Australasian Clinical Indicator Report

22ND EDITION

2013-2020

ACHS

AUSTRALASIAN CLINICAL INDICATOR REPORT: 2013–2020 22ND EDITION.

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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 Australian Council on Healthcare Standards (ACHS) would like to thank the healthcare organisations (HCOs) participating in the ACHS Clinical Indicator Program for their data, which form the content of this report.

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 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
Anaesthesia and Perioperative Care	Dr Brian Hennessy (ANZCA)	• Australian and New Zealand College of Anaesthetists • Australian Society of Anaesthetists
Day Patient	Ms Mary Kirkwood (APHA)	• Australian Private Hospitals • Association Day Hospitals Australia • Australian Day Surgery Nurses Association
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Hospital in the Home	A/Prof Mary O'Reilly (HITHSA)	• Hospital in the Home Society Australasia
Hospital-Wide	Dr David Rankin (RACMA)	• The Royal Australasian College of Medical Administrators • The Royal Australasian College of Surgeons • Australian College of Nursing
Infection Control	Dr Philip Russo (ACIPC)	• Australasian College for Infection Prevention and Control • Australian College of Nursing
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Internal Medicine	Prof Donald Campbell (IMSANZ)	• Internal Medicine Society of Australia and New Zealand • Australian College of Nursing

CLINICAL INDICATOR WORKING PARTIES

CI set	Working Party Chair	Participating organisations
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Oral Health	Dr Hugo Sachs (ADA)	• Australian Dental Association • Royal Australasian College of Dental Surgeons
Paediatrics	Dr Simon Fraser (PCHD, RACP)	• Paediatrics and Child Health Division of The Royal Australasian College of Physicians • Australian College of Children and Young People's Nurses • Women's and Children's Healthcare Australasia
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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 22nd Edition 2013-2020*. 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 2013 and 2020 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 offer insight for the potential to improve quality and safety within their facility.

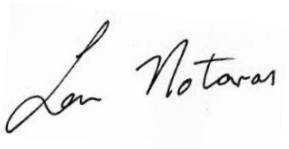
During the 32-year history of the Clinical Indicators and with this new *Australasian Clinical Indicator Report*, ACHS has proudly collaborated with medical colleges, societies, and associations. These key stakeholders have contributed within their specialist area for each of the 20 Clinical Indicator sets, which contains 323 individual Clinical Indicators, and we sincerely thank them for their time and contributions.

Dr Brian Collopy and Simon Cooper have written the feature report which discusses the improvement of indicators over 20 years from 1999 to 2020, outlining which indicators have performed the best and continue to do so.

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 22nd Edition 2013-2020* to you 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 22nd Edition 2013-2020* 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.

The Report

This report summarises the CI data submitted to the ACHS Clinical Indicator Program for the years from 2013-2020. 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 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 2020. Listed within the report are the CI, its intent, the numerator, and denominator. Tables summarise the data submitted in every year since 2013 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 2020, 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.

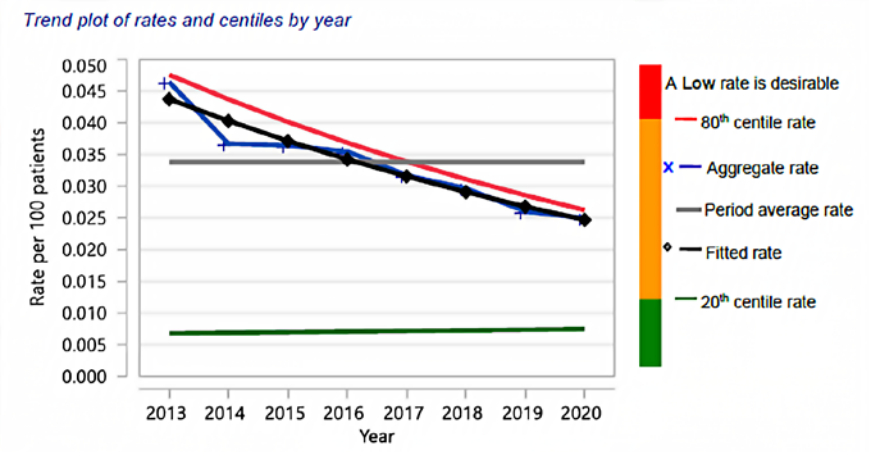
KEY RESULTS OF 2020 - IMPROVEMENTS

In 2020, there were 118 CIs which showed statistically significant trends in the desired direction. Of these, 62 remained significant after allowing for changes in the HCOs contributing over the period. There were eight CI sets that had an improvement in at least two-thirds of all trended CIs. They were Anaesthesia and Perioperative Care, Gynaecology, Infection Control, Intensive Care, Internal Medicine, Oral Health, Paediatrics and Rehabilitation Medicine. For the CIs denoted below, (L) means low desirable rate while (H) means high desirable rate. There were noteworthy improvements in the following sets:

Anaesthesia and Perioperative Care

3.1 Relief of respiratory distress in the recovery period (L)

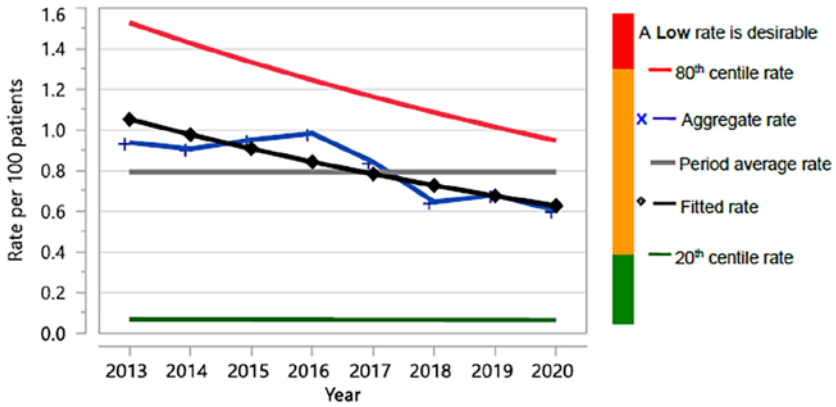
The rate of respiratory distress for patients who undergo a procedure requiring tracheal intubation or insertion of a laryngeal mask is a well reported indicator that has continued to decrease since its introduction in 2010. Commencing at 0.63, it has continually decreased to its current lowest rate of 0.025. The fitted rate improved from 0.44 to 0.025 in 2020, based on over 1.1 million patients who received postanaesthesia care. System wide variation for this indicator is also at its lowest, as measured by the difference between the 80th and 20th centiles.



Day Patient

6.1 Unplanned transfer or overnight admission related to procedure (L)

The number of day surgery patients who required an unplanned transfer or overnight admission related to the procedure performed during the same admission has continued to decrease to its lowest rate of 0.61 in 2020. This indicator has demonstrated a constant decrease in the last two decades, given it was at 2.1 in 2000, and the 80th centile rate has reduced from 3.4 to 0.99 in this same period. This reflects an improved quality of care for day surgery patients, as unplanned transfer or overnight admission generally reflects perioperative complications.

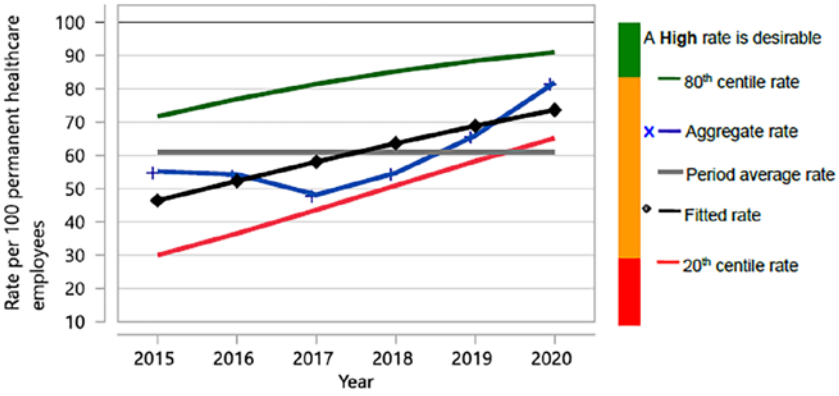


KEY RESULTS OF 2020 - IMPROVEMENTS

Infection Control

5.1 Influenza/ Flu vaccination for permanent staff (H)

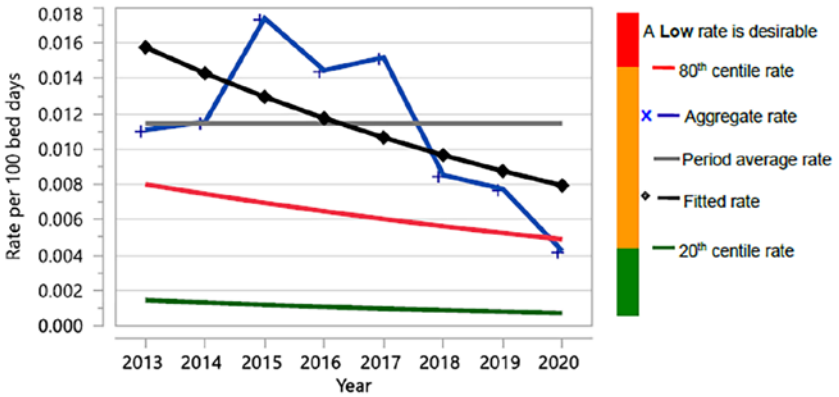
The number of permanent healthcare employees that received a flu vaccination in 2020 has abruptly increased to 81.8. This indicator commenced in 2015, with a rate of 55.1 and demonstrated system wide variation (30.1 for 20th centile and 78.6 for 80th centile). It is likely that the current pandemic has encouraged HCOs to formulate comprehensive immunisation policies for their workers, given the centiles have both increased significantly.



Medication Safety

6.3 Medication errors - adverse event requiring intervention (L)

The number of medication errors that have resulted in an adverse event requiring intervention beyond routine observation and monitoring is a well reported indicator that has continued to decrease from 0.11 in 2013 to 0.004 in 2020. The denominator for this indicator (number of occupied bed days) has remained over 8 million for all of the last eight years, and the 20th centile rate has reduced from 0.002 to 0.0007. Given medication use remains the most common intervention in healthcare, this demonstrates safer medication administration and less experience of adverse events for inpatients.



KEY RESULTS OF 2020 - DETERIORATIONS

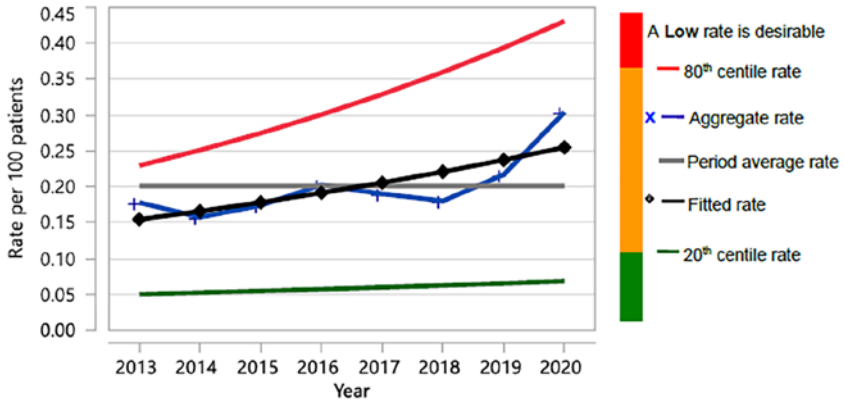
In 2020, there were 51 CIs which showed statistically significant trends in the undesirable direction. Of these, 31 remained significant after allowing for changes in the composition of HCOs contributing over the period. It is recommended that HCOs give consideration to determining and to addressing 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

3.1 Cancellation of the procedure after arrival due to pre-existing medical condition (L)

The number of patients who arrived for their day procedure but the facility cancelled it due to detecting a pre-existing medical condition has steadily been increasing to 0.30 in 2020. Interestingly, this indicator reached 1.2 in 1999, reduced to 0.17-0.24 during 2006 and 2019, and increased this year, based on close to or over a million patients who arrived at the day procedure service throughout these two decades. Closer assessment of patients arriving due to COVID-19 protocols may have accounted for this increase.

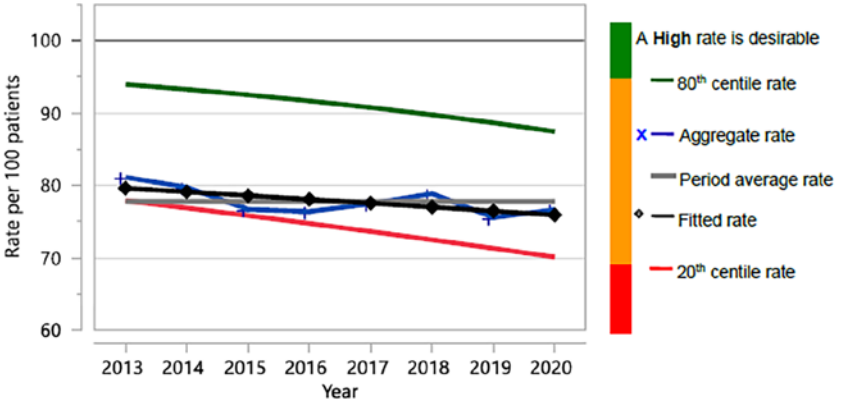
Trend plot of rates and centiles by year



Emergency Medicine

1.2 ATS Category 2 – medically assessed and treated within 10 minutes (H)

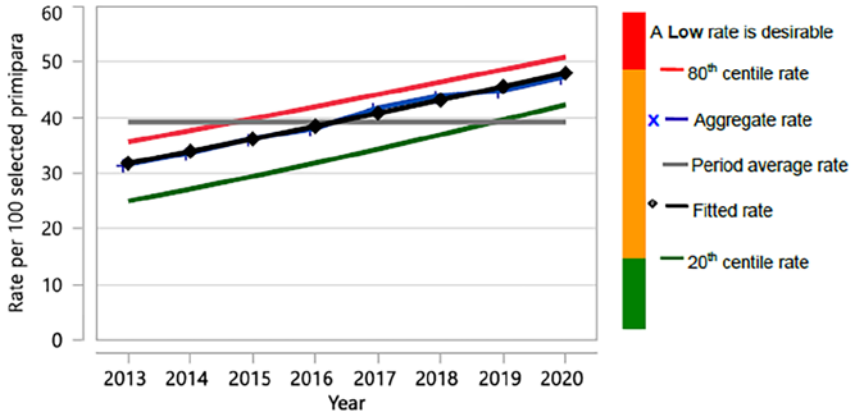
From its inception in 1998, the number of ATS allocated Category 2 patients who were medically assessed and treated within 10 minutes of arriving at an emergency department was 73.9, reached its highest rate in 2013 (81.1), and has declined from that year to the current 76.6. Based on consistent numbers of patients triaged to ATS Category 2 on arrival (411 000 to 469 000) during the last eight years, both centile rates have decreased, from 78.2 to 70.2 (20th) and 93.3 to 87.2 (80th). The increasing complexity and comorbidity of patients attending hospitals for emergency treatment may be influencing the timeliness of treatment.



KEY RESULTS OF 2020 - DETERIORATIONS

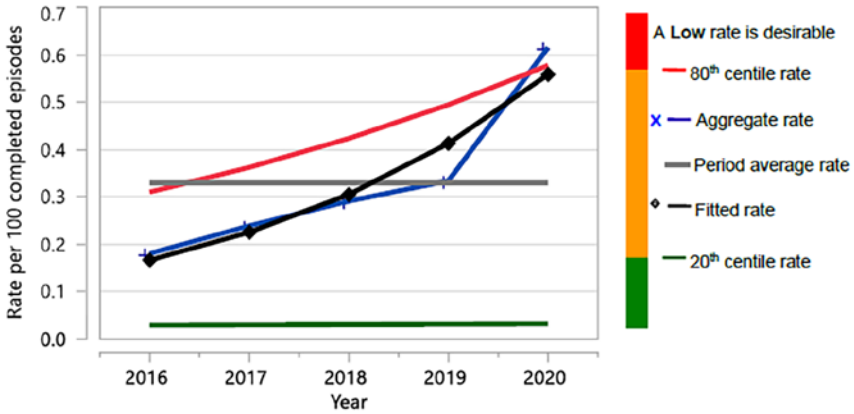
Maternity
1.2 Induction of labour (L)

The number of selected primipara who experienced labour induction was 29.1 in 2010 based on 51,000 women and has now reached 47.4 in 2020 based on 32,000 women. Both centile rates have increased to 41.3 (20th) and 50.4 (80th), and the outlier HCO rate was 68.9. Whilst there were no significant differences between public and private services, variation between states was demonstrated and accounted for 1,910 stratum gains. This will be the fourth time that this indicator has featured in the deteriorations since 2015.



Mental Health
5.6 Mechanical restraint - ≥1 episodes (L)

Only introduced in 2016, the number of completed episodes of care with at least one episode of mechanical restraint has risen from 0.18 to 0.62 in 2020. The outlier rate was 4.8, and the potential gains revealed that 73 fewer patients would have experienced mechanical restraint during their admission. For the past four years, physical restraint has appeared in the deteriorations, so it is hoped that mechanical restraint will not follow that trend. Where confinement is still considered essential, staff must reduce and, where possible, eliminate restraint.



THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2020

In this *Australasian Clinical Indicator Report 22nd Edition 2013-2020*, there are a total of 20 Clinical Indicator (CI) sets. In 2020 there were data submitted for 309 of the possible 323 CIs across these sets. Data within this report are submitted from healthcare organisations (HCOs) from every state and territory within Australia, HCOs within New Zealand and member organisations located in Asia. 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 of 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 number of participating private hospitals remained steady between 2013 to 2020. With recent increased engagement of private hospitals in the program, it is likely that 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 are 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.

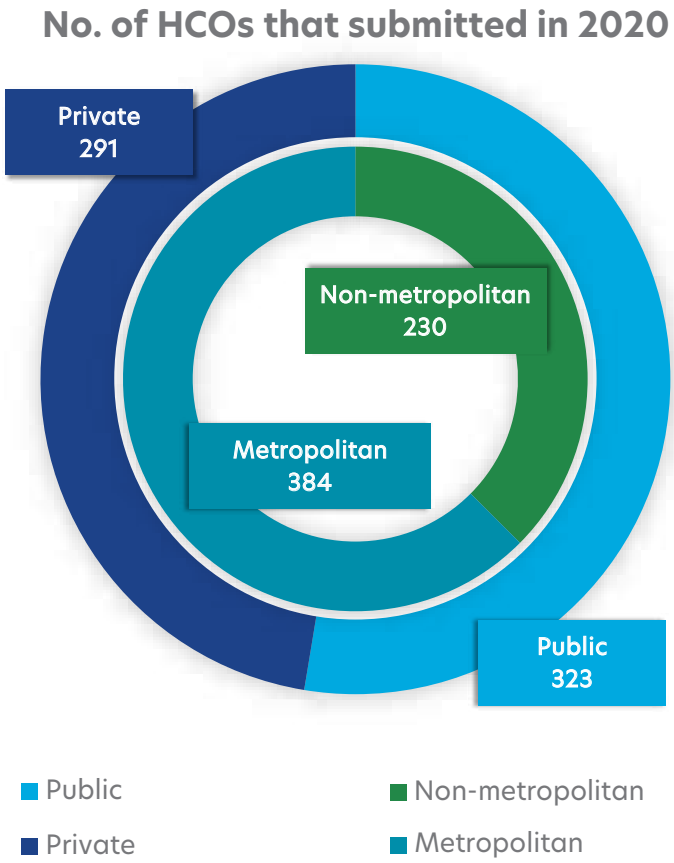
In 2020, the total number data submissions was 26,841. The number of submissions from the private and public sectors were 11,446 and 15,395 respectively, as represented on page 10.

Clinical Indicators reported by each HCO

In 2020, the average number of individual CIs reported was 22.4, with half of all HCOs reporting between eight and 30 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.

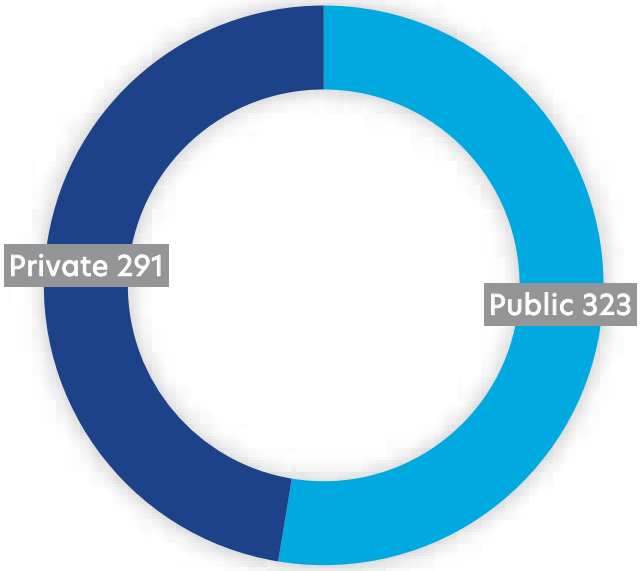
During the last three years, the mean and median number of Cis collected by individual HCOs in each year has remained relatively stable. The median number of CIs collected varied between 15 and 18 and the mean varied between 21.4 and 24.7.

Page 12 shows that in 2020 there were five CI sets with at least 150 HCOs providing data. While there are eight CI sets where fewer than 50 HCOs participate, 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.

