is burnout, and it has been proposed that addressing factors that contribute to burnout, such as the mismatch between available resources and demands of the role, will assist in improving the quality of care provided to the patient as well as overall nursing profession retention. For this reason this commentary will focus on the indicators that reflect direct patient outcomes rather than the whole dataset which considers organisational and administrative efficiencies.

- CI 1.1 Preadmission assessment indicator: More HCOs contributed to this 2021 dataset than in previous years with the greatest denominator seen (number of patients booked into a day procedure service) in 2021. This indicator has improved.

- CI 4.1 Adverse event indicator: Whilst the fitted rate demonstrated a slight deterioration, the actual rate in 2021 was only 0.11 per 100 patients who experienced an adverse event related to the management and/or delivery of care. This result is robust considering, yet again, more HCOs reported this indicator and there were more patient admissions to a day procedure service reported in this years' data. This result was impacted by outlier records.

- CI 5.1 Unplanned return to the operating/procedure room: The reported rate demonstrates a slight deterioration. The fitted results deteriorated from 0.027 to 0.056, a change of 0.029 per 100 patients who had an unplanned return to the operating/procedure room. Noted were differences between strata (public or private hospital results) and approximately 8% of HCOs reporting outlier results.

- CI 6.1 Unplanned transfer or overnight admission related to procedure: This indicator reflects perioperative complications and is considered an index of the quality of delivered care. This indicator improved noting it considers the treatment of more than 1.4 million patients, the greatest number of reported separations since 2014 for this dataset.

- CI 7.1 Unplanned delayed discharge: This indicator has also improved. Differences were noted by strata of public/private hospitals, also by state. Seventeen outlier records influenced this result as the outlier rate was noted at 2.4 per 100 patients compared with the overall annual rate of 0.34.

The impact of strata differences and outlier records prompts some questions. First, and foremost, is data cleaning and adherence to definitions for reporting impacting results? Secondly, the data presented reports on strata by public/private, regional/metropolitan and by state where significant. Is there a different trend within the dataset which relates to free standing/integrated day surgery units? This is collected but included in the results. Lastly, it is important to note that outlier thresholds should not be used to label poor performance, but rather to identify when investigation is warranted

On the whole, it is pleasing to note that of the 5 patient outcome indicators considered, 3 have improved. Despite workforce pressures, day patients are not receiving sub-optimal care. The day procedure workforce should be commended on retaining excellent standards in the face of present day challenges.

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# Summary Of Results

In 2021 there were 2,948 submissions from 275 HCOs for 12 CIs. Of the nine indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- five improved
- four deteriorated

Of the five trended process indicators:

- three improved
- two deteriorated.

Of the five trended outcome indicators:

- two improved
- three deteriorated.

One indicator was both a process and outcome indicator. Eleven indicators had outlier gains in excess of 25% of undesirable events. Twelve indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in seven indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Preadmission preparation | | | | | | | |
| 1.1 Booked patients assessed before admission (H) | 91.4 | Private | 17 (20%) | 15,661 (71%) | 22,031 (100%) | 22,045 | ↑ ✓ |
| Procedure non-attendance | | | | | | | |
| 2.1 Booked patients who fail to arrive (L) | 0.46 | | 35 (19%) | 2,012 (54%) | 3,536 (95%) | 3,731 | ↑ ✗ |
| Procedure cancellation | | | | | | | |
| 3.1 Cancellation of the procedure after arrival due to pre-existing medical condition (L) | 0.34 | Private | 30 (15%) | 1,308 (38%) | 2,610 (77%) | 3,410 | ↑ ✗ |
| 3.2 Cancellation of procedure after arrival due to administrative/ organisational reasons (L) | 0.58 | Private | 28 (14%) | 2,749 (56%) | 4,622 (94%) | 4,918 | ↓ ✓ |
| Episode of care adverse events | | | | | | | |
| 4.1 Patients who experience an adverse event during care delivery (L) | 0.11 | | 24 (13%) | 191 (17%) | 686 (62%) | 1,105 | ↑ ✗ |
| Unplanned return to the operating room | | | | | | | |
| 5.1 Unplanned return to operating room on same day as initial procedure (L) | 0.06 | Private | 14 (8%) | 194 (45%) | 350 (81%) | 434 | ↑ ✗ |

# DAY PATIENT

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Unplanned transfer / admission | | | | | | | |
| 6.1 Unplanned transfer or overnight admission related to procedure (L) | 0.53 | Private | 49 (20%) | 3,344 (45%) | 6,612 (88%) | 7,478 | ↓ ✓ |
| Discharge | | | | | | | |
| 7.1 Unplanned delayed discharge for clinical reasons >1 hour beyond expected (L) | 0.34 | Private | 12 (9%) | 840 (55%) | 1,428 (94%) | 1,523 | ↓ ✓ |
| Departure | | | | | | | |
| 8.1 Departure without an escort (L) | 0.41 | | 6 (7%) | 747 (81%) | 905 (98%) | 920 | ↓ ✓ |
| 8.2 Departure without an overnight carer (L) | 0.06 | | 5 (9%) | 53 (54%) | 86 (88%) | 98 | |
| Post-discharge folow-up | | | | | | | |
| 9.1 Follow-up contact within 48 hours (H) | 84.9 | | 21 (30%) | 13,138 (54%) | 24,297 (100%) | 24,327 | |
| 9.2 Completeness of follow-up instructions form for patients (H) | 97.7 | NSW | 6 (11%) | 3,704 (88%) | 4,208 (100%) | 4,209 | |

# Number of undesirable or non-compliant events
\+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# EMERGENCY MEDICINE

# General Comments

*Dr Rachel Goh*
*Australasian College for Emergency Medicine*

The strength of the trends in the Australasian Clinical Indicator Report is reliant on HCO participation. On review, there are some surprising, improving trends, some concerning trends and some CIs that have required a review in Version 7 given low rates of HCO participation. HCOs continue to allocate resources to those most in need of urgent care with 99.7% of patients allocated ATS Category 1 who are medically assessed and treated immediately after arrival.

Trends deteriorated for patients allocated ATS Category 2, with the fitted rate dropping from 79% of patients assessed and treated within 10 minutes to 73.6%. A slight deterioration was also seen in patients allocated ATS Category 3, with the fitted rate dropping from 65.7% to 64%. Stratum variation exists; in NSW 73.5% of patients allocated ATS 3 were assessed and treated within 30 minutes, whereas in WA only 25% were assessed and treated within the recommended time target. WA was the poorest performer across ATS Category 3, 4 and 5. Funnel plots for ATS Category 2, 3, and 4 indicate that poorer performing outlier organisations contributed a greater proportion of the denominator dragging the aggregate rates down.

Interpretation of trends for CI 1.2 to 1.5 in the current overcrowded Emergency Department (ED) environment is complex. ATS targets measure a patients' access to timely care based on clinical need and ED overcrowding impacts this access. Acuity is increasing, with more patients allocated ATS 2 in 2021 than 2020. Patients are presenting sicker, and the increasing proportion of patients needing to be seen sooner is putting ever more stress on an already burdened ED system. Is it possible ATS 2 patients are impacted disproportionately, as they make up a growing proportion of patients most likely to need a bed but unable to obtain one due to access block? Are these CIs crude markers of overcrowding as various system solutions introduced to improve patient access to timely care, such as physician-assisted triage, and that this may mean the clock starts earlier but the journey takes longer? Given the importance of ED overcrowding to patient safety, Version 7 incorporates reporting on the ACEM recommended time-based targets as measures of patient flow and ED overcrowding. HCO participation is critical, given the proven links to increased patient mortality and hospital length of stay with ED overcrowding.

CI 2.1: 8 HCOs contributed data on STEMI Patients who receive thrombolytic therapy within 30 minutes. It is concerning that the proportion of those who receive thrombolysis within recommended period of 30 minutes has steadily declined from a fitted rate of 50.3% to 37.6%.

For CI 3.1 Mental health patients admitted from the ED within 4 hours showed a steady decline in fitted rate from 34.5% to 24.1%. There was a concerning spike in the number of mental health presentations who left the ED before service was completed (CI 3.3), from 2.64% in 2020 to 5.82% in 2021.

In Critical Care CI 4.1, the proportion of patients transferred to the ICU within 4 hours of ED arrival has remained consistently low at 43.2 per 100 patients with no significant change in the fitted rate over 6 years. Reassuringly, the rate of rapid response system calls within 4 hours of patient admission to the ward from ED (CI 4.2) remained low (rate of 0.29 per 100 patients).

There continues to be limited reporting by HCOs on the timely administration of antibiotics in paediatric sepsis. For this reason, paediatric and adult CIs are combined in Version 7 in CI 5.1. There is a critical deficiency in this area, with only 13.1 per 100 patients with sepsis receiving antibiotics within 60 minutes of arrival.

For CI 6.1, there continues to be an improving trend for provision of discharge communication to an ongoing provider for patients with a completed episode of ED care. The fitted rate improved from 80.6 to 94.5 per 100 patient care

# General Comments

episodes, with no significant stratum differences. Version 7 has removed quality of discharge documentation, as this process indicator is difficult to use for benchmarking given the likely variability between organisations in measurement.

Since 2016, few HCOs have provided data for documented initial pain assessment at triage (previous CI 7.1) and pain reassessment within 30 minutes of receiving analgesia (previous CI 7.3). For this reason, only CI 7.2 (analgesic therapy within 30 minutes) was available in Version 7. For the 2 HCOs submitting data, 100 of 100 patients presenting with moderate/severe pain received analgesic therapy within 30 minutes of documented initial pain assessment. The lack of data for Area 7 may highlight variation in process and collection of data, however, early pain management remains a high priority to our patients.

Trends continue to improve for patients with an unplanned re-attendance to the ED within 48 hours of initial presentation and require admission (CI 8.1). Patient flow (CI 9.1-9.9) is a crucial marker of ED performance for many HCOs, however only 4 HCOs submitted data in 2021. The ED Short Stay Unit is a CI to watch, with many EDs investing in expanding those units to manage patient numbers and rampant access block. The discrepancy between bed flow for admitted patients versus discharged patients (e.g. CI 9.2 aggregate rate of 67.7% versus CI 9.5 aggregate rate of 93.2%) reflects the critical state of access block across Australian ED departments.

# General Comments

*Ms Sarah-Louise Laing*
*WA CENA Committee President*
*College of Emergency Nursing Australasia*

It was interesting to note the increase in presentations of patients allocated ATS Category 2 and decreases in ATS Category 3 and ATS Category 4 presentations. Additionally whilst ATS 1 compliance has improved, decreases in compliance were noted for ATS 2, 3 and 5 categories. This may be related to the increase in access block and overcrowding in emergency departments (ED) in the last few years.

There has been a decrease in the overall number of patients who left the ED after triage without being seen (CI 1.6). Anecdotally, EDs in Australia have noted an increase in this, but perhaps this change is due to more people accessing EDs without having another alternative, and patients are waiting despite the length of time to be seen.

It is concerning that we are not seeing a higher rate of admission of mental health patients within 4 hours (CI 3.1). This is however in line with anecdotal experience, with mental health patients often waiting lengthy periods of time to be admitted to inpatient beds, or to be transferred to an appropriate facility. It is also worrying that there is a relatively high rate of patients who do not wait for treatment, however it is worth noting the improvement in this particular CI (1.6) from 2014 to 2021.

Continued work needs to be done in the sepsis space. The new indicator in 2021, CI 5.1 Time of antibiotic administration for patients within 60 minutes, showed a worrying statistic as only 99 out of 757 patients presenting with a primary diagnosis of sepsis received timely access to antibiotics. The recent release of the Australian Commission on Safety and Quality in Health Care (ACSQHC) Clinical Care Standard for Sepsis[1] will hopefully see improvements in this space. EDs should also be encouraged to develop sepsis guidelines.

It would be useful to see more HCO data relating to pain management, as over the years the number of contributing HCOs varied from 2-5. Pain management is not always done consistently well so it would be useful to explore this area more in the future.

*REFERENCES*

1. Australian Commission on Safety and Quality in Healthcare. *Sepsis Clinical Care Standard.* ACSQHC; Sydney. 2022.

# Summary Of Results

In 2021 there were 1,157 submissions from 93 HCOs for 26 CIs. Of the 13 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- six improved
- five deteriorated
- the remainder showed no evidence of trend.

Of the 10 trended process indicators:

- four improved
- five deteriorated

Of the three trended outcome indicators:

- two improved
- none deteriorated

Six indicators had outlier gains in excess of 25% of undesirable events. Twelve indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in seven indicators. See Table of Indicator Results below.

## Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Waiting time | | | | | | | |
| 1.1 ATS Category 1 - medically assessed and treated immediately (H) | 99.9 | NSW | 1 (1%) | 5 (28%) | 9 (50%) | 18 | ↑ ✓ |
| 1.2 ATS Category 2 - medically assessed and treated within 10 minutes (H) | 70.5 | NSW | 27 (30%) | 27,772 (18%) | 86,142 (57%) | 152,278 | ↓ ✗ |
| 1.3 ATS Category 3 - medically assessed and treated within 30 minutes (H) | 61.5 | NSW | 24 (27%) | 103,322 (21%) | 271,992 (56%) | 482,528 | ↓ ✗ |
| 1.4 ATS Category 4 - medically assessed and treated within 60 minutes (H) | 72.0 | | 26 (29%) | 90,271 (26%) | 219,646 (64%) | 342,447 | ↓ ✗ |
| 1.5 ATS Category 5 - medically assessed and treated within 120 minutes (H) | 91.4 | NSW | 35 (41%) | 11,805 (41%) | 21,007 (72%) | 29,095 | ↑ ✓ |
| 1.6 Patients who left the ED after triage without being seen (L) | 3.70 | NSW | 20 (36%) | 17,353 (23%) | 51,649 (68%) | 75,928 | ↓ ✓ |
| ST-segment elevated myocardial infarction (STEMI) management | | | | | | | |
| 2.1 STEMI patients who receive thrombolytic therapy within 30 minutes (H) | 42.9 | | | | 2 (7%) | 28 | ↓ ✗ |
| 2.2 Time to balloon opening within 90 minutes (H) | 84.5 | | | | | 23 | |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Emergency department mental health presentations | | | | | | | |
| 3.1 Mental health patients admitted from the ED within 4 hours (H) | 22.8 | | 1 (7%) | 60 (1%) | 406 (8%) | 4,879 | |
| 3.2 Mental health patients discharged from the ED within 4 hours (H) | 44.7 | | 3 (25%) | 813 (18%) | 2,459 (55%) | 4,439 | |
| 3.3 Mental health patients who left before the service was completed (L) | 5.82 | | 3 (23%) | 306 (25%) | 1,125 (92%) | 1,222 | |
| Critical care | | | | | | | |
| 4.1 ED time within 4 hours for ICU admissions (H) | 43.2 | | 3 (27%) | 227 (6%) | 1,209 (32%) | 3,832 | |
| 4.2 Rapid response system call within 4 hours of admission to the ward from the ED (L) | 0.29 | | 4 (36%) | 108 (37%) | 194 (67%) | 291 | |
| Sepsis management | | | | | | | |
| 5.1 Time of antibiotic administration for patients within 60 minutes (H) | 13.1 | | | | 161 (24%) | 658 | |
| Discharge Communication | | | | | | | |
| 6.1 Documented evidence of clinical management plan provided to an ongoing care provider (H) | 95.1 | | 5 (50%) | 355 (19%) | 708 (38%) | 1,861 | |
| Pain management | | | | | | | |
| 7.1 Analgesic therapy within 30 minutes for all patients with moderate or severe pain (H) | 100.0 | | 1 (50%) | 1 (33%) | 3 (100%) | 3 | |
| Unplanned re-attendance | | | | | | | |
| 8.1 Patients who have an unplanned re-attendance to the ED within 48 hours of initial presentation and who require hospital admission (L) | 1.18 | | 8 (33%) | 1,496 (23%) | 4,426 (69%) | 6,395 | |
| Patient flow | | | | | | | |
| 9.1 Patients admitted to the ward within 4 hours (H) | 28.7 | | 1 (25%) | 437 (2%) | 617 (3%) | 23,248 | |
| 9.2 Patients admitted to the ward within 8 hours (H) | 67.7 | | 2 (50%) | 1,120 (11%) | 2,466 (23%) | 10,532 | |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Patient flow (continued) | | | | | | | |
| 9.3 Patients admitted to the ward within 12 hours (H) | 83.9 | | 2 (50%) | 1,038 (20%) | 2,285 (44%) | 5,239 | |
| 9.4 Patients discharged from the ED within 4 hours (H) | 65.6 | | 1 (25%) | 1,741 (7%) | 8,288 (33%) | 24,816 | |
| 9.5 Patients discharged from the ED within 8 hours (H) | 93.2 | | 1 (25%) | 892 (18%) | 3,563 (73%) | 4,909 | |
| 9.6 Patients discharged from the ED within 12 hours (H) | 97.8 | | 1 (25%) | 394 (24%) | 1,345 (83%) | 1,612 | |
| 9.7 Patients admitted to an ED Short Stay Unit (SSU) within 4 hours (H) | 49.6 | | | | 119 (2%) | 6,281 | |
| 9.8 Patients admitted to an ED Short Stay Unit (SSU) within 8 hours (H) | 87.6 | | 1 (33%) | 86 (6%) | 296 (19%) | 1,541 | |
| 9.9 Patients admitted to an ED Short Stay Unit (SSU) within 12 hours (H) | 95.6 | | 1 (33%) | 123 (23%) | 257 (47%) | 546 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# EMERGENCY MEDICINE

# GASTROINTESTINAL ENDOSCOPY

# General Comments

*Dr Nicholas Burgess*
*Gastroenterological Society of Australia*

Monitoring of gastrointestinal endoscopy clinical indicators is essential as there is well established evidence linking these indicators directly to patient outcomes. The 2021 ACIR reassuringly demonstrates that many indicators remained stable and showed improvement, reflecting the high quality care that is delivered by endoscopy providers across Australia.

Failure to reach the caecum due to inadequate bowel preparation (CI 1.1) is an important metric, however it does represent the more extreme end of failed bowel preparation. The endoscopist may fail to reach the caecum due to very poor preparation or solid stool, or the endoscopist will abandon the procedure as it is clear that the colon views are insufficient to detect or exclude polyps and cancer. What is not reported by this metric is the more common situation where the endoscopist will reach the caecum, but decide that one or more bowel segments is insufficiently clear enough to exclude polyps and recommend a repeat colonoscopy.

The European Society of Gastrointestinal Endoscopy (ESGE) recommends the target standard for this assessment of adequate bowel preparation is ≥90% and that units should have an aspirational target of ≥95%. The Australian Commission on Safety and Quality in Health Care (ACSQHC) Colonoscopy Clinical Care Standard (CCCS) includes bowel preparation adequacy as an indicator for local monitoring, and states that the metric that must be collected or audited by endoscopy units is the proportion of patients scheduled for a colonoscopy whose bowel preparation was adequate.[1]

The fitted rate for CI 1.1 is 0.54 per 100 colonoscopies which has deteriorated slightly, indicating that bowel preparation is extremely poor in 0.54% of cases, but this only represents a fraction of the inadequate bowel preparation cases requiring repeat endoscopy. Endoscopy units should monitor their local rates of inadequate bowel preparation according to the CCCS. Inadequate bowel preparation can be related to patient factors, but is often more strongly related to facility communication processes prior to endoscopy. Ensuring that facilities have clear instructions, strong communication and support resources for patients may help to improve outcomes.

Failure to reach the caecum due to pathology encountered (CI 1.2) is a relatively non-modifiable metric which has been stable over the years recorded. It is typically combined with CI 1.1 to add context to the validated quality standard of the caecal intubation rate. In fact, it is now clear that the unadjusted caecal intubation rate is the most important metric and inclusion of the modifiers adds complexity to the calculation and may introduce the risk of gaming.[2] Low unadjusted caecal intubation rates are directly associated with interval cancer.[3] Endoscopy units should ensure that they are measuring or auditing the unadjusted caecal intubation rate according to the CCCS.

Adverse event trends in this year's report are either improving or stable. Perforation rates after polypectomy (CI 2.1) have continued to decline. Perforation not related to polypectomy (CI 2.2) was also reassuringly low and stable at 0.024 per 100 colonoscopies, in line with international reported rates.[4] The advent of through the scope clips, $CO_2$ insufflation and improving ability to recognize and manage these adverse events has improved patient outcomes. Post-polypectomy haemorrhage (CI 2.3) rates have continued to decline and the oesophageal perforation rate after dilatation (CI 4.1) was stable at 0.39 per 100 oesophageal dilatations.

CI 3.1 Adenoma detection rate (ADR) is another metric that is well validated and correlates directly to colorectal cancer (CRC) mortality. It is a laborious metric to collect as it requires correlation of the endoscopy procedure with histopathology data which may not be available until a few days after the procedure is complete. Because of these challenges, many centres may not have centralised collation of this data, or may perform it on an intermittent basis as an audit.

# General Comments

There is a risk that the ADR may be biased as more motivated or organised facilities are more likely to report their data. The annual rate of ADR in 2021 was 41.2% which clearly exceeds the minimum standard expected for colonoscopy recertification in Australia of 25%. Nevertheless, this minimum standard represents a low bar that all endoscopists should be aiming to clear by a wide margin. Large studies have clearly demonstrated that endoscopists with a high ADR have a 50% lower rate of post-colonoscopy CRC and a 60% lower rate of CRC mortality than those endoscopists with an ADR of less than 20%.[5] Some HCOs in this year's report have ADRs of less than 20% which is a cause for concern, as endoscopists who do not meet these targets will not be eligible for recertification, and patient outcomes will be poorer.

Sedation safety is monitored through admission for suspected aspiration following endoscopy (CI 5.1) and administration of sedation reversal agents (CI 6.1), both of which rates were stable and low. Two outlier HCOs reported use of reversal agents in 4.3 per 100 patients. This is a high rate and likely represents HCOs where sedation is performed using midazolam/fentanyl sedation alone. Propofol sedation uses no midazolam/fentanyl, meaning reversal agents are rarely used, and this likely represents the majority of HCOs across Australia. If reversal agents are being administered in ≥1% of endoscopies at an HCO, this should serve as a trigger to review safe sedation practices.

*REFERENCES*


1. Australian Commission on Safety and Quality in Healthcare. *Colonoscopy Clinical Care Standard.* ACSQHC; Sydney. 2020.
2. Kaminski M, Thomas-Gibson S, Bugajski M *et al.* Performance measures for lower gastrointestinal endoscopy: A European scoiety for Gastrointestinal Endoscopy (ESGE) quality improvement initiative. *Endoscopy* 2017; 49(4): 387-397.
3. Baxter NN, Sutradhar R, Forbes SS *et al.* Analysis of administrative data finds endoscopist quality measures associated with postcolonoscopy colorectal cancer. *Gastroenterology* 2011; 140(1): 65-72.
4. Rees CJ, Gibson ST, Rutter MD *et al.* UK key performance indicators and quality assurance standards for colonoscopy. *Gut* 2016; 65(12): 1923-1929.
5. Corley DA, Jensen CD, Marks AR *et al.* Adenoma detection rate and risk of colorectal cancer and death. *New England Journal of Medicine* 2014; 370(14): 1298-1306.

# Summary Of Results

In 2021 there were 1,374 submissions from 117 HCOs for nine CIs. Of the seven indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- two improved
- one deteriorated
- the remainder showed no evidence of trend.

Of the six trended process indicators:

- two improved
- one deteriorated.

The single trended outcome indicator showed no trend. Seven indicators had outlier gains in excess of 25% of undesirable events. Six indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in three indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Failure to reach caecum / neo-terminal ileum | | | | | | | |
| 1.1 Failure to reach caecum due to inadequate bowel preparation (L) | 0.57 | Private | 12 (12%) | 443 (43%) | 872 (84%) | 1,034 | ↑ ✗ |
| 1.2 Failure to reach caecum due to pathology encountered (L) | 0.31 | Private | 11 (12%) | 145 (29%) | 360 (71%) | 504 | |
| Colonoscopy adverse outcomes | | | | | | | |
| 2.1 Treatment for possible perforation post-polypectomy (L) | 0.04 | | 1 (1%) | 32 (71%) | 41 (91%) | 45 | ↓ ✓ |
| 2.2 Treatment for possible perforation post-colonoscopy (L) | 0.02 | | | | 4 (15%) | 26 | |
| 2.3 Post-polypectomy haemorrhage (L) | 0.05 | | 4 (5%) | 23 (55%) | 35 (83%) | 42 | ↓ ✓ |
| Adenoma detection | | | | | | | |
| 3.1 Adenoma detection rate (H) | 41.2 | QLD | 27 (39%) | 5,178 (13%) | 8,904 (21%) | N/A | |
| Oesophageal performation after dilatation | | | | | | | |
| 4.1 Oesophageal dilatation - possible perforation (L) | 0.39 | | 3 (4%) | 7 (27%) | 11 (42%) | 26 | |
| Aspiration following GI endoscopy | | | | | | | |
| 5.1 Aspiration following GI endoscopy (L) | 0.02 | | 6 (7%) | 12 (35%) | 23 (68%) | 34 | |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Sedation in GI endoscopy | | | | | | | |
| 6.1 Sedation in GI endoscopy (L) | 0.07 | | 2 (4%) | 39 (71%) | 54 (98%) | 55 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# GASTROINTESTINAL ENDOSCOPY

# GYNAECOLOGY

43

# General Comments

*Dr Marilla Druitt*
*RANZCOG Endoscopic Surgery Advisory Committee*
*Royal Australian and New Zealand College of Obstetricians and Gynaecologists*

RANZCOG recognises the significant efforts of the junior staff within HCOs, in collecting and refining the data that are included in the ACIR. RANZCOG further acknowledges the difficulties encountered in data collection, owing to the absence of efficient data collection platforms.

It is noted that the dataset is modest and not necessarily representative, thus, making it difficult to draw practical conclusions. For instance, there are 26 public and 24 private HCO reporting sites, out of which 86% are metro-based.

Blood transfusions

It is noted that unplanned blood transfusions for benign disease are steady, at under 1%. However, the number of reporting HCOs have dropped 10-20% from pre COVID-19 pandemic, nonetheless, the rate appears steady and low. Moreover, transfusions for malignant disease are six times the benign rate. However, it is noteworthy that the rate is also steady across the last 8 years. In addition, reporting HCOs have dropped from 21 (in 2014) to 12 (in 2021) and this is likely the impact of COVID pandemic. Given that there are no significant changes in the last 8 years, RANZCOG is of the view that this may be as low as it may get.

Injury to a major viscus

Injury to a major viscus (CI 2.1) during endoscopic surgery is a new indicator and in RANZCOG's view is an essential information to track. The rate is low at 0.27% for 2021, with 41 HCOs reporting. However, it is noted that there is reasonable variation between States, and outliers may contribute disproportionately to the rate. In RANZCOG's opinion, this will be helpful information for the individual HCOs as it may reflect issues that need addressing, such as better data collection systems. For example, a more difficult patient with a large fibroid uterus sustains a bladder injury which is repaired intraoperatively, but the procedure is still completed laparoscopically. This injury may appear complicated on paper, hence contributing to the complication rate.

Nevertheless, this complication may have been avoided with an open operation, (but overall morbidity will probably be lower in the first scenario (injury + laparoscopy v no injury + open surgery). Many gynaecologists are concerned that there may be a rise in viscus injury with increasing adoption of robotically assisted laparoscopic surgery, as was seen in the USA in the early days, with a small rise in fistulas reported. Therefore, RANZCOG recommends encouraging more HCOs to report these injuries. It is further noted that injury to major viscus rates at open surgery were almost the same at 0.26% (CI 2.2).

Venous Thromboembolism Prevention

Thromoboprophylaxis for major gynaecological surgery (12 HCOs reported in 2021) is up from 9 in 2020 and a major drop in rate is noted from 98% in 2020 to 72% in 2021. It is quite difficult to provide an accurate interpretation of data in this instance, as RANZCOG is unclear whether this rate drop represents three new HCOs with much lower rates or competing interests of COVID affecting the general public's ignorance of VTE prophylaxis. In RANZCOG's view, we presume that usually higher prophylaxis rates should result in fewer episodes of venous thromboembolism, and thus, this is concerning. Therefore, RANZCOG recommends promotion of the national Venous Thromboembolism Prevention Clinical Care Standard[1] among the HCOs, as a feasible solution to improve reporting against this indicator.

Surgical approach for hysterectomy

In RANZCOG's view, drawing conclusions from the data in CI 4.1 may not be prudent, given the minuscule proportion of

# General Comments

hysterectomies (1305) in this data set in 2021. An Medicare Benefits Schedule search of vaginal hysterectomy (35657) and some laparoscopically assisted hysterectomies (35753 and 35754) reveal 12,282 for the 12 months to June 2021. 16 HCOs reported, and 51% of hysterectomies were performed by an open abdominal approach.

Thus, RANZCOG looks forward to a trend over time, to fewer (but not zero) laparotomies, as the skill set of RANZCOG surgeons changes. In addition, RANZCOG does not recommend one of the four options for hysterectomy above another, noting that each option has its benefits and shortcomings, and none with suitability for every patient and pathology. It is further noted that the approach to hysterectomy should be selected, based on patient factors, the pathology being treated, surgical experience and patient preference.

The College notes with concern that the surgical volume (for all approaches) indicated by these data, would be inadequate for training requirements.

*REFERENCES*

1. Australian Commission on Safety and Quality in Healthcare. *Venous Thomboembolism Prevention Clinical Care Standard.* ACSQHC; Sydney. 2020.

# Summary Of Results

In 2021 there were 280 submissions from 50 HCOs for seven CIs. Of the four indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- two improved
- two deteriorated

Of the three trended process indicators:

- one improved
- two deteriorated.

Of the two trended outcome indicators:

- one improved
- one deteriorated.

One trended indicator was both a process and outcome indicator.

Five indicators had outlier gains in excess of 25% of undesirable events. Five indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in four indicators. See Table of Indicator Results below.

## Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Blood transfusion | | | | | | | |
| 1.1 Major gynaecological surgery for benign disease - unplanned intraoperative or postoperative blood transfusion (L) | 0.75 | Private | 7 (18%) | 79 (34%) | 182 (78%) | 233 | ↓ ✓ |
| 1.2 Major gynaecological surgery for malignant disease - unplanned intraoperative or postoperative blood transfusion (L) | 5.69 | VIC | | | | 23 | ↑ ✗ |
| Injury to a major viscus | | | | | | | |
| 2.1 Injury to a major viscus during endoscopic surgery (L) | 0.27 | | 4 (10%) | 27 (29%) | 62 (67%) | 93 | |
| 2.2 Injury to a major viscus during non-endoscopic surgery (L) | 0.26 | | 4 (11%) | 18 (31%) | 43 (73%) | 59 | |
| Thromboprophylaxis for major gynaecological surgery | | | | | | | |
| 3.1 Thromboprophylaxis for major gynaecological surgery (H) | 72.9 | | 3 (25%) | 177 (64%) | 270 (97%) | 278 | ↑ ✓ |
| 3.2 Re-admission for venous thromboembolism within 28 days (L) | 0.36 | | 1 (6%) | 4 (44%) | 5 (56%) | 9 | ↑ ✗ |
| Hysterectomy | | | | | | | |
| 4.1 Surgical approach for hysterectomy (L) | 51.8 | | 3 (19%) | 92 (14%) | 253 (37%) | 676 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# HOSPITAL IN THE HOME

# General Comments

*Dr James Pollard*
*President, Hospital in the Home Society of Australasia*
*Chair, ACHS Hospital in the Home Working Party Version 6*

In a year of ongoing service disruptions due to the evolving COVID pandemic, it was notable to see this did not deter Hospital in the Home (HITH) HCOs across the country, both metro and regional, private and public hospital based, to submit 2021 data to the Australian Council on Healthcare Standards for the 2014-2021 Australasian Clinical Indicator Report.

In HITH area 1 (patient safety, selection, communication and care co-ordination), unexpected clinical and administrative telephone calls (CI 1.1) rate was 1.96 calls per 100 patient admissions, suggesting that services continue to select and treat appropriate patients, and have planned and prepared for their care adequately prior to transfer to HITH care. Whilst demonstrating significant stratum gains are possible in this indicator, an outlier result accounted for much of this variability. There was less variation across unscheduled clinical assessment (CI 1.2), at 1.61 per 100 patient admissions.

When considering service interruption in CI 2.1 and CI 2.2, a larger number of HCOs submitted data, and whilst the overall rate of unplanned return to hospital (CI 2.1) was low at 0.96 per 100 patients, there were four outlier HCOs with a combined rate of 10.1 per 100 patients. These services may require improved access to in-home care escalation, and may need to see a more varied cohort of patients or have lower thresholds for return to bed-based care.

The unplanned return to hospital within 24 hours (CI 2.2) showed similar trends, albeit at a lower rate. With high patient denominators, the data from both these indicators will need close focus by the outlying services in the years ahead, with significant gains possible if returns can be reduced.

CI 3.1 Unexpected deaths during HITH admission rate continues to be extremely low, continuing to affirm HITH as safe care, and suggesting the unplanned returns remain an important safety checkpoint and unwell patients receive care escalation appropriately.

The fourth area of focus for HITH (reviewing patient experiences), new for 2021, had a low response rate. Reviewing of patient experience by HITH services, as well as audit of practice and patient complications, is an important part of contemporary healthcare in Australasia, and it would be pleasing to see both an increased response rate, and high affirmation rate, in future surveys to inform us all in this area.

It is pleasing to once again review these results, and to learn from the data with a view to constant improvement in HITH care across Australasia.

# Summary Of Results

In 2021 there were 45 submissions from 16 HCOs for eight CIs. None of the indicators had sufficient data to test for trends.

Four indicators had outlier gains in excess of 25% of undesirable events. Four indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was not observed in any indicator. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Patient safety, selection, communication and care co-ordination | | | | | | | |
| 1.1 Unexpected clinical and administrative telephone calls (L) | 1.96 | | 1 (20%) | 147 (59%) | 175 (70%) | 249 | |
| 1.2 Unscheduled clinical assessment (L) | 1.61 | | 2 (33%) | 51 (44%) | 82 (71%) | 116 | |
| Service interruption | | | | | | | |
| 2.1 Unplanned return to hospital (L) | 0.96 | | 4 (29%) | 189 (55%) | 233 (68%) | 345 | |
| 2.2 Unplanned return to hospital within 24 hours (L) | 0.21 | | 3 (30%) | 43 (69%) | 49 (79%) | 62 | |
| Unexpected deaths | | | | | | | |
| 3.1 Unexpected deaths during HITH admission (L) | 0.02 | | | | 1 (25%) | 4 | |
| Reviewing patient experiences | | | | | | | |
| 4.1 Receiving survey reports (H) | 50% | | | | | | |
| 4.2 Causes of unexpected phone calls and returns to hospital (H) | 50% | | | | | | |
| 4.3 Hospital associated complications (H) | 50% | | | | | | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# HOSPITAL IN THE HOME

# HOSPITAL-WIDE

# General Comments

*Dr David Rankin*
*Royal Australasian College of Medical Administrators*
*Chair, ACHS Hospital-Wide Working Party Version 13.4*

Benchmarking is a fundamental foundation to improving quality and safety in healthcare and the ACHS Hospital Wide clinical indicator set provides a useful vehicle to assist HCOs in identifying their comparative performance. It is disappointing to see the number of participating HCOs falling across many of the indicators with just 368 participants in 2021, 59% of these from the private sector. With around 515 private hospitals in Australia, discharging over 3 million patients a year, the ACHS Clinical Indicator report represents around 42% of private hospitals.

In analysing benchmark data, one of the first considerations is whether the rates are reflective of HCOs similar to yours. It would be helpful to know the spread of hospital classification across many of the indicators.

While the unplanned readmissions within 28 days of separation (CI 1.1) is around 15,000 for both private and public stratums, it is not known if these are large acute hospitals, sub-acute or mental health facilities. Each of these hospital types have quite different patterns and causes of readmissions. This is a complex indicator as there are a range of unexpected but unrelated reasons for readmission, particularly in a surgical setting. The elderly patient that is readmitted 25 days after a prostatectomy for heart failure or a fall at home is very different from a similar patient who is readmitted after 4 days with urinary retention or a wound infection. It is unclear why 81% of private HCOs provided data on this indicator, whilst only 19% of public HCOs responded. With just 38 out of the 152 public HCOs reporting their 28 day unplanned readmission data, there is concern that the 25% of responding HCOs may represent a significantly biased sample.

One of the most significant reductions seen was in CI 3.1 Inpatients who develop one or more pressure injuries. It is delightful to see the rate falling from 7.3 per 10,000 bed days to 1.7 - this is a remarkable achievement over the past seven years.

The rate of inpatient falls (CI 4.1), in contrast, is demonstrating remarkable stability ranging from 0.35 per 100 occupied bed days in 2015 to 0.33 in 2021. There did appear to be a slight reduction in 2019, which raises questions about the association with COVID-19 and the reduction in visitors during periods of lock-down. Again, it would be helpful to know the breakdown of the classification of facilities and whether the rate is higher in acute or sub-acute care. CI 4.2 Inpatient falls resulting in fracture or closed head injury appears even more stable at 0.010 per 100 occupied bed days.

It is interesting to note that the rapid response system calls to adult patients (CI 8.1) has nearly doubled in the past 7 years. Public and private hospitals are equally represented, though it is unclear if the growth has occurred evenly across these hospital types. Again it would be interesting to know if this growth has been in the acute or sub-acute setting. It would be nice to know if this rise in rapid response system call rates is due to the implementation of more robust criteria for initiating a rapid response or a deterioration in patient complexity.

Surgery for hip fracture within 48 hours of admission/ diagnosis (CI 9.4) is a key efficiency measure in acute orthopaedics. Unfortunately, with only 5 HCOs responding it is not possible to use this data to determine what the industry benchmark should be. The newly established hip fracture registry is expected to provide detailed outcome data on the consequence of delayed access to theatre.

Once again the ACHS is to be complimented in maintaining this important data collection. It would assist hospitals in determining their comparative results if the larger data collections could be stratified by hospital type.