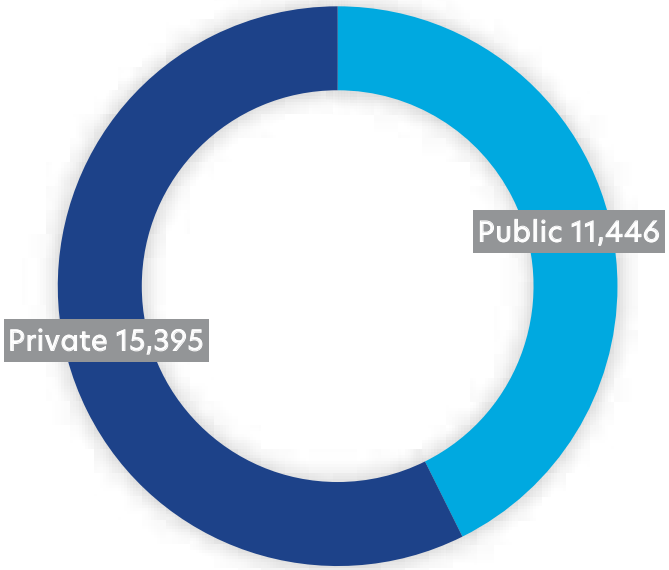


THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2020

No. of HCOs that submitted in 2020



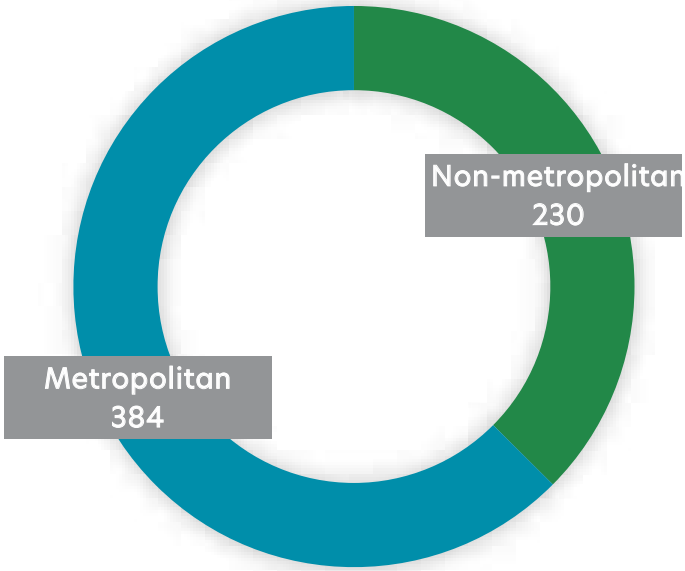
No. of submissions in 2020



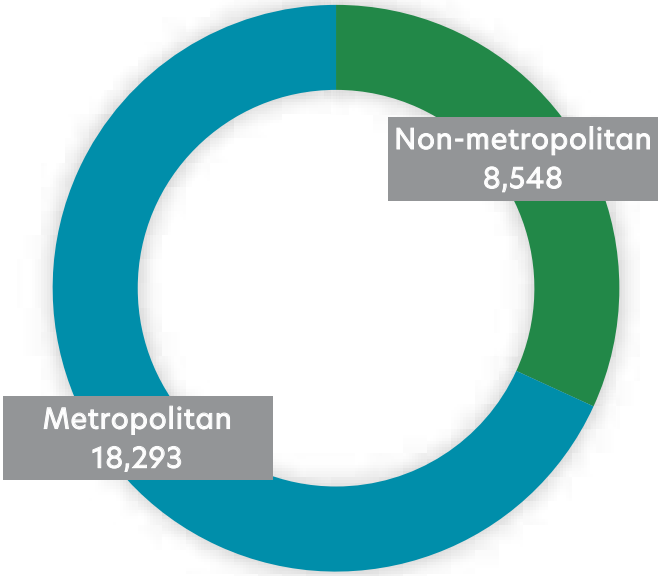
Public
Private

Non-metropolitan
Metropolitan

No. of HCOs that submitted in 2020



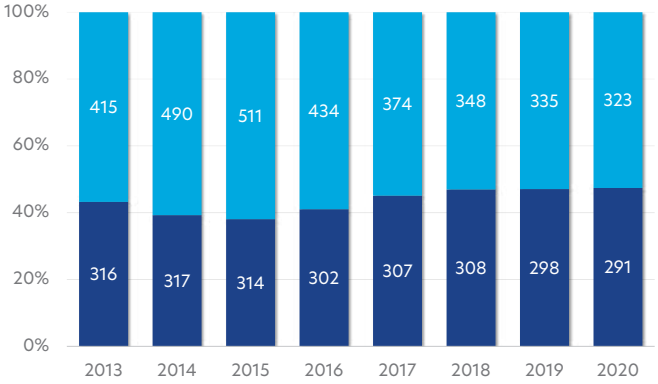
No. of submissions in 2020



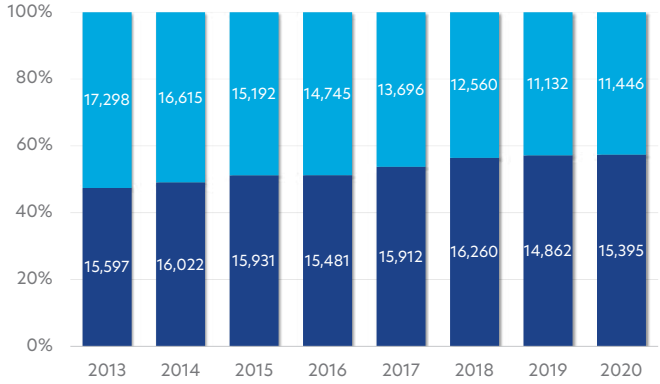
THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2020

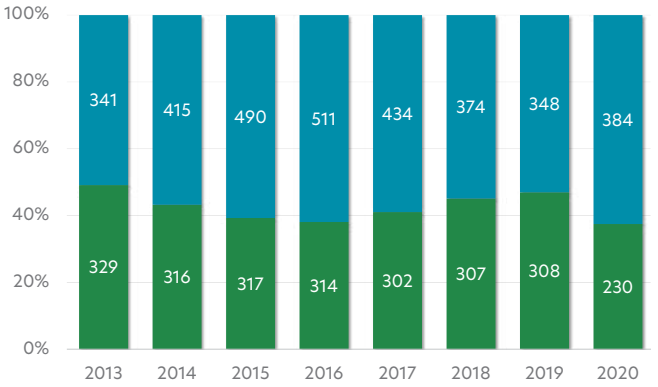
Public Private Non-metropolitan Metropolitan

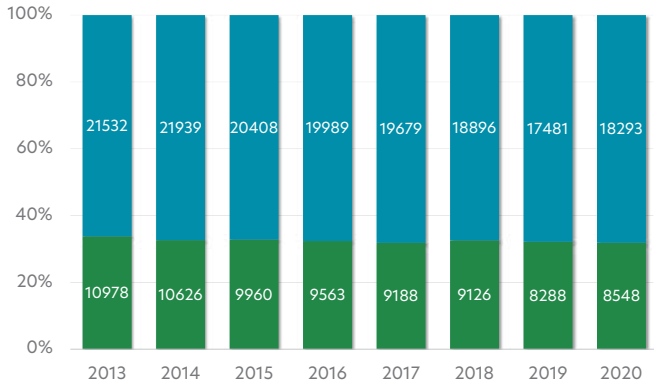
HCOS THAT SUBMITTED CIS IN 2013-2020



TOTAL SUBMISSIONS IN 2013-2020



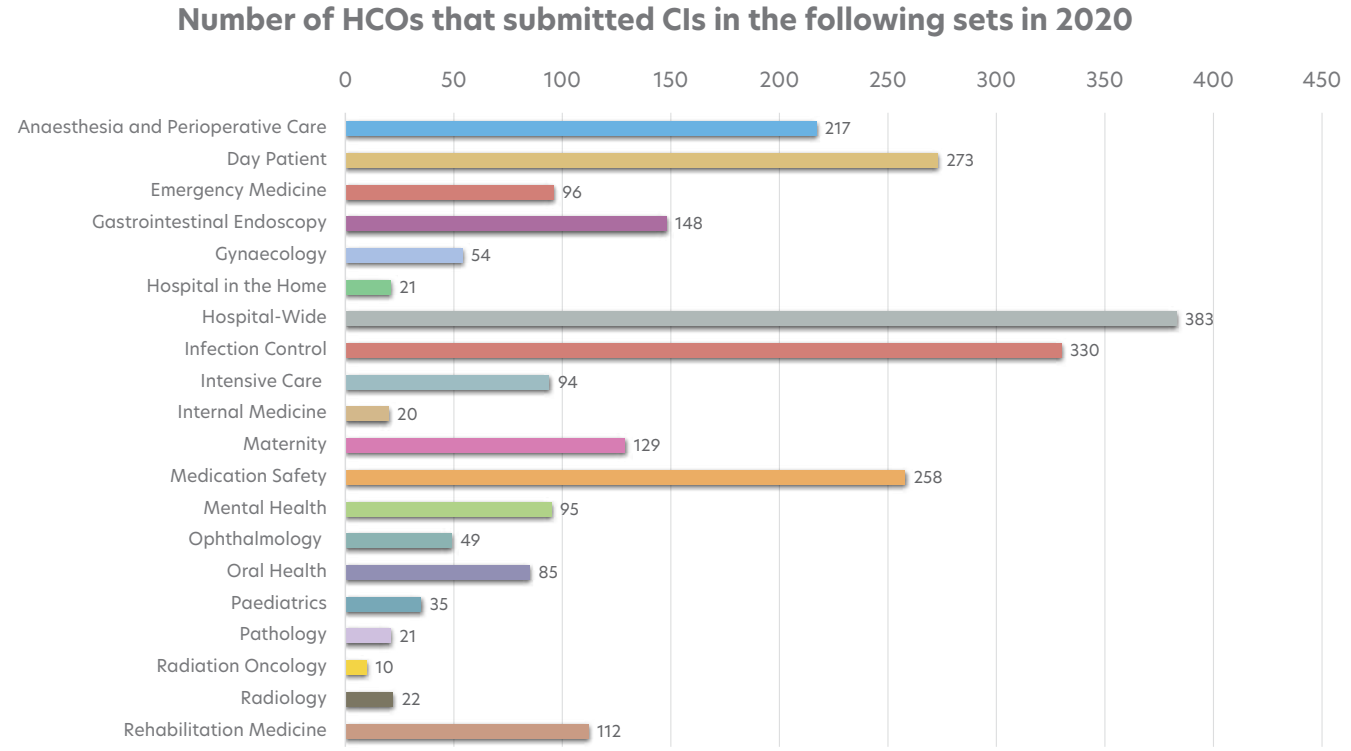


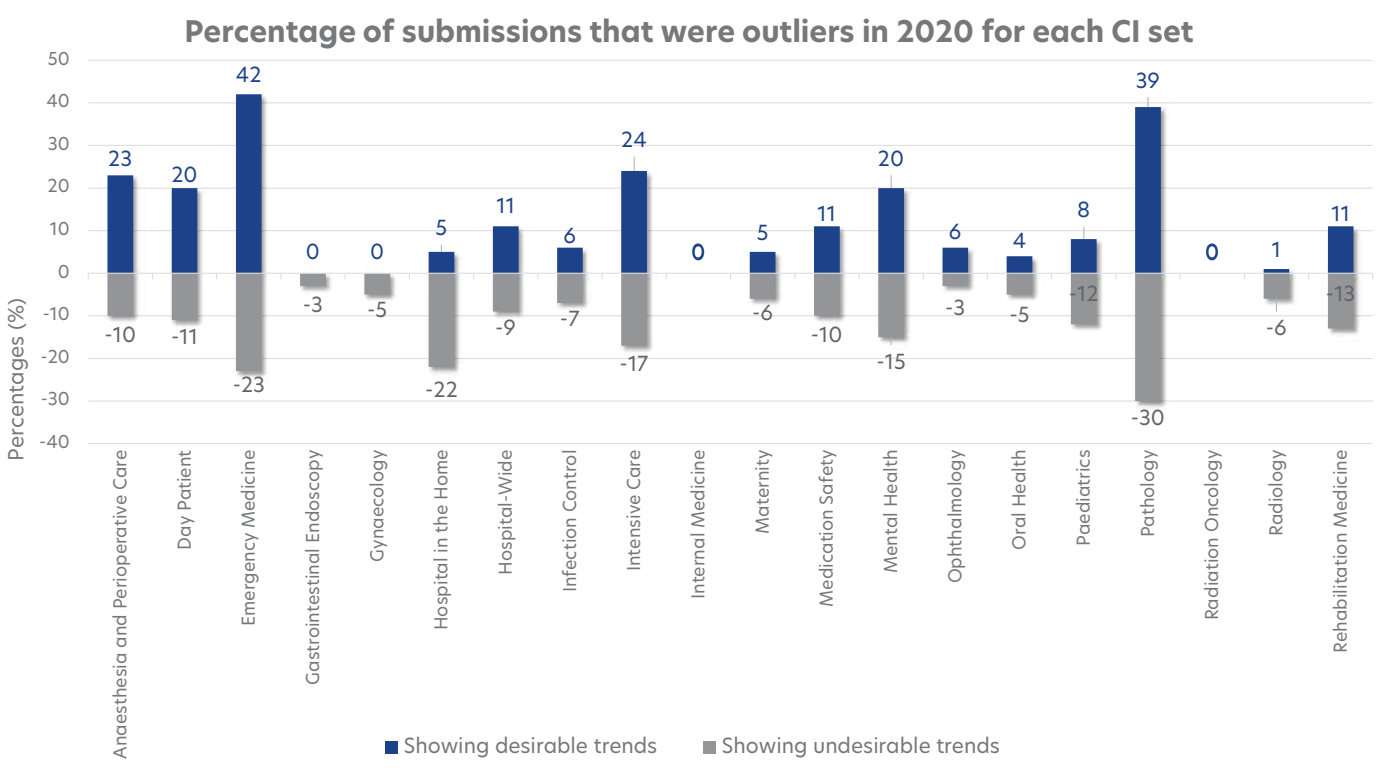


Locations of Submitting HCOs

NEW SOUTH WALES	33.1%
VICTORIA	25.9%
QUEENSLAND	15.7%
SOUTH AUSTRALIA	14.1%
WESTERN AUSTRALIA	7.0%
TASMANIA	2.0%
AUSTRALIAN CAPITAL TERRITORY	1.2%
NORTHERN TERRITORY	1.0%

THE CLINICAL INDICATOR PROGRAM: KEY FACTS 2020





FEATURE REPORT

‘Simply the Best’

A consequential ranking of selected ACHS Clinical Indicators

It has been stated that monitoring healthcare quality is impossible without using clinical indicators (CIs)[1], although there has been only limited[2] and selected[3, 4] evaluation of CIs in the literature. More than 900 indicators have been developed over the 27 years of data collection for the Australian Council on Healthcare Standards (ACHS) CI program. Regular reviews have resulted in many being discarded as they were either poorly reported, no longer considered responsive, or of limited value, and this was addressed in the 2020 ACIR Feature Article[5]. This review presents an analysis of the extensive list (324) of current CIs and a consequential ranking of selected CIs according to five criteria:

- Ease of collection
- Longevity (years of reporting)
- Amount of data (number of health care organisations {HCOs} reporting)
- Clinical importance
- Percentage of change (improvement)

The non-appearance of any particular CI on the list does not imply that it is not of value but simply that it did not ‘stand out’ in more than one of the selection criteria.

Ease of Collection

In the survey conducted of HCOs that returned data on a particular CI set, before the review of that set, HCOs are asked to indicate the ease of data collection. For example, greater than 70% indicated that Anaesthesia and Perioperative Care CI 3.1 Relief of respiratory distress in the recovery period was easy to collect while 12% disagreed. Factoring into this ranking was the ability for the data to be collected electronically via International Classification of Diseases coding, and if the data was reportable to other services such as Australian and New Zealand Intensive Care Society (CORE) database or state-based public health databases such as the Australasian Triage Scale indicators in the Emergency Department set.

Longevity

Retention of a particular CI within the set implies continued recognition of its importance by the relevant providers of the care. Some outstanding examples are in the Hospital -Wide set CI 1.1 Unplanned readmissions within 28 days and CI 2.1 Unplanned return to the operating room during the same admission, both of which have been part of the set since its inception. However, it is essential when measuring longevity that indicators which persisted at goal rates are often removed, as the level of quality improvement industry wide has been achieved. Generally speaking, indicators that have reached their long-term goals are removed unless they are in particularly high-risk areas like unplanned readmissions.

Amount of data reported

For those CIs which address high volume areas, such as those addressing anaesthesia and perioperative care, it is important that a reasonable percentage of services provided are reported in the data the ACHS receives, to ensure the rate obtained is a reasonable reflection of actual practice. Data volume was ranked by the number of submissions and scored on a sliding scale with less than ten submissions obtaining a score of zero while greater than 8,000 a maximum score of 40. This scale allowed ACHS to objectively rate the data volume of all indicators based on the historical submissions. The longevity of the indicator skewed this system, so the results were divided by the longevity to compensate when performing the ranking.

Clinical Importance

Importance is reflected in multiple factors, such as morbidity or mortality associated with an event, the financial cost of treatment, the volume of the condition or event, and the inconvenience to the patient and family. This ranking is much more subjective than all the others but areas which directly result in patient death or direct harm were ranked significantly higher than those which lead indirectly to reduced patient experience or harm.

Percentage of change

The percentage improvement reflected in the rates over time may be due to improved patient care. With many effective CIs, significant improvement can be demonstrated within the first two to three years of their introduction, suggesting their influence. Qualitative information provided by HCOs advising of actions taken following a review of their peer comparative data also indicates the impact or responsiveness of an indicator[5].

An analysis of all indicators submitted between 1999 and 2020 was undertaken to determine the most significant improvement over the lifetime of each indicator. This data was broken down by desirable rate, where the goal would be either High with a goal of 100%, Low with a goal of 0% or Not Specified where there was no performance goal.

Highest Performing Indicators

The following indicators were the highest performing overall in our review of all our current 324 indicators. The

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15 indicators in Table 1 are the highest rated across all five areas of review from Ease of Collection, Longevity, Amount of data submitted, Clinical Importance and Percentage of Improvement. Most of these high performing indicators represent areas of major risk in a hospital or day procedure centre and are often of the highest concern.

Table 1: The top 15 performing indicators (order does not signifiy relative importance)

CI Set	CI #	Description
Emergency Medicine	1.1~	ATS Category 1 - medically assessed and treated immediately
Hospital-Wide	2.1	Unplanned return to the operating room during the same admission
Hospital-Wide	5.1	Patient deaths addressed within a clinical audit process
Day Patient	3.1	Cancellation after arrival due to pre-existing medical condition
Hospital-Wide	4.2	Inpatient falls resulting in fracture or closed head injury
Hospital-Wide	6.1	Significant adverse blood transfusion events
Maternity	3.6	Surgical repair of perineum for fourth-degree tear
Medication Safety	6.3	Medication errors - adverse event requiring intervention
Hospital-Wide	9.2*	Laparoscopic cholecystectomy - bile duct injury requiring operative intervention
Ophthalmology	1.3	Cataract surgery – unplanned overnight admission
Hospital-Wide	3.1	Inpatients who develop ≥1 pressure injuries
Medication Safety	6.2	Adverse drug reactions reported to TGA
Intensive Care	4.1	Adult ICU-associated CI- CLABSI
Maternity	7.2	Vaginal birth - blood transfusion
Day Patient	5.1	Unplanned return to operating room on same day as initial procedure
Rehabilitation Medicine	3.1	Functional gain following completed rehabilitation program
Medication Safety	6.3	Medication errors - adverse event requiring intervention
Gastrointestinal Endoscopy	2.2	Treatment for possible perforation post-colonoscopy

~All ATS Categories are some of the most important well reported indicators, but not all are listed here to provide diversity;
**Originally in Surgical CI set*

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Special mentions

It is appropriate to identify some CIs which were outstanding in one criterion. Data were reported on 22 CIs more than 5,000 times. The highest one reported was the Day Patient CI 2.1 (Booked patients who fail to arrive) and CI 3.1 (Cancellation after arrival due to pre-existing medical condition) on over 10,000 occasions. Two additional highly reported indicators of significance are the Infection Control indicators 6.1 and 6.2 which relate to parenteral and non-parenteral exposures sustained by staff. These would have been in the top 10 but NSW Health mandated their reporting for a long period of time and this would have skewed their representation in the ACHS data, hence their exclusion from Table 1.

There are various other reasons for listing a CI under this heading. The long-standing Hospital-Wide CI 1.1 Unplanned readmission within 28 days had a rate of 2.5% in 1998 and is currently at 1.1%. Whilst advances in medical care would have occurred over that long interval, its existence may well have contributed to the fall, as several HCOs advised that they had introduced a new staff member - a Nurse Discharge Planner - following review of their peer comparative data. Another point about this CI is its ability to enable a calculation of the level of cost avoidance achieved, in addition to reduced patient stress.

The unplanned transfer of a day patient to an overnight facility after a procedure (Day Patient CI 6.1) fell from 2.1% in 2000 to 0.61% in 2020. With a denominator of more than 1.3 million patients in 2020, nearly 20,000 more patients avoided this stressful event than would have experienced it had the rate remained at the year 2000 level.

A significant relief in patient stress can also be evidenced with the Anaesthesia and Perioperative Care CI 3.1 Relief of respiratory distress in the recovery period, with its rate falling from 0.25% in 1998-9 to 0.02% in 2020.

Another CI reflecting high cost and significant patient stress is the CI addressing infection following a hip joint replacement. This CI was originally in a surgical set and in 2004 had a rate of 1.08%. It is now within the Infection Control set (CI 1.1), with a rate reported of 0.55% in 2020, however because of definitional changes, the two rates for this important CI cannot be compared.

Long term data

Data were available to look back from 2020 to 1999, enabling a search for the greatest improvement over time. As indicators often improve over their lifetime, many of the indicators which have the most significant improvement are not in the current sets, as they have achieved their goal of improving patient safety. The following indicators in Table 2 show the levels of improvement across both high and low desirable rates. Indicators with a 'not specified' desirable rate were not included, as determining levels of improvement was not possible without a goal for improvement.

Table 2: Top ten most improved clinical indicators between 1999 and 2020 in descending order for both desirable rates

Desirable Rate	Set	CI #	Improvement	Indicator Description
Low	Radiology	2.5	68.5%	Radiation exposures performed by plain X-ray apparatus
Low	Hospital-Wide	4.3	39.9%	Total number of inpatients who have or develop a Stage 2 pressure ulcer during their admission
Low	Hospital-Wide	4.2	39.4%	Inpatients who have or develop a Stage 1 pressure ulcer during their admission
Low	Psychiatry*	6.3	34.8%	Number of inpatients who assault twice or more in an admission
Low	Psychiatry*	5.3	33.2%	Inpatients having seclusion for more than 4 hours in one episode, in an admission
Low	Mental Health	3.1	20.3%	Discharged on 2 or more psychotropic medications from 1 sub-group category (excluding antipsychotics)

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Desirable Rate	Set	CI #	Improvement	Indicator Description
Low	Internal Medicine	2.1	15.1%	Hospitalised patients with severe hypoglycaemia < 2.8 mmol/L
Low	Radiation Oncology	1.1	12.8%	Patients waiting more than 21 days, from the date 'ready for care', to the date of commencing radiotherapy treatment
Low	Infection Control	1.11	11.5%	Superficial incisional SSI in femoro-popliteal bypass procedures
High	Rehabilitation Medicine	4.2	88.4%	Rehabilitation patient deaths addressed within an audit process/quality improvement study
High	Dermatology~	2.11	85.7%	Patients receiving UVB phototherapy where there is documented evidence of the total UVB dose administered
High	Infection Control	2.9	80.3%	Discontinuation of SAP within 24 hours of the CABG procedure
High	Medication Safety	5.3	75.1%	Percentage* of patients with a new adverse drug reaction (ADR) that are given written ADR information at discharge AND a copy is communicated
High	Anaesthesia & Perioperative Care	5.6	74.4%	Nausea and vomiting
High	Infection Control	5.2	63.8%	Hepatitis B vaccination for permanent staff
High	Radiation Oncology	2.3	56.5%	Patients receiving megavoltage radiotherapy using MLC
High	Hospital-Wide	8.4	53.8%	Rapid response system attendances within 5 minutes
High	Emergency Medicine	7.1	52.8%	Documented initial pain assessment at triage
High	Internal Medicine	3.5	51.7%	Ischaemic stroke presentation ≤ 4.5 hours onset - intravenous thrombolysis

** Psychiatry is now under the Mental Health set;*
^Obstetrics and Gynaecology is now under the Gynaecology set and Maternity set;
~Dermatology set was discontinued but is now under redevelopment.

Of the indicators which improved over time, 17 of the 515 low desirable rate indicators improved by 5% or more, while 124 of the 339 high desirable rate indicators improved by 5% in the same period. These results demonstrate that a greater improvement is more likely in the higher desirable rate indicators, which are predominantly process based, whilst the low desirable rate and mostly outcome based indicators show a significantly smaller improvement.

The Best Indicators

It is interesting to note that many of the indicators in Table 1 have previously been identified by the Performance and Outcomes Service (POS) team for inclusion in a possible core set of CIs, not currently promoted by ACHS. The identification of a core set of indicators is part of a project being undertaken by POS, which so far has led to the identification of a set of indicators suggested for hospitals but due to the diversity of clients using the POS service they were not as relevant for day procedure centres or speciality sites. The aim in the future is to provide end users with better data on the indicator's usage and relevance for their specialities to make a more informed decision on which indicators to choose.

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SUMMARY OF RESULTS

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

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

The 2020 quality indicator trends for anaesthesia are largely stable or show modest improvement during a period of extreme disruption to clinical activity due to the COVID-19 pandemic.

Preoperative care is assessed through a sole indicator, CI 1.1 Preanaesthesia consultation completed by anaesthetist, a metric which has steadily improved over the last few years and now shows excellent compliance.

A new addition to the intraoperative indicator set, CI 2.2 Temperature of <36°C in the holding bay, introduced discussion about how and where to measure temperature, as well as what an acceptable preoperative cut-off should be.

The first patient recovery period indicator, CI 3.1 Relief of respiratory distress in the recovery period, showed excellent improvement over the last five years. Others such as CI 3.2 PONV treatment in the recovery room, CI 3.3 Temperature of <36°C in the recovery period, and CI 3.5 Unplanned stay in the recovery room >2 hours showed improvement by the lowest performers, resulting in a modest overall advancement.

A new indicator, CI 3.6 Adult patients with documented systolic blood pressure of <100mm Hg in the postanaesthesia recovery room, will be important to monitor given the multi-trial findings of the significant association between hypotension and major end-organ events.

The postoperative clinical indicator, CI 4.1 Unplanned ICU admission within 24 hours after procedure, was largely stable, while CI 4.2 Documented patient handover - operating suite to recovery area is now excellent, with little room for overall improvement. This may reflect the beneficial effects of electronic medical records on transitions of care, where there are significant vulnerabilities for communication failures.

The only obstetric anaesthesia indicator, CI 5.1 Obstetric patients who experience post-dural puncture headache, was stable overall but it is interesting to note that the number of records examined was half that of previous years, possibly the effect of the pandemic on data collection in some areas.

These newly revised clinical indicators are intended to reflect the priorities that the profession sets, and therefore measures and manages. However, the events of the last two year have added a complex labyrinth of new claims on time and resources. Anaesthetists have substantiated the frontline of the COVID-19 response - intubating, stabilising, transporting, and caring for COVID-19 suspected and confirmed positive patients in Australia. Additionally, they have contributed to significant decisions on the suspension of non-emergency surgery and reallocation of key resources.

Evidence suggests pandemics may occur more frequently in our globalised and highly mobile society, with increase in trade, livestock husbandry, population density, and climate change[1]. Pandemic and profession-relevant surveillance, preparedness, and performance assessments become key in this new era. The collection of appropriate data allows an evidence base that is required for the timely execution of key actions, both at a public health and profession-specific level. This data is especially important when optimal performance is yet to be fully understood.

Formulating pandemic relevant clinical indicators during a complex, dynamic and rapidly changing environment poses significant challenges to even the most agile of organisations. Indicators must not add unnecessary burden to an already overwhelmed health system and their selection must be based on clinical relevance, ease of collection and data availability[2]. A first iteration of a high-level indicator set for anaesthesia may encompass areas such as resource availability, including personal protective equipment (PPE), the presence of technological infrastructure to rapidly and

clearly communicate changes in policies and protocols, staffing separation to minimise vulnerabilities, telehealth capabilities, the impact of postponing elective procedures, and clinical considerations.

A necessary first step is to build strong measurement infrastructure to reduce measurement burden and lag in reporting time, as well as allow for standardisation of quality data. Measurement infrastructure may include mandated, standardised electronic records and data capture systems that do not require extra effort from clinicians[3]. Noting that the ACHS has experienced a drop in data quantity during the pandemic, measurement in healthcare is often seen as an ancillary post-clinical, double-check intervention, rather than a real-time assessment tool to guide key responses in crises.

This pandemic presents an opportunity to start the first iteration cycle of building crises and profession specific indicator sets, and the infrastructure to collect them. While executing these steps requires a high level of effort and coordination, the perils posed by non-evidence based decision making are even higher.

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ANAESTHESIA AND PERIOPERATIVE CARE

Summary Of Results

There are 13 clinical indicators in the Anaesthesia and Perioperative Care Indicator Set. 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
- none deteriorated
- and the remainder showed no evidence of trend.

Ten indicators had outlier gains in excess of 25% of undesirable events. Eleven indicators had potential gains in excess of 50% of undesirable events. 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)	97.2	Private	1 (3%)	2,653 (78%)	3,395 (100%)	3,396	↑✓
Intraoperative period							
2.1 Presence of a trained assistant (H)	94.9		2 (7%)	4,021 (73%)	5,527 (100%)	5,529	↑✓
2.2 Temperature of <36° C in holding bay (L)	0.05		3 (23%)	16 (84%)	18 (95%)	19	
Patient recovery period							
3.1 Relief of respiratory distress in the recovery period (L)	0.02		8 (5%)	117 (40%)	224 (77%)	290	↓✓
3.2 PONV treatment in the recovery period (L)	0.77	Private	20 (18%)	2,387 (52%)	4,187 (92%)	4,547	↓✓
3.3 Temperature of <36° C in the recovery period (L)	1.64		22 (18%)	8,525 (69%)	12,167 (99%)	12,293	↓✓
3.4 Severe pain not responding to pain protocol in the recovery period (N)	0.33						↓
3.5 Unplanned stay in recovery room >2 hours (L)	1.00		16 (13%)	3,065 (40%)	6,440 (85%)	7,600	↓✓
3.6 Adult patients with documented systolic blood pressure of <100mm Hg in the postanaesthesia recovery room (L)	0.37		4 (44%)	61 (42%)	109 (75%)	146	
3.7 Presence of a trained recovery room nurse (H)	100.0					-	

Summary of Indicator Results continued

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Patient recovery period							
4.1 Unplanned ICU admission within 24 hours after procedure (L)	0.18		15 (14%)	442 (31%)	1,125 (80%)	1,409	
4.2 Documented patient handover - operating suite to recovery area (H)	99.6	Metropolitan	3 (10%)	261 (77%)	339 (99%)	341	↑ ✓
Obstetric anaesthesia care							
5.1 Obstetric patients experiencing post-dural puncture headache (L)	0.82		1 (11%)	12 (24%)	33 (67%)	49	

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
Day Hospitals Australia

The 2020 data collection year is memorable with regard to the general societal upheaval as a result of the bushfires and the commencement of the COVID-19 pandemic. The Australian Institute of Health & Welfare (AIHW) reports that the impact of COVID-19 resulted in a decrease of admitted patient activity of 2.8% in 2019-2020, greatest in private hospitals (4.5% compared to public hospitals 1.7%)[1]. Given that day surgery is primarily elective surgery, this was also reflected in a 9.2% decrease of elective surgery numbers in 2019-2020, compared with 2018-2019, and the subsequent increase in overall wait time[2].

In comparison to the 2019 dataset, where improvement was noted in 11 of the 12 CIs, the 2020 ACHS Day Patient CI dataset results reflect the disruptive nature of the year. Observed in the trended over time results: five CIs improved, four remained stable, and three declined. The areas of decline were CIs:

- 2.1 Booked patients who fail to arrive (a change of 0.21 per 100 patients)
- 3.1 Cancellation of the procedure after arrival due to pre-existing medical condition (a change of 0.1 per 100 patients)
- 5.1 Unplanned return to operating room on same day as the initial procedure (a change of 0.010 per 100 patients).

Whilst noting the negative change, the scale of impact is extremely small. The incidence of an unplanned return to the operating room in the day procedure sector was measured at 0.059%. The rates of unplanned return to the operating theatre across the full range of surgical complexities, anaesthesia types, patient comorbidities and societies varies from 0.6% to 11.2%[3]. The rate for indicator 5.1, being just outside and below this range, reinforces the appropriateness and safety of day surgery.

Stratum differences were available and noted for CIs 3.2, 5.1, 6.1 and 7.1. In all instances there were:

- more private health care organisations (HCOs) contributing to the dataset
- significantly more patient separations in the private sector (denominator)
- more favourable results in the private sector (stratum rates).

These results may be explained by differing patient comorbidities, surgical training programs, or the ability to modify/adapt day procedure processes in larger institutions. The peer reports, available to the HCOs by the ACHS PIRT program, will be invaluable to drill down further into areas of differentiation.

Overall, when reflecting on the consistent results noted in the stable CIs (4.1, 8.2, 9.1 and 9.2) and the excellent results noted in the improving CIs (1.1, 3.2, 6.1, 7.1 and 8.1), the data demonstrates that the day procedure sector provides excellent patient care.

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Summary Of Results

In 2020 there were 3,068 submissions from 274 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
- three deteriorated
- the remainder showed no evidence of trend.

Of the five trended process indicators:

- three improved
- two deteriorated.

Of the four trended outcome indicators:

- two improved
- one deteriorated.

Twelve 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
Preadmission preparation							
1.1 Booked patients assessed before admission (H)	90.3		17 (21%)	15,654 (68%)	22,996 (100%)	23,010	↑✓
Procedure non-attendance							
2.1 Booked patients who fail to arrive (L)	0.77		21 (11%)	3,753 (52%)	7,005 (97%)	7,188	↑✗
Procedure cancellation							
3.1 Cancellation of the procedure after arrival due to pre-existing medical condition (L)	0.30		34 (17%)	1,180 (38%)	2,293 (74%)	3,099	↑✗
3.2 Cancellation of procedure after arrival due to administrative/ organisational reasons (L)	0.45	Private	30 (15%)	1,834 (53%)	3,107 (90%)	3,445	↓✓
Episode of care adverse events							
4.1 Patients who experience an adverse event during care delivery (L)	0.13		25 (14%)	344 (32%)	822 (76%)	1,084	
Unplanned return to the operating room							
5.1 Unplanned return to operating room on same day as initial procedure (L)	0.06	Private	10 (6%)	228 (52%)	371 (85%)	435	↑✗

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)	0.61		48 (20%)	3,715 (46%)	7,162 (89%)	8,085	↓ ✓
Discharge							
7.1 Unplanned delayed discharge for clinical reasons >1 hour beyond expected (L)	0.44	Private	15 (13%)	938 (55%)	1,622 (94%)	1,717	↓ ✓
Departure							
8.1 Departure without an escort (L)	0.51		8 (9%)	1,051 (79%)	1,303 (98%)	1,325	↓ ✓
8.2 Departure without an overnight carer (L)	0.06		6 (11%)	66 (68%)	88 (91%)	97	
Post-discharge folow-up							
9.1 Follow-up contact within 48 hours (H)	85.0		23 (32%)	11,595 (50%)	23,074 (100%)	23,116	
9.2 Completeness of follow-up instructions form for patients (H)	98.3		6 (12%)	2,329 (85%)	2,747 (100%)	2,749	

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 Sandra Brownlea
Australasian College for Emergency Medicine
Chair, ACHS Emergency Department Working Party Version 7

This *Australasian Clinical Indicator Report* provides trends in CIs from 2013 to 2020 across the participating HCOs. The strength of the trends reflected is reliant on HCO participation. On review, there are some surprising improving trends, some concerning trends, and some CIs have required a review in Version 7 given the low rates HCO participation.

Area 1: Waiting Times and patients not waiting for assessment

HCOs continue to allocate resources to those most in need of urgent care with an aggregate of 99.3% of patients allocated ATS 1 seen and treated immediately after arrival (CI 1.1). Trends deteriorated for patients allocated ATS 2 (CI 1.2), with the fitted rate dropping from 79.6% of patients seen within 10 minutes in 2019 to 75.9% in 2020. Stratum variation exists; HCOs in VIC and NSW achieved benchmark (80.4% and 80.2% respectively), WA reported 79.7%, and QLD the lowest performer assessed at 69.1% within the recommended time target.

In contrast, fitted rate trends improved for ATS 3 (CI 1.3) from 65.4% in 2019 to 65.5% in 2020, ATS 4 (CI 1.4) from 73.2% in 2019 to 74.8%, and ATS 5 (CI 1.5) from 89.3% in 2019 to 93.0% in 2020. Funnel plots for ATS categories 2, 3, and 4 indicate poorer performing outlier organisations contributed a greater proportion of the denominator dragging the aggregates down. For instance, the outlier HCO ATS 2 rate was 66.4%, whose combined excess led to 18,263 fewer patients assessed within 10 minutes.

Interpretation of the deteriorating ATS 2 trends and improving ATS 3, 4, and 5 in the current overcrowded ED environment is complex. ATS targets measure a patient's access to timely care based on clinical need and ED overcrowding impacts this access. Is it possible ATS 2 patients are impacted disproportionately, as they are more likely in need of a bed? Are these CIs crude markers of overcrowding as various system solutions introduced to improve patient access to timely care, such as physician-assisted triage, 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.

Another surprising result was the continued and reassuring downward trend in the number of patients not waiting to be seen after triage (CI 1.6), declining from 3.9 per 100 patients in 2019 to 2.9 in 2020. Data is disproportionately represented by HCOs in NSW.

Area 2: STEMI management

Only three HCOs contributed data on door-to-balloon times at 60 and 90 minutes (CI 2.2-2.3). For this reason, the 60-minute timeframe is no longer available in Version 7. The rate of door-to-balloon times have remained stable.

Of concern, the proportion of patients receiving thrombolysis within the recommended period of 30 minutes (CI 2.1) has steadily declined from a fitted rate of 51.5% in 2016 to 37.8% in 2020. The number of HCOs reporting has remained relatively constant, between 10-14, with no stratum differences between 2019 and 2020 and no outliers in 2020.

Area 3: Emergency Department Mental Health presentations

There continues to be a steady decline in CI 3.2 Mental health presentations discharged from the ED within 4 hours (fitted rate of 59.9 per 100 mental health presentations in 2016 to 50.1 in 2020) and CI 3.1 Mental health patients admitted from the ED within 4 hours (fitted rate of 34.2 per 100 mental health presentations in 2016 to 26.7 in 2020). The funnel plots indicate the outlier HCOs also contribute

General Comments

to a greater proportion of the denominator.

There continues to be a reassuring downward trend of mental health presentations who left the department after documentation of clinical information (CI 3.3), from a fitted rate of 5.7% in 2016 to 1.3% in 2020. This indicator, does not capture those that do not wait (i.e. triaged but left prior to any medical assessment), an equally high-risk group. This CI is amended in Version 7 to capture both high-risk groups.

Area 4: Critical Care
The proportion of patients transferred to the ICU within 4 hours of ED arrival (CI 4.1) has remained consistently low at 42.2 per 100 patients with no significant change in the fitted rate over five years. HCOs from NSW reported most of the data. The rate of rapid response system calls within 4 hours of patient admission to the ward (CI 4.2) remained low (aggregate rate of 0.27 per 100 patients) with metropolitan hospitals performing better than non-metropolitan hospitals.

Area 5: Sepsis Management
There continues to be limited reporting by HCOs on timely administration of antibiotics in paediatric sepsis (CI 5.1). For this reason, paediatric and adult CIs are combined in Version 7. Since 2016, there has been a steady increase in HCO submitting data for time to antibiotics in adult sepsis (CI 5.2), and perhaps this reflects the sepsis quality improvement programs promoted by various state level health services.

Area 6: Discharge Communication
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 (CI 6.1). The fitted rate improved from 81.0 in 2019 to 92.1 in 2020 per 100 patient care episodes, with no significant stratum differences. The quality of information provided in the discharge instruction was lower with 78.2 per 100 patient care episodes receiving a quality discharge letter (CI 6.2). 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.

Area 7: Pain management
Since 2016, the number of HCOs participating in CI 7.1 Documented initial pain assessment at triage, CI 7.2 Analgesic therapy within 30 minutes for all who presented with moderate or severe pain, and CI 7.3 Documented pain reassessment within 30 minutes of receiving analgesic therapy remains poor. For the three HCOs submitting data, 99.7 of 100 care episodes had a documented pain score at triage (CI 7.1), however this is skewed positively by two organisations contributing a greater proportion of the denominator. This high rate of pain score documentation did not translate to timely administration of analgesia or documentation of pain reassessment 30 minutes later. The poor response to these CIs may highlight variation in process and collection of data across HCOs. However, pain management is a high priority to our patients. For this reason, only indicator CI 7.2 will continue in Version 7.

Area 8: Unplanned re-attendance
Trends continue to improve for patients with an unplanned re-attendance to the ED within 48 hours of initial arrival and require admission (CI 8.1), improving from a fitted rate of 2% in 2016 to 1.2% in 2020.

General Comments

Dr Maria Unwin
College of Emergency Nursing

Valuable insight can be gained from the 22nd edition of the *Australasian Clinical Indicator Report* into the provision of emergency department (ED) care. Australian EDs continue to experience demands that exceed resource availability, a situation referred to as crowding. Crowding contributes to extended waiting times, ambulance ramping, poorer outcomes for patients and increased stress for staff. This commentary focuses on instances where CIs are not currently being met.

The CIs for time to assessment and treatment following arrival to the ED (CI 1.1-1.5) provide a measure for the timeliness of care. The trend for first assessment and treatment of patients with imminently life-threatening conditions (ATS 1 / CI 1.1.) has remained consistent between 2013 and 2020, with the fitted rate improving slightly from 99.5 to 99.7 per 100 patients (respectively) receiving immediate care. The trend for ATS 2 (CI 1.2) has significantly deteriorated over the same period. More patients are waiting longer than 10 minutes to be seen by a treating clinician. In 2020, there were 108,649 (23.4 per 100) patients across the 93 participating HCOs who were triaged to an ATS 2 and who did not receive timely care. The fitted rate of 75.9% falls below the Australasian College for Emergency Medicine (ACEM) accepted performance indicator of 80%[1]. The trend for ATS 3 time to be seen (CI 1.3) remained consistent but well below the ACEM recommended performance indicator of 75%[1]. There were 374,710 patients (31.0 per 100) triaged to an ATS 3 who were not seen on time. This patient group require 'urgent' assessment and treatment (within 30 minutes).

It is possible the lower proportion of ATS 2 patients (CI 1.2), and the consistently lower proportion of ATS 3 patients receiving timely assessment and treatment (CI 1.3) may be reflective of factors beyond the control of EDs. Factors such as increasing demand for ED services, hospital access block and/or limited accessibility of primary care services are known to contribute to crowding in EDs[2], all of which are beyond the control of the ED[2]. Greater understanding of when and why this occurs is required to identify strategies to address causes and improve patient outcomes.

CIs 2.1-2.3 measure timely treatment for patients experiencing ST-segment elevated myocardial infarction (STEMI), aiming to reduce the risk of death and permanent disability. The proportion of patients receiving thrombolytic therapy for a STEMI within 30 minutes (CI 2.1) has decreased significantly over time, from 51.5 to 37.8 per 100 since 2013. Over the period, the rate of balloon opening within 90 or 60 minutes (CI 2.2-2.3) was 85.0 and 42.5 per 100 respectively. Only three HCOs, however, contributed to the latter data, the smaller number limiting translatability across other HCOs. Further understanding of the factors contributing to these delays is required to implement strategies to ensure early recognition, assessment, and treatment of STEMIs is required.

Patients presenting to EDs with mental health conditions remain an area of concern and is reflected in this report. The proportion of patients admitted to a mental health unit (CI 3.1) or discharged home within the 4-hours (CI 3.2) continues to decline. In 2020, just one in four patients requiring admission to a mental health unit were transferred within 4 hours (CI 3.1). Approximately 4,900 patients (18 HCOs) waited longer than accepted. This situation is known to contribute to poorer patient outcomes[3]. Furthermore, just one in two patients with mental health conditions were discharged home within 4 hours across the 19 contributing HCOs (CI 3.2). This represents 8,247 patients with mental health conditions who were unable to be assessed, treated, and depart the ED within 4 hours. It is crucial that a clear understanding of the delays in assessment and management are developed to identify strategies to inform the provision of patient-centre care for vulnerable patient population.
Trends in ED time to intensive care unit (ICU) admission within 4 hours (CI 4.1) have remained consistent since 2016, with the 2020 annual rate at 42.2 per 100 patients. The 11

General Comments

HCOs contributing to this data equated to 4,722 occasions where timely transfers to the ICU did not occur. It is unlikely this is based solely on ED performance; again, identification and understanding of the causes is required to address this indicator and implement solutions.