# General Comments

*Ms Kathleen Lynch*
*Australian College of Nursing*

The Australian College of Nursing (ACN) acknowledges the contribution nurses have to all clinical indicators, and decided to make comment on Nurse sensitive clinical indicators as listed below:

Acquired pressure injuries

It is pleasing to note the downward trend in hospital acquired pressure injuries (PI) (CI 3.1). The increased nursing emphasis on accurate assessment and recording of pre-existing PIs would be contributing to accurate data. The overall emphasis from hospitals to train nurses in preventable hospital acquired PIs would be contributing to this datset and needs to continue. Digital policies that include photography of PIs for a more accurate location and severity of PIs empowers nurses to take ownership of this CI. This should be encouraged to continue moving forward to ensure that PIs in hospital patients continues on the downward trend, both for the benefit of the patient and the family, as well as the burden on the health system. The lack of standardised pressure injury assessment tools across the states/territories is a body of work that could potentially assist in PI prevention.

It would be difficult to ascertain the impact the pandemic has had on the care of patients that had an acquired PI, as nurses were required to don and doff full personal protective equipment (PPE) to attend all cares for a COVID Positive patient. Add to this the thought of patients at high risk of PI, also requiring frequent position changing and that care for these patients required more than one clinician or health support worker. The downward trend would indicate that patients were cared for adequately despite the precautions implemented during the pandemic. ACN will watch with interest over the coming years to ascertain whether the pandemic did in fact influence this nurse sensitive CI.

Inpatient falls

Whilst ACN acknowledges the already completed, large amount of work done in regard to education, documentation and assessment tools for falls prevention, it is concerning to note that falls with harm is still increasing. Again, it would be interesting to note the distribution of this data across the years as the pandemic and isolation of COVID positive patients has possibly contributed to an increase of falls with harm. Patients who are unwell with COVID, who would normally have been nursed in open areas of the ward, were isolated and behind "closed doors" out of direct line of sight of nursing staff at times. A standardised falls risk tool across states/territories is also lacking, and as we continue to move forward, standardising digital medical records may also contribute to both falls prevention and reduce falls with harm. Resources should continue to put into falls prevention strategies in workplaces, including contemporary falls monitoring systems (e.g. bed alarms). A multi-disciplinary approach to falls prevention, including allied health input, could also be beneficial in falls management strategies. The role of the nurse is vital in falls prevention strategies and should continue to be a focus in all forms of curriculum and inpatient policy.

Rapid response system (RRS) calls

The increase pressure on Emergency Departments (ED) to move patients to inpatient beds to avoid ambulance ramping, bed block and the meeting of other performance indicators such as triage categories, increases the likelihood of patients moving out of the ED to inpatient areas sooner than they may be ready to do so. Whilst the increase in RRS calls made within 24 hours of admission is concerning, it could also be said that detection of the unwell patient is good and emergency help is being sought sooner.

# General Comments

The same rationale could be used in examining the reduction in cardiac arrests, where early detection of deterioration enables better patient outcomes. Nursing staff are aware of their obligations in detecting deterioration and the escalation pathways available for assistance to treat this deterioration. Nursing staff should continue to be empowered in advanced life support and advocating for patients when they are concerning. The empowerment of advanced practice nurses in treating initial patient deterioration will also address the impact of the concerning data of response times. The downward trend in this data indicates that RRS teams are not able to respond fast enough. There could be numerous factors as to why this is the case, but in the current climate, furloughing of staff, overall staffing resources and system issues would be impacting. Nurse led resuscitation and further advanced practice skills for inpatient nurses is another way to mitigate the risk of slow response times.

Frailty assessments

ACN would support future monitoring and data analysis of frailty assessments in patients greater than 65 years. Ideally this data would be collected within 24 hours of the patient's presentation to a hospital. Accurate, regular assessments, early treatment pathways and hospital avoidance would benefit both the patient and the health sytsem. Nurse driven assessment and community support of this initiative should be considered for future analysis.

# Summary Of Results

In 2021 there were 4,845 submissions from 368 HCOs for 19 CIs. Of the 15 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- ten improved
- three deteriorated
- the remainder showed no evidence of trend.

Of the four trended process indicators:

- two improved
- two deteriorated.

Of the nine trended outcome indicators:

- eight improved
- one deteriorated.

Ten indicators had outlier gains in excess of 25% of undesirable events. Thirteen indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in ten indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Hospital readmissions | | | | | | | |
| 1.1 Unplanned readmissions within 28 days (L) | 0.91 | Private | 29 (14%) | 13,732 (48%) | 26,751 (93%) | 28,865 | ↓✓ |
| Return to the operating room | | | | | | | |
| 2.1 Unplanned return to the operating room during the same admission (L) | 0.27 | | 17 (9%) | 1,544 (28%) | 4,061 (72%) | 5,611 | |
| Pressure injuries | | | | | | | |
| 3.1 Inpatients who develop ≥1 pressure injuries (L) | 0.02 | | 35 (11%) | 743 (39%) | 1,602 (85%) | 1,891 | ↓✓ |
| Inpatient falls | | | | | | | |
| 4.1 Inpatient falls (L) | 0.33 | | 101 (30%) | 9,168 (20%) | 23,797 (51%) | 46,522 | ↓✓ |
| 4.2 Inpatient falls resulting in fracture or closed head injury (L) | 0.01 | Private | 10 (3%) | 162 (12%) | 561 (42%) | 1,327 | ↑✗ |
| Patient deaths | | | | | | | |
| 5.1 Patient deaths addressed within a clinical audit process (H) | 91.9 | Private | 18 (10%) | 1,180 (68%) | 1,711 (99%) | 1,732 | |
| 5.2 Deaths in adult patients who do not have a resuscitation plan (L) | 0.07 | Private | 14 (20%) | 230 (38%) | 513 (86%) | 598 | ↓✓ |
| Blood transfusion | | | | | | | |
| 6.1 Significant adverse blood transfusion events (L) | 0.08 | | 1 (1%) | 3 (6%) | 6 (12%) | 50 | ↓✓ |

# HOSPITAL-WIDE

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Blood transfusion (continued) | | | | | | | |
| 6.2 Transfusion episodes where informed patient consent was not documented (L) | 1.57 | | 16 (15%) | 177 (52%) | 268 (78%) | 343 | ↓ ✓ |
| 6.3 RBC transfusion where Hb reading is ≥100 g/L (L) | 1.18 | | 8 (10%) | 45 (28%) | 92 (57%) | 162 | ↑ ✗ |
| Thromboprophylaxis | | | | | | | |
| 7.1 VTE risk assessment (H) | 37.9 | Private | 8 (24%) | 24,482 (24%) | 88,673 (86%) | 103,223 | |
| Minimum standards for rapid response system (RRS) calls | | | | | | | |
| 8.1 Rapid response system calls to adult patients (N) | 5.10 | | | | | | ↑ |
| 8.2 Rapid response system calls to adult patients within 24 hours of admission (N) | 0.84 | | | | | | ↑ |
| 8.3 Adult patients experiencing cardiopulmonary arrest (L) | 0.07 | | 11 (7%) | 194 (17%) | 537 (48%) | 1,121 | ↓ ✓ |
| 8.4 Rapid response system attendances within 5 minutes (H) | 94.6 | NSW | 8 (13%) | 607 (43%) | 1,171 (83%) | 1,403 | ↓ ✗ |
| Surgery | | | | | | | |
| 9.1 Pre-operative acute appendicitis - normal histology (L) | 9.09 | | 5 (17%) | 46 (14%) | 206 (64%) | 324 | ↓ ✓ |
| 9.2 Laparoscopic cholecystectomy - bile duct injury requiring operative intervention (L) | 0.24 | Private | 3 (6%) | 9 (30%) | 20 (67%) | 30 | ↓ ✓ |
| 9.3 Tonsillectomy - significant reactionary haemorrhage (L) | 0.21 | | | | 1 (4%) | 25 | ↓ ✓ |
| 9.4 Hip fracture care (H) | 79.6 | | 1 (20%) | 32 (26%) | 73 (59%) | 123 | |
| Risk assessment | | | | | | | |
| 10.1 Frailty assessment (H) | No data has been submitted for this indicator. | | | | | | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# INFECTION CONTROL

# General Comments

*Ms Ann Whitfield*
*Board Director, Australasian College for Infection Prevention and Control*

The COVID-19 pandemic had considerable impact on the healthcare system, however each year in Australia 180,000 patients suffer healthcare associated infections (HAIs) that prolong hospital stay and consume two million hospital bed days. HAIs are amongst the most common and preventable of infections.[1] HAIs surveillance remains critical to HCOs to improve the patient experience and outcomes. However, there remains inconsistencies in data collection and methodology across Australia with many HCOs only having to report voluntary on many indicators.[1] A large study looking into the prevalence of HAIs in adult acute hospital settings demonstrated a higher prevalence of HAIs than in previous studies conducted.[1] The variance in reported data highlights the need for national reporting. This study was the first to be conducted in 34 years in Australia, which highlights the need for further research.

The Australian Commission on Safety and Quality in Health Care (ACSQHC) has identified the need for targeted surveillance on a national list of HAIs, including urinary tract infections, surgical site infections (SSIs), pneumonia and multi-resistant organisms (MROs), to name a few.[2] These particular HAIs were highlighted so that HCOs can put in place strategies to reduce harm, by either reducing high rates or maintain low rates in these areas.[2] However, there is still variance with HCOs choosing which type of surveillance to focus on, which may limit the amount of harm reduction in these areas. Additionally there may be human error from lack of experience in identifying HAIs and overall variance in reporting.

There are still inconsistencies across Australia with how each state validates the HAI data reported by HCOs. Use of other systems such as pathology data, National Alert System for Critical Antimicrobial Resistances (CARAlert), National Notifiable Diseases Surveillance System (NNDSS) and ICNET clinical surveillance and management software could support the collection of HAI data nationally. There is also the need to refocus attention on MROs of significance, such as Carbapapenemase-producing Enterobacteriacaea (CPE) and Candida auris. Another area worth considering is how healthcare is evolving with shorter lengths of hospital stay, such that HAIs are potentially appearing after discharge but are treated within 30 days by General Practitioners (GPs). This is where the use of My Health Record could be of potential support to HCOs in monitoring HAIs more closely to improve patient safety after discharge.

SSIs are traditionally broken down into emergency and elective procedures (CI 1.1 and 1.2), however these indicators do not separate associated HAI risk linked to primary versus revision hip/knee procedures. The fitted rate appeared to be stable for both indicators, from 2014 to 2021. Revisions tend to have a higher complication rate, and so should be considered separate to primary procedures performed. The indicator data for coronary artery bypass graft (CABG) (CI 1.3) combines data from both elective and emergency services, however it would be beneficial if it was broken down into each type of service, as there is generally a higher risk associated with emergency procedures, such as out of hours and bundled skin preparation.

Antibiotic use, dose and timing are advised by the National Therapeutic Guidelines[3], however there continues to be poor compliance with HCOs where 100% compliance is not reached (Area 2: Surgical antibiotic prophylaxis). This results in suboptimal care and increased risk of HAIs, which can further result in additional antibiotic use. This is a significant concern, given international concern with overuse of antibiotics and increase in MROs.

Immunisation is safe way to protect individuals from disease (Staff immunisation CI 5.1-5.5). There is the National Immunisation Program which includes children and adult vaccination programs[4] and the National Database Australian Childhood Immunisation Register which has been around

# General Comments

since 1996. States should mandate that all HCOs and community sites report on immunisation rates, as it would be critical in targeting immunisation programs in primary care and child health.

The National Occupational Health and Safety Act 1985 is clear on reporting harm that occurs within the workplace, and although each state strives to align the Act with each of the individual state's legislation, all have focused to reduce harm within the workplace. However, there is still a lack of national data regarding occupational exposures, which could be due to the different reporting systems and culture at the level of the HCO. CI 6.1 and 6.2 both show declining HCO reporting from 2014 to 2021.

It is possible that the COVID-19 pandemic has affected data collection, however it is pleasing to see improvements in most of the indicators within the Infection Control clinical indicator set. It may be worth looking into capturing ethnicity, to reduce inequalities in healthcare.

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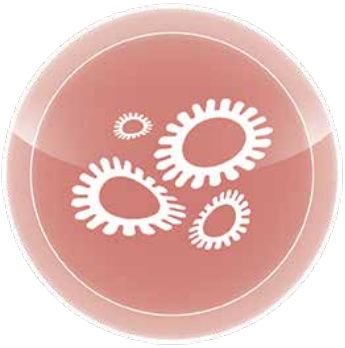

# Summary Of Results

In 2021 there were 2,899 submissions from 280 HCOs for 26 CIs. Of the 26 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- 13 improved
- six deteriorated
- the remainder showed no evidence of trend.

Of the 14 trended process indicators:

- eight improved
- five deteriorated.

Of the twelve trended outcome indicators:

- five improved
- one deteriorated.

Fifteen indicators had outlier gains in excess of 25% of undesirable events. Seventeen indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in ten indicators. See Table of Indicator Results below.

## Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Surgical Site Infections (SSIs) | | | | | | | |
| 1.1 Deep or organ / space SSI - hip prosthesis procedure (L) | 0.56 | Private | 1 (1%) | 2 (1%) | 27 (18%) | 147 | |
| 1.2 Deep or organ / space SSI - knee prosthesis procedure (L) | 0.33 | NSW | 3 (2%) | 7 (6%) | 50 (40%) | 126 | |
| 1.3 Deep or organ / space SSI to chest incision site - CABG (L) | 0.76 | | | | 5 (14%) | 36 | |
| 1.4 Deep or organ / space SSI - LSCS (L) | 0.19 | | 1 (2%) | 4 (11%) | 17 (47%) | 36 | ↑ ✗ |
| 1.5 Deep or organ/space SSI - open colon surgery (L) | 1.99 | | | | | 8 | |
| 1.6 Deep or organ/space SSI - open rectal surgery (L) | 1.21 | | 1 (13%) | 2 (40%) | 1 (20%) | 5 | ↓ ✓ |
| 1.7 Deep or organ/space SSI - laparoscopic-assisted large bowel resection (L) | 0.61 | | | | | 2 | |
| Surgical Antibiotic Prophylaxis (SAP) | | | | | | | |
| 2.1 Timing of SAP for the hip prosthesis procedure (H) | 90.4 | | 5 (11%) | 231 (53%) | 398 (91%) | 436 | ↓ ✗ |
| 2.2 Correct SAP and dose for the hip prosthesis procedure (H) | 92.4 | | 7 (14%) | 146 (42%) | 300 (87%) | 345 | ↑ ✓ |
| 2.3 Discontinuation of SAP within 24 hours of the hip prosthesis procedure (H) | 85.2 | | 13 (27%) | 353 (52%) | 618 (91%) | 677 | ↑ ✓ |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Surgical Antibiotic Prophylaxis (SAP) (continued) | | | | | | | |
| 2.4 Timing of SAP for the knee prosthesis procedure (H) | 88.3 | | 5 (11%) | 440 (65%) | 645 (96%) | 675 | ↓ ✗ |
| 2.5 Correct SAP and dose for the knee prosthesis procedure (H) | 86.8 | | 6 (13%) | 471 (60%) | 741 (95%) | 782 | |
| 2.6 Discontinuation of SAP within 24 hours of the knee prosthesis procedure (H) | 83.8 | | 8 (17%) | 510 (57%) | 851 (94%) | 901 | ↑ ✓ |
| 2.7 Timing of SAP for the LSCS procedure (H) | 93.8 | | 6 (21%) | 164 (50%) | 276 (84%) | 329 | ↑ ✓ |
| 2.8 Correct SAP and dose for the LSCS procedure (H) | 95.8 | Metropolitan | 6 (21%) | 79 (36%) | 168 (76%) | 222 | ↑ ✓ |
| 2.9 Discontinuation of SAP within 24 hours of the LSCS procedure (H) | 96.4 | | 3 (11%) | 49 (26%) | 129 (68%) | 191 | ↑ ✓ |
| Haemodialysis access-associated bloodstream infection surveillance | | | | | | | |
| 3.1 Haemodialysis - AV-fistula access-associated BSI (L) | 0.05 | | | | | 3 | |
| 3.2 Haemodialysis - Centrally Inserted cuffed line access-associated BSI (L) | 1.06 | Metropolitan | | | | 21 | ↓ ✓ |
| Vancomycin Resistant Enterococci (VRE) | | | | | | | |
| 4.1 VRE infection within the ICU (L) | 1.09 | | 3 (7%) | 5 (31%) | 10 (63%) | 16 | ↓ ✓ |
| Staff immunisation | | | | | | | |
| 5.1 Influenza / Flu vaccination for permanent staff (H) | 51.6 | | 20 (24%) | 4,292 (15%) | 18,057 (65%) | 27,762 | ↑ ✓ |
| 5.2 Hepatitis B vaccination for permanent staff (H) | 80.8 | | 16 (27%) | 2,474 (28%) | 6,018 (69%) | 8,685 | ↑ ✓ |
| 5.3 MMR vaccination for permanent staff (H) | 78.4 | | 16 (30%) | 3,029 (34%) | 7,353 (84%) | 8,789 | ↓ ✗ |
| 5.4 Pertussis vaccination for permanent staff (H) | 68.0 | | 16 (30%) | 4,584 (35%) | 11,113 (85%) | 13,138 | ↓ ✗ |
| 5.5 Varicella vaccination for permanent staff (H) | 76.1 | | 15 (28%) | 3,493 (36%) | 8,293 (85%) | 9,811 | ↓ ✗ |

# INFECTION CONTROL

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Occupational exposures to blood and/or body fluids | | | | | | | |
| 6.1 Reported parenteral exposures sustained by staff (L) | 0.03 | Private | 9 (4%) | 219 (9%) | 1,265 (52%) | 2,439 | ↓ ✓ |
| 6.2 Reported non-parenteral exposures sustained by staff (L) | 0.008 | Private | 13 (6%) | 154 (21%) | 422 (59%) | 717 | ↓ ✓ |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# INTENSIVE CARE

# General Comments

*Associate Professor Mary White*
*Australian and New Zealand Intensive Care Society*
*Chair, ACHS Intensive Care Working Party Version 6*

Currently, 185 hospitals report adult and paediatric intensive care data to ANZICS, and 118 are accredited for training by the College of Intensive Care Medicine. Seventy four HCOs appear to be contributing data to the ACHS. This unfortunately limits interpretation. Notwithstanding, the data does provide some valuable insights particularly in the context of the COVID-19 pandemic.

The clinical indicators under the area of access and exit block are designed to detect intensive care unit (ICU) and to a lesser extent hospital stress. Data from these indicators must be interpreted in the context of periods of elective surgery stoppages in 2021 and potentially low activity of other admissions. The peak of the COVID-19 Delta variant in Australia occurred between August and November 2021, when there were over 1000 patients in hospital every day and hundreds in ICUs, almost exclusively in NSW and Victoria.

Despite this, CI 1.1 to CI 1.5 were only marginally 'worse' than in previous years. This may be more reflective of uneven sampling than the real situation. The proportion of private HCOs submitting data for CI 1.1 to CI 1.5 is between 36% to 44%. Private HCOs perform much better than public HCOs for these indicators - this is largely thought to be because of the more elective nature of their patients. Victorian ICUs represent only 13 – 15% of HCOs submitting data for CI 1.1 to CI 1.5 and most of the box plots for Victoria in 2021 have a similar distribution to private rather than public HCOs. This suggests that the major public HCOs in Victoria, who are arguably the more 'stressed', may not have submitted data. It is unlikely that protective strategies such as opening more ICU beds, shutting down elective surgery, reducing staff to patient ratios, and using staff with less training would have reduced the stress on Victorian ICUs.

In general, these strategies increase the strain on ICUs rather than lessen it. It is also unlikely that access and exit block do not reflect strain on ICU beds. It is more likely that these indicators do not adequately reflect the strain inflicted on an ICU by a pandemic. We would caution against over interpretation of any recent trends until we settle into the new COVID-19 norm.

The after-hours discharges (CI 1.5) and discharge delay more than 12 hours (CI 1.4) in NSW are potentially reflective of relatively low capacity on hospital wards either related to staffing of ward beds or lack of adequate ward beds across the system. The inability to admit to ICU (CI 1.1) and deferred or cancelled elective surgery data (CI 1.2) are concerning for Queensland and possibly reflects a low ICU bed base indexed to population or activity in that state. The increased transfer of patients between facilities in Queensland due to lack of ICU access (CI 1.3) potentially reflects the same issue. Overall the report shows considerable variation between HCOs in different states and between private and public HCOs. Access to ICU beds is particularly challenging in Queensland.

CI 2.1 Rapid response system calls to adult ICU patients within 48 hours of ICU discharge seems to have been relatively stable over the past few years. A higher rate for this CI particularly in the context of the pandemic may relate to ICU capacity being constrained prompting earlier discharge.

CI 4.1 CLABSI rates are rising from a nadir of 0.34 per 1000 CI central line-days (in 2017/2018) but the rise is slow and potentially not clinically significant. The rates reported in this document are amongst the lowest in the world and reflective of excellent clinical practice across the board in Australian ICUs. Interestingly this is the only CI for which the number of HCOs has increased over the past eight years and the one for which there are more contributions from the private than the public sector.

Participation in the ANZICS CCR survey (CI 5.3) is relatively low. The number of HCOs submitting data has fallen from 40

# General Comments

to 30 since 2014. Approximately 50% of units contributing data to ANZICS CORE contribute data to CCR and programs to improve engagement and validity of CCR data should be considered. Only a small number of units report data on empathetic practice (CI 6.1) and further encouragement to participate in this indicator would be helpful.

The paediatric indicators (CI 1.6, 1.7, 2.2, 4.2, 5.2) are extremely difficult to interpret due to the small numbers of HCOs and children involved; the data behind these indicators represent less than 7% of children admitted to Australian ICUs in that year. The HCOs that do submit data to the report clearly do not generally represent high-acuity paediatric ICU, given the CLABSI rate of zero and the low number of line days, and the cancellation rate of zero for elective surgery. None of the indicators are worryingly high, and there were no discernible trends, but these observations simply reflect the nature of the HCOs reporting and the very low number of admissions recorded. It is reassuring that there is a relatively high rate of reporting of paediatric admissions to the ANZPIC Registry (CI 5.2), where benchmarking will be more meaningful for those HCOs.

One of the persistent themes is the lack of access to critical care services in public Australian ICUs. Greater reporting of these indicators to the ACHS should be encouraged particularly in regions such as Victoria. Lack of visibility of these data make it impossible to argue effectively for appropriate ICU resources.

# Summary Of Results

In 2021 there were 1,155 submissions from 93 HCOs for 16 CIs. Of the 12 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- six improved
- three deteriorated
- the remainder showed no evidence of trend.

Of the six trended process indicators:

- five improved
- one deteriorated.

Of the three trended outcome indicators:

- none improved
- one deteriorated.

Of the three trended structure indicators:

- one improved
- one deteriorated.

Nine indicators had outlier gains in excess of 25% of undesirable events. Ten indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in nine indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Access and exit block | | | | | | | |
| 1.1 ICU - adult non-admission due to inadequate resources (L) | 1.97 | Private | 11 (21%) | 735 (62%) | 1,174 (99%) | 1,189 | ↓✓ |
| 1.2 ICU - elective adult surgical cases deferred or cancelled due to unavailability of bed (L) | 2.09 | Private | 12 (24%) | 433 (63%) | 670 (98%) | 682 | ↑✗ |
| 1.3 ICU - adult transfer to another facility / ICU due to unavailability of bed (L) | 0.96 | Private | 8 (16%) | 331 (58%) | 556 (97%) | 575 | |
| 1.4 ICU - adult discharge delay >12 hours (L) | 14.8 | Private | 23 (38%) | 3,392 (35%) | 8,834 (92%) | 9,591 | ↓✓ |
| 1.5 ICU - adult discharge between 6pm and 6am (L) | 15.5 | Private | 24 (36%) | 3,398 (31%) | 8,476 (78%) | 10,911 | ↓✓ |
| 1.6 ICU - paediatric discharge between 6pm and 6am (L) | 11.2 | | 1 (7%) | 3 (3%) | | 90 | ↑✗ |
| 1.7 ICU - elective paediatric surgical cases deferred or cancelled (L) | 0.000 | | | | | - | |
| Intensive care patient management | | | | | | | |
| 2.1 Rapid response system calls to adult ICU patients within 48 hours of ICU discharge (L) | 5.01 | Private | 9 (18%) | 713 (26%) | 2,205 (82%) | 2,697 | ↑✗ |
| 2.2 Rapid response system calls to paediatric ICU patients within 48 hours of ICU discharge (L) | 2.66 | | 1 (9%) | 7 (33%) | 9 (43%) | 21 | |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Intensive care patient treatment | | | | | | | |
| 3.1 VTE prophylaxis in adult patients within 24 hours of ICU admission (H) | 95.7 | Private | 20 (31%) | 1,278 (44%) | 2,854 (98%) | 2,900 | |
| Central line-associated bloodstream infection | | | | | | | |
| 4.1 Adult ICU-associated CI-CLABSI (L) | 0.38 | Private | | | 15 (29%) | 52 | |
| 4.2 Paediatric ICU-associated PI-CLABSI (L) | 0.000 | | | | | - | |
| Utilisation of patient assessment systems | | | | | | | |
| 5.1 Participation in the ANZICS CORE Adult Patient Database (APD) (H) | 97.6 | | 9 (14%) | 1,497 (85%) | 1,758 (100%) | 1,764 | |
| 5.2 Participation in the ANZICS CORE Paediatric Intensive Care (ANZPIC) registry (H) | 99.2 | | 1 (13%) | 1 (17%) | 5 (83%) | 6 | |
| 5.3 Participation in the ANZICS CORE Critical Care Resources survey (N) | 96.3 | | | | | | |
| Empathetic practice | | | | | | | |
| 6.1 Empathetic practice toward families of ICU patients (H) | 67.9 | | 6 (33%) | 101 (22%) | 270 (59%) | 461 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# INTENSIVE CARE

# INTERNAL MEDICINE

# General Comments

The Internal Medicine clinical indicator set collects data from a broad spectrum of complex, chronic, multisystem disorders spanning acute and sub-acute hospital settings. A degree of restraint was applied to the selection of these indicators, to ensure conciseness and avoid data collection fatigue. Of the 20 indicators available for collection, it is worth noting that the number of participating healthcare organisations (HCOs) varies, and only five indicators had relevant data to test for trends in this year's ACIR.

The cardiovascular disease indicator, CI 1.5 Percutaneous transluminal coronary angioplasty – vessels where primary success achieved, showed an improvement in rate over the last 8 years to 96.4% in 2021. This was the highest reported indicator amongst those in the cardiovascular disease area, however it is worth keeping in mind that overall the number of HCOs reporting for this indicator has declined from 9 HCOs in 2014 to 5 in 2021.

Similar to 2020 results, the most popular indicators that were reported on were CIs 3.1, 3.2, 3.3 and 3.4, of which all showed improvements in their fitted rates over the last few years. This demonstrates a focus on early screening and assessment, management, and documented treatment of acute stroke. In Australia, 40,000 acute care hospitalisations had a principal diagnosis of stroke in 2019-2020, where the average length of acute hospital stay was 6.6 days, and the average length of hospital rehabilitation care stay was 14 days.[1] The COVID-19 pandemic also taught us that patients with pre-existing cardiovascular disease (such as stroke) who present with COVID-19 have a higher risk of disease and death, and that COVID-19 itself can cause cardiovascular injury which may increase stroke risk.[1]

In Australia, access to stroke unit care is lower when compared to other countries, despite its benefits for improved patient outcomes.[2] Although system wide coordination of acute stroke services is recommended, there is still significant variation in many aspects of hospitalised stroke patients across states and territories[2], highlighting the importance of HCOs to participate in the reporting of acute stroke management indicators (CI 3.1 – 3.4).

CI 3.1 increased to its highest rate in 2021 (82.0%). Ensuring early identification of dysphagia in acute stroke patients through early implementation of swallow screening assessments and tools, has shown to reduce the risk of pneumonia in these patients[3] as well as lengths of hospital stay and cost[4]. CI 3.3 has also shown a steady increase in rates over the last 8 years with 2021 data showing that 90.8% of acute stroke inpatients were provided with a documented plan for their ongoing care in the community prior to discharge. Both CI 3.2 and 3.4 have displayed fluctuations in their rates since 2014, however overall showed promising upward trends in their fitted rates to 83.5% and 84.5% respectively in 2021, indicating that an increasing number of inpatients are having a physiotherapy assessment within required time frames and treatment in a stroke unit during their hospital stay.

Unfortunately no data was provided about the number of delirium diagnosed patients who have a documented delirium plan (CI 4.3) or who have a documented follow-up plan after discharge (CI 4.4), despite the prevalence of delirium in the elderly population, although this may have been due to submission of the ACHS supported Clinical Care Standard indicators for Delirium.[5] The Oncology indicators (CI 7.1) and Care of the Elderly indicators (CI 4.1 and 4.2), in this set have largely been replaced with indicators in the Cancer Care set and Geriatric Care set, in which organisations are making a transition. The reported data on endocrine disease (CI 2.1), respiratory disease (CI 5.1 – 5.3), and gastrointestinal disease (CI 6.1 and 6.2) were underreported areas despite how prevalent these health conditions are in Australia's health care system.[6]

# General Comments

Thank you to those who have contributed to the reporting of the ACHS Internal Medicine clinical indicators in 2021. It is pleasing to see that 5 CIs showed a trend in a desirable direction, and there is an opportunity to review this set in 2023 to update these indicators to ensure their reporting relevance.


*REFERENCES*

1. *Australian Institute of Health and Welfare. Heart, stroke and vascular disease - Australian facts. AIHW: Canberra; 2021.*
2. Stroke Foundation. *National Stroke Audit - Acute Services Report 2021.* Stroke Foundation: Melbourne; 2021.
3. Schrock JW, Lou L, Ball BAW *et al.* The use of emergency department dysphagia screen is associated with decreased pneumonia in acute strokes. *The American Journal of Emergency Medicine* 2018; 36(12): 2152-2154.
4. Attrill S, White S, Murray J *et al.* Impact of otopharyngeal dysphagia on healthcare cost and length of stay in hospital: a systematic review. *BMC Health Services Research* 2018; 18(594): 1-18.
5. Pezzullo L, Streatfeild J, Hickson J *et al.* Economic impact of delirium in Australia: a cost of illness study. *BMJ Open* 2018; 9(9): 1-9.
6. Australian Institute of Health and Welfare. *Australia's health 2022: data insights.* AIHW: Canberra; 2022.

# Summary Of Results

In 2021 there were 102 submissions from 20 HCOs for 20 CIs. Of the five indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- all five improved.

Of the four trended process indicators:

- all four improved.

The single trended outcome indicator improved.

The single trended structure indicator improved (this indicator was both a process and structure indicator).

Two indicators had outlier gains in excess of 25% of undesirable events. Three indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. There was insufficient data to detect stratum variation. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Cardiovascular disease | | | | | | | |
| 1.1 CHF - prescribed ACEI / A2RA (H) | 94.3 | | | | | 11 | |
| 1.2 CHF - prescribed beta blocker (H) | 87.9 | | | | | 36 | |
| 1.3 CHF and AF - prescribed warfarin (H) | 87.0 | | | | | 3 | |
| 1.4 CHF - chronic disease management referral including physical rehabilitation (H) | 70.5 | | | | 10 (20%) | 51 | |
| 1.5 PTCA - vessels where primary success achieved (H) | 96.4 | | | | 17 (17%) | 101 | ↑ |
| Endocrine disease | | | | | | | |
| 2.1 Hospitalised patients with severe hypoglycaemia <2.8 mmol/L (L) | 10.9 | | 1 (50%) | 25 (37%) | 40 (60%) | 67 | |
| Acute stroke management | | | | | | | |
| 3.1 Acute stroke - documentation of swallowing screen conducted within 24 hours prior to food or fluid intake (H) | 82.0 | | 2 (25%) | 31 (13%) | 94 (38%) | 245 | ↑ |
| 3.2 Acute stroke - documented physiotherapy assessment within 48 hours of presentation (H) | 83.5 | | 1 (13%) | 24 (11%) | 83 (40%) | 209 | ↑ |
| 3.3 Acute stroke - plan for ongoing community care provided to patient / family (H) | 90.8 | | 2 (29%) | 30 (34%) | 55 (63%) | 88 | ↑ |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Acute stroke management (continued) | | | | | | | |
| 3.4 Acute stroke - documented treatment in a stroke unit during hospital stay (H) | 84.5 | | 1 (14%) | 37 (18%) | 142 (69%) | 207 | |
| Care of the elderly | | | | | | | |
| 4.1 Medical patients ≥65 years - cognition assessment using validated tool (H) | 89.0 | | | | | 107 | |
| 4.2 Geriatric patients - documented assessment of physical function (H) | 86.9 | | 1 (100%) | 11 (17%) | 14 (22%) | 65 | |
| 4.3 Documentation of delirium plan (H) | No data has been submitted for this indicator. | | | | | | |
| 4.4 Documentation of follow-up plan after discharge (H) | No data has been submitted for this indicator. | | | | | | |
| Respiratory disease | | | | | | | |
| 5.1 COPD - chronic disease management service referral (H) | 39.3 | | | | 48 (24%) | 198 | |
| 5.2 Acute asthma - assessment of severity documented on admission (H) | 62.2 | | | | | 34 | |
| 5.3 Acute asthma - appropriate discharge plan documented (H) | 70.0 | | | | | 27 | |
| Gastrointestinal disease | | | | | | | |
| 6.1 Haematemesis / melaena with blood transfusion - gastroscopy within 24 hours (H) | 74.1 | | | | | 15 | |
| 6.2 Haematemesis / melaena with blood transfusion & subsequent death (L) | 1.09 | | | | | 1 | |
| Oncology | | | | | | | |
| 7.1 Time to administration of antibiotics for patients admitted with febrile neutropenia (H) | 71.4 | | | | | 2 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# INTERNAL MEDICINE

# MATERNITY

# General Comments

*Associate Professor Alexis Shub*
*Fellow, Royal Australian and New Zealand College of Obstetricians and Gynaecologists*

This comprehensive dataset with analysis is welcomed as a way to track and improve the care we provide to women and babies. Large numbers of HCOs have contributed data to this report, with most indicators being informed by over 100 HCOs, however this is a reduction from 2014 when 151 services contributed. This breadth of data enables comparisons to be made between states, between metro and regional services, between private and public settings, and between smaller and larger health services. These comparisons need to be tempered by the varying risk profiles and demographic features of women at different services. It is important to recognise and acknowledge that data sets like this cannot be produced without substantial time and effort from staff at every level of hospitals to ensure accurate data collection in busy clinical settings.

The outcomes from the last 2 years must also recognise the impact on care of the COVID-19 pandemic. Care across the maternity spectrum was impacted by restrictions. This includes the provision of in-person care for antenatal care, but also for crucial elements for women, including antenatal education and the provision of family support for women in their journey. There were also significant workforce pressures on both medical and midwifery staff. Staff continued to turn up to work, putting themselves at risk, to provide this essential care. Given these limitations, the improvement in many areas of care provision are even more impressive.

The rate of vaginal delivery in selected primipara has fallen over the reporting period in CI 1.1 Spontaneous vaginal birth. This is matched by the increasing rate of caesarean section in this cohort, with higher rates in the private sector, as seen in CI 1.4 Caesarean section. in CI 1.3 Instrumental vaginal birth, the rate of instrumental birth has remained stable. It is important that this option remains available to women, to avoid some complex caesarean sections at full dilatation, and the implications for the next birth.

In CI 1.1 to 1.4, although the definition of "selected primipara" describes a lower risk profile cohort than all other primiparas, these women may still have indications for induction of labour such as pre-eclampsia or fetal growth restriction, and so there will continue to be a need for interventions such as induction of labour and caesarean section in this cohort. This data should prompt clinicians to consider their local rates of intervention, and to consider the role of maternal choices in intervention.

There has been a very positive trend in reduction in rates of third-degree (CI 3.5) and fourth-degree tears (CI 3.6), which are significant adverse outcomes for women. The reasons for this may be due to the documented increase in episiotomy rate (CI 3.2), which may demonstrate the role of episiotomy when clinically indicated, to reduce risk of severe perineal trauma.

In CI 4.1 General anaesthetic (GA) for caesarean section, there has been a reduction in the use of GA for caesarean section. Regional analgesia is safer for the woman and the baby, where it is appropriate, and provides a positive experience for women and their partners. The sector is to be commended on this positive trend and subsequent improvement in safety.

The previously noted increase in prophylactic antibiotics for caesarean section has slowed (see CI 5.1). Nearly 1 in 10 women did not receive this evidence based intervention to reduce maternal post operative infection morbidity. In comparison to many of the more complex multi-factorial outcomes measured in the maternity sector, administration of antibiotics at the time of caesarean section is relatively simple.

There has been a reduction in exclusive breastfeeding at hospital discharge, although this data has been reported by a small number of HCOs (CI 6.1). This may be related to

# General Comments

a shorter length of stay during the pandemic, and so less assistance for women in learning to breastfeed successfully. There is significant variation between sites, suggesting that some sites with lower numbers may have the potential to learn from more successful sites to support women.

In CI 7.1 Vaginal birth - blood transfusion and CI 7.2 Caesarean section - blood transfusion, the rate of blood transfusion after delivery is falling, but with wide variation between HCOs. This variation may reflect variation in the postpartum haemorrhage rate, but also may reflect variation in compliance with recommended blood transfusion practices.[1]

Women want to know what to expect on their pregnancy and birth journey and the data in this report makes an important contribution to informing women about their care. It enables women to manage expectations with respect to the likelihood of needing intervention and the outcomes that may be expected along the way.

*REFERENCES*

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# Summary Of Results

In 2021 there were 3,326 submissions from 123 HCOs for 20 CIs. Of the 18 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- eight improved
- nine deteriorated
- one showed no evidence of trend.

Of the 10 trended process indicators:

- three improved
- six deteriorated

Of the thirteen trended outcome indicators:

- six improved
- six deteriorated

There were three indicators that were both outcome and process indicators.

Two indicators had outlier gains in excess of 25% of undesirable events. Three indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in thirteen indicators. See Table of Indicator Results below.

## Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Outcome of selected primipara | | | | | | | |
| 1.1 Spontaneous vaginal birth (H) | 40.1 | | 16 (15%) | 833 (4%) | 2,544 (14%) | 18,624 | ↓ ✗ |
| 1.2 Induction of labour (L) | 46.3 | | 1 (1%) | 33 (0%) | 1,476 (10%) | 14,572 | ↑ ✗ |
| 1.3 Instrumental vaginal birth (N) | 24.9 | | 5 (5%) | 139 (2%) | 1,297 (17%) | 7,820 | |
| 1.4 Caesarean section (L) | 34.6 | | 16 (15%) | 875 (8%) | 2,448 (22%) | 10,955 | ↑ ✗ |
| Vaginal birth after caesarean section (VBAC) | | | | | | | |
| 2.1 Vaginal delivery following previous birth by caesarean section (N) | 11.1 | | | | | | ↓ |
| Major perineal tears and surgical repair of the perineum | | | | | | | |
| 3.1 Intact perineum (H) | 9.40 | | 5 (5%) | 103 (1%) | 1,100 (6%) | 17,509 | ↓ ✗ |
| 3.2 Episiotomy and no perineal tear (L) | 37.6 | | 7 (8%) | 252 (4%) | 1,751 (27%) | 6,417 | ↑ ✗ |
| 3.3 Perineal tear and no episiotomy (L) | 42.8 | NSW | 6 (7%) | 268 (4%) | 1,692 (23%) | 7,319 | ↓ ✓ |
| 3.4 Episiotomy and perineal tear (L) | 6.71 | NSW | 4 (5%) | 71 (6%) | 381 (34%) | 1,122 | ↑ ✗ |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Major perineal tears and surgical repair of the perineum (continued) | | | | | | | |
| 3.5 Surgical repair of perineum for third-degree tear (L) | 4.33 | Private | | | 131 (16%) | 842 | ↓ ✓ |
| 3.6 Surgical repair of perineum for fourth-degree tear (L) | 0.21 | | | | | 47 | ↓ ✓ |
| General anaesthetic for caesarean section | | | | | | | |
| 4.1 General anaesthetic for caesarean section (L) | 5.42 | Private | 8 (8%) | 374 (14%) | 1,336 (51%) | 2,598 | ↓ ✓ |
| Antibiotic prophylaxis and caesarean section | | | | | | | |
| 5.1 Appropriate prophylactic antibiotic at time of caesarean section (H) | 91.7 | | 21 (27%) | 1,419 (51%) | 2,461 (89%) | 2,761 | ↑ ✓ |
| Exclusive breastfeeding | | | | | | | |
| 6.1 Selected primipara - exclusive breastfeeding (H) | 69.3 | | 8 (15%) | 433 (8%) | 1,397 (27%) | 5,255 | ↓ ✗ |
| Postpartum haemorrhage and blood transfusions | | | | | | | |
| 7.1 Vaginal birth - blood transfusion (L) | 1.19 | | 8 (8%) | 92 (10%) | 342 (37%) | 933 | |
| 7.2 Caesarean section - blood transfusion (L) | 1.18 | Private | 5 (5%) | 39 (7%) | 218 (36%) | 598 | ↓ ✓ |
| Fetal growth restriction (FGR) | | | | | | | |
| 8.1 Birth weight less than 2,750g at 40 weeks gestation or beyond (L) | 1.09 | | | | 23 (6%) | 356 | ↓ ✓ |
| Apgar score | | | | | | | |
| 9.1 Term neonates - Apgar score less than 7 at 5 minutes post-delivery (L) | 1.19 | Private | 4 (4%) | 55 (4%) | 553 (36%) | 1,543 | ↓ ✓ |
| All admissions of a term neonate to a neonatal intensive care nursery or special care nursery | | | | | | | |
| 10.1 Term neonates - transferred or admitted to a NICN or SCN (L) | 10.7 | | 23 (21%) | 2,363 (18%) | 6,607 (50%) | 13,224 | ↑ ✗ |
| Specific maternal peripartum adverse events | | | | | | | |
| 11.1 Specific maternal peripartum adverse events addressed within peer review process (H) | 94.3 | Private | 3 (14%) | 21 (66%) | 28 (88%) | 32 | ↓ ✗ |

# Number of undesirable or non-compliant events
\+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# MATERNITY

# MEDICATION SAFETY

81

# General Comments

*Dr Sasha Bennett*
*NSW Therapeutics Advisory Group*
*Chair, ACHS Medication Safety Working Party Version 4*

Despite a challenging year for Australian healthcare, 257 HCOs undertook at least one clinical audit using the ACHS Clinical Indicators (CIs) for Medication Safety v.4 during 2021. As in previous years, private HCOs (70%) remained the major users and two-thirds of HCOs were based in metropolitan areas. As in 2020, similar trends were identified this year - worsening CI results for medication-related continuity of care both at admission and at discharge, and low uptake of CIs that measure processes involving specific high-risk medicines.

On a positive note, more HCOs participated in CI audits of general medication management processes. The most popular non-automated indicators during 2021 were CIs 3.1, 3.2, 5.5 and 5.6 (similar to 2020) demonstrating a focus on processes that target medication reconciliation at admission, inpatient medication charting and communication of medication information for ongoing care after discharge.

The importance of having an accurate and comprehensive record of a patient's medications at admission to inform future therapeutic decision-making cannot be understated. Unfortunately, for CI 3.1, the fitted rate deteriorated from 2015 to 2021. There was good uptake of the indicator by all Australian jurisdictions but significant inter-jurisdictional variation showed. NSW HCOs reported an overall 28% performance rate, followed by a 44% by Queensland HCOs. South Australia and Victoria performed similarly at approximately 75%; however, Victoria involved significantly more HCOs and evaluated significantly more patient records. It is unclear whether the rate of the highest-performing jurisdiction (Western Australia with 88%) was truly representative as the number of participating HCOs and the number of evaluated patient records were significantly less than other jurisdictions. A similar observation applies to auditing in non-metropolitan HCOs and private HCOs.

The other CI which focused on early medication management processes, CI 6.1 Percentage of patients that are reviewed by a clinical pharmacist within one day of admission, showed a similar downward trend to that of CI 3.1. Overall, the deterioration in rate over time of CI 3.1 and 6.1 is concerning and HCOs are strongly encouraged to implement strategies to improve medication reconciliation at admission and improve early clinical pharmacist review.

The increased HCO uptake of CI 3.2, Percentage of patients whose known adverse drug reactions are documented on the current medication chart, is encouraging. The 2021 results (97%) are consistent with the high performance rates shown over the last 7 years. There were 29 outlier HCOs showing poor performance. It would be useful in the future to collect the data source(s) for this CI: paper or electronic medication charts (or hybrid charting systems).

Eighteen HCOs audited CI 5.5 (Percentage of patients whose discharge summaries contain a current, accurate and comprehensive list of medicines) in 2021. While CI uptake was good in 2021, the total number of patient records evaluated for this CI was small and contrasts with previous years' audits, and a deteriorating trend was seen in performance. On average, 1 in 10 patients did not have a current, accurate and comprehensive list of medicines in their discharge documentation and in 6 outlier HCOs, 4 in 10 patients did not.

Eighteen HCOs audited CI 5.6 (Percentage of patients who receive a current, accurate and comprehensive medication list at the time of hospital discharge) in 2021. In contrast to the small sample size demonstrated with CI 5.5 audits, the average sample size was approximately 2,800 patients providing greater confidence in this CI's results. Nevertheless, a deteriorating trend was seen in the rates from 2015 to 2021. Private HCOs performed better than public, however their sample sizes were much smaller. Stratification according to a HCO's patient separations may provide some useful

# General Comments

insights into the generalisability, validity and comparability of the results.

Whilst 70% of all participating HCOs were from the private sector, there was generally far greater denominator numbers (patients, charts, orders) in the public sector. It is recommended for future CI audits that all HCOs consider whether their sample size is sufficient, and their sample population is sufficiently representative of their HCO, to ensure that the CI result is a true result of their HCO's performance. Sampling information can be found in the National Indicators for Quality Use of Medicines (QUM) in Australian Hospitals.[1]

The ACHS Medication Safety CI set provides a set of validated CIs targeted at well-recognised gaps in medication safety. The collation of CI results provides benchmarking information but most importantly HCOs need to study their results and trends to assess their need for further quality improvement intervention. Comparisons between different HCO sectors, whether inter-jurisdictional, private versus public or metropolitan versus non-metropolitan need to be interpreted very cautiously as they may have been measured with different methodologies or may have different casemix.

*REFERENCES*

1. Australian Commission on Safety and Quality in Health Care and NSW Therapeutic Advisory Group Inc. *National Quality Use of Medicines Indicators for Australian Hospitals.* ACSQHC; Sydney. 2014.

# Summary Of Results

In 2021 there were 1,052 submissions from 257 HCOs for 20 CIs. Of the 11 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- two improved
- eight deteriorated
- the remainder showed no evidence of trend.

Of the ten trended process indicators:

- one improved
- eight deteriorated

The single trended outcome indicator improved.
Five indicators had outlier gains in excess of 25% of undesirable events. Eleven indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in five indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Antithrombotic therapy | | | | | | | |
| 1.1 Percentage of patients prescribed enoxaparin whose dosing schedule is appropriate (H) | 58.2 | | | | 16 (25%) | 64 | |
| 1.2 Percentage of patients prescribed hospital initiated warfarin whose loading doses are consistent with a Drug and Therapeutics Committee approved protocol (H) | 65.3 | | | | 4 (24%) | 17 | |
| 1.3 Percentage of patients with an INR above 4 whose dosage has been adjusted or reviewed prior to the next warfarin dose (H) | 99.1 | | | | | 1 | ↑✓ |
| Antiobiotic therapy | | | | | | | |
| 2.1 Percentage of prescriptions for restricted antibiotics that are concordant with drug and therapeutics committee approved criteria (H) | 68.3 | | 1 (11%) | 16 (3%) | 91 (18%) | 501 | ↓✗ |
| 2.2 Percentage of patients in whom doses of empirical aminoglycoside therapy are continued beyond 48 hours (L) | 1.97 | | | | 3 (75%) | 4 | |
| 2.3 Percentage of patients presenting with community acquired pneumonia that are prescribed guideline concordant antibiotic therapy (H) | 67.4 | | | | 47 (55%) | 86 | |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Medication ordering | | | | | | | |
| 3.1 Percentage of patients whose current medications are documented and reconciled at admission (H) | 41.7 | | 6 (8%) | 6,341 (12%) | 43,147 (84%) | 51,646 | ↓ ✗ |
| 3.2 Percentage of patients whose known adverse drug reactions are documented on the current medication chart (H) | 96.8 | | 29 (30%) | 917 (59%) | 982 (64%) | 1,543 | |
| 3.3 Percentage of medication orders that include error-prone abbreviations (L) | 9.18 | Private | 5 (25%) | 629 (35%) | 1,658 (92%) | 1,800 | ↑ ✗ |
| 3.4 Percentage of patients receiving cytotoxic chemotherapy whose treatment is guided by a hospital approved chemotherapy treatment protocol (H) | 100.0 | | | | | - | |
| Pain Management | | | | | | | |
| 4.1 Percentage of postoperative patients that are given a written pain management plan at discharge AND a copy is communicated to the primary care clinician (H) | 100.0 | | | | | - | |
| Continuity of care | | | | | | | |
| 5.1 Percentage of discharge summaries that include medication therapy changes and explanations for changes (H) | 53.0 | | 1 (8%) | 454 (5%) | 7,538 (78%) | 9,669 | ↓ ✗ |
| 5.2 Percentage of patients discharged on warfarin that receive written information regarding warfarin management prior to discharge (H) | 79.4 | | 1 (20%) | 13 (28%) | 45 (96%) | 47 | ↓ ✗ |
| 5.3 Percentage of patients with a new adverse drug reaction (ADR) that are given written ADR information at discharge AND a copy is communicated to the primary care clinician (H) | 100.0 | | | | | - | |
| 5.4 Percentage of patients receiving sedatives at discharge that were not taking them at admission (L) | 7.41 | | | | | 2 | |
| 5.5 Percentage of patients whose discharge summaries contain a current, accurate and comprehensive list of medicines (H) | 90.4 | Private | 3 (17%) | 106 (50%) | 172 (82%) | 210 | ↓ ✗ |
| 5.6 Percentage of patients who receive a current, accurate and comprehensive medication list at the time of hospital discharge (H) | 46.1 | Private | 3 (17%) | 3,435 (7%) | 42,026 (83%) | 50,359 | ↓ ✗ |

# MEDICATION SAFETY

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Hospital wide policies | | | | | | | |
| 6.1 Percentage of patients that are reviewed by a clinical pharmacist within one day of admission (H) | 58.7 | | 2 (15%) | 104 (1%) | 5,638 (57%) | 9,836 | |
| 6.2 Adverse drug reactions reported to TGA (N) | 0.06 | | | | | | |
| 6.3 Medication errors - adverse event requiring intervention (L) | 0.005 | | 21 (9%) | 225 (54%) | 367 (88%) | 415 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# MENTAL HEALTH

# General Comments

*Dr William John Kingswell*
*Royal Australian and New Zealand College of Psychiatrists*
*Deputy Chair, Education Committee, RANZCP*
*Chair, ACHS Mental Health Working Party Version 8*

The Royal Australian & New Zealand College of Psychiatrists

The 2014-2021 Australasian Clinical Indicator Report continues with the structure of 2013-2020 and the indicators are unchanged from the nine groups of indicators clustered into four broad areas: Consumer/carer engagement (diagnosis and care planning, continuity of care, community care), treatment interventions (physical examination, prescribing and electro-convulsive therapy), restrictive practice (seclusion and restraint, mental health act status) and critical incidents.

In 2021 only 83 HCOs contributed data across 31 clinical indicators, down from 95 in 2020. The HCOs are predominantly private metropolitan facilities. For many of the indicators only a small proportion of HCOs submitted data. Perhaps the priorities of dealing with COVID-19 have impacted on the HCOs ability to participate.

Interpretation of rolled up results requires caution when the number of participating HCOs and the number of observations is falling. In 2021 there is a reported trended improvement in the number of consumers with an individual care plan (CI 1.1). If true, it would be a pleasing result. It would indicate that a greater proportion of patients have an established diagnosis and have participated in planning their care. However, the number of reporting HCOs declined from 64 in 2020 to 54 on 2021 and the number of observations declined by almost half. The possible explanations for the observation includes 'no improvement' as the poorer performing HCOs might not have submitted their data.

For those indicators with a relatively large number of participating HCOs, reporting on a stable set of observations, i.e. excluding from the analysis those HCOs that have not submitted data in the current year, would provide a more reliable estimate of the true trend.

This year's report found that the rate of sexual assault in 2020 and 2021 was approximately twice that reported in 2019. There was approximately one reported incident from a consumer for every 25,000 mental health occupied bed days. As the total number of events is low in a statistical sense, rates may vary from year to year by chance or due to differences in the types of HCOs who report each year. However, any episode of sexual assault in inpatient mental health care is a serious and traumatic event, and services must provide sexually safe environments for people receiving care.

Very few HCOs have contributed data on restrictive practices, seclusion, restraint and Mental Health Act detention. It is probably not a surprising result when these activities are more associated with public mental health services and the information is collected and reported by all states and territories. The mental health clinical indicators were reviewed in 2018 and collected from 2019. The majority have gained some traction, not withstanding this years result might be an anomaly, with HCOs. A review of those indicators with participating HCOs that have not risen above single figures despite three year's of collection is probably due.

The Australasian Clinical Indicator Report is a significant body of work with the greatest value realised by those HCOs that participate, and are able to identify their strengths and weaknesses, and continue to improve on the quality of the mental health care delivery and the outcomes for patients and their families.

# Summary Of Results

In 2021 there were 1,634 submissions from 83 HCOs for 31 CIs. Of the 16 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- eleven improved
- four deteriorated
- the remainder showed no evidence of trend.

Of the 15 trended process indicators:

- eleven improved
- four deteriorated

The single trended outcome indicator showed no evidence of trend.

Nineteen indicators had outlier gains in excess of 25% of undesirable events. Nineteen indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in fifteen indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Diagnosis and care planning | | | | | | | |
| 1.1 Individual care plan (H) | 93.0 | Private | 13 (24%) | 1,236 (46%) | 2,562 (96%) | 2,660 | ↑ ✓ |
| 1.2 Individual care plan signed by consumer (H) | 85.4 | | 15 (33%) | 1,719 (39%) | 3,807 (85%) | 4,463 | ↑ ✓ |
| 1.3 Individual care plan signed by carer (H) | 19.9 | | 8 (25%) | 1,344 (15%) | 7,005 (78%) | 9,000 | ↓ ✗ |
| Physical examination of patients | | | | | | | |
| 2.1 Physical examination documented within 24 hours of admission (H) | 81.1 | Private | 11 (21%) | 2,953 (46%) | 5,973 (94%) | 6,355 | ↑ ✓ |
| Prescribing patterns | | | | | | | |
| 3.1 Discharged on ≥2 psychotropic medications from sub-group I (Antidepressants) (L) | 22.0 | NSW | 6 (23%) | 433 (14%) | 1464 (46%) | 3,185 | |
| 3.2 Discharged on ≥2 psychotropic medications from sub-group II (Mood Stabilisers) (L) | 5.21 | | 7 (27%) | 124 (17%) | 277 (38%) | 738 | |
| 3.3 Discharged on ≥2 psychotropic medications from sub-group III (Sedatives, Hypnotics or Anxiolytics) (L) | 11.9 | | 5 (20%) | 497 (30%) | 1,347 (82%) | 1,642 | |
| 3.4 Percentage of patients who receive written and verbal information on regular psychotropic medicines initiated during their admission (including antipsychotics) (H) | 76.3 | | 3 (18%) | 763 (56%) | 1,352 (99%) | 1,363 | ↓ ✗ |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Prescribing patterns (continued) | | | | | | | |
| 3.5 Discharged on ≥2 antipsychotic medications (L) | 17.6 | NSW | 4 (17%) | 230 (14%) | 636 (38%) | 1,682 | ↓ ✓ |
| 3.6 Monitoring for metabolic side effects for consumers commencing antipsychotic medications (H) | 90.3 | | 3 (18%) | 142 (49%) | 275 (96%) | 287 | ↑ ✓ |
| 3.7 Monitoring for metabolic side effects for consumers taking regular antipsychotic medications (H) | 90.9 | | 6 (35%) | 224 (51%) | 422 (96%) | 440 | ↑ ✓ |
| Electroconvulsive therapy | | | | | | | |
| 4.1 ECT treatments (L) | 5.12 | | 12 (39%) | 1,284 (43%) | 1,351 (45%) | 2,992 | |
| Use of seclusion and restraint | | | | | | | |
| 5.1 Average duration of seclusion episodes (Hours per episode) (L) | 14.9 hours per episode | | | | | | |
| 5.2 Rate of seclusion (per 1,000 bed days) (L) | 2.44^ | | 6 (46%) | 184 (39%) | 422 (89%) | 472 | ↓ ✓ |
| 5.3 Percent of consumers secluded (L) | 2.40 | | 2 (15%) | 34 (15%) | 88 (38%) | 232 | ↓ ✓ |
| 5.4 Physical restraint (L) | 3.91 | Private | 2 (13%) | 192 (38%) | 415 (81%) | 511 | ↑ ✗ |
| 5.5 Rate of physical restraint (per 1,000 bed days) (L) | 2.58^ | | 5 (42%) | 173 (39%) | 420 (96%) | 439 | |
| 5.6 Mechanical restraint (L) | 0.10 | WA | 1 (8%) | 3 (30%) | 7 (70%) | 10 | ↑ ✗ |
| 5.7 Rate of mechanical restraint (per 1,000 bed days) (L) | 0.11^ | | 2 (22%) | 7 (50%) | 13 (93%) | 14 | |
| Major critical incidents | | | | | | | |
| 6.1 Percent of consumers who die by suicide (L) | 0.02 | NSW | | | | 9 | |
| 6.2 Rate of suicide (per 1,000 bed days) (L) | 0.008^ | | | | | 7 | |
| 6.3 Consumers who assault (per 1,000 bed days) (L) | 0.41^ | Private | 8 (17%) | 151 (52%) | 275 (95%) | 291 | |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Major critical incidents (continued) | | | | | | | |
| 6.4 Consumers assaulted (per 1,000 bed days) (L) | 0.17^ | Private | 6 (14%) | 55 (48%) | 100 (88%) | 114 | |
| 6.5 Sexual assault (per 1,000 bed days) (L) | 0.04^ | | | | 9 (35%) | 26 | |
| 6.6 Significant self-harm (per 1,000 bed days) (L) | 0.30^ | | 7 (10%) | 115 (40%) | 246 (86%) | 287 | |
| Mental Health Act status | | | | | | | |
| 7.1 Involuntary admission status (N) | 14.1 | | | | | | ↓ |
| 7.2 Consumers detained as involuntary patients (per 1,000 bed days) (L) | 82.6^ | | 3 (60%) | 3,791 (59%) | 5,958 (93%) | 6,396 | |
| Continuity of Care | | | | | | | |
| 8.1 Discharge summary / letter provided to consumer or nominated carer (H) | 85.3 | | 21 (32%) | 2,423 (37%) | 5,548 (85%) | 6,500 | ↑ ✓ |
| 8.2 Discharge summary / letter provided to service providing ongoing care (H) | 82.2 | | 12 (29%) | 1,545 (30%) | 4,229 (83%) | 5,072 | ↑ ✓ |
| 8.3 Three-monthly multidisciplinary review (H) | 98.0 | | 1 (11%) | 2 (8%) | 6 (23%) | 26 | ↑ ✓ |
| Community Care | | | | | | | |
| 9.1 Consumers seen face-to-face by community service (N) | 87.1 | | | | | | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers
^ Rate per 1,000 bed days