Time to antibiotic administration within 60 minutes for paediatric patients was 11.1 per 100 patients (CI 5.1) and 52.5 for adults (5.2) in 2020. Sepsis remains a potentially life threating condition and caused 8,700 deaths in Australia in 2020[4]. Analgesic administration for patients with moderate to severe pain (CI 7.2) was greater than 30 minutes for 35 per 100. Both these issues continue to occur despite evidence-based guidelines. Research demonstrates that ED staff are less likely to follow guidelines and pathways when departments are crowded[2]. Further understanding of why delays in antibiotic and analgesic management occur and strategies to address the causes are needed.

In the context of crowded EDs it is important to acknowledge where patient care met CIs. Timely treatment for ATS 4 and 5 patients (CI 1.4, 1.5) continued to exceed the ACEM recommended performance indicator of 70% - that is 851,101 ATS 4 (93 HCOs) and 318,980 ATS 5 (90 HCOs) presentations treated in a timely way.

The CIs continuing to experience improvement between 2013 and 2020 included: fewer patients leaving without being seen (CI 1.6, CI 3.3); fewer patients requiring rapid response calls within 4-hours of admission to ward from ED (CI 4.2); there were more episodes of discharge communication (CI 6.1, 6.2); more documentation of initial pain assessment (CI 7.1) and fewer unplanned representations (CI 8.1). Understanding of why some CIs are improving while others deteriorate, and the associated factors is needed to inform solutions and translate into sustainable strategies enabling CIs to be met in the future.

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Summary Of Results

In 2020 there were 1,212 submissions from 96 HCOs for 22 CIs. Of the 14 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

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

Of the 11 trended process indicators:

- six improved and four deteriorated

Of the three trended outcome indicators:

- two improved
- none deteriorated

Four 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 one indicator. 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)	99.3		2 (2%)	121 (79%)	149 (97%)	154	↑ ✓
1.2 ATS Category 2 - medically assessed and treated within 10 minutes (H)	76.6		31 (33%)	18,263 (17%)	49,154 (45%)	108,649	↓ ✗
1.3 ATS Category 3 - medically assessed and treated within 30 minutes (H)	69.0		22 (24%)	81,163 (22%)	210,058 (56%)	374,710	↑ ✓
1.4 ATS Category 4 - medically assessed and treated within 60 minutes (H)	77.2		23 (25%)	57,516 (23%)	162,588 (65%)	251,457	↑ ✓
1.5 ATS Category 5 - medically assessed and treated within 120 minutes (H)	94.6		42 (47%)	7,632 (42%)	13,509 (74%)	18,300	↑ ✓
1.6 Patients who left the ED after triage without being seen (L)	2.64		24 (40%)	11,283 (21%)	30,932 (57%)	54,703	↓ ✓
ST-segment elevated myocardial infarction (STEMI) management							
2.1 STEMI patients who receive thrombolytic therapy within 30 minutes (H)	34.2				4 (8%)	52	↓ ✗
2.2 Time to balloon opening within 90 minutes (H)	85.0				1 (17%)	6	
2.3 Time to balloon opening within 60 minutes (H)	42.5					23	

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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)	27.1		4 (22%)	169 (3%)	1,695 (35%)	4,889	↓ ✗
3.2 Mental health patients discharged from the ED within 4 hours (H)	50.5		5 (26%)	928 (11%)	5,127 (62%)	8,247	↓ ✗
3.3 Mental health patients who did not wait following clinical documentation (L)	2.64		4 (25%)	268 (49%)	486 (88%)	551	↓ ✓
Critical Care							
4.1 ED time within 4 hours for ICU admissions (H)	42.2		3 (27%)	155 (3%)	1,347 (29%)	4,722	
4.2 Rapid response system call within 4 hours of admission to the ward from the ED (L)	0.27	Metropolitan	2 (15%)	14 (7%)	62 (32%)	196	
Sepsis management							
5.1 Time of antibiotic administration for paediatric patients within 60 minutes (H)	11.1					16	
5.2 Time of antibiotic administration for adult patients within 60 minutes (H)	52.5				43 (11%)	379	
Discharge Communication							
6.1 Documented evidence of clinical management plan provided to an ongoing care provider (H)	95.9		3 (30%)	47 (3%)		1,437	↑ ✓
6.2 Documented evidence of patient-centred discharge information and instructions provided to the patient or carer (H)	78.2		1 (11%)	14 (8%)	101 (59%)	171	
Pain management							
7.1 Documented initial pain assessment at triage (H)	99.7		2 (67%)	52 (93%)	56 (100%)	56	
7.2 Analgesic therapy within 30 minutes for all patients with moderate or severe pain (H)	35.0				5 (8%)	65	
7.3 Documented pain reassessment within 30 minutes of analgesic therapy (H)	56.2				26 (81%)	32	

EMERGENCY MEDICINE

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Unplanned re-attendance							
8.1 Patients who have an unplanned re-attendance to the ED within 48 hours of initial presentation and who require admission (L)	1.32		11 (44%)	1,566 (22%)	4,606 (66%)	6,976	↑

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

GASTROINTESTINAL ENDOSCOPY

General Comments

Associate Professor Stephen Pianko
Gastroenterological Society of Australia

The ACHS Gastrointestinal Endoscopy CIs provide important information about the provision of endoscopic services in the ACHS accredited day surgeries and integrated facilities within the private and public hospitals. The report examines six CIs and provides comparative data over the last eight years. To avoid bias between freestanding facilities and overnight hospitals, only day procedures were included in the analysis. The report provides information about the overall results for each CI with some overall outlier information. Individual institutions were provided with feedback about their own data but these are not included in this report. The data was however reviewed by the statistician and if an HCO was an outlier in one CI they were not consistently outliers in the other CI. In fact, in all the indicators there were relatively few outliers.

The first indicator CI 1.1 Failure to reach caecum due to inadequate bowel preparation assessed 221,306 individuals, making it a powerful assessment. With increased attention on quality endoscopy the number of HCOs contributing data increased significantly as did the number of patients in the data set. The adequacy of bowel preparation is an essential requirement for performing high quality diagnostic and therapeutic colonoscopy. Between 2013-2019 this CI has been steady at around 0.42 per 100 colonoscopies with virtually no fluctuation over this period despite an increase in colonoscopy numbers from approximately 40,000 to 111,000. On this occasion, the rate increased from 0.42 in 2019 to 0.53 in 2020. The reason is unclear but the rise in the rate may be from new contributors (1,175 in 2020 compared with 472 HCOs in 2019). One of the biggest reasons is the difference in failure to reach the cecum rate between public and private sector of 1.63 versus 0.42 respectively. As in previous years, the public hospital patients fared worse than private day surgery/hospital patients (1.63 per 100 compared with 0.42 per 100 colonoscopies), which may be due to multiple reasons including patient motivation and education provided by the endoscopist prior to the procedure. Unlike last year the outliers were larger public centres rather than the smaller centres in 2019. In fact, the public sector excess rate is almost entirely driven by one large public health care region in Sydney that had a rate of around six per 100 colonoscopies. When the worst 10% of the public and private group were excluded, the rates were almost identical. In essence the increased failure to reach the caecum is only an issue for one large public group to address.

Unfortunately no data is provided about the timing and type of bowel preparation in the HCOs as split bowel preparation may improve this indicator[1]. Once again, I am recommending that the quality of the bowel preparation should also be included in this or a new indicator.

Adverse outcomes associated with colonoscopy and polypectomy have reassuringly been low over the eight-year period. Ongoing endoscopist education and recertification, the introduction of endoscopic clips, and potentially the increased use of cold snaring may all play a role in this. The post-polypectomy perforation rate (CI 2.1) was 0.023 per 100 colonoscopies with polypectomy, and this rate is similar to the last five years. The perforation rate post-colonoscopy without polypectomy (CI 2.2) is also very low at 0.022 per 100 colonoscopies and is essentially the same as the post-polypectomy rate. No analysis was provided for public versus private, but the overall numbers are so small this subgroup analysis may not be relevant. In future it would be interesting to assess complication rates versus experience of endoscopist.

Post-polypectomy bleeding (CI 2.3) was limited to the timeframe of post-colonoscopy until 24 hours. Delayed bleeding and intra-procedure bleeding that was controlled was once again excluded. Excluding delayed bleeding creates a potential failure of the indicator but it is difficult to collect accurate data as patients do not always represent

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to site of original colonoscopy. The post-polypectomy bleeding rate has also continued to fall over the eight-year period and this year is similar to 2019, sitting at 0.040 per 100 colonoscopies, which is very respectable. Once again, improvements in the post-polypectomy bleeding rates may be influenced by education, clips and the introduction of cold snaring for smaller polyps.

Adenoma detection rate (CI 3.1) was assessed for the second time as a clinical indicator. This important indicator is now one of the hallmarks of quality colonoscopy and the basis of endoscopist recertification. A minimum standard of 25% adenoma detection in over 50-year-old patients is required for accreditation in Australia. The adenoma detection rate was 41.2 percent in this report, which is excellent. Unfortunately, an improved denominator of 152,717 for 99 HCOs is far short of the CI 1.1 denominator of 221,306 for 138 HCOs. This once again raises the possibility of reporter bias in that the better endoscopists/HCOs may have been more likely to report their data.

Possible perforation in oesophageal dilatation patients (CI 4.1) was stable and rare in 2020, compared with previous years at 0.54 per 100 patient dilatations.

Aspiration post-endoscopy (CI 5.1) is one of the most serious endoscopic complications. There had been a small increase in this adverse outcome in the previous seven years which improved to 0.025, compared with 0.041 in 2019. The reason for the improvement is unclear. There has certainly not been any improvement in obesity (which is a risk factor for aspiration) but the advent of high flow oxygen for obese patients may be one of the reasons for this. Once again, the aspiration rate was higher in the public versus private hospitals 0.072 versus 0.021, although this may be due to outliers and no allowance is taken for negative risk factors such as obesity and comorbidity.

The final indicator assessed the use of reversal agents in endoscopy (CI 6.1). This was the second time this was assessed and whilst low (0.068 per 100 patients), may reflect the persistent use of fentanyl or midazolam in endoscopy rather than pure propofol anaesthesia. Perhaps this needs to be evaluated and may be a practice that should be reconsidered.

Overall, despite some potential flaws in data collection for certain CIs, the report demonstrates a high quality of endoscopy in the participating HCOs. The increase in number of HCOs and volume of patients' data contributed is very important. Once again the most important areas for future improvement relate to assessing the benefits of split bowel preps and the correlation of adenoma detection rate with withdrawal times[2], endoscopist experience. and ensuring a complete data set for adenoma detection. The outliers in both the public and private sectors need to be assessed with respect to the bowel preparation and aspiration. For most of the colonoscopy-associated adverse outcomes the HCOs appear to have reached an excellent performance level.

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Summary Of Results

In 2020 there were 1,414 submissions from 149 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.

Of the single trended outcome indicators:

- there was no evidence of trend

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 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)	0.53	Private	16 (12%)	315 (27%)	773 (66%)	1,175	↑ ✗
1.2 Failure to reach caecum due to pathology encountered (L)	0.28		9 (11%)	86 (24%)	244 (67%)	364	
Adverse outcomes - colonoscopy / polypectomy							
2.1 Treatment for possible perforation post-polypectomy (L)	0.02				3 (15%)	20	↓ ✓
2.2 Treatment for possible perforation post-colonoscopy (L)	0.02					19	
2.3 Post-polypectomy haemorrhage (L)	0.04		1 (1%)	1 (3%)	12 (39%)	31	↓ ✓
Adenoma detection							
3.1 Adenoma detection rate (N)	41.2						
Oesophageal perforation after dilatation							
4.1 Oesophageal dilatation - possible perforation (L)	0.16				1 (11%)	9	
Aspiration following GI endoscopy							
5.1 Aspiration following GI endoscopy (L)	0.03	Private	1 (1%)	3 (10%)	13 (45%)	29	

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		3 (6%)	23 (61%)	36 (95%)	38	

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

GASTROINTESTINAL ENDOSCOPY

GYNAECOLOGY

General Comments

Dr Martin Ritossa
Royal Australian and New Zealand College of Obstetricians and Gynaecologist SA/NT State and Territory Committee Chair
Chair, ACHS Gynaecology Working Party Version 7

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
Excellence in Women's Health

Thank you once again to those units who participated in this year's ACHS Clinical Standards. With the exception of CI 4.2 Re-admissions for venous thromboembolism within 28 days (which may be a statistical anomaly due to low numbers, considering the rate of thromboprophylaxis for major gynaecological surgery consistently sits above 98%), all the CIs remained stable or improved in the last year. This highlights the great work performed in the Australian healthcare system over the last 12 months, in spite of the strain COVID-19 has placed on us.

This year the focus of this commentary is on indicator 6.1, surgical intervention for heavy menstrual bleeding (HMB). The Australian Commission on Safety and Quality in Health Care (ACSQHC) released its Heavy Menstrual Bleeding Clinical Care Standard[1] in late 2017, and since that time CI 6.1 has demonstrated a slight rise in the rate of hysterectomy performed by reporting HCOs.

HMB has been defined as 'excessive menstrual blood loss which interferes with the woman's physical, emotional, social and material quality of life, and which can occur alone or in combination with other symptoms'[2]. The breadth of management opportunities for HMB has both expanded and improved in the last 50 years, when hysterectomy rates for menstrual disorders were initially observed to be relatively high and to vary significantly between regions[1]. Whilst hysterectomy continues as an option, it is not commonly endorsed as first-line management unless less invasive alternatives are unacceptable or are inappropriate[2].
The ACSQHC's Clinical Care Standard outlines the standards for managing women with HMB. These standards work through the management from diagnosis in primary care to specialist intervention. Although hysterectomy will always remain an option for clinically appropriate women, it is recommended that all women are at least offered conservative therapy first. Given care for these women involves multiple practitioners over multiple sites, tracking compliance to the standards is problematic. The ACHS CI 6.1 Surgical intervention for menorrhagia is an attempt to highlight the issues and encourage units to look at ways of reviewing management of HMB to minimise variation in practice and maximise outcomes for women.

CI 6.1 compares the number of women who undergo hysterectomy to the number of women who undergo surgery to treat HMB. The denominator includes women who undergo myomectomy and endometrial ablation as well as those undergoing hysterectomy. While accepting that the vast majority of women undergoing conservative management, including hormonal intrauterine devices (IUDs), are treated in the community and that this number is impossible to track, the CI suggests there has been a slight rise in the percentage of women undergoing hysterectomy since 2018. This data is supported by Medicare data in which the number of women undergoing abdominal and laparoscopic hysterectomy has increased by 1% in the period 2017-21 when compared to 2014-17.

It should be noted that the rate of vaginal hysterectomy has decreased by 7%, but this may be more related to the 19% fall in prolapse surgery in the same time frame. Medicare data over the same timeframe shows an increase use of hormonal IUDs for HMB by 7%. This shows a strong uptake of conservative measures in the community but is not an indicator of the use of hormonal IUDs across the whole system.

What does this all mean? Since the introduction of the HMB standard in 2017, there has been in increase in uptake of hormonal IUD usage in the private system without a reduction in the hysterectomy rate. This may mean that more women are being identified and treated for HMB as a result of the new standard, which is the desired outcome. Alternatively, it may have resulted from a swing in the fitting of hormonal IUDs from the public to the private system, which

General Comments

is equally a desired outcome. It may also indicate that the standard has been more useful for driving quality in primary care and that specialist providers have been meeting and indeed leading the standards for some time. This would be supported by the decreasing rate of hysterectomy from 2014 to 2017.

As usual there were outlying HCOs who reported on CI 6.1, and there may be very good explanations for these results. The outlying HCOs, however, should use the ACSQHC's HMB Clinical Care Standard as a guide to review their practice and improve outcome for Australian women.

REFERENCES

1. Australian Commission on Safety and Quality in Health Care (ACSQHC) 2017, *Heavy menstrual bleeding clinical care standard*, ACSQHC, Sydney, NSW.
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Summary Of Results

In 2020 there were 339 submissions from 54 HCOs for eight CIs. Of the eight indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

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

Of the six trended process indicators:

- five improved
- none deteriorated.

Of the two trended outcome indicators:

- one improved
- none deteriorated.

Two 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 one indicator. 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 Gynaecological surgery for benign disease - unplanned intraoperative or postoperative blood transfusion (L)	0.60	Private	3 (8%)	21 (10%)	130 (61%)	214	↓✓
1.2 Gynaecological surgery for malignant disease - unplanned intraoperative or post-operative blood transfusion (L)	5.62		1 (8%)	6 (9%)	21 (31%)	68	
Injury to a major viscus							
2.1 Gynaecological surgery - injury to a major viscus with repair (L)	0.17		3 (6%)	15 (16%)	54 (57%)	94	↓✓
Laparoscopic management of an ectopic pregnancy							
3.1 Ectopic pregnancy managed laparoscopically (H)	95.2		1 (3%)	4 (11%)	20 (57%)	35	↑✓
Thromboprophylaxis for major gynaecological surgery							
4.1 Thromboprophylaxis for major gynaecological surgery (H)	98.3		1 (11%)	4 (29%)	11 (79%)	14	↑✓
4.2 Re-admission for venous thromboembolism within 28 days (L)	0.17					4	

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Mesh repair							
5.1 Use of mesh repair for pelvic organ prolapse (L)	3.21		1 (8%)	15 (47%)	28 (88%)	32	
Menorrhagia							
6.1 Surgical intervention for menorrhagia (L)	22.8		2 (13%)	45 (8%)	210 (39%)	533	

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

GYNAECOLOGY

HOSPITAL IN THE HOME

General Comments

Dr James Pollard
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Member, ACHS Hospital in the Home Working Party Version 5

In many ways, the year that was 2020 and the emergence of COVID-19 presented both a challenge and an opportunity to Hospital in the Home (HITH) services across Australia. More than ever, patients were seeking care without physical hospital admission, and capacity was relieved from bed-based care in anticipation of surge demand, both during outbreaks and also for recovery of elective and non-elective care capacity between COVID-19 outbreaks[1].

In this context, the ACHS HITH CIs and their results were notable for the ongoing quality of care provided by reporting organisations. Denominators were broadly up, and reported rates remained low, and those CIs with sufficient data have shown improvement.

Importantly, unexpected deaths remain extremely low across all settings (CI 3.1-3.2), reaffirming HITH as safe care for its chosen cohorts.

Unplanned return to hospital within 24 hours (CI 2.3) continues to show very low rates of return, suggesting patient selection remains appropriate. Metropolitan reporting organisations had a lower rate than non-metropolitan, however further work would need to be undertaken to explore if there are contextual settings such as drivers of discharge and/or earlier return that have led to this result. Overall unplanned return rate (CI 2.1) also demonstrated improvement overall, with some variation by stratum – this also needs exploration of cohort differences, contextual differences and learnings that could be applied across strata.

Unexpected clinical and administrative phone calls remain low (CI 1.1-1.4), noting some limitation in this data and potential scope to rationalise all phone calls. Equally, progress in virtual monitoring, remote consultation and patient cohort changes may mean these CIs may have future variation, as interventions such as unscheduled clinical assessment (CI 1.5) may now be "easier" to provide where travel and other inherent barriers are removed.

Reporting services will take good learnings from these results as they continue to strive and achieve high quality care. The data remains relatively easy to collect, and current non-reporting services will learn from this data and leverage it further by contributing to future data sets.

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Summary Of Results

There are 12 clinical indicators in the Hospital in the Home Indicator Set. In 2020 there were 123 submissions from 21 HCOs for nine 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:

- three improved
- none deteriorated.

The one trended process indicator, improved significantly. Of the three trended outcome indicators:

- two 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. 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
Patient safety, selection, communication and care co-ordination							
1.1 Unexpected clinical telephone calls - adult/paediatric patient (N)	0.928						↓
1.2 Unexpected clinical telephone calls - neonatal patient (N)	No data						
1.3 Unexpected administrative telephone calls - adult/paediatric patient (L)	0.105		3 (75%)	19 (76%)	24 (96%)	25	
1.4 Unexpected administrative telephone calls - neonatal patient (L)	No data						
1.5 Unscheduled clinical assessment - adult/ paediatric patient (L)	0.184		3 (33%)	20 (31%)	55 (86%)	64	↓✓
1.6 Unscheduled clinical assessment - neonatal patient (L)	No data						
Service interruption							
2.1 Unplanned return to hospital - adult/ paediatric patient (L)	0.474	NSW	7 (37%)	131 (28%)	167 (36%)	463	↓✓
2.2 Unplanned return to hospital - neonatal patient (L)	1.747				9 (32%)	28	
2.3 Unplanned return to hospital within 24 hours - adult/paediatric patient (L)	0.086	Vic	2 (15%)	10 (16%)	39 (62%)	63	↓✓
2.4 Unplanned return to hospital within 24 hours - neonatal patient (L)	0.499				4 (50%)	8	

HOSPITAL IN THE HOME

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Unexpected deaths							
3.1 Unexpected deaths during HITH admission - adult/paediatric patient (L)	0.005				1 (33%)	3	
3.2 Unexpected deaths during HITH admission - neonatal patient (L)	0.000					-	

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

HOSPITAL-WIDE

General Comments

Dr David Rankin
Royal Australasian College of Medical Administrators
Chair, ACHS Hospital-Wide Working Party Version 13

Once again, ACHS has collected and collated a valuable data set from across 383 hospitals - 165 public and 218 private. The data provides a solid basis for tracking trends in quality and safety in the Australian hospital sector over the past eight years.

It is delightful to see the significant reduction in pressure injuries, with the rate for CI 3.1 reducing from a 0.073 to 0.026. The highest rates now appear to be clustered in a small number of the largest hospitals. The 37 hospitals (11%) who were outliers had a rate that was six times higher than the group average rate and nearly seven times higher than the 80th percentile rate.

It is curious to see that the inpatient falls rate (CI 4.1) appears to be remarkably stable, with a rate of between 0.29 and 0.32 over the past four years. This is aligned with CI 4.2 Inpatient falls resulting in fracture or closed head injury that has been sitting at between 0.008 and 0.011 over the past six years. Of concern is the variation between hospitals for CI 4.2, with rates varying between 0.01 and 0.05 in private hospitals and 0.01 and 0.11 in public. It would be helpful to know what type and size of hospital have the highest rates.

Any data set like this raises several questions about peer comparison and comparability. We certainly take the report and immediately look at our patient outcome data to try to determine how we compare. It is always helpful to know if you are comparing like with like.