# MENTAL HEALTH

# OPHTHALMOLOGY

# General Comments

*Dr Daniel Polya*
*Royal Australian and New Zealand College of Ophthalmologists*

The Clinical Indicator Program is an important initiative between The Australian Council on Healthcare Standards and The Royal Australian and New Zealand College of Ophthalmologists to provide readily available information on a limited range of quality markers in ophthalmology in the areas of cataract surgery, glaucoma surgery and retinal detachment surgery.

Due to the limitations of the type of data collected, it is difficult to draw firm conclusions, however the data does offer some interesting insights and trends, and is helpful to affirm high quality of care in these aspects of ophthalmology in Australia.

Cataract surgery

In 2021, low rates of unplanned readmissions (0.19%) and unplanned overnight stays (0.12%) persist, consistent with the highly effective provision of cataract surgery in the day surgery setting. Endophthalmitis rates after cataract surgery are extremely low at 0.007% and continue to fall, and while under-reporting is likely, these low rates may reflect improvements in care in recent years, presumably attributable to the routine use of intracameral antibiotics, and technology improvements. Antibiotic prophylaxis rates remain high at 95.2%, confirming this practice as part of routine care in most institutions. There are two outlier facilities, suggesting lower rates of uptake of this widely accepted practice in some locations.

Anterior vitrectomy rates remain low at around 1:250 cases, being 1:300 in the private setting and 1:150 in the public hospital setting. This is consistent with benchmarks for high quality care amongst experienced surgeons and training surgeons, and are consistent with a high quality training system for cataract surgery. Planned second eye surgery cancellations fell but are still several fold higher than in years before the pandemic, suggesting the ongoing prescence of disruption to health care systems, albeit around half of that in 2020. Interestingly the rate is still quite low at 0.37% and under-reporting must be suspected, especially in recent years (2017-2019) where there were only 12 cases of cancelled second eye surgery from 19,702 cases.
TASS rates remain low at 0.01%, and while underreporting is possible, the trend shows continued low rates. This is reassuring as it indicates no emerging concerns related to changes in practice, which might become associated with increased rates of TASS from time to time.

Glaucoma surgery

Unplanned readmission rate (1.2%) and unplanned prolonged overnight stay rate (1.3%) are stable and are consistent with anticipated complication rates such as significant hyphaema. The rate of micro-invasive glaucoma surgery (MIGS) continues to rise and is now around 81% of glaucoma surgery indicating a recent continued uptake of this newer technique, up from 63% of glaucoma surgery in 2017. Endophthamlitis rates remain low (0%), consistent with low rates of endophthalmitis after cataract surgery, with which MIGS is typically combined.

Retinal detachment surgery

Unplanned readmission rate within 28 days (5.0%) remain stable, low and consistent with anticipated benchmark rates of retinal redetachment of 10%, of which a portion of these are expected in the first 28 days. Prolonged overnight stay rate (2.7%) also remains low and consistent with low rates of early post-op complications. Interestingly, reported rates of endophthalmitis after retinal detachment (1:700) are much higher than rates of endophthalmitis after cataract surgery (1:14000), again likely reflective of the success of high rates of intracameral antibiotic use in reducing endophthalmitis after cataract surgery.

Intraocular lens implantation

The rates of having a scan present at surgery in non-toric and toric cases has fallen to 99.3%, where it had been at 100% for the past 6-7 years. This may indicate an error in data collection, or a change in practice perhaps at one or a small number of locations. As this metric has been at 100% for some time it could be concluded that it is a practice for which 100% compliance is possible. Further investigation of the data would help identify whether an issue exists, that could then be addressed. The rate of toric intraocular lens implantation continues to rise and is at around 47% (13544 cases of toric lenses out of 28894 cases), up from 29% five years ago.

# Summary Of Results

In 2021 there were 610 submissions from 48 HCOs for 17 CIs. Of the 17 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- six improved
- five deteriorated
- the remainder showed no evidence of trend.

Of the seven trended process indicators:

- two improved
- five deteriorated

Of the thirteen trended outcome indicators:

- five improved
- two deteriorated

Two indicators were both process and outcome indicators. Nine indicators had outlier gains in excess of 25% of undesirable events. Twelve indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in five indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Cataract surgery | | | | | | | |
| 1.1 Cataract surgery - unplanned readmissions within 28 days (L) | 0.19 | Private | 1 (3%) | 8 (10%) | 42 (53%) | 80 | ↓ ✓ |
| 1.2 Cataract surgery - treatment within 28 days due to endophthalmitis (L) | 0.007 | | 1 (3%) | 1 (33%) | 1 (33%) | 3 | |
| 1.3 Cataract surgery - unplanned overnight admission (L) | 0.12 | NSW | 3 (8%) | 22 (38%) | 46 (79%) | 58 | ↓ ✓ |
| 1.4 Cataract surgery - anterior vitrectomy (L) | 0.42 | Private | 3 (7%) | 37 (18%) | 117 (57%) | 206 | ↓ ✓ |
| 1.5 Cataract surgery - antibiotic prophylaxis (H) | 95.2 | NSW | 3 (12%) | 1,267 (88%) | 1,432 (100%) | 1,434 | ↑ ✓ |
| 1.6 Cataract surgery - toxic anterior segment syndrome (TASS) (L) | 0.01 | | 1 (5%) | 1 (33%) | 2 (67%) | 3 | |
| 1.7 Cataract surgery - planned second eye cataract surgery (L) | 0.37 | | 2 (20%) | 7 (58%) | 10 (83%) | 12 | ↑ ✗ |
| Intraocular glaucoma surgery | | | | | | | |
| 2.1 Intraocular glaucoma surgery - unplanned readmissions within 28 days (L) | 1.24 | | 1 (6%) | 13 (59%) | 20 (91%) | 22 | ↓ ✓ |
| 2.2 Intraocular glaucoma surgery - micro-invasive glaucoma surgery (MIGS) (H) | 80.8 | | 2 (14%) | 69 (31%) | 197 (88%) | 224 | ↑ ✓ |

# OPHTHALMOLOGY

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Intraocular glaucoma surgery (continued) | | | | | | | |
| 2.3 Intraocular glaucoma surgery - treatment within 28 days due to endophthalmitis (L) | 0.000 | | | | | - | |
| 2.4 Intraocular glaucoma surgery - >1 overnight stay (L) | 1.30 | | | | 7 (58%) | 12 | ↑ ⊗ |
| Retinal detachment surgery | | | | | | | |
| 3.1 Retinal detachment surgery - unplanned readmission within 28 days (L) | 4.98 | | | | | 66 | |
| 3.2 Retinal detachment surgery - treatment within 28 days due to endophthalmitis (L) | 0.14 | | | | | 2 | |
| 3.3 Retinal detachment surgery - >1 overnight stay (L) | 3.40 | | | | 26 (62%) | 42 | ↑ ⊗ |
| 3.4 Retinal detachment surgery - unplanned reoperation within 28 days (L) | 3.64 | | 1 (11%) | 4 (8%) | 18 (37%) | 49 | |
| Planning records for intraocular lens implantation | | | | | | | |
| 4.1 Intraocular lens implantation with planning record present at time of surgery (H) | 99.3 | NSW | 1 (5%) | 181 (96%) | 189 (100%) | 189 | ↓ ⊗ |
| 4.2 Toric intraocular lens implantation with planning record present at time of surgery (H) | 92.7 | | 1 (5%) | 823 (83%) | 988 (100%) | 988 | ↓ ⊗ |

# Number of undesirable or non-compliant events
\+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# ORAL HEALTH

# General Comments

*Dr Martin Webb*
*Federal Executive, Australian Dental Association*

Thank you for the opportunity to comment on the Oral Health version 4 long report, which is the last time the data will be recorded for these Clinical Indicators (CI) in their current definitions. Considering that the data for 2021 was collected during the COVID-19 pandemic with associated restrictions on dental services during government imposed lockdowns, it is impressive that the overall results of the fitted rates for most of the CIs showed an improvement in the trend rates.

The indicators within the first area of the oral health user manual, which show the return of a patient to a dental centre for re-treatment or management of complications, all showed minor improvements in 2021, compared with previous years. For example, CI 1.3 return of patients following surgical extractions showed a significant improvement in the fitted rate from 2.8 to 1.8, a change of 0.99 per 100 extraction attendances. For CI 1.4 denture remade within 12 months, there was an almost one third reduction in the number of dentures that required remaking during 2021, which is a significant improvement.

The second area of oral health indicators relate to endodontic completion rates, and a drop in rate was seen in 2021 which may be related to dental centre closures during COVID-19 lockdowns. The Oral Health working party held detailed discussions regarding the clinical relevance of the 6 months time frame as an indicator of success of endodontic treatment. While the fitted rate decreased by over 8% for CI 2.1 (from 2017 to 2021), which indicates that more endodontic treatments were not completed in the 6 month time frame, this may not correspond with a failure of the root canal treatment. The Oral Health working party has recommended the removal of CI 2.1, and the implementation of a new endodontic CI "Endodontic Treatment – root canal retreatment within 12 months". This is a much more clinically relevant CI for contemporary dental practice, as an indicator of the success or failure of endodontic procedures.

The re-treatment of dental restorations in children (CI 3.1) has also shown an approximately 10% improvement in the fitted rate, which continues a gradual reduction over the 2014-2021 period in the number of teeth retreated within 6 months. Similarly the number of deciduous teeth extracted following pulpotomy (CI 3.2) improved during 2021. This may indicate a gradual improvement in the clinical success of these pulpotomy treatments for children with deep decay in their deciduous teeth. To complete the trifecta, CI 3.3 also showed an improvement in the success rate for fissure sealant treatments in deciduous teeth in children, with a slight improvement in the fitted rate.

CI 4.1 bite-wing radiographs that meet the specified criteria has not been reported by any HCO since 2015, and after extensive discussion by the Oral Health working party, this CI has been deleted. The fourth area of the oral health indicators has been renamed Preventative Services (in the upcoming version release), which will measure preventative treatment provided at a periodic oral examination. This has been recommended as a more clinically relevant CI to report on the delivery of preventative dentistry as part of the provision of dental treatment by HCOs.

The work of the Oral Health working party has made some significant changes to the existing clinical indicators in the upcoming version 5 release, to bring them more in line with contemporary dental practice. Some of the experts on this committee have provided extensive clinical justifications for these changes, backed up by a long list of references from dental literature.

# Summary Of Results

In 2021 there were 1,096 submissions from 86 HCOs for nine CIs. Of the nine indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- seven improved
- one deteriorated
- the remainder showed no evidence of trend.

No process indicators were tested for trend.

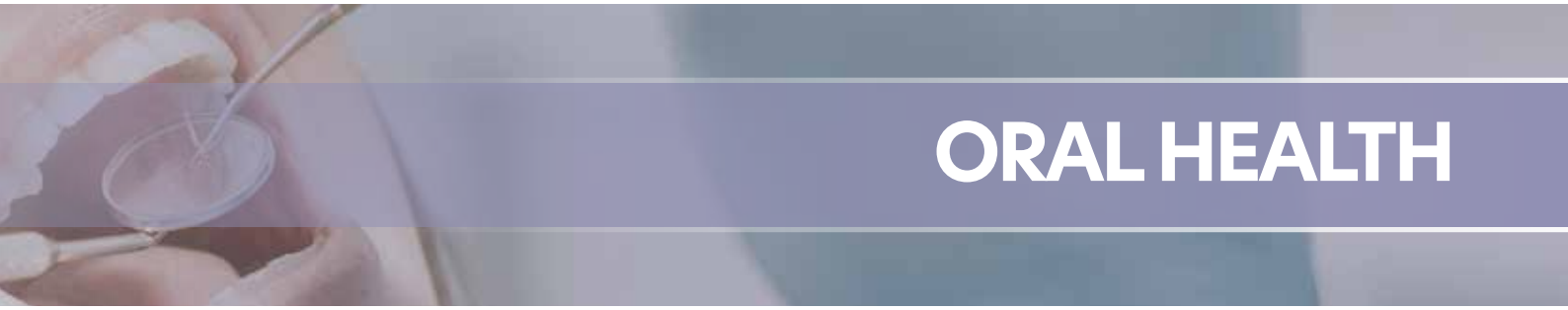
Of the eight trended outcome indicators:

- seven improved
- one deteriorated

No indicator had outlier gains in excess of 25% of undesirable events. One indicator demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in eight indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Unplanned returns to the dental centre | | | | | | | |
| 1.1 Restorative treatment - teeth retreated within 6 months (L) | 6.25 | NSW | 12 (17%) | 1,620 (9%) | 5,101 (29%) | 17,424 | ↓✓ |
| 1.2 Routine extraction - complications within 7 days (L) | 1.45 | | 12 (18%) | 307 (20%) | 830 (55%) | 1,513 | ↓✓ |
| 1.3 Surgical extraction - complications within 7 days (L) | 1.84 | | 5 (9%) | 61 (23%) | 105 (39%) | 266 | ↓✓ |
| 1.4 Denture remade within 12 months (L) | 2.08 | NSW | 3 (6%) | 41 (9%) | 185 (40%) | 464 | ↓✓ |
| Endodontic treatment | | | | | | | |
| 2.1 Endodontic treatment - same tooth within 6 months of initial treatment (H) | 61.6 | | 3 (5%) | 495 (22%) | 859 (37%) | 2,293 | ↓✗ |
| 2.2 Endodontic treatment - teeth extracted within 12 months (L) | 3.21 | | | | 13 (8%) | 171 | |
| Children's dental care | | | | | | | |
| 3.1 Restorative treatment (children) - teeth retreated within 6 months (L) | 2.09 | | 3 (4%) | 111 (3%) | 496 (15%) | 3,238 | ↓✓ |
| 3.2 Pulpotomy (children) - deciduous teeth extracted within 6 months (L) | 2.28 | | 1 (2%) | 5 (6%) | 15 (17%) | 86 | ↓✓ |
| 3.3 Fissure sealant treatment (children) - re-treatment within 24 months (L) | 1.64 | Metropolitan | 12 (16%) | 422 (7%) | 1,397 (23%) | 6,055 | ↓✓ |



# ORAL HEALTH

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Radiographs | | | | | | | |
| 4.1 Bite-wing radiographs that meet the specified criteria (H) | No data has been submitted for this indicator. | | | | | | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# PAEDIATRICS

# General Comments

*Professor Catherine Choong*
*Royal Australasian College of Physicians*

The Paediatric clinical indicator set collects a broad range of indicators concerning paediatric patients, including the provision of appropriate care, adverse events, proper completed documentation, and safe anaesthetic practice. It is worth noting that of the 14 indicators available for collection in 2021, only 3 indicators had sufficient data to test for trends. This was due to significant variation in the number of HCOs that reported data, for example, 28 HCOs reported on CI 1.1 (Registered nurses with paediatric basic life support qualifications) but only 2 HCOs reported on CI 3.5 (Medical discharge summary completed - paediatrics). A large proportion of HCOs were from the private sector (75%) and in metropolitan regions (81%).

It is pleasing to see that CI 2.1 (Medication errors) showed significant improvement in its rate across the last 7 years of data collection, decreasing to 0.073% in 2021, indicating that there is more focus placed on ensuring medical dosages are appropriate for the paediatric population, so that there are less adverse incidents. A significant improvement in rate was also seen for CI 2.3 (Adverse events in a paediatric ward/area) to 0.66% in 2021. System wide variation for this indicator was also at its lowest, as measured by the difference between 80th (0.77) and 20th (0.048) centiles, showing a strong focus on paediatric patient safety and care, and ongoing monitoring of deteriorating patients.

Overall, the clinical indicators within the Paediatric clinical indicator set include well developed rationales, and the safety of paediatric patients would be significantly enhanced by the adoption of these clinical indicators.

Suggestions for further development of other clinical indicators are as follows, although some of these suggestions may already be under consideration:

1. Informed consent for surgical procedures and new therapeutics: This indicator should be expanded to ensure that it is correctly conducted and documented, with specific consideration given to individuals whose primary language is a language that is other than English.
2. Medication upon discharge (related to CI 3.5 Medical discharge summary completed - Paediatrics): There should be clear documentation and evidence of provision of information regarding the medication and adverse side effects which may occur if these are initiated prior to discharge. This is particularly the case given application to paediatric patients.
3. There should be follow up plans for patients with complex disease including surveillance, time for cessation of medication such as antibiotics and a plan for follow up.
4. Documentation of research participation should be clearly indicated in medical notes. A possible rationale for this is that there is an increasing effort to provide systematic evidence of outcome, safety and quality improvement, as well as recruitment to various types of research within almost all paediatric facilities. Provision of evidence and documentation within the medical record, and discharge summary of research participation is vital. Documented consent appears to be frequently lacking. There may also be potential interaction of certain trial agents with prescribed medications, which raises significant risk to patient safety.