It is curious to see that only 25% of the public hospitals reported on CI 1.1 Unplanned readmissions within 28 days, while 80% of private hospitals submitted data for this indicator. It would be interesting to see the mix of the public hospitals that responded and to know if there is a difference in response rate between the type and size of a facility. Are the public hospitals that responded similar to the private hospitals? It is always a challenge to present graphical data when you have a single significant outlier. How did one private hospital come to report their readmission rate at 65% when the next highest private hospital is around 10%? What is the casemix of the outlier and have their numbers been validated?

For the surgical indicators, it is hard to determine if the patients are admitted for acute or elective surgery. The risk of a Medical Emergency Team (MET) call is substantially different for a patient admitted via the emergency department from an elective admission. Large tertiary hospitals are far more capable of providing a rapid response service than standalone private day surgery hospitals. Is the 30% rise in the rate of rapid response system calls to adult patients (CI 8.1) an outcome of changing capability and access, has there been a change in patient acuity or has the care that has provided resulted in higher patient deterioration?

In unplanned return to the operating room (CI 2.1), the average number of surgical cases for private hospitals is 11,000 per year, while for the public it is only 6,400. This implies there is a relatively high number of smaller hospitals reporting. It is of interest to see that two of the largest hospitals have rates of 400 and 660. Unplanned return to the operating theatre is more likely in major acute, emergency surgical cases compared to planned day surgery cases. Overall, this indicator is proving remarkably stable at 0.28 per 100 surgical patients. This is the same level as reported in 2013 and 2014.

The 11 public hospitals reporting on CI 9.3 Tonsillectomy – significant reactionary haemorrhage averaged 160 cases per year, while the 38 private hospitals average 236. Are these hospitals that specialise in paediatric ear, nose and throat (ENT) surgery, or are they large surgical hospitals who undertake a number of paediatric ENT cases?

General Comments

While there are a wide range of questions that could be raised against each CI, the ACHS data set provides a very valuable picture of comparative performance against an important set of CIs. It is important that we all review our hospital performance against the benchmark data to identify ways we can improve health outcomes for our patients.

General Comments

Professor Virginia Plummer
Australian College of Nursing

Australian College of Nursing

AREA 10: Risk Assessment

The *Australasian Clinical Indicator Report 2013-2020* reports on frailty assessment (CI 10.1) for the first time. The numerator measures the number of inpatients 65 years or older who have a frailty assessment within 24 hours of admission, while the denominator comprises the number of inpatients 65 years or older on admission during the six-month reporting period. The desirable rate is high for this process indicator, however, no data was submitted for the indicator by any of the 383 HCOs who contributed to other Hospital-Wide indicator sets.

The problem is complex and probably a contributing reason for no data submissions; there is a shortage of evidence on various aspects including structured health system interventions to detect and manage this condition.

Frailty is a critical global health issue associated with rapidly growing ageing populations in Australia and internationally[1, 2]. It was first recognised as a research search term in PubMed Medline Medical Subject Headings (MeSH) in January 2018[1], appearing in the literature of the past 20 years[1]. Frailty is referred to as a transitional, age related and reversable state[2], a multi-dimensional syndrome of increased vulnerability to adverse outcomes[3] with physical, psychological and social dimensions[4]. Frailty increases incidence of falls, cardiovascular disease, hypertension, cancer, hospital and nursing home admission and fatal outcomes[5]. The most common setting where worsening in frailty occurs is acute care[3], yet adequate assessment of frailty can be challenging for health professionals in all settings.

Timely assessment and intervention of frailty is essential due to the association with increased morbidity and mortality. There have been various systematic reviews of frailty assessment tools with a range of objectives. A commonly used tool is the Cardiovascular Health Study Frailty Screening Scale, and the evidence shows that the Fried Index is the most commonly used assessment of frailty[6], assessing unintended weight loss, slow gait speed, low physical activity, muscle weakness and exhaustion[6]. If these factors are left untreated there will be likely progress to irreversible disability which is detrimental to independent functioning for older people[7]. Frailty is distinct from disability, but they can overlap[5,7] and the distinction needs to be ensured when assessing disability as an outcome in frailty assessment tools[3].

The FRAILTOOLS protocol described the need to validate scales for different clinical and social settings and integration into management algorithms for frail older people[8]; then to explore their usefulness, and establish the scale with the highest predictive value according to the most common adverse outcomes in frail patients[8]. Despite the availability of several well validated tools, few are used in routine care. The health risks for the population are usually poorly estimated instead, from the presence and severity of chronic medical diagnoses alone[9].

Inclusion of assessment of frailty into routine daily care should be considered, along with the application of non-invasive frailty assessment tools with risk prediction ability, person-centred interventions and more research into preventing frailty and transition between different levels of frailty.

General Comments

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Summary Of Results

In 2020 there were 5,077 submissions from 383 HCOs for 19 CIs. Of the 14 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 and one deteriorated.

Of the ten trended outcome indicators:

- eight improved and two deteriorated.

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 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
Hospital readmissions							
1.1 Unplanned readmissions within 28 days (L)	1.11	Private	37 (17%)	16,156 (48%)	31,331 (93%)	33,847	↑ ✗
Return to the operating room							
2.1 Unplanned return to the operating room during the same admission (L)	0.28		21 (10%)	1,631 (29%)	4,299 (75%)	5,702	↓ ✓
Pressure injuries							
3.1 Inpatients who develop ≥1 pressure injuries (L)	0.03		37 (11%)	1,477 (52%)	2,550 (91%)	2,814	↓ ✓
Inpatient falls							
4.1 Inpatient falls (L)	0.30		111 (31%)	7,967 (19%)	20,873 (49%)	42,522	↓ ✓
4.2 Inpatient falls resulting in fracture or closed head injury (L)	0.010	Private	9 (3%)	93 (7%)	483 (39%)	1,243	↑ ✗
Patient deaths							
5.1 Patient deaths addressed within a clinical audit process (H)	95.2		15 (8%)	654 (67%)	955 (98%)	971	↑ ✓
5.2 Deaths in adult patients who do not have a resuscitation plan (L)	0.11		11 (15%)	396 (44%)	756 (83%)	909	↓ ✓

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Blood transfusion							
6.1 Significant adverse blood transfusion events (L)	0.07			12 (27%)	20 (45%)	44	↓ ✓
6.2 Transfusion episodes where informed patient consent was not documented (L)	1.49			214 (53%)	340 (85%)	402	↓ ✓
6.3 RBC transfusion where Hb reading is ≥100 g/L (L)	2.20	NSW	5 (6%)	137 (43%)	249 (79%)	316	↑ ✗
Thromboprophylaxis							
7.1 VTE risk assessment (H)	52.3	NSW	4 (15%)	6,189 (25%)	20,372 (82%)	24,915	
Minimum standards for rapid response system (RRS) calls							
8.1 Rapid response system calls to adult patients (N)	3.90						↑
8.2 Rapid response system calls to adult patients within 24 hours of admission (N)	0.87						↑
8.3 Adult patients experiencing cardiopulmonary arrest (L)	0.07		9 (5%)	177 (15%)	526 (45%)	1,173	↓ ✓
8.4 Rapid response system attendances within 5 minutes (H)	96.1	NSW	11 (17%)	286 (29%)	788 (80%)	986	
Surgery							
9.1 Pre-operative acute appendicitis - normal histology (L)	7.44	NSW	2 (8%)	18 (10%)	61 (34%)	179	
9.2 Laparoscopic cholecystectomy - bile duct injury requiring operative intervention (L)	0.11		3 (5%)	8 (62%)	11 (85%)	13	↓ ✓
9.3 Tonsillectomy - significant reactionary haemorrhage (L)	0.42	Private	1 (2%)	13 (29%)	28 (62%)	45	↓ ✓
9.4 Hip fracture care (H)	85.8		1 (25%)	10 (16%)	48 (79%)	61	

HOSPITAL-WIDE

INFECTION CONTROL

General Comments

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General comments
The reviewers note the limitations of the data, given not all states are represented and for those states submitting data there appears to be a lack of representation of the available HCOs. Whilst there remains no standardised national surveillance system in Australia, commentary on this report and any understanding of these in the context of practice associated with these outcome measures is limited. We would also like to highlight that one of the reviewers in this group is an ACIPC Consumer Representative and found the data included in this report to be of significance to consumers. We believe there to be great value in the role of consumers in both the development and review of these reports. ACIPC strongly supports further consideration of how reporting of key indicators of concern to healthcare consumers could be achieved.

Deep or Organ/Space Surgical Site Infection
The low number of HCOs that have contributed data limits the ability to comment on trends overall, however, it is noted the significant rate change reduction observed for knee prothesis procedures (CI 1.2). This trend is welcome especially in context of the larger number of HCOs contributing data. It is also noted the variability in the aggregate rate of deep or organ / space SSIs following lower segment caesarean section (LSCS) procedures performed (CI 1.4). It could be questioned whether this variability in outcome is influenced by variation in practices across HCOs[1].

Surgical antibiotic prophylaxis (SAP)
Overall, the appropriate use of antibiotic prophylaxis for surgery remains stable with upward trends in all CIs except for CI 2.4 Timing of SAP for the knee prosthesis procedure. There continues to be room for improvement with all joint-related SAP CIs generally performing less than SAP related to lower segment caesarean (LSCS) procedures (CI 2.7-2.9). In this report the joint-related SAP CIs demonstrate significant representation from private HCOs to potentially being overrepresented, which is not the case for CI 2.7-2.9 where the contribution of data is almost equal.

Haemodialysis access-associated bloodstream infection (BSI) surveillance
Although neither indicator showed a significant trend, it was promising to see the number of AV-fistula access-associated bloodstream infections (CI 3.1) has improved considering the number of patients dialysed through AV-fistula. It is difficult to provide comment on the rate of bloodstream infections in centrally inserted cuffed line access (CI 3.2) due to the lack of representation of HCOs, there is also variability in the aggregate rate which may be due to practice variation or data sample size.

Vancomycin Resistant Enterococci (VRE)
It is difficult to make comment on the rate of VRE infection within the ICU (CI 4.1) in this report. Although it is noted in the report that the prevalence of VRE infection is rising in Australia, the most recent report from the Australian Group on Antimicrobial Resistance (AGAR) covers data from 2006 to 2014[2]. Although the aggregate rate in the report is decreasing, it is difficult to interpret this in consideration of national data. This highlights the current limitations and delay in the monitoring of multi-resistant organisms in Australia without a national surveillance system[3].

Staff immunisation
Healthcare worker safety is easily arguable to be as important as patient safety. This includes from a consumer perspective, because staff immunisation will lower the risk to patients and also reduce the absenteeism of healthcare

General Comments

workers. Consumers going into hospitals want to know that all healthcare staff are immunised, especially now with COVID-19. The most significant improvements notable in the staff immunisation indicators is in CI 5.1 Influenza/Flu vaccination for permanent staff and CI 5.2 Hepatitis B vaccination for permanent staff. Again, it should be noted that data from private HCOs is somewhat higher than that contributed by public facilities, yet there is an increase of reporting HCOs overall. Consumers would also be interested in understanding the differences in rates between public and private HCOs and why this may be the case. The increase in influenza and hepatitis B vaccination could be an artefact of the increasing requirement at a state level that these, and other vaccine preventable diseases, are a condition of employment[4].

Occupational exposure to blood and body fluids

The representation of both public and private HCOs is closer to being equal in this dataset. Both CI 6.1 and 6.2 are demonstrating a continuing downward trend in incidence. This may be due to improvements in care technologies that prevent occupational exposures, particularly for parenteral exposures such as "needlestick" injuries with the use of self-retracting needles and needleless intravenous access systems. There remains a significant amount of improvement required to reduce the incidence of these exposures to achieve rates in the 20th centile range. There is also a question of under-reporting of these exposures which has been reported extensively in the literature[5].

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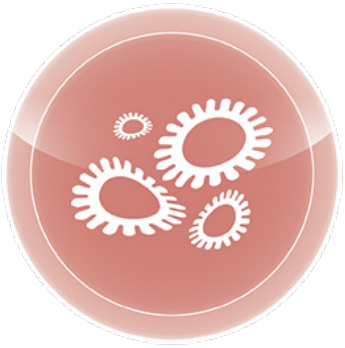

Summary Of Results

In 2020 there were 3,064 submissions from 330 HCOs for 26 CIs. Of the 20 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

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

Of the 11 trended process indicators:

- ten improved
- none deteriorated.

Of the nine trended outcome indicators:

- four improved
- none deteriorated.

Sixteen indicators had outlier gains in excess of 25% of undesirable events. Sixteen indicators demonstrated systematic variation with 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
Surgical site infection							
1.1 Deep or organ / space SSI - hip prosthesis procedure (L)	0.55		1 (1%)	3 (2%)	30 (22%)	135	
1.2 Deep or organ / space SSI - knee prosthesis procedure (L)	0.30		2 (1%)	5 (5%)	37 (36%)	103	↓✓
1.3 Deep or organ / space SSI to chest incision site - CABG (L)	0.84				11 (30%)	37	
1.4 Deep or organ / space SSI - LSCS (L)	0.21				3 (7%)	42	
1.5 Deep or organ/space SSI - open colon surgery (L)	4.29					21	
1.6 Deep or organ/space SSI - open rectal surgery (L)	1.22		1 (8%)	3 (43%)	3 (43%)	7	
1.7 Deep or organ/space SSI - laparoscopic assisted large bowel resection (L)	1.09					6	
Surgical antibiotic prophylaxis (SAP)							
2.1 Timing of SAP for the hip prosthesis procedure (H)	95.0		2 (4%)	109 (56%)	180 (93%)	194	↑✓
2.2 Correct SAP and dose for the hip prosthesis procedure (H)	89.8		6 (13%)	172 (44%)	349 (89%)	394	↑✓
2.3 Discontinuation of SAP within 24 hours of the hip prosthesis procedure (H)	87.3		10 (22%)	227 (46%)	440 (90%)	491	↑✓

INFECTION CONTROL

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)	97.2		6 (14%)	48 (36%)	112 (84%)	134	
2.5 Correct SAP and dose for the knee prosthesis procedure (H)	0.18		9 (20%)	151 (41%)	316 (85%)	371	↑✓
2.6 Discontinuation of SAP within 24 hours of the knee prosthesis procedure (H)	0.18		9 (20%)	258 (51%)	460 (90%)	510	↑✓
2.7 Timing of SAP for the LSCS procedure (H)	0.18	Metropolitan	7 (26%)	80 (41%)	183 (93%)	196	↑✓
2.8 Correct SAP and dose for the LSCS procedure (H)	0.18		5 (19%)	43 (25%)	137 (81%)	170	↑✓
2.9 Discontinuation of SAP within 24 hours of the LSCS procedure (H)	99.6		5 (19%)	39 (35%)	75 (67%)	112	↑✓
Haemodialysis access-associated bloodstream infection surveillance							
3.1 Haemodialysis - AV-fistula access-associated BSI (L)	0.02	NSW				2	
3.2 Haemodialysis - Centrally Inserted cuffed line access-associated BSI (L)	1.01				7 (37%)	19	
Vancomycin Resistant Enterococci (VRE)							
4.1 VRE infection within the ICU (L)	1.85		3 (6%)	22 (76%)	26 (90%)	29	↓✓
Staff immunisation							
5.1 Influenza / Flu vaccination for permanent staff (H)	81.8		19 (24%)	1,991 (26%)	5,677 (75%)	7,543	↑✓
5.2 Hepatitis B vaccination for permanent staff (H)	85.1	NSW	21 (40%)	1,498 (31%)	3,359 (69%)	4,840	↑✓
5.3 MMR vaccination for permanent staff (H)	86.6	NSW	17 (35%)	1,249 (34%)	3,177 (85%)	3,727	
5.4 Pertussis vaccination for permanent staff (H)	80.2	NSW	16 (33%)	2,168 (41%)	4,344 (82%)	5,324	
5.5 Varicella vaccination for permanent staff (H)	86.7	NSW	20 (43%)	1,568 (44%)	3,084 (86%)	3,593	

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

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		11 (4%)	237 (8%)	1,511 (50%)	3,009	↓ ✓
6.2 Reported non-parenteral exposures sustained by staff (L)	0.009		12 (4%)	131 (13%)	491 (50%)	984	↓ ✓

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

INTENSIVE CARE

General Comments

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Member, ACHS Intensive Care Working Party Version 5

There are 189 intensive care units (ICUs) in Australia and there were 1,122 submissions from 95 HCOs for the 15 Intensive Care CIs for 2020. The small number of HCOs submitting data for some adult ICU indicators raises questions about generalisability and particularly limits interpretation of regional subgroups. However, the present findings still provide some useful insight into overall practice.

Of the 12 indicators which had a desirable level of high or low and sufficient data to test for trend, nine improved, one deteriorated, and two demonstrated no evidence of trend.

Despite Victorian ICUs bearing the brunt of the COVID-19 pandemic in 2020, the records from indicators assessing access and exit block (CI 1.1-1.7) do not suggest that resources were stretched, although the number of patients in the denominators for Victorian HCOs was less than half of that for HCOs in NSW for these indicators. This may mean that less data were collected and or analysed from Victorian ICUs because of the pandemic.

The access CIs may actually have significantly under-estimated how many patients were not able to be admitted to ICU in 2020 because hospital-wide cancellations of major elective surgery which would have normally required ICU admission during the first and second waves of the pandemic will not be reflected in these ICU metrics. It is thus possible the access problem is even greater than reported here. This would be the case particularly in the public ICUs. One jurisdiction (Qld) is more of an outlier than others with regards to access block, indicating that possibly ICU bed capacity is not adequate for demand more so than in other jurisdictions.

Access to and exit from ICU is dependent on both ICU and hospital-wide systems. The data continue to demonstrate the bimodal distribution described in 2019. Better resourced HCOs that are more likely to be private and metropolitan have rates that are lower and therefore more desirable. On the other hand, HCOs that are public and non-metropolitan tend to have higher rates that on the face of it look less desirable. In 2020 there were 16 outliers from 11 HCOs reporting on CI 1.1 ICU – adult non-admission due to inadequate resources. It is likely that the outliers are all the same HCOs and they are clearly under resourced.

Discharge delay (CI 1.4) is significant in one jurisdiction (NSW) despite the highest ICU bed to population ratio. A structured indicator to assess the impact of discharge delay on ICU access may yield useful information. The delay itself may be beneficial for the 'delayed high-risk patient' and result in lower mortality and readmission risk. For more than 2/3 of patients discharged from ICU in a recent study, however, there was no benefit to remaining in ICU beyond when considered ready to leave[1].

For the indicator that deteriorated (CI 2.1 Rapid response system calls to adult ICU patients within 48 hours of ICU discharge), the desired low rate is somewhat controversial as a low rate may mean that some deteriorating patients are missed. Therefore, it doesn't necessarily mean there has been a deterioration in the quality of care. In certain

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General Comments

jurisdictions an increase in the number of calls may also relate to the ICU capacity being constrained prompting earlier discharge.

VTE prophylaxis (CI 3.1) rates are lower in one jurisdiction (NSW). This may be a data collection error or a true issue and needs further review by the jurisdiction.

There has been a further increase in the number of HCOs reporting on CI 6.1 Empathetic practice towards families of ICU patients. This is up from 12 last year to 18 this year, however the time period for the follow-up contact changed from four weeks to 12 weeks in July 2020, when Version 6 was introduced. There was participation from private and non-metropolitan HCOs as well as metropolitan public HCOs with more resources. The 80th centile rate of 95.8 suggests that in a small number of HCOs a family member received follow up after a patient's death on almost every occasion which is very pleasing.

The paediatric indicators (CI 1.6-1.7, 2.2, 4.2, 5.2) in the report are extremely difficult to interpret due to the small numbers of HCOs and children involved; the data behind the indicators represent less than 7% of children admitted to ICUs in Australia 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 (CI 4.2), and the cancellation rate of zero for elective surgery (CI 1.7). 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 seven HCOs. None of the indicators are worryingly high, and there were no discernible trends, but these observations simply reflect the nature of the institutions reporting and the very low number of admissions recorded.

One of the main themes appears to be one of persisting lack of access to critical care services in public Australian ICUs. Given the impact of the COVID-19 pandemic, it is likely that this continues to put the Australian population at risk if there were to be another pandemic wave in 2021 (....as is now happening in NSW and with increasing numbers of cases in Victoria). There is a real danger that our ICU capacity may be inadequate to meet the needs of the population.

Greater reporting of these indicators to ACHS should be encouraged, particularly in regions such as Victoria. Without visibility of measures such as these, it is impossible to argue effectively for appropriate ICU resources.

General Comments

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Australian College of Critical Care Nurses

Data collected from 2013-2019 and January to June 2020 were from Intensive Care Clinical Indicators version 5. Version 6 data was collected from July 2020, and the only change between the versions is CI 6.1 Empathetic practices toward families of ICU patients. The time frame for contacting family members after patient deaths was extended from within four weeks to within 12 weeks. There are a total of 16 clinical indicators.

Despite the impact of and the interruptions caused by COVID 19, participating ICUs performed well, and showed improvements in most of the access and exit block indicators for adult ICUs (CI 1.1-1.5). There was no change in CI 1.6 Paediatric discharge between 6pm-6am (annual rate of 9.1 cases per 100 patients), and CI 1.7 ICU – elective paediatric surgical cases deferred or cancelled which remained at zero cases for five years.

It is worth noting that for CI 1.5 ICU - adult discharge between 6pm and 6am, although it shows a trend of improvement (fitted rate from 15.0-13.9, a change of 1.1), the rate remains quite high at 13.9 cases per 100 patients. In addition, there is a clear difference between the ICUs in public hospitals (stratum rate 17.8 per 100 patients) and private hospitals (3.5 per 100 patients); and there are differences across the states (NSW 19.3, Qld 7.77, SA 6.01, Vic 17.5, and the rest at 7.46 per 100 patients). Factors influencing ICU patient flow are complex, but the differences between public and private hospitals, and across the various states indicate the potential impact of contextual factors, such as patient flow management across the hospitals, after hours patient care post discharge, and ICU bed supply and demand in certain hospitals, and so on. A recent systematic review with meta-analysis shows that after hours discharge was strongly associated with increased hospital death and increased ICU readmission[1].

Future quality improvement activity, such as observational studies, should be conducted in the ICUs with higher results in this CI to investigate and address the contributing factors to ensure patient safety after ICU discharge.

CI 2.1 Rapid response system calls to adult ICU patients within 48 hours of ICU discharge deteriorated from 4.2 to 5.3, with an increase of 1.1 cases per 100 patients. This change does not necessarily mean an increased patient deterioration post-ICU discharge, as increased awareness of the impact of delayed detection of deterioration on patient outcomes, and efforts made to detect deteriorating patients early could contribute to more proactive rapid response calls. This indicator should be closely monitored by HCOs.

CI 4.1 Adult ICU-associated CI-CLABSI shows that fitted rate improved from 0.51 to 0.35, a change of 0.17 per 1,000 line-days. This is a promising trend for the last few years for this CI. This result indicates an overall ongoing effort from contributing HCOs in their CLABSI prevention activities.

CI 6.1 Empathetic practices toward families of ICU patients, which measures the number of occasions that at least one family member was contacted within 12 weeks after the patient's death, had a rate at 75.6 per 100 patients, which shows that one out of every four patient's families were not contacted. Contacting family members after patient deaths is part of family-centered care. Stronger efforts from ICUs are needed.

The data set provides important information for ICUs of contributing HCOs regarding their performance in these areas. Monitoring the ongoing trend of the collected CI data and associated patient outcomes enables clinicians to respond to issues, and take timely action.

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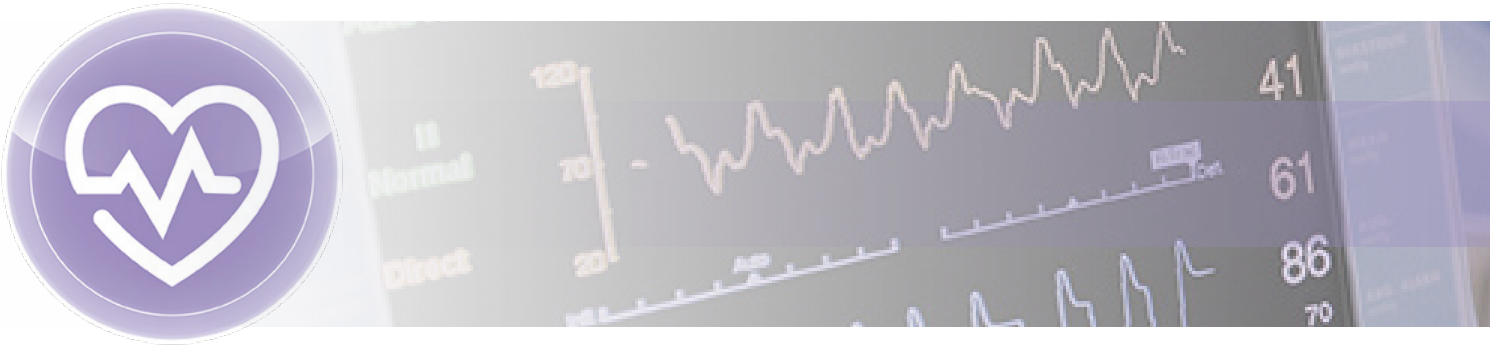

Summary Of Results

In 2020 there were 1,122 submissions from 95 HCOs for 15 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:

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

Of the six trended process indicators:

- five improved
- none deteriorated.

Of the three trended outcome 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 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
Access and exit block							
1.1 ICU - adult non-admission due to inadequate resources (L)	0.95	Private	11 (20%)	326 (55%)	574 (97%)	591	↓✓
1.2 ICU - elective adult surgical cases deferred or cancelled due to unavailability of bed (L)	0.83	Private	9 (17%)	169 (64%)	257 (97%)	266	↓✓
1.3 ICU - adult transfer to another facility / ICU due to unavailability of bed (L)	0.48	Private	8 (15%)	149 (50%)	274 (92%)	299	↓✓
1.4 ICU - adult discharge delay >12 hours (L)	13.5	Private	22 (34%)	3,187 (34%)	8,417 (91%)	9,265	↓✓
1.5 ICU - adult discharge between 6pm and 6am (L)	13.4	Private	27 (39%)	3,291 (34%)	7,449 (78%)	9,607	↓✓
1.6 ICU - paediatric discharge between 6pm and 6am (L)	9.11		1 (9%)	13 (23%)	19 (33%)	57	
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)	5.15	Private	8 (14%)	897 (29%)	2,423 (79%)	3,084	↑✗

INTENSIVE CARE

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Intensive care patient treatment (continued)							
2.2 Rapid response system calls to paediatric ICU patients within 48 hours of ICU discharge (L)	1.30					8	
3.1 VTE prophylaxis in adult patients within 24 hours of ICU admission (H)	94.8	Private	21 (31%)	1,637 (47%)	3,407 (98%)	3,489	↑ ✓
Central line-associated bloodstream infection							
4.1 Adult ICU-associated CI-CLABSI (L)	0.35		2 (3%)	3 (7%)	8 (20%)	41	↓ ✓
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)	98.1		9 (13%)	1,152 (81%)	1,416 (100%)	1,423	↑ ✓
5.2 Participation in the ANZICS CORE Paediatric Intensive Care (ANZPIC) registry (H)	98.5		1 (14%)	3 (33%)	8 (89%)	9	↑ ✓
5.3 Participation in the ANZICS CORE Critical Care Resources survey (N)	98.3						
Empathetic practice							
6.1 Empathetic practice toward families of ICU patients (H)	75.6		4 (22%)	34 (13%)	225 (83%)	272	

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

INTERNAL MEDICINE

General Comments

On an average day, 100 Australians have a stroke[1], and nearly 40,000 acute care hospitalisations annually have a principal diagnosis of stroke[2]. The average length of stay is generally seven days in a hospital and 24 days in rehabilitation[2]. The availability of stroke units significantly improves health outcomes for these patients; however the number of these units is still low compared with other similar countries[3]. Given the management and treatment of stroke is complex and the lack of substantial national data on many aspects of hospitalised stroke patients[3], HCOs are strongly encouraged to report on the acute stroke management CIs (3.1-3.4).

Despite low HCO numbers, CIs 3.1 Documentation of swallowing screen conducted within 24 hours prior to food or fluid intake and 3.3 Plan for ongoing community care provided to patient/family have increased to their highest rates - 81.2 and 91.5% respectively. Early detection of dysphagia has been associated with reduced length of stay, hospital costs, and the risk of pneumonia[4], while a plan for ongoing community care outlines appropriate management strategies to guide care once the person returns to the community.

Both CIs 3.2 Documented physiotherapy assessment ≤48 hours of presentation and 3.4 Documented treatment in a stroke unit during hospital stay have fluctuated over the last eight years, with 2020 data revealing 84.2% receive the physiotherapy assessment in the required timeframe and 84.1% obtain treatment in a stroke unit.

It is disappointing that few HCOs are collecting the cardiovascular disease (1.1-1.5), endocrine disease (2.1), respiratory disease (CI 5.1-5.3), gastrointestinal disease (CI 6.1-6.2), oncology (CI 7.1), and care of the elderly (CI 4.1-4.4) CIs, given the prevalence of patients with these conditions in Australian acute care services[5].

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Summary Of Results

There are twenty clinical indicators in the Internal Medicine Indicator Set. In 2020 there were 112 submissions from 20 HCOs for 18 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:

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

Of the four trended process indicators:

- three improved
- none deteriorated.

The single trended outcome indicator improved. 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)	94.9		1 (50%)	10 (77%)	12 (92%)	13	
1.2 CHF - prescribed beta blocker (H)	96.3				4 (33%)	12	
1.3 CHF and AF - prescribed warfarin (H)	100.0					-	
1.4 CHF - chronic disease management referral including physical rehabilitation (H)	89.9					21	
1.5 PTCA - vessels where primary success achieved (H)	97.0				21 (24%)	89	↑ ✓
Endocrine disease							
2.1 Hospitalised patients with severe hypoglycaemia <2.8 mmol/L (L)	23.1				3 (5%)	60	
Acute stroke management							
3.1 Acute stroke - documentation of swallowing screen conducted within 24 hours prior to food or fluid intake (H)	81.2		2 (22%)	41 (14%)	67 (22%)	298	↑ ✓
3.2 Acute stroke - documented physiotherapy assessment within 48 hours of presentation (H)	84.2		1 (11%)	29 (12%)	82 (33%)	251	
3.3 Acute stroke - plan for ongoing community care provided to patient / family (H)	91.5		1 (14%)	18 (19%)	66 (71%)	93	↑ ✓

INTERNAL MEDICINE

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)	84.1		3 (43%)	65 (27%)	127 (53%)	238	
Care of the elderly							
4.1 Medical patients ≥65 years - cognition assessment using validated tool (H)	92.9					65	
4.2 Geriatric patients - documented assessment of physical function (H)	95.0					37	
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)	37.2		1 (17%)	19 (7%)	82 (32%)	255	
5.2 Acute asthma - assessment of severity documented on admission (H)	82.8				2 (13%)	16	
5.3 Acute asthma - appropriate discharge plan documented (H)	63.4				4 (12%)	34	
Gastrointestinal disease							
6.1 Haematemesis / melaena with blood transfusion - gastroscopy within 24 hours (H)	83.3					6	
6.2 Haematemesis / melaena with blood transfusion & subsequent death (L)	4.17					2	
Onocology							
7.1 Time to administration of antibiotics for patients admitted with febrile neutropenia (H)	46.2					7	

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

MATERNITY

General Comments

Dr Vijay Roach
President, Royal Australian and New Zealand College of Obstetricians and Gynaecologists

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists is again pleased to have the opportunity to comment on the maternity indicators in the *Australasian Clinical Indicator Report for 2013-2020*. Women and their carers continue to derive significant benefits from this data collection and the College congratulates ACHS on another year of excellent work. For women, the data provides realistic expectations for their pregnancy and birth. For obstetricians and midwives, the clinical indicators reveal important trends in maternity care and outcomes. The opportunity to assess eight consecutive years of longitudinal data is particularly valuable.

There are a number of issues to highlight in this most recent report. In 2011, ACHS in consultation with RANZCOG contributors, introduced a clinical indicator that reports the rate of severe fetal growth restriction (FGR) at or beyond the expected due date for the pregnancy (CI 8.1). This is important because we know that the mortality of the FGR fetus increases exponentially as the gestation advances beyond 39 weeks' gestation[1]. The improvement in this statistic continued in 2020 so that the incidence was down to 1.16% (the lowest ever) after beginning at 1.62%. This is a more than 30% improvement over the time period and ACHS must be congratulated for focussing maternity carers (both obstetricians and midwives) on the early detection of FGR and avoiding the particular risks associated with an FGR pregnancy progressing beyond the due date of confinement.

The trend for an increasing incidence of induction of labour in the "selected primipara" (CI 1.2) remains strong. In 2020, the rate was 47.4%, after a rate of 44.9% in 2019. The longitudinal trend is most revealing with an almost linear rise from 31.6% in 2013. There are of course many maternity conditions where the evidence favours induction of labour at term over awaiting spontaneous labour[2]. Particularly relevant to contemporary practice is evidence favouring induction of labour in the presence of fetal macrosomia[3].

The increasingly risk averse maternity population translates to more women choosing risk minimisation strategies over a "leave it to nature" approach[4].

It is reassuring to see the lowest figure recorded for the incidence of third-degree tears (CI 3.5) with a rate in the selected primipara of 4.19% after previously being recorded as high as 5.18% in 2015 and 2016. This decrease has occurred without a corresponding decrease in instrumental births which are an important recognised risk factor for third- and fourth-degree tears. The most likely explanation is that an increasing number of low-cavity instrumental births in relation to epidural analgesia is counter-balanced by a decreasing rate of difficult mid-cavity instrumental births that would be most associated with severe perineal trauma[5].

Unsurprisingly, the caesarean section rate in selected primipara (CI 1.4) continues to increase, reaching 32.8% in 2020. It is interesting to see that the increase since 2019 of 0.5% is the least in the last five years and may indicate that the rate of increase is slowing. A rising caesarean section rate is to be expected given the increasingly "risk averse" population who are older, more often obese and with a lower planned future parity. The risk averse mother is more likely to choose caesarean section in preference to a long difficult labour and a mid-cavity instrumental birth that may be accompanied by a postpartum haemorrhage and serious trauma to the pelvic floor.

General Comments

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Summary Of Results

In 2020 there were 3,655 submissions from 129 HCOs for 20 CIs. Of the 19 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

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

Of the 15 trended process indicators:

- five improved and nine deteriorated.

Of the four trended outcome indicators:

- two improved and one deteriorated.

Two 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 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
Outcome of selected primipara							
1.1 Spontaneous vaginal birth (H)	40.2	NSW	10 (9%)	663 (3%)	2,696 (14%)	19,410	↓ ✗
1.2 Induction of labour (L)	47.4		4 (4%)	244 (2%)	1,969 (13%)	15,329	↑ ✗
1.3 Instrumental vaginal birth (L)	26.6		4 (4%)	137 (2%)	1,273 (15%)	8,711	↑ ✗
1.4 Caesarean section (L)	32.8		13 (12%)	735 (7%)	2,092 (19%)	10,803	↑ ✗
Vaginal birth after caesarean section (VBAC)							
2.1 Vaginal delivery following previous birth by caesarean section (N)	11.3						↓
Major perineal tears & surgical repair of the perineum							
3.1 Intact perineum (H)	10.2		5 (5%)	137 (1%)	1,736 (10%)	18,222	↓ ✗
3.2 Episiotomy and no perineal tear (L)	39.2		4 (5%)	251 (4%)	1,609 (23%)	7,032	↑ ✗
3.3 Perineal tear and no episiotomy (L)	40.6	NSW	10 (11%)	328 (4%)	1,547 (21%)	7,314	↓ ✓
3.4 Episiotomy and perineal tear (L)	7.32	NSW	5 (6%)	128 (10%)	491 (38%)	1,288	↑ ✗

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Major perineal tears & surgical repair of the perineum (continued)							
3.5 Surgical repair of perineum for third-degree tear (L)	4.19	Private	2 (2%)	25 (3%)	267 (31%)	862	↓ ✓
3.6 Surgical repair of perineum for fourth-degree tear (L)	0.39		2 (2%)	15 (16%)	44 (48%)	91	
General anaesthetic for caesarean section							
4.1 General anaesthetic for caesarean section (L)	5.02	Private	9 (9%)	262 (11%)	1,213 (52%)	2,349	↓ ✓
Antibiotic prophylaxis & caesarean section							
5.1 Appropriate prophylactic antibiotic at time of caesarean section (H)	94.1		16 (20%)	791 (43%)	1,549 (85%)	1,830	↑ ✓
Exclusive breastfeeding							
6.1 Selected primipara - exclusive breastfeeding (H)	70.0		9 (18%)	529 (11%)	1,706 (34%)	4,986	↓ ✗
Postpartum haemorrhage / blood transfusions							
7.1 Vaginal birth - blood transfusion (L)	1.43		9 (8%)	180 (16%)	517 (45%)	1,149	
7.2 Caesarean section - blood transfusion (L)	1.17	Private	4 (4%)	70 (12%)	207 (36%)	583	↓ ✓

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

MATERNITY

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Intrauterine growth restriction (IUGR)							
8.1 Babies - birth weight <2,750 g at 40 weeks gestation or beyond (L)	1.12		1 (1%)	4 (1%)	20 (5%)	364	↓ ✓
Apgar score							
9.1 Term neonates - Apgar score <7 at 5 minutes post-delivery (L)	1.27	Private	9 (8%)	61 (4%)	428 (27%)	1,584	↓ ✓
All admissions of a term baby to special care nursery or neonatal intensive care nursery							
10.1 Term neonates - transferred or admitted to NICN or SCN (L)	10.6	NSW	30 (26%)	2,130 (17%)	6,396 (51%)	12,660	↑ ✗
Specific maternal peripartum adverse events							
11.1 Specific maternal peripartum adverse events addressed within peer review process (H)	96.6		2 (8%)	3 (43%)	5 (71%)	7	↓ ✗

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

MEDICATION SAFETY

General Comments

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

Despite a challenging year for many hospitals, 258 healthcare organisations (HCOs) undertook at least one clinical audit using the ACHS CIs for Medication Safety Version 4 during 2020. Private HCOs remain the major users (71%) compared to public hospitals and two-thirds of participating HCOs were based in metropolitan areas. Of concern is the worsening in CI results for medication-related continuity of care processes, both at admission and discharge, and the low use of CIs that measure processes involving high risk medicines such as antithrombotics and stewardship activities for opioids and antibiotics. This is reflected in results of medication-related processes at admission (CIs 3.1 and 6.1) and medicine information in discharge summaries and discharge patient medication lists (CIs 5.1, 5.3, 5.5 and 5.6).

Similar to 2019 results, the most popular non-automated indicators (CIs 1.1 - 6.1) during the 2020 audit year were CIs 3.1, 3.2, 3.3, 5.5, and 5.6, demonstrating a focus on processes that target medication reconciliation at admission, inpatient medication charting, and communication of medication information for ongoing care after discharge. There continues to be an increasing trend for HCOs to measure CI 3.1 Percentage of patients whose current medications are documented and reconciled at admission and CI 3.2 Percentage of patients whose known adverse drug reactions are documented on the current medication chart. The increasing trend for measuring CI 5.5 Percentage of patients whose discharge summaries contain a current, accurate and comprehensive list of medicines and CI 5.6 Percentage of patients who receive a current, accurate and comprehensive medication list at the time of hospital discharge, however, was not seen in 2020.

It was reassuring to see a much greater number of patient records in 2020 were audited for CI 6.1 Percentage of patients that are reviewed by a clinical pharmacist within one day of admission compared to previous years.

Of concern, the rate of pharmacist review within one day of admission continues to deteriorate (56% in 2020 compared to 75% in 2015 and 2016) and there was one HCO which had a particularly low rate of 35%. Given that this review process should accompany medication reconciliation processes at admission (measured by CI 3.1), it is not surprising that results for CI 3.1 (59% in 2020) do not significantly improve. The processes at admission indicate the potential for increasing risk of medication-related harm at admission and should be of concern to health administrators and clinicians. The results for CI 3.1 remain worse in public HCOs compared to private HCOs and Victoria and Western Australia (WA) performed very well and suggest that other jurisdictions should be exploring the strategies that Victorian and WA hospitals have implemented to achieve CI 3.1 results of approximately 90%.

Similar to results in 2019, audit results of 50% for CI 5.6 Percentage of patients who receive a current, accurate and comprehensive medication list at the time of hospital discharge continue to show substantial room for improvement. Similar numbers of public and private HCOs used CI 5.6 but public hospitals reviewed a 20-fold number of patient records suggesting that eMMS analysis was used to obtain the result. The result for CI 5.5 Percentage of patients whose discharge summaries contain a current, accurate and comprehensive list of medicines was 84%, falling from the highs of 95-99% in 2016-2019. As stated in the 2020 commentary, these previous high results were dubious and warranted further investigation. Far fewer patient records have been audited in CI 5.5 compared to those in CI 5.6. There would be benefit in auditing these two CIs at the same time.

The results for CI 3.2 Percentage of patients whose known adverse drug reactions are documented on the current medication chart remain consistently high (96%, with more than 48,000 patient records of 94 HCOs were audited. In

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contrast, CI 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 was only undertaken by 2 HCOs using 77 records, despite this being an important strategy to minimise future ADRs. A renewed emphasis on ensuring continuity of ADR information is required.

The numbers of HCOs undertaking audits involving antibiotic therapy, antithrombotic therapy and pain management were low [average 4.0, (range 1-6)]. This is of significant concern given that these CIs target commonly encountered medication safety issues; although it may be that other measures are being used by HCOs to measure the safety and quality of care involving use of these medications.

Although 71% of all HCOs represented the private HCO sector, there were generally far greater indicator denominator numbers (patients, charts, orders) in the public HCO sector. This may or may not be appropriate.

It remains critically important that clinical audits that address local issues as well as well-recognised evidence-based gaps are well-resourced in busy resource-limited healthcare environments. The ACHS CI set provides the use of validated CIs targeted at well-recognised gaps in medication safety. The collation of CI results provides benchmarking information but importantly hospitals need to look at their results and previous results to assess their need for further quality improvement intervention. Comparisons of the results between sectors, whether public versus private or metropolitan versus rural, need to interpreted very cautiously as they may not have been measured using the same methodology or have the same casemix. Feedback from HCOs regarding audits in the area of medication safety should be regularly obtained to ensure appropriate responsiveness in the healthcare system.

Summary Of Results

In 2020 there were 1,067 submissions from 258 HCOs for 19 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:

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

Of the ten trended process indicators:

- none improved
- six deteriorated.

Of the single trended outcome indicator:

- the indicator improved.

Seven 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 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
Antithrombotic therapy							
1.1 Percentage of patients prescribed enoxaparin whose dosing schedule is appropriate (H)	76.7		1 (20%)	37 (35%)	98 (92%)	107	
1.2 Percentage of patients prescribed hospital initiated warfarin whose loading doses are consistent with a Drug and Therapeutics Committee approved protocol (H)	47.4				1 (5%)	20	
1.3 Percentage of patients with an INR above 4 whose dosage has been adjusted or reviewed prior to the next warfarin dose (H)	91.2				3 (38%)	8	
Antiobiotic therapy							
2.1 Percentage of prescriptions for restricted antibiotics that are concordant with drug and therapeutics committee approved criteria (H)	66.5		2 (33%)	52 (16%)	62 (20%)	316	↓ ⊗
2.2 Percentage of patients in whom doses of empirical aminoglycoside therapy are continued beyond 48 hours (L)	0.000					-	
2.3 Percentage of patients presenting with community acquired pneumonia that are prescribed guideline concordant antibiotic therapy (H)	72.9				9 (31%)	29	

MEDICATION SAFETY

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)	0.18	Private	15 (14%)	442 (31%)	1,125 (80%)	1,409	
3.2 Percentage of patients whose known adverse drug reactions are documented on the current medication chart (H)	0.18		0.18	0.18	0.18	0.18	↓ ✕
3.3 Percentage of medication orders that include error-prone abbreviations (L)	0.18	Private	0.18	0.18	0.18	0.18	↑ ✕
3.4 Percentage of patients receiving cytotoxic chemotherapy whose treatment is guided by a hospital approved chemotherapy treatment protocol (H)	99.6		3 (10%)	261 (77%)	339 (99%)	341	
Pain Management							
4.1 Percentage of postoperative patient that are given a written pain managemen plan at discharge AND a copy is communicated to the primary care clinician (H)	No data has been submitted for this indicator						
Continuity of care							
5.1 Percentage of discharge summaries that include medication therapy changes and explanations for changes (H)	73.2		1 (10%)	11 (5%)	75 (32%)	233	
5.2 Percentage of patients discharged on warfarin that receive written information regarding warfarin management prior to discharge (H)	83.4		2 (40%)	24 (59%)	40 (98%)	41	
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)	7.79		1 (25%)	4 (67%)	4 (67%)	6	
5.5 Percentage of patients whose discharge summaries contain a current, accurate and comprehensive list of medicines (H)	83.9		5 (29%)	197 (34%)	483 (83%)	585	↓ ✕
5.6 Percentage of patients who receive a current, accurate and comprehensive medication list at the time of hospital discharge (H)	50.1	Private	2 (10%)	3,002 (7%)	37,446 (93%)	40,141	↓ ✕

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)	56.1		1 (8%)	80 (1%)	5,930 (62%)	9,473	
6.2 Adverse drug reactions reported to TGA (N)	0.08						
6.3 Medication errors - adverse event requiring intervention (L)	0.004		18 (8%)	153 (45%)	288 (84%)	343	

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

MENTAL HEALTH

General Comments

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Chair, ACHS Mental Health Working Party Version 8

The *Australasian Clinical Indicator Report 2013-2020* follows the same structure as the 2012-2019 report. There are nine groups of indicators that can be clustered into four broad areas:

- Consumer/carer engagement (diagnosis and care planning, continuity of care, community care)
- Treatment interventions (physical examination, prescribing, electroconvulsive therapy)
- Restrictive practice (seclusion and restraint, mental health act status)
- Critical incidents.

Consumer engagement measured by the proportion of patients who had an individual care plan (CI 1.1) remained above 80% and the proportion who had signed that plan (CI 1.2) had climbed above 80% from the low 70s in previous years. While very positive, the proportion of carers involved in care planning as indicated by signing the care plan (CI 1.3) is deteriorating and now sits below one third.

This is the second year to report on the revised polypharmacy indicators (CI 3.1-3.5). For all four categories of medicines - antidepressants, mood stabilisers, anxiolytics and antipsychotics - the denominators have doubled (except antipsychotics) and fitted rates have improved. The change was greatest for anxiolytics where the number or patients discharged on psychotropics who were prescribed two of more anxiolytics fell from 22.5 per hundred to 13.5 per 100. Polypharmacy has not been associated with improved patient outcomes and is potentially harmful. More improvement in this area is needed. There were ten outlier records from six HCOs in which more than a third of patients were discharged on two or more anxiolytics.

In 2020 all the seclusion indicators (CI 5.1-5.3) have moved in a positive direction (down). The average duration of seclusion events (CI 5.1) dropped markedly from a mean 12.6 hours to 2.7 hours and 80% of episodes at less than 2.9 hours. The number of seclusion events per 1,000 bed days (CI 5.2) dropped to 3.5 events per 1,000 occupied bed days from 4.8 in 2019 and the proportion of patients experiencing a seclusion event (CI 5.3) continues to fall. The declining reliance on seclusion is another very important improvement in patient care. The literature in this area is clear - seclusion is traumatic for staff and patients and associated with physical and psychological harm[1].

The critical incident indicators have all moved in a negative direction (up), particularly sexual assault as a rate per 1,000 occupied bed days (CI 6.5). For this CI, the denominator has more than doubled to over 660,000 occupied bed days but the numerator is up almost five-fold to give an overall doubling of the annual rate. These indicators require review at an HCO level, particularly sexual assault. Whether a true increase in sexual assault or increased reporting in the current social environment, it identifies a serious deficit in our mental health service's ability to provide sexually safe environments for our patients and identifies a problem that requires a solution.

The production of the *Australasian Clinical Indicator Report* is a significant body of work for the ACHS and the HCOs who collect and contribute data. The utility of these indicators in comparing services or time periods is improved when more services participate in consistent and ongoing collection. Where there are different time periods, states represented or different mixes of services, public/private, metropolitan/non-metropolitan, caution is required in comparisons made

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between strata and subgroups. We urge HCOs to continue their efforts in this important exercise of collecting and providing data and critically reflecting on the information produced.

Last year I expressed some pessimism that despite all the efforts of HCOs to collect and contribute data and the work of the ACHS team to turn that data into information "that reflection and improvement is not moving as expected". That pessimism was not warranted - this year of 14 indicators with a known direction of improvement and sufficient data to test for trend, nine have improved. Very important improvements have occurred in polypharmacy and restrictive practice and although the sexual assault data is concerning, it cannot be addressed unless brought into the light.

REFERENCES

1. Georgieva, I Mulder, CL & Whittington, R 2012, 'Evaluation of behavioral changes and subjective distress after exposure to coercive inpatient interventions'. *BMC Psychiatry*, vol. 12, 54.

Summary Of Results

In 2020 there were 1,777 submissions from 95 HCOs for 30 CIs. Of the 14 indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend:

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

Of the 13 trended process indicators:

- nine improved and three deteriorated.

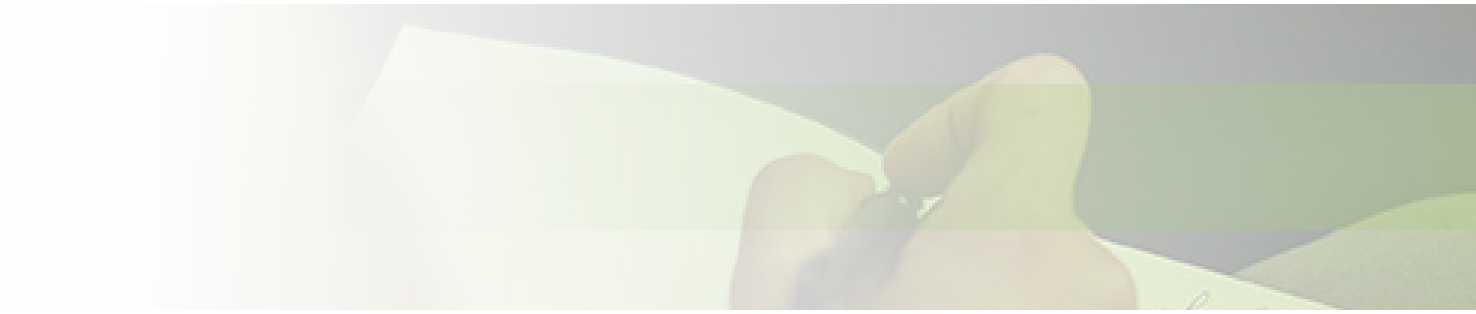
Of the one trended outcome indicators:

- none improved
- none deteriorated.

Nineteen indicators had outlier gains in excess of 25% of undesirable events. Twenty four indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in 11 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)	89.2	Private	13 (20%)	2,728 (32%)	7,983 (95%)	8,429	↑ ✓
1.2 Individual care plan signed by consumer (H)	83.7		13 (30%)	1,789 (33%)	3,941 (73%)	5,368	↑ ✓
1.3 Individual care plan signed by carer (H)	32.1		9 (28%)	1,486 (21%)	4,012 (56%)	7,119	↓ ✗
Physical examination of patients							
2.1 Physical examination documented within 24 hours of admission (H)	79.3		10 (19%)	3,322 (44%)	7,000 (92%)	7,581	
Prescribing patterns							
3.1 Discharged on ≥2 psychotropic medications from sub-group I (Antidepressants) (L)	23.0	NSW	10 (32%)	664 (19%)	1,253 (36%)	3,487	
3.2 Discharged on ≥2 psychotropic medications from sub-group II (Mood Stabilisers) (L)	6.76		5 (22%)	202 (23%)	441 (50%)	880	
3.3 Discharged on ≥2 psychotropic medications from sub-group III (Sedatives, Hypnotics or Anxiolytics) (L)	13.5	NSW	6 (22%)	615 (34%)	1,438 (79%)	1,820	
3.4 Percentage of patients who receive written and verbal information on regular psychotropic medicines initiated during their admission (including antipsychotics) (H)	94.9		2 (14%)	101 (40%)	217 (87%)	250	↑ ✓



Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Prescribing patterns (continued)							
3.5 Discharged on ≥2 antipsychotic medications (L)	19.6	NSW	10 (30%)	489 (20%)	682 (28%)	2,402	↓✓
3.6 Monitoring for metabolic side effects for consumers commencing antipsychotic medications (H)	90.3		5 (31%)	170 (61%)	271 (97%)	279	
3.7 Monitoring for metabolic side effects for consumers taking regular antipsychotic medications (H)	90.6		8 (47%)	227 (48%)	457 (97%)	470	
Electroconvulsive therapy							
4.1 ECT treatments (L)	9.29		6 (17%)	970 (26%)	2,493 (68%)	3,665	
Use of seclusion and restraint							
5.1 Average duration of seclusion episodes (Hours per episode) (L)	2.71 hours						
5.2 Rate of seclusion (per 1,000 bed days) (L)	3.55^		7 (35%)	369 (37%)	871 (87%)	1,004	↓✓
5.3 Percent of consumers secluded (L)	3.26		6 (29%)	104 (23%)	249 (55%)	451	↓✓
5.4 Physical restraint - ≥1 episodes (L)	4.37	Private	5 (28%)	170 (28%)	478 (79%)	607	↑✗
5.5 Rate of physical restraint (per 1,000 bed days) (L)	3.26^	Private	7 (35%)	378 (42%)	845 (93%)	907	
5.6 Mechanical restraint - ≥1 episodes (L)	0.62		2 (11%)	56 (74%)	73 (96%)	76	↑✗
5.7 Rate of mechanical restraint (per 1,000 bed days) (L)	0.10^		1 (7%)	12 (60%)	19 (95%)	20	
Major critical incidents							
6.1 Percent of consumers who die by suicide (L)	0.02		1 (2%)	1 (7%)	3 (20%)	15	
6.2 Rate of suicide (per 1,000 bed days) (L)	0.009^				5 (63%)	8	

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

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Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Major critical incidents (continued)							
6.3 Consumers who assault (per 1,000 bed days) (L)	0.39^	Private	8 (15%)	154 (50%)	287 (93%)	309	
6.4 Consumers assaulted (per 1,000 bed days) (L)	0.30^	Private	11 (22%)	143 (64%)	208 (94%)	222	
6.5 Sexual assault (per 1,000 bed days) (L)	0.04^	Private	2 (5%)	10 (42%)	19 (79%)	24	
6.6 Significant self-harm (per 1,000 bed days) (L)	0.04^		7 (9%)	92 (39%)	216 (91%)	237	
Mental Health Act status							
7.1 Involuntary admission status (N)	19.6						↓
7.2 Consumers detained as involuntary patients (per 1,000 bed days) (L)	14.1^		1 (25%)	195 (23%)	858 (100%)	859	
Continuity of Care							
8.1 Discharge summary / letter provided to consumer or nominated carer (H)	86.6	NSW	19 (31%)	2,380 (41%)	5,488 (94%)	5,813	↑ ✓
8.2 Discharge summary / letter provided to service providing ongoing care (H)	82.5	NSW	12 (30%)	1,673 (34%)	3,961 (80%)	4,922	↑ ✓
8.3 Three-monthly multidisciplinary review (H)	96.9					25	↑ ✓
Community Care							
9.1 Consumers seen face-to-face by community service (N)	90.9						

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

OPHTHALMOLOGY

General Comments

Dr Daniel Polya
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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 2020, low rates of CI 1.1 Unplanned readmissions within 28 days (0.21%) and CI 1.3 Unplanned overnight admission (0.14%) persist, consistent with the highly effective provision of cataract surgery in the day surgery setting.

CI 1.2 Treatment within 28 days due to endophthalmitis rates are extremely low at 0.015%, and while under-reporting is likely, these low rates likely indicate improvements in care in recent years, presumably attributable to the routine use of intracameral antibiotics, and technology improvements.

CI 1.5 Antibiotic prophylaxis rates are high at 97.3% and have risen significantly from 90.4% in 2017, suggesting increased uptake of this practice as part of routine care. There are two outlier facilities, however, suggesting lower rates of uptake of this widely accepted practice in some locations.

CI 1.4 Anterior vitrectomy rates remain low at around 1:300 cases, being 1:400 in the private setting and 1:200 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.

CI 1.6 Toxic anterior segment syndrome (TASS) rates remain low at 0.02%, and while under-reporting 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.

CI 1.7 Planned second eye cataract surgery cancellations were 1000% higher. This perhaps reflects the impact COVID-19 has had on elective surgery cancellations. Interestingly the rate is still quite low at 1.2% 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. This raises a question as to the validity of this somewhat problematic indicator, which has been created as a surrogate marker for unsatisfactory first eye surgery, which then leads on to postponement or cancellation of the second eye surgery in cases where both eyes have been booked.

Intraocular glaucoma surgery
CI 2.1 Unplanned readmissions within 28 days (1.5%) and CI 2.4 Unplanned prolonged overnight stay (1.6%) rates are stable and are consistent with anticipated complication rates such as significant hyphaema.
Interestingly the rate of CI 2.2. Micro-invasive glaucoma surgery (MIGS) is around 77% of glaucoma surgery, indicating a recent continued uptake of this newer technique, up from 63% of glaucoma surgery in 2017.

CI 2.3 Treatment within 28 days due to endophthalmitis rates remain low (0%), consistent with low rates of endophthalmitis after cataract surgery, with which MIGS is typically combined.

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Retinal detachment surgery
CI 3.1 Unplanned readmission within 28 days rates (5.7%) remain stable, low and consistent with anticipated benchmark rates of retinal redetachment of 10%, of which a portion of these is expected in the first 28 days. Prolonged overnight stay (CI 3.3) rates (2.7%) also remain low and consistent with low rates of early postoperative complications.

Interestingly, reported rates of CI 3.2 Treatment within 28 days due to endophthalmitis after retinal detachment (1:1500) are now higher than rates of endophthalmitis after cataract surgery (1:7000), 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 (CI 4.1 and 4.2) is at essentially 100% and has been at this rate for the past five years. This indicates that this is a universal practice and further collection data on this is probably not necessary. Surgeons are likely highly motivated to want to know which lens they are implanting, and are thus likely to and have proven over five years to have these records on hand. Of note, we see that the rate of toric intraocular lens implantation is at around 40% (10,047 cases of toric lenses out of 24,911 cases) and perhaps benchmarks should be established in this area.

Summary Of Results

In 2020 there were 640 submissions from 49 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:

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

Of the ten trended process indicators:

- five improved and three deteriorated.

Of the seven trended outcome indicators:

- three improved and one deteriorated.

Four indicators had outlier gains in excess of 25% of undesirable events. Eight 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)	0.21	Private	1 (3%)	13 (17%)	38 (49%)	77	↓✓
1.2 Cataract surgery - treatment within 28 days due to endophthalmitis (L)	0.02				1 (17%)	6	
1.3 Cataract surgery - unplanned overnight admission (L)	0.14	NSW	3 (8%)	18 (33%)	40 (74%)	54	↓✓
1.4 Cataract surgery - anterior vitrectomy (L)	0.31	Private	2 (5%)	13 (10%)	60 (45%)	133	↓✓
1.5 Cataract surgery - antibiotic prophylaxis (H)	97.3	NSW	1 (4%)	665 (90%)	734 (100%)	736	↑✓
1.6 Cataract surgery - toxic anterior segment syndrome (TASS) (L)	0.02		1 (5%)	1 (20%)	3 (60%)	5	↑✗
1.7 Cataract surgery - planned second eye cataract surgery (L)	1.21		1 (17%)	28 (88%)	31 (97%)	32	↑✗
Intraocular glaucoma surgery							
2.1 Intraocular glaucoma surgery - unplanned readmissions within 28 days (L)	1.54	NSW	1 (6%)	10 (40%)	23 (92%)	25	↓✓
2.2 Intraocular glaucoma surgery - micro-invasive glaucoma surgery (MIGS) (H)	77.2		1 (7%)	60 (24%)	180 (73%)	247	↑✓

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)	1.59				8 (62%)	13	
Retinal detachment surgery							
3.1 Retinal detachment surgery - unplanned readmission within 28 days (L)	5.66					70	
3.2 Retinal detachment surgery - treatment within 28 days due to endophthalmitis (L)	0.07					1	
3.3 Retinal detachment surgery - >1 overnight stay (L)	2.66				26 (84%)	31	
3.4 Retinal detachment surgery - unplanned reoperation within 28 days (L)	4.15					51	
Toric introcular lens implantation							
4.1 Intraocular lens implantation with planning record present at time of surgery (H)	100.0					2	
4.2 Toric intraocular lens implantation with planning record present at time of surgery (H)	100.0					-	

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

OPHTHALMOLOGY

ORAL HEALTH

General Comments

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Member, ACHS Oral Health Working Party Version 4

In general terms, this report shows that there has been a slight improvement in outcomes for most of the oral health CIs, with the trend in the fitted rate showing slight decreases for most CIs. One area of significant improvement has been in that area of the remake of dentures within 12 months (CI 1.4), where the fitted rate has improved by almost one third. Technology in the field of dentures has been improving recently with 3D printing being incorporated into various stages of denture construction.

Dental restorations that required re-treatment within six months (CI 1.1) has shown a slight improvement over the last seven years. This may reflect an improvement in the dental materials and adhesive bonding systems used in these restorations. Complications following extractions that required further attendances at dental clinics (CI 1.2-1.3) has shown a mild improvement over the last four years, with surgical extractions (CI 1.3) accounting for slightly more postoperative complications.

Root canal treatment success after 12 months (CI 2.2) is reported to be around 97%, with approximately 3% of teeth where endodontic treatment has commenced being extracted in that period. The trend line in this CI is flat, which may mean that some teeth that had endodontic treatment commenced may have had undiagnosed root fractures or other periodontal pathology.

Fissure sealant treatment success rates in children (CI 3.3) has shown a significant improvement over the seven years in this report, with the fitted rate trend improving by almost 20%. This may indicate improved training for dental practitioners and better dental materials that increase the bond of the sealant to the children's teeth.

Public sector institutions provide the bulk of the clinical data for this report, but the private sector in dentistry accounts for about 85% of dental services around Australia. This leaves a gaping hole in the accuracy of these clinical indicators, which needs to be addressed in future reports. The majority of private dental practices around Australia operate computerised dental practice management software, which could easily be tasked with reporting some of these CI data.

Summary Of Results

In 2020 there were 976 submissions from 85 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 nine trended outcome indicators:

- seven improved and one deteriorated.

No indicator had outlier gains in excess of 25% of undesirable events. No indicator demonstrated systematic variation with potential gains in excess of 50% of undesirable events. Significant stratum variation was observed in one indicator. 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)	5.89	Private	8 (13%)	996 (7%)	4,260 (28%)	15,246	↓✓
1.2 Routine extraction - complications within 7 days (L)	1.36		8 (13%)	193 (14%)	675 (50%)	1,358	↓✓
1.3 Surgical extraction - complications within 7 days (L)	2.03		2 (4%)	23 (13%)	66 (36%)	181	↓✓
1.4 Denture remade within 12 months (L)	1.77		2 (5%)	35 (9%)	163 (40%)	405	↓✓
Endodontic treatment							
2.1 Endodontic treatment - same tooth within 6 months of initial treatment (H)	61.6		4 (7%)	306 (16%)	636 (32%)	1,966	↓✗
2.2 Endodontic treatment - teeth extracted within 12 months (L)	3.19				11 (6%)	188	
Children's dental care							
3.1 Restorative treatment (children) - teeth retreated within 6 months (L)	1.81		5 (7%)	153 (5%)	512 (16%)	3,109	↓✓
3.2 Pulpotomy (children) - deciduous teeth extracted within 6 months (L)	2.31	SA			23 (27%)	86	↓✓
3.3 Fissure sealant treatment (children) - re-treatment within 24 months (L)	2.04		10 (14%)	313 (4%)	1,969 (27%)	7,173	↓✓

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

ORAL HEALTH

PAEDIATRICS

General Comments

Dr Sandra Miles
Australian College of Children and Young People's Nurses

It is important to note a general reduction in responses to the survey in 2020, no doubt due to the pandemic response. The results for 2020 are therefore less reliable than in other years.

It is pleasing to see improvements in the number of children admitted to a paediatric unit (CI 1.3) and ongoing reduction in paediatric medication administration errors (CI 2.1). A difference between non-metropolitan and metropolitan areas presents an opportunity for urging for better paediatric facilities and qualifications in non-metropolitan areas.

Whilst there is a decreasing trend in paediatric CPR qualifications (CI1.1-1.2), it is important that ACHS recognise these CIs are outdated. A far more important measure would be the number of organisations that have a paediatric early warning system (with specific vital sign criteria designating the need to make a call) and paediatric medical emergency team (MET) system in place. As well, measuring the number of events that have resulted in a MET callout and how many positive outcomes as a result of the call could be measured.

A further measure would be the number of staff who have undertaken training in recognising deterioration in a paediatric patient instead of CPR qualifications. Early MET calls prevent the need for CPR and have a much better outcome compared to providing CPR.

This is important because children can physiologically compensate for many adverse conditions until a crisis point and sudden deterioration is reached. Many hospitals have implemented the use of early warning system tools such as modified early warning system [MEWS] or paediatric early warning score [PEWS]) to assist staff to recognise the subtle signs of deterioration, signalling when a patient should be reviewed and changes to care implemented[1].

The annual rate for CI 3.5 Medical discharge summary completed - paediatrics is fairly low when one considers how important this summary is for ongoing focused care for that child. A discharge summary can be commenced on admission to hospital with additions made during the hospitalisation, so that an additional overall summary statement is required on discharge. This helps inform GPs and other health care professionals of important ongoing considerations for care, so its importance should be emphasised across HCOs.

REFERENCES

1. Chapman, SM & Maconochie, IK 2019, 'Early warning scores in paediatrics: an overview', *Archives of Disease in Childhood*, vol. 104, no. 4, pp. 395-399.

Summary Of Results

There are 14 clinical indicators in the Paediatrics Indicator Set. In 2020 there were 173 submissions from 35 HCOs for 11 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:

- three improved
- one deteriorated.

The trended process indicator improved.

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 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
Appropriateness							
1.1 Registered nurses with paediatric basic life support qualifications (H)	83.6	NSW	7 (26%)	429 (35%)	1,039 (85%)	1,222	↓ ✗
1.2 Medical practitioners with paediatric basic life support qualifications (H)	19.0					17	
1.3 Paediatric patients admitted to a paediatric ward/area (H)	95.1		1 (25%)	352 (43%)	821 (100%)	822	↑ ✓
Adverse events							
2.1 Medication errors (L)	0.13	Private	5 (17%)	28 (53%)	45 (85%)	53	↓ ✓
2.2 Adverse events when not in a paediatric ward/area (L)	1.58		1 (20%)	15 (16%)	78 (83%)	94	
2.3 Adverse events in a paediatric ward/area (L)	0.63	NSW	3 (14%)	135 (64%)	206 (98%)	211	↓ ✓
Documentation							
3.1 Completed asthma action plan - paediatrics (H)	89.2				2 (20%)	10	
3.2 Paediatric surgery post-procedural report (H)	100.0	Private				-	
3.3 Physical assessment completed by medical practitioner and documented (H)	68.0					24	

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)	No data has been submitted for this indicator						
3.5 Medical discharge summary completed - paediatrics (H)	68.3		1 (33%)	230 (38%)	579 (95%)	611	
3.6 Adult patients with documented systolic blood pressure of <100mm Hg in the postanaesthesia recovery room (L)	0.37		4 (44%)	61 (42%)	109 (75%)	146	
3.7 Presence of a trained recovery room nurse (H)	100.0					-	
Paediatric anaesthesia							
4.1 Paediatric patients who fast 6 hours prior to anaesthesia (H)	91.6				7 (88%)	8	
4.2 Adverse event due to non-adherence to paediatric fasting guidelines (L)	No data has been submitted for this indicator						
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 Royal College of Pathologists of Australasia (RCPA) has been pleased to work with The Australian Council on Healthcare Standards (ACHS) in revising the Pathology CIs. Community expectations regarding health service delivery are high and both patients and medical practitioners expect timely results for tests requested urgently. With each iteration, the CIs have become more focused and hence more relevant to contemporary pathology practice. Some of the CIs are partially or completely outside the control of the laboratory, but it is nevertheless important to provide data on the entire "request-test-report cycle" to measure the entire process as this reflects the clinical need. Only by assessing the whole cycle can the impact of assessing these CIs be considered by HCOs.

Chemical Pathology
There has been an overall decline in laboratory performance in achieving targets during the last five years inside the lab and a lack of improvement in ED to lab times (CI 1.1-1.4). There is large inter-HCO variability in these CIs, and when poorly performing HCOs are excluded, overall performance would actually show a considerable improvement.

Haematology
Similar to biochemistry, there has been no gain and some fall in haematology CIs 2.1-2.5, though the poor performance of some HCOs biases this data. This should allow for these HCOs to gain appreciation of the issues they face. The addition of the new CI blood group samples that require recollection (CI 2.5) has been instructive. There has been a considerable gain in overall performance, though once again variability across HCOs is demonstrated.

Anatomical Pathology
The CI addressing compliance with utilisation of structured reporting for six common cancers (CI 3.3) has shown a 100% conformance with the standard, although the number of contributing HCOs has fallen by more than 50% (from 11 to 4), which clearly affects the ability to interpret these results.

Microbiology
Overall lab in and to lab performance for urine examination (CI 4.1-4.2) has improved, particularly so in the in-lab reporting (CI 4.1), despite the increase in HCOs reporting. The rate has improved over five years by an absolute percentage of 15.6. HIV reporting standards (CI 4.3) continue to improve.

Whole of service
Since the introduction of the point of care testing register CI (CI 5.1), there has been a marked improvement in the albeit smaller number of HCOs performance. The 100% as a standard has been reached in just over five years, which demonstrates the effectiveness of this CI to HCOs. Misidentified sample frequency (CI 5.2) continues to fall across HCOs, though there is some heterogeneity.

Finally, I would also like to acknowledge the thoughtful contributions by the representatives of ACHS. I believe that the newer CIs have shown great utility in the assessment of performance of pathology and have set appropriate benchmarks for patient care.

Summary Of Results

In 2020 there were 404 submissions from 21 HCOs for 16 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:

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

Of the 16 trended process indicators:

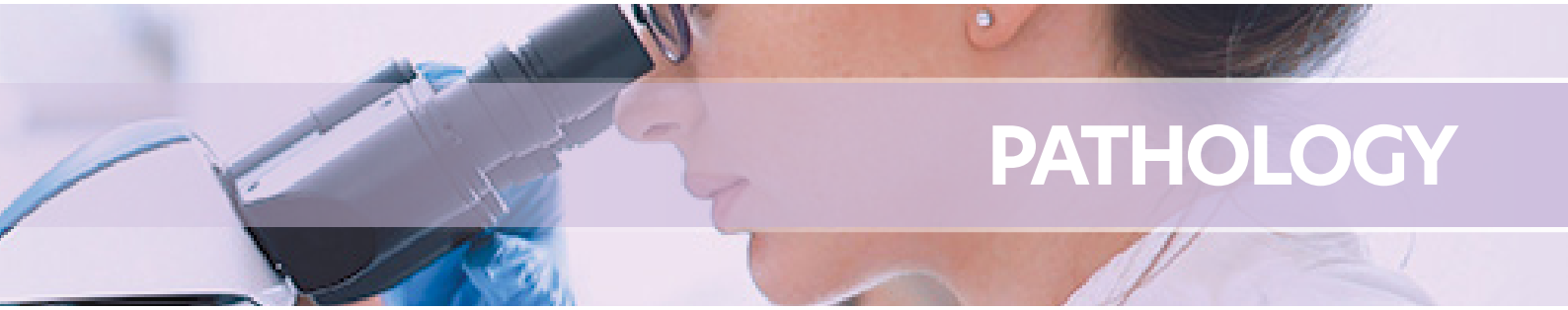
- eight improved
- six deteriorated.

No outcome indicators were tested for trend.

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 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)	56.3	NSW	3 (16%)	6,477 (17%)	16,229 (43%)	37,667	↓ ✗
1.2 Serum / plasma potassium from ED - collected to in lab time <60 minutes (H)	83.6		7 (37%)	6,763 (48%)	12,085 (87%)	13,952	↓ ✗
1.3 Serum / plasma troponin for ED - in lab to validated time <50 minutes (H)	65.7		5 (26%)	1,618 (17%)	3,156 (34%)	9,296	↓ ✗
1.4 Serum / plasma troponin from ED - collected to in lab time <60 minutes (H)	81.7		8 (42%)	2,037 (42%)	3,579 (73%)	4,870	↓ ✗
Haematology							
2.1 Haemoglobin for ED - in lab to validated time <40 minutes (H)	88.4		9 (47%)	3,054 (31%)	5,848 (58%)	10,001	↓ ✗
2.2 Haemoglobin from ED - collected to in lab time <60 minutes (H)	84.5		7 (37%)	6,957 (53%)	11,612 (89%)	13,010	↑ ✓
2.3 Blood group for ED - in lab to validated time <60 minutes (H)	51.8	Vic	4 (36%)	303 (17%)	604 (33%)	1,817	
2.4 Blood group from ED - collected to in lab time <60 minutes (H)	92.9		2 (17%)	131 (44%)	190 (64%)	297	↑ ✓
2.5 Blood group from ED - recollections (L)	7.86	NSW	2 (15%)	103 (31%)	190 (56%)	337	↑ ✗



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 <96 hours (H)	84.28		6 (46%)	1,042 (38%)	2,443 (88%)	2,763	↑
3.2 AP complexity level 6 & 7 MBS item - received to validated time <7 days within a calendar month (H)	70.8		2 (17%)	35 (13%)	144 (55%)	262	
3.3 Structured reporting for Anatomical Pathology (H)	100.0						↑
Microbiology							
4.1 Urine microscopy for ED - in lab to validated time <4 hours (H)	92.6		6 (40%)	394 (51%)	622 (80%)	775	↑
4.2 Urine microscopy from ED - collection to in lab time <60 minutes (H)	69.1		5 (33%)	1,534 (47%)	2,825 (87%)	3,250	↑
4.3 HIV antigen-antibody screening - in lab to validated time <24 hours (H)	89.7		3 (30%)	35 (12%)	57 (20%)	291	↑
Whole of service							
5.1 Point of care testing register (N)	100.0						
5.2 Misidentified episodes (L)	0.19		6 (50%)	266 (22%)	18 (1%)	1,205	↓

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

RADIATION ONCOLOGY

General Comments

Ms Rachel Kearvell
Professional Standards Committee, Australian Society of Medical Imaging and Radiation Therapy
Member, ACHS Radiation Oncology Working Party Version 5

It is pleasing to see that more HCOs contributed to the wait times data (CIs 1.1 and 1.2), and also that the rate decreased and hence improved. This reduction may be due to the efficiency of the HCOs that provided data, but it may also indicate that referrals for radiation therapy fell in the same period due to COVID-19. We know that in 2020 many medical services were impacted by COVID-19 and that many diagnostic and surgical procedures related to cancer investigations were substantially reduced[1].

A reduction in these services would also have had a flow on effect on radiation therapy with the demand for this treatment over the following months declining in response. In short, if you don't get diagnosed, you don't get treated.

The report from Cancer Australia[1] describes the months of April and May 2020 recording significantly fewer cancer-related diagnostic and surgical procedures, which would translate to a decline in radiation therapy services from May 2020. Most diagnostic and surgical services had returned to normal levels of activity by July but the impact on radiation therapy would still be felt through to August at least. A reduction in referrals for radiation therapy over this four-month period in 2020 would also lead to a decrease in wait times which may also contribute to the gains reported here.

As cited by Abdul Ghani & Ng[2], there are many methods of motion management for lung radiation therapy and hence I am delighted to see that the rate for CI 3.2 Motion management continues to increase. Whilst results from only six HCOs were received, it is encouraging that the rate is over 90, indicating that accounting for motion of the target volume for lung cancer patients is almost standard practice for this cohort of patients.

REFERENCES

1. Cancer Australia 2020, *National and jurisdictional data on the impact of COVID-19 on medical services and procedures in Australia: breast, colorectal, lung, prostate and skin cancers. Cancer Australia*, Surry Hills, NSW.
2. Abdul Ghani, MN & Ng, WL 2018, 'Management of respiratory motion for lung radiotherapy: a review', *Journal of Xiangya Medicine*, vol. 3, pp. 27 (1-14).

General Comments

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

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

The radiation oncology CIs in this year's *Australasian Clinical Indicator Report* were reviewed and modified in 2017, with the current renewed version implemented in 2018. In this report, there were ten HCOs submitting data on any clinical indicator, and as low as four HCOs for one indicator. This dataset, therefore, reflects only a small fraction of the radiation therapy delivered in Australia. The small number of contributing centres raises questions about the generalisability of the observations. This must be considered when analysing the statistics, however, there remains some useful insight into radiation oncology practice in this data.

It is pleasing to see the improvement in the use of motion management (CI 3.2) in treatment planning for radical radiation therapy treatment for lung cancer. 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. The use of a motion management technique can reduce the dose to surrounding normal tissue, and ensure better targeting of the lung cancer, and therefore can improve the safety and efficacy of radiation therapy[1]. Over the last three years this rate has increased from 67.4% in 2018 to 90.9% in 2020.

Single fraction radiation therapy has been shown to be as effective as multiple fraction radiation therapy for the management of patients with painful bone metastases[2], however the use of single fractionation for the treatment of uncomplicated bone metastases (CI 3.1) was low in 2020. The rate of 34.9 per 100 patients was the lowest rate recorded over the last three years, and there was relatively little variation between HCOs. Given that single fraction treatment reduces the number of visits to HCOs, this data is particularly interesting in a year marked by COVID-19. As there are significant benefits in terms of patient convenience and reduction in the burden on the healthcare system with single fractionation, this is an area which shows room for improvement across the board. Ongoing collection of this clinical indicator will allow analysis of trend over time.

The revision of the CI set starting in 2018 means that trends were only able to be tested on two indicators. Waiting times (CI 1.1-1.2) have improved over time, while the documentation of staging information for a radiotherapy course (CI 2.1) has mildly deteriorated. There was marked systematic variation in CI 2.1, with large potential gains by improving this rate in a small number of HCOs.

This year there was an improvement in the number of patients without treatment prolongation (CI 2.2) when radical radiation therapy was delivered for a category 1 tumour as defined by the Royal College of Radiologists[3]. The number of HCOs contributing data, however, for this clinical indicator was low, which may be an indicator of difficulty in identifying this subset of patients from the medical records.

From the perspective of ensuring the accountability and safety of radiation therapy, potentially the most significant finding of this year's CI data was an ongoing improvement in the rate of patients discussed in a multidisciplinary meeting prior to radical radiation therapy (CI 1.3). Multidisciplinary care is considered best practice in the care of patients with cancer, and it is hoped that in coming years we see an ongoing upwards trend.

REFERENCES

1. Molitoris, JK Diwanji, T Snider 3rd, JW Mossahebi, S Samanta, S Badiyan, SN Simone 2nd, CB & Mohindra, P 2018, 'Advances in the use of motion management and image guidance in radiation therapy treatment for lung cancer', *Journal of Thoracic Disease*, vol. 10, suppl. 21, pp. S2437-S2450.
2. Chow, E Zeng, L Salvo, N Dennis, K Tsao, M & Lutz, S 2011, 'Update on the systematic review of palliative radiotherapy trials for bone metastases', *Clinical Oncology*, vol. 24, no. 2, pp. 112-124.
3. The Royal College of Radiologists 2019, *The timely delivery of radical radiotherapy: standards and guidelines for the management of unscheduled treatment interruptions (4th ed.)*. The Royal College of Radiologists, London, UK.

Summary Of Results

In 2020 there were 112 submissions from 10 HCOs for nine 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:

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

Of the two trended process indicators:

- one improved
- one deteriorated.

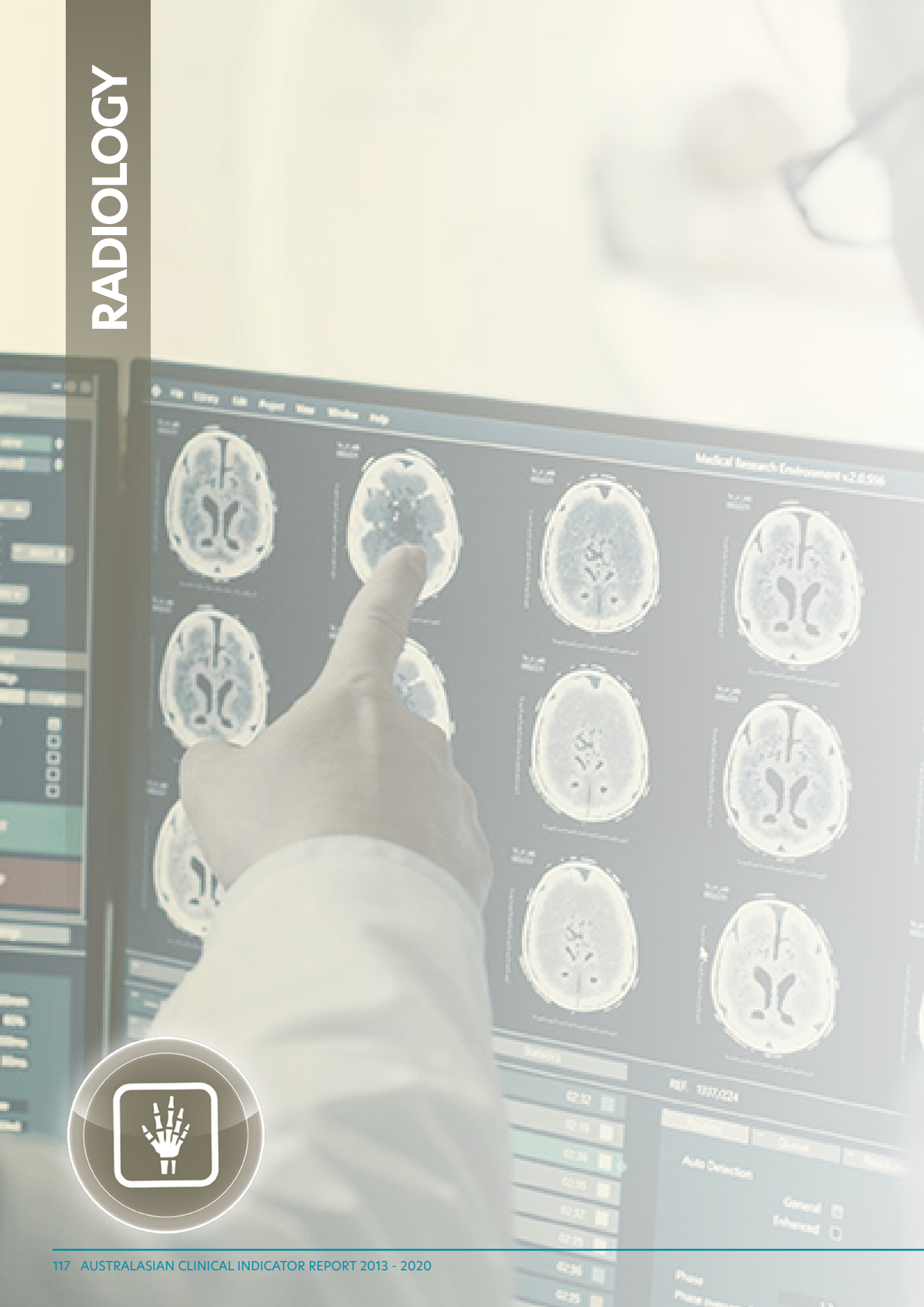
No outcome indicators were tested for trend. Five indicators had outlier gains in excess of 25% of undesirable events. Six indicators demonstrated systematic variation with potential gains in excess of 50% of undesirable events. No significant stratum variation was observed in. See Table of Indicator Results below.

Table of Indicator Results

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Pre-anaesthesia period							
1.1 Patients for radical treatment - waiting time from the 'ready for care' date more than the faculty guidelines (L)	8.10		5 50%)	303 (44%)	500 (72%)	696	↓✓
1.2 Patients for palliative treatment - waiting time from the 'ready for care' date more than the faculty guidelines (L)	10.4		3 (30%)	302 (47%)	491 (77%)	641	
1.3 Multidisciplinary meeting involvement (H)	52.3				217 (24%)	905	
Treatment process							
2.1 Staging annotation for current radiotherapy course (H)	81.6		3 (38%)	506 (45%)	1,071 (96%)	1,117	↓✗
2.2 Treatment prolongation (L)	6.35				28 (68%)	41	
2.3 Treatment plan peer review (H)	32.9		2 (33%)	20 (10%)	78 (40%)	196	
Treatment delivery							
3.1 Single fractionation for bone metastases (H)	34.9				1 (0%)	401	
3.2 Motion management (H)	90.9		1 (17%)	16 (67%)	22 (92%)	24	
3.3 Androgen deprivation therapy (H)	74.8		1 (17%)	20 (39%)	42 (82%)	51	

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

RADIOLOGY



General Comments

In 2020 there were 22 HCOs submitting data on the Radiology CIs – 21 of those being from the public sector and 16 from a metropolitan region.

In contrast with 2019, where there were no events in either interventional radiology or diagnostic radiology which were of the highest severity assessment code of SAC1, CI 1.1 Interventional radiology examinations accounted for one and CI 1.2 Diagnostic radiology examinations reported five incidents. The number of SAC2 events identified during interventional radiology examinations (CI 1.3) increased from six in 2019 to nine in 2020, however decreased from 18 to 13 for diagnostic radiology examinations (CI 1.4).

Contrast extravasation during an intravenous contrast enhanced CT procedure (CI 1.5) continues to exhibit increased variability amongst the reporting HCOs but remains low at 0.26%. This is consistent with a recent study by Heshmatzadeh Behzadi et al. in 2018[1], which reported a rate of 0.2% for over 1.1 million patients undergoing either CT or magnetic resonance imaging. This study identified several factors associated with increased contrast media extravasations – older age, being female or an inpatient, using an existing intravenous cannula rather than inserting a new access in radiology, the use of an automated power injection, high injection rates, catheter location, and inability to warm up the contrast media to body temperature[1].

The rates for CIs 1.6 Percutaneous trans pleural biopsy of lung or mediastinum requiring unexpected overnight admission and 1.7 Image-guided percutaneous core biopsy of liver requiring unexpected overnight admission have increased compared with 2019 data, however the number of HCOs submitting data remains low.

As the use of computed tomography (CT) has been increasing, the dose index should be routinely monitored and assessed against the current Australian National Diagnostic Reference Levels. Two new CIs introduced in 2018 – CI 2.1 CTDIvol for non-contrast CT head examinations and CI 2.2 CTDIvol for portal venous phase of abdominal pelvic CT examinations – remain low at 1.77% and 9.54% respectively. There were no significant stratum differences in 2019 or 2020.

It is critical that the correct patient, the correct site, the correct procedure, and patient consent is confirmed prior to any medical intervention, with the Australian Commission on Safety and Quality in Health Care publishing a protocol in 2012 – Ensuring correct patient, correct site, correct procedure in General Radiology and Ultrasound[2]. Means for CI 3.1 (Does your organisation have policies in place for Time-Out procedures specific to radiation examinations and procedures?) and 3.2 (Does your organisation have standardised processes in place to address 3Cs [correct patient, correct site, correct procedure] and patient consent in the Time-Out procedures?) were both excellent at 1.00. The mean for CI 3.3 (Can your organisation present 10 de-identified forms that demonstrate the Time-Out procedures were carried out in accordance with your organisation's processes and policies?) was slightly less at 0.90%.

Lastly, critical test result notification (CIs 4.1-4.4) identifies the ability of HCOs to report any result or finding that may be considered life threatening or could result in severe morbidity requiring clinical attention. Whilst the mean for 4.1 (Does your organisation have policies in place to manage critical imaging test result notification?) was 1.00, CI 4.2 (Does your organisation have standardised

General Comments

processes in place to manage critical imaging test result notification?) reported its highest mean of 0.95%, and CI 4.3 (Can your organisation present 10 de-identified cases that demonstrate documentation within the radiology report that the critical test result notifications are carried out following the organisation's processes and policies?) reached its lowest mean of 0.55%.

REFERENCES

1. Heshmatzabeh Behzadi, A Farooq, Z Newhouse, J & Prince, M 2018, 'MRI and CT contrast media extravasation: a systematic review'. *Medicine*, vol. 97, no. 9, p. e0055.
2. Australian Commission on Safety and Quality in Health Care (ACSQHC) 2012, Ensuring correct patient, correct site, correct procedure in General Radiology and Ultrasound, *ACSQHC*: Sydney.

Summary Of Results

In 2020 there were 254 submissions from 21 HCOs for nine CIs. Two 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. 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)	0.004					1	
1.2 Number of Severity