# General Comments

*Ms Bernadette Duffy*
*Australian College of Children and Young People's Nurses*
*Ms Lee O'Malley*
*Australian College of Children and Young People's Nurses*

Appropriateness

The number of registered nurses caring for paediatric patients that have up-to-date paediatric basic life support (BLS) qualifications (CI 1.1) has deteriorated from 2020 to 2021. This may be related to the need to alter the ways in which paediatric resuscitation training is offered in response to COVID-19 pandemic and may also signal to HCOs that registered nurses must continue to be supported and reviewed on their safety to care for paediatric patients requiring CPR. It is also worth noting that the 2021 rate of 74.8 per 100 registered nurses differs when compared to the rate of medical practitioners having up-to-date paediatric BLS qualifications of 92.9 pre 100, which is an excellent result and should be the benchmark for the greater workforce employed in HCOs.

Resuscitation has traditionally been offered with updates which are face-to-face with large groups of clinicians. As a group, individuals rotate around to complete hands-on basic life support exercises with paediatric and adult mannequins, with the use of defibrillators. Education for resuscitation has evolved and other modes of training and resources are available but may not be available at all health services. Opportunities for clinicians to observe and practice basic life support may have been restricted due the limit on the numbers of participants per session due to COVID-19 social distancing guidelines. Additionally, as a result of COVID-19 and influenza in 2021, ongoing high levels of sick leave may result in lower number of registered nurses and medical practitioners who have up to date paediatric life support or who are able to attend education sessions.

A recommendation to support clinicians to complete BLS training might be to ensure all HCOs have access to resources to enable training to be completed. And also to ensure follow up face-to-face training is enabled, or to consider alternate technology to complete this activity if face-to-face is not feasible. [1, 2] Paediatric BLS qualifications are essential if registered nurses employed within HCOs must be accountable for maintaining this qualification. The qualification should be a mandatory qualification, rather than just a recommendation that all nurses receive BLS training which is assessed on an annual basis.

Frequent training and practice of paediatric resuscitation, for knowledge checks and skills recall, is recommended for both fluency of CPR performance and mastery of skills, and monthly training is suggested for HCOs that receive paediatric patients in very infrequent episodes, such as those HCOs in rural settings.[3] In the regional, rural and remote settings of Australia, clinicians, particularly nurses, rely on a generalist skill approach to care, thus it is essential that there is immediate recall of correct age appropriate resuscitation skills in the episode where paediatric emergencies requiring CPR is presented. [4]

The high rate of 93.8 per 100 paediatric patients in CI 1.3 Paediatric patients admitted to a paediatric ward/area, suggest that the paediatric population is growing to the point where there are potentially more dedicated paediatric wards/areas in an HCO. However, the drop in the overall number of paediatric patient admissions in 2020 and 2021, as compared to other years, could be due to COVID-19 lockdown periods which resulted in families staying and working from home, and intermittent closures of childcare and schools. Some HCOs may be challenged to provide settings that can accommodate family who wish to stay with their child, provide appropriate paediatric resources and appropriate staffing, and even more challenges may exist in rural and remote settings.

HCOs must ensure that the specialist area of paediatrics receives similar attention to that of adult care training and

# General Comments

support, and that there are appropriately skilled paediatric staff who maintain knowledge and skills, and who are supported through regular scheduled training and are educated on current best practice guidelines in health care delivery.[5] All these factors contribute to the appropriate care of paediatric patients in acute care settings.

Adverse events

The improvement in the fitted rate of CI 2.1 Medication errors is encouraging, as it reflects the improvement in education programs aimed to reduce adverse events in clinical care involving paediatric patients. Medication safety initiatives have been implemented at the point of drug administration in the clinical setting.

Annual mandatory updates are more practical with "case study" type examples, where the clinician navigates various links and scenarios to complete each question or assessment. In community settings, annual updates have transitioned from the expectation of a 100% pass mark for a test of drug calculations, to the use of prompts to resources that allow clinicians to check current guidelines or administration updates. These safety initiatives support clinicians to provide medications safely, and education is geared towards increasing awareness of the complexity of medication errors and those factors which contribute to medication error. For example, a child may be at greater risk of having an adverse medication incident when drug dosage is only calculated relative to weight of child, without consideration of other potential contributing factors such as age or co-morbidities (e.g. obesity).

The Australian Commission on Safety and Quality in Health Care (ACSQHC) addresses specific criteria in the Medication Safety Standard[6] to ensure that clinicians undertake pre-administration checks prior to prescribing, dispensing or administering medicines, to mitigate risks associated with potential patient harm or injury. It is important to develop a comprehensive understanding of the factors that have contributed to medication errors, and implement tools to collate data, to support the investigation of causes of errors and highlight appropriate intervention to reduce the risk of medication error reoccurrence.[7]

CI 2.3 Adverse events in a paediatric ward/area has showed an improvement in the fitted rate, indicating that there has been improvement in the clinical safety and management of these patients, and a reduction in events associated with harm, injury or death of a paediatric patient. This is most likely due to increased education in early recognition of a deteriorating patient.

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5. Ilangakoon C, Jones T, Innes K *et al.* Caring for deteriorating paediatric patients in the emergency department: A mixed method study. *Australasian Emergency Care* 2020; 23(4): 252-258.
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# Summary Of Results

In 2021 there were 171 submissions from 36 HCOs for 13 CIs. Of the three indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- two improved
- one deteriorated.

No process indicators were tested for trend.
One structure indicator deterioriated.
Of the two trended outcome indicators:

- both improved.

Five indicators had outlier gains in excess of 25% of undesirable events. Seven indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in two indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Appropriateness | | | | | | | |
| 1.1 Registered nurses with paediatric basic life support qualifications (H) | 74.8 | | 7 (25%) | 323 (24%) | 1,025 (75%) | 1,371 | ↓ ✗ |
| 1.2 Medical practitioners with paediatric basic life support qualifications (H) | 92.9 | | | | | 5 | |
| 1.3 Paediatric patients admitted to a paediatric ward/area (H) | 93.8 | | 1 (25%) | 333 (33%) | 998 (100%) | 999 | |
| Adverse events | | | | | | | |
| 2.1 Medication errors (L) | 0.07 | Private | 2 (7%) | 12 (35%) | 25 (74%) | 34 | ↓ ✓ |
| 2.2 Adverse events when not in a paediatric ward/area (L) | 0.08 | | | | 3 (100%) | 3 | |
| 2.3 Adverse events in a paediatric ward/area (L) | 0.66 | Private | 5 (22%) | 134 (52%) | 239 (93%) | 258 | ↓ ✓ |
| Documentation | | | | | | | |
| 3.1 Completed asthma action plan - paediatrics (H) | 100.0 | | | | | - | |
| 3.2 Paediatric surgery post-procedural report (H) | 100.0 | | | | | - | |
| 3.3 Physical assessment completed by medical practitioner and documented (H) | 91.7 | | | | | 2 | |

# PAEDIATRICS

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Documentation (continued) | | | | | | | |
| 3.4 Physical assessment completed by registered nurse and documented (H) | 95.8 | | | | | 1 | |
| 3.5 Medical discharge summary completed - paediatrics (H) | 89.7 | | 1 (50%) | 5 (45%) | 8 (73%) | 11 | |
| Paediatric anaesthesia | | | | | | | |
| 4.1 Paediatric patients who fast 6 hours prior to anaesthesia (H) | 96.2 | | 1 (50%) | 4 (80%) | 5 (100%) | 5 | |
| 4.2 Adverse event due to non-adherence to paediatric fasting guidelines (L) | 0.000 | | | | | - | |
| 4.3 Parent/guardian present at induction of anaesthesia (N) | No data has been submitted for this indicator. | | | | | | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# PATHOLOGY

# General Comments

*Dr Daman Langguth*
*The Royal College of Pathologists of Australasia*
*Chair, Board of Professional Practice and Quality, RCPA*

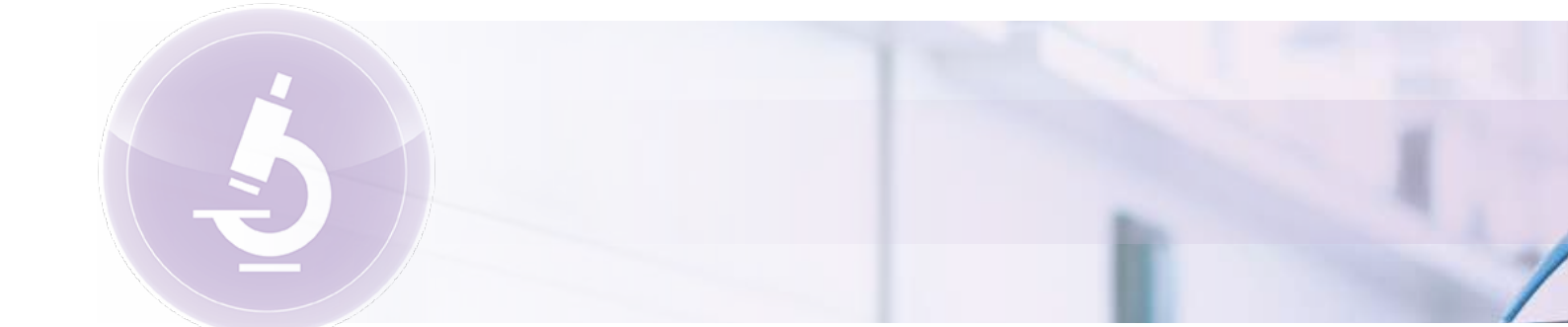
The fifth version of the Pathology clinical indicator set was released for data collection mid 2021, with several indicators revised and new indicators added. The time durations were revised for the CIs within Haematology (CI 2.1 to 2.4) and Anatomical pathology (CI 3.1 and 3.2). New indicators were added in Microbiology (blood cultures from the emergency department, and COVID-19, hepatitis B, HIV and cerebrospinal fluid testing), Point of care testing, Whole of service and Immunology (new area).

The 2021 calendar year for pathology has been a huge challenge for pathology as a whole, with staff and resources directed away from core businesses to deal with the ongoing COVID-19 pandemic. In addition, not only has the workload been a major challenge, managing a workforce in this setting compounds the issue. However, it is disappointing to see that biochemistry performance was significantly affected, both with potassium and troponin reporting (CI 1.1 and 1.3).

In CI 3.3 Structured reporting for Anatomical Pathology, there was a very high uptake in labs using the ACHS AP module, which is to be commended. In CI 4.3 COVID-19 testing - PCR result in hospitalised patients from receipt in testing laboratory to reporting <24 hours, the participating laboratories had a very high performance, although we may not consider 24 hours to be acceptable for a hospitalised patient in current circumstances. However, only 2 labs reported on this indicator, limiting any solid conclusions to be made.

Most of the indicators within Whole of service were stable, including error rates in misidentification, which is to be commended given the huge numbers of COVID-19 PCR tests performed. Many of the newer ACHS CIs do not have enough HCOs reporting, which limits commentary to be made on the results. This will require consistent reporting over the next few years to understand and develop what is acceptable across HCO practice.

In summary, the above changes and achievements likely are related to change in resourcing across departments and HCOs should view these results in the light of the COVID-19 challenges to laboratories. There is a great deal to be learned from the last year, and resource allocation in the face of a crisis in test and staff numbers in the laboratory, as well as elsewhere, is something that should be key in any review.



# Summary Of Results

In 2021 there were 183 submissions from 21 HCOs for 25 CIs. Of the four indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- one improved
- two deteriorated
- the remainder showed no evidence of trend.

All four of these indicators were process indicators. No outcome indicators were tested for trend.

Eight indicators had outlier gains in excess of 25% of undesirable events. Nine indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in three indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Chemical Pathology | | | | | | | |
| 1.1 Serum / plasma potassium for ED - in lab to validated time <40 minutes (H) | 53.7 | NSW | 4 (20%) | 7,998 (24%) | 14,251 (42%) | 33,813 | ↓ ✕ |
| 1.2 Serum / plasma potassium from ED - collected to in lab time <50 minutes (H) | 88.5 | | 2 (20%) | 1,350 (40%) | 2,608 (77%) | 3,402 | |
| 1.3 Serum / plasma troponin for ED - in lab to validated time <50 minutes (H) | 57.4 | NSW | 6 (30%) | 1,698 (15%) | 5,326 (46%) | 11,463 | ↓ ✕ |
| 1.4 Serum / plasma troponin from ED - collected to in lab time <50 minutes (H) | 93.7 | | 4 (40%) | 195 (28%) | 462 (67%) | 691 | |
| Haematology | | | | | | | |
| 2.1 Haemoglobin for ED - in lab to validated time <35 minutes (H) | 90.0 | | 3 (33%) | 842 (30%) | 1,649 (59%) | 2,817 | |
| 2.2 Haemoglobin from ED - collected to in lab time <50 minutes (H) | 89.3 | | 2 (22%) | 1,468 (49%) | 2,431 (81%) | 3,011 | |
| 2.3 Blood group for ED - in lab to validated time <60 minutes (H) | 48.4 | | 1 (25%) | 64 (23%) | 182 (64%) | 284 | |
| 2.4 Blood group from ED - collected to in lab time <50 minutes (H) | 92.8 | | | | 15 (47%) | 32 | |

# PATHOLOGY

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Anatomical pathology | | | | | | | |
| 3.1 AP complexity level 4 MBS item - received to validated time <4 working days (H) | 69.3 | | 4 (50%) | 345 (29%) | 898 (75%) | 1,192 | |
| 3.2 AP complexity level 6 & 7 MBS item - received to validated time <7 working days within a calendar month (H) | 64.6 | | | | 3 (3%) | 91 | |
| 3.3 Structured reporting for Anatomical Pathology (H) | 100.0 | | | | | - | |
| Microbiology | | | | | | | |
| 4.1 Time from blood culture "flagging" positive to reporting of Gram stain result entered in laboratory information system (H) | 66.7 | | | | | 118 | |
| 4.2 Cerebrospinal fluid testing - Time from receipt in the testing laboratory to reporting <60 minutes (H) | 94.8 | | | | | 15 | |
| 4.3 COVID-19 testing - PCR result in hospitalised patients from receipt in testing laboratory to reporting <24 hours (H) | 96.6 | | 1 (50%) | 35 (80%) | 44 (100%) | 44 | |
| 4.4 HIV testing - Ag/Ab negative in recipients of blood borne virus exposures occurring in hospitals (H) | 75.0 | | | | | 8 | |
| 4.5 Hepatitis B surface antibody testing in recipients of blood borne virus exposures occuring in hospitals (H) | 55.8 | | | | | 19 | |
| Point of care testing | | | | | | | |
| 5.1 Point of care testing (PoCT) register (N) | 83.3 | | | | | | |
| 5.2 PoCT devices that are not under a quality framework (N) | 100 | | | | | | |
| Whole of service | | | | | | | |
| 6.1 Misidentified episodes (L) | 0.39 | | 4 (29%) | 1,100 (43%) | 1,756 (69%) | 2,551 | ↓ |
| 6.2 Errors prior to receipt (Specimen handling, Patient identification) (L) | No data has been submitted for this indicator. | | | | | | |
| 6.3 Errors post receipt (Specimen handling, Patient identification) (L) | No data has been submitted for this indicator. | | | | | | |

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Whole of service (continued) | | | | | | | |
| 6.4 Number of specimens collected for potassium testing witih haemolysis (L) | 4.31 | | 1 (50%) | 409 (33%) | 642 (51%) | 1,249 | |
| 6.5 Blood group from ED - recollections | 4.65 | NSW | | | 32 (24%) | 134 | |
| 6.6 Alert of urgent results (H) | 100% | | | | | | |
| Immunopathology | | | | | | | |
| 7.1 Immunopathology - Anti-Neutrophil Cytoplasmic Antigen (ANCA) (H) | 11.6 | | | | | 129 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# PATHOLOGY

# RADIATION ONCOLOGY

# General Comments

*Dr Rachel Effeney*
*Faculty of Radiation Oncology, The Royal Australian and New Zealand College of Radiologists*
*Quality Improvement Committee, FRO RANZCR*

The Royal Australian and New Zealand College of Radiologists
The Faculty of Radiation Oncology

The Radiation Oncology clinical indicator set was first established in 1999, and for 2021 HCOs submitted data on the fifth version of the indicator set. 2021 submissions were received from 10 HCOs on the 9 clinical indicators. With only a limited number of participating centres, this dataset reflects only a small fraction of the radiation therapy delivered in Australia in 2021. However, there are some pleasing trends in the data, as well as areas for improvement.

Of the 7 indicators with sufficient data to assess trend, 4 improved, one deteriorated and the remaining two showed no evidence of trend. One improvement was that the number of patients exceeding acceptable waiting times for both radical and palliative treatment has decreased over time (CI 1.1 and 1.2). However, for palliative treatment (CI 1.2), the outlier rate was 30.2 per 100 patients, indicating that in these centres, almost one third of patients were waiting longer for treatment than the Faculty of Radiation Oncology guidelines.

The number of patients with documented staging information about the disease currently being treated (CI 2.1) has deteriorated to the lowest rate in the eight years of data collection, with marked variation between HCOs. Accurate documentation of staging information is crucial for better patient selection onto treatment pathways and communication among care providers.

There has been a marked improvement in the use of motion management in treatment planning for lung cancer radiation treatment (CI 3.2). Over the 4 years of data collection, the rate has steadily increased to over 92.6% in 2021, indicating that motion management has been established as standard practice in this setting. Motion management encompasses a number of techniques that account for the effect of respiratory motion on the position of a lung tumour and the surrounding normal tissues. Such techniques can ensure better targeting of the lung cancer, and therefore can improve the safety and the success of radiation therapy. This is one of many areas in radiation oncology benefiting from technological advances in the planning or delivery of treatment.

# Summary Of Results

In 2021 there were 107 submissions from 10 HCOs for nine CIs. Of the seven indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- four improved
- one deteriorated
- the remainder showed no evidence of trend.

Of the seven trended process indicators:

- four improved
- one deteriorated.

No outcome indicators were tested for trend.

Five indicators had outlier gains in excess of 25% of undesirable events. Six indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. There was insufficient data to test for stratum differences. See Table of Indicator Results below.

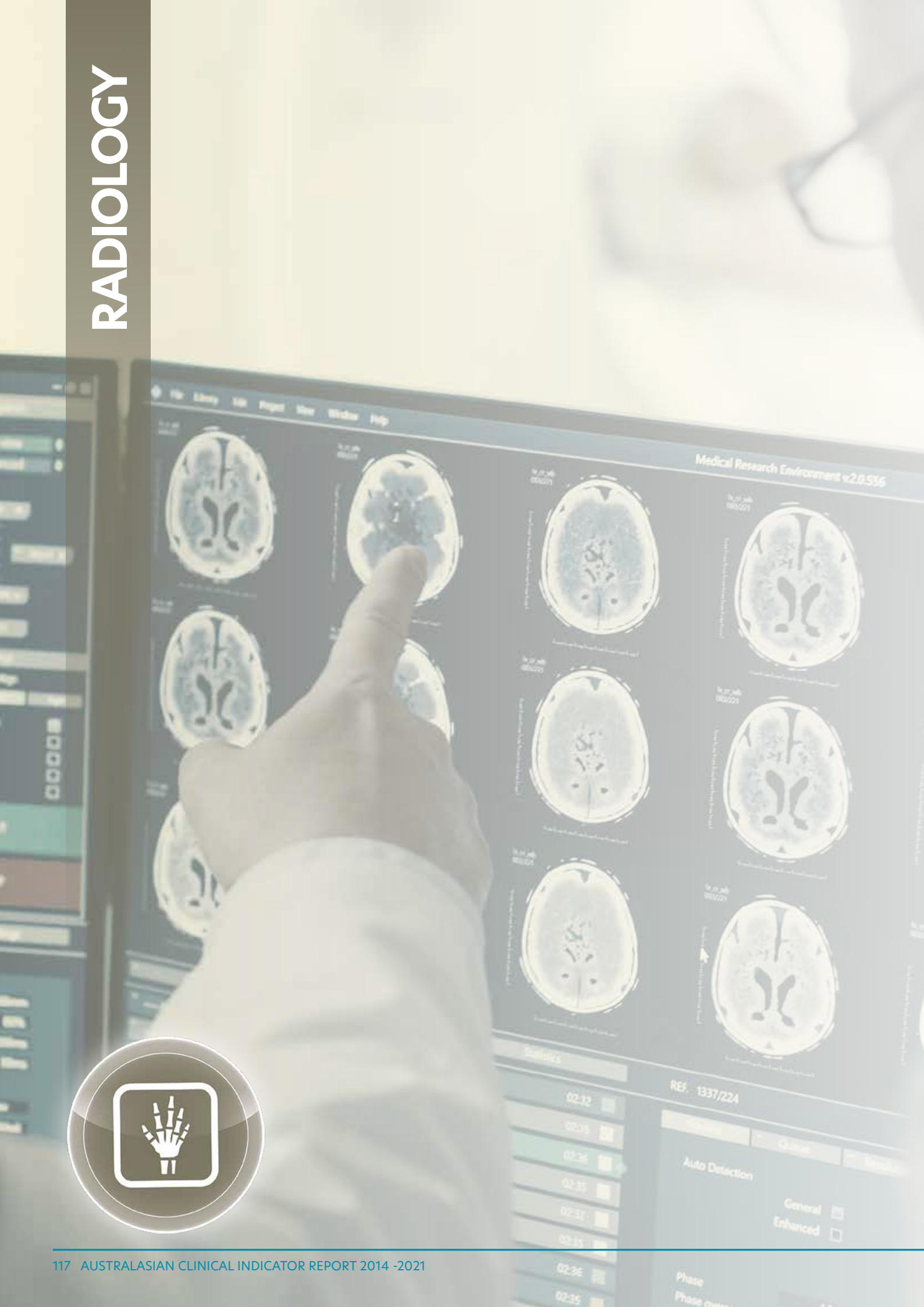
## Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Consultation process | | | | | | | |
| 1.1 Patients for radical treatment - waiting time from the 'ready for care' date more than the faculty guidelines (L) | 5.87 | | 5 50%) | 183 (32%) | 284 (50%) | 569 | ↓ ✓ |
| 1.2 Patients for palliative treatment - waiting time from the 'ready for care' date more than the faculty guidelines (L) | 8.07 | | 4 (40%) | 298 (54%) | 431 (78%) | 555 | ↓ ✓ |
| 1.3 Multidisciplinary meeting involvement (H) | 61.4 | | 1 (13%) | 7 (1%) | 69 (12%) | 599 | ↑ ✓ |
| Treatment planning | | | | | | | |
| 2.1 Staging annotation for current radiotherapy course (H) | 69.4 | | 3 (38%) | 998 (38%) | 2,578 (97%) | 2,661 | ↓ ✗ |
| 2.2 Treatment prolongation (L) | 4.48 | | | | 14 (54%) | 26 | |
| 2.3 Treatment plan peer review (H) | 32.6 | | 2 (33%) | 37 (15%) | 125 (51%) | 244 | |
| Treatment delivery | | | | | | | |
| 3.1 Single fractionation for bone metastases (H) | 36.6 | | | | 53 (10%) | 545 | |
| 3.2 Motion management (H) | 92.6 | | 1 (17%) | 11 (69%) | 15 (94%) | 16 | ↑ ✓ |
| 3.3 Androgen deprivation therapy (H) | 80.5 | | 1 (25%) | 11 (38%) | 22 (76%) | 29 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# RADIATION ONCOLOGY

# RADIOLOGY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# General Comments

***Dr Paul Beech***
*Victorian Branch Education Officer, RANZCR*
*The Royal Australian and New Zealand College of Radiologists*

The Royal Australian and New Zealand College of Radiologists (RANZCR) is pleased to provide commentary on the Australasian Clinical Indicator Report 23rd Edition (2014-2021) whcih addresses Key Performance Indicators across adverse patient events, CT dosimetry and patient identification, consent and critical test result notification.

The HCOs contributing to this report are predominantly from the public health sector and it is pleasing to see a high level of compliance with clinical indicators related to patient identification, and consent and critical test result notification, and low levels of adverse patient events.

The clinical indicators related to CT dosimetry remain highly relevant with ongoing research into the link between cumulative radiation exposure and cancer risk. Minimising radiation dose in individual radiology studies remains an effective method of reducing patient radiation exposure and is in keeping with the "As Low As Reasonably Achievable (ALARA)" principle. In this regard, it is pleasing to note the trends in these indicators of fewer CT examinations being delivered at a higher dose than the National Diagnostic Reference Level (NDRL) over the reporting period. It is also important to note the outlier HCOs identified in these indicators, confirming the value of monitoring radiation doses in relation to the NDRL to continue improving radiation safety for the Australasian population.

# Summary Of Results

In 2021 there were 289 submissions from 17 HCOs for eleven CIs. Of the nine indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

- three improved
- none deteriorated
- the remainder showed no evidence of trend.

Of the two trended process indicators, both improved.

Of the seven trended outcome indicators:

- one improved
- none deteriorated

Three indicators had outlier gains in excess of 25% of undesirable events. Three indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. There was insufficient data to test for stratum differences. See Table of Indicator Results below.

### Table of Indicator Results

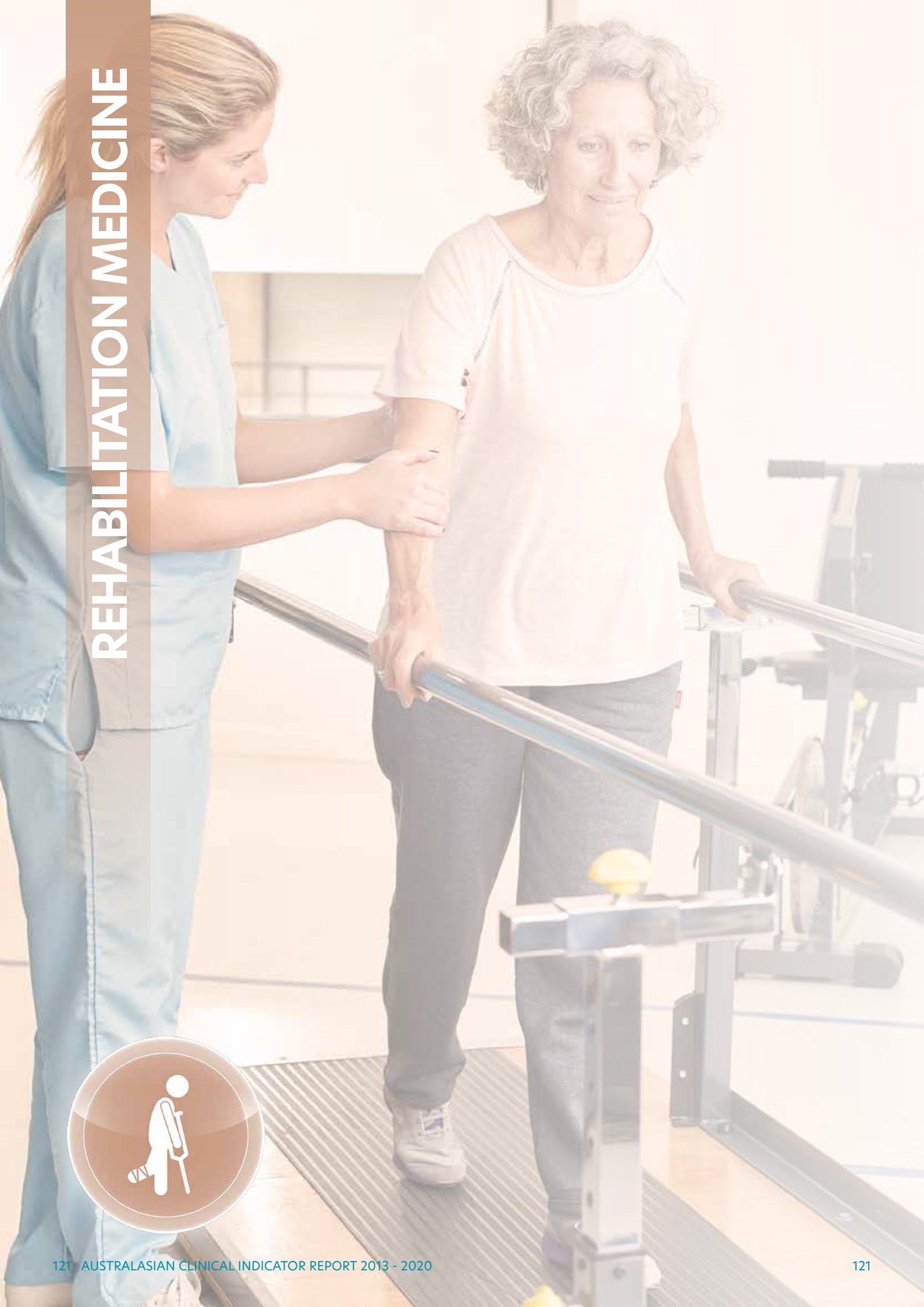
| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Adverse patient events | | | | | | | |
| 1.1 Number of Severity Assessment Code (SAC) 1 or Incident Severity Rating (ISR) 1 incidents - interventional radiology examinations (L) | 0.000 | | | | | - | |
| 1.2 Number of Severity Assessment Code (SAC) 1 or Incident Severity Rating (ISR) 1 incidents - diagnostic radiology examinations (L) | 0.000 | | | | | - | |
| 1.3 Number of Severity Assessment Code (SAC) 2 or Incident Severity Rating (ISR) 2 incidents - interventional radiology examinations (L) | 0.03 | | | | | 8 | |
| 1.4 Number of Severity Assessment Code (SAC) 2 or Incident Severity Rating (ISR) 2 incidents - diagnostic radiology examinations (L) | 0.001 | | 2 (13%) | 5 (36%) | 10 (71%) | 14 | |
| 1.5 Contrast extravasation during an IV contrast enhanced CT procedure (L) | 0.19 | | 3 (23%) | 40 (14%) | 129 (46%) | 280 | ↓ ✓ |
| 1.6 Percutaneous trans pleural biopsy of lung or mediastinum requiring unexpected overnight admission (L) | 2.59 | | | | 6 (38%) | 16 | |
| 1.7 Image-guided percutaneous core biopsy of liver requiring unexpected overnight admission (L) | 0.59 | | | | | 2 | |

# RADIOLOGY

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| CT Dosimetry | | | | | | | |
| 2.1 $CTDI_{vol}$ for non-contrast CT head examinations (L) | 7.02 | | 2 (15%) | 20 (32%) | 58 (92%) | 63 | |
| 2.2 $CTDI_{vol}$ for portal venous phase of abdominal pelvic CT examinations (L) | 8.43 | | 1 (8%) | 23 (41%) | 52 (93%) | 56 | |
| Patient identification and consent | | | | | | | |
| 3.1 Patient identification and consent (Q1) (H) | 100 | | | | | | |
| 3.2 Patient identification and consent (Q2) (H) | 100 | | | | | | |
| 3.3 Patient identification and consent (Q3) (H) | 88.0 | | | | | | |
| Critical test result notification | | | | | | | |
| 4.1 Critical test result notification (Q1) (H) | 100 | | | | | | |
| 4.2 Critical test result notification (Q2) (H) | 100 | | | | | | |
| 4.3 Critical test result notification (Q3) (H) | 81.0 | | | | | | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# REHABILITATION MEDICINE



# General Comments

*Professor Evangelos Pappas*
*Australasian Rehabilitation Outcomes Centre*

The Rehabilitation Medicine section of the Australasian Clinical Indicator Report 2014–2021 provides a wealth of data and information for the sector.

Version 7 includes two important changes - CI 5.1 Rate of fallers of less than 15% of admissions and CI 6.1 Rehabilitation intensity have been added to the set. This is a very positive development as it highlights the importance of these two new indicators and is consistent with the latest evidence around the importance and cost of falls, of which most are potentially preventable, and the benefits of rehabilitation (potentially within a dose response curve). While the methodological challenges in terms of making changes in the indicators for longitudinal analysis are acknowledged, I found that the benefits of reporting data on these indicators outweigh the methodological challenges that may pose until enough data are collected. Utilising the "rate of fallers" measure instead of "falls rate" is well justified.

While the newly introduced "rate of fallers" indicator will require the collection of a few years of data to perform meaningful trend analysis, data from the first year reveals an interesting stratum variation that can allow the strategic deployment of resources to reduce falls. Education of staff and patients is an effective falls reduction intervention within hospitals[1] whilst resistance and balance training can reduce falls by over 50% in residents of aged care.[2] In addition to monitoring longitudinal trends for this indicator, it will be interesting to see how it intersects with "rehabilitation intensity".

Data on CI 6.1 Rehabilitation intensity is more limited, with only 9 HCOs reporting data, compared to 44 HCOs reporting on CI 5.1, 75 HCOs reporting on CI 4.1 Destination after discharge from a rehabilitation program and 96-101 HCOs reporting data for the remaining indicators. The release of the ACIR may result in increased awareness and wider reporting of rehabilitation intensity. The limited data does not allow for detailed statistical analysis in this version, however, there are initial indications for substantial variability within rehabilitation intensity between the worst and best performers. Overall, it is encouraging to see improved metrics and the addition of new clinical indicators.

*REFERENCES*

1. Morris ME, Webster K, Jones C *et al.* Interventions to reduce falls in hospitals: a systematic review and meta-analysis. *Age and ageing.* 2022; 51(5): 1-12.
2. Hewitt J, Goodall S, Clemson L *et al.* Progressive resistance and balance training for falls prevention in long-term residential aged care: a cluster randomized trial of the sunbeam program. *Journal of the American Medical Directors Association.* 2018; 19(4): 361-369.

# Summary Of Results

In 2021 there were 769 submissions from 104 HCOs for six CIs. Of the two indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend

- both improved

No process indicators were tested for trends.
Of the two trended outcome indicators

- both improved.

Six indicators had outlier gains in excess of 25% of undesirable events. Six indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in five indicators. See Table of Indicator Results below.

### Table of Indicator Results

| Indicator | Aggregate rate % | Best Stratum | Outlier HCOs (%)* | Outlier Gains (%)+ | Centile Gains (%)+ | Events# | Trend |
|---|---|---|---|---|---|---|---|
| Timely assessment of function on admission | | | | | | | |
| 1.1 Functional assessment within 48 hours of admission (H) | 95.8 | NSW | 15 (16%) | 1,112 (61%) | 1,778 (98%) | 1,816 | |
| Timely establishment of an inital multidisciplinary rehabilitation plan | | | | | | | |
| 2.1 Multidisciplinary team plan within 7 days (H) | 98.7 | Private | 14 (14%) | 327 (52%) | 588 (93%) | 630 | |
| Functional gain achieved by rehabilitation program | | | | | | | |
| 3.1 Functional gain following completed rehabilitation program (H) | 96.7 | Private | 17 (17%) | 653 (40%) | 1,319 (81%) | 1,625 | ↑ |
| Discharge destination | | | | | | | |
| 4.1 Destination after discharge from a rehabilitation program (H) | 92.8 | Private | 18 (24%) | 873 (35%) | 1,992 (79%) | 2,515 | ↑ |
| Rate of fallers | | | | | | | |
| 5.1 Rate of fallers of less than 15% of admissions (L) | 8.46 | Private | 14 (32%) | 1,288 (40%) | 1,723 (53%) | 3,234 | |
| Rehabilitation intensity | | | | | | | |
| 6.1 Rehabilitation intensity (H) | 90.8 | | 3 (33%) | 636 (56%) | 897 (80%) | 1,128 | |

# Number of undesirable or non-compliant events
+ % of events accounted for by outlier/centile gains
* % of HCOs that are outliers

# REHABILITATION MEDICINE

# EMERGING CLINICAL INDICATOR SETS

We are excited to announce that there will be two new clinical indicator sets added into the existing ACHS clinical indicator set portfolio. These two upcoming sets will be in the areas of Dermatology and Paramedical Care. We have seen low reporting of clinical indicators within the area of Cancer Care, thus it was not included in this years' ACIR. Geriatric Care clinical indicators were recently introduced in 2021, and have not had enough data to report on. We hope to see greater collection of these indicators in the years to come.

## Cancer Care

Cancer Care launched in mid-2020 with the 2021 year being the first year of collection. Currently four organisations are contributing to the benchmarking of this set, but unfortunately that is not enough data to provide an overall commentary on. We recently reviewed the indicators in 2022 and clarified several of the indicators, which were difficult to collect to ensure that collection would be easier on organisations choosing to report on this data. We hope that in 2022 more organisations will start reporting on this important indicator set.

## Geriatric Care

Geriatric Care has only had 6 months of data collection so far and therefore not enough data to report on widely in the Australasian Clinical Indicator Report. The update of data collection amongst several organisations is promising and we hope that this set will yield improvements in the quality of care for the elderly. This set focuses on functional assessments and planning, medications, discharge, and unplanned readmissions. It is an emerging area of care in regard to clinical indicators which complement the National Aged Care Mandatory Quality Indicator Program indicators.

## Dermatology

This set originally underwent a major review in 2003 and the user manual (version 2) was implemented in 2004. Unfortunately, given low HCO reporting, data on the Dermatology clinical indicators has not been collected since 2010, and as such the set was removed from the current portfolio. We are excited to collaborate with the Australasian College of Dermatologists (the endorsing College for this set) to reinvigorate this set so that it is current, worthwhile, and clinically relevant for HCOs to collect and report on in the future. We would like to include Dermatology clinical indicators in the area of Telehealth, given the visibility and improved technology surrounding skin imaging remotely. Work is underway to organise the working party for this set, and we look forward to releasing the indicators for collection and reporting.

## Paramedical Care

This set will be a brand new addition to the ACHS portfolio and we are thrilled to have received significant interest from several organisations within the field of paramedical and ambulatory care. The Working Party for this set has been organised, and we are excited to have the Council of Ambulance Authorities endorsing this set. We look forward to gathering member feedback on the upcoming new indicators within Paramedical Care.

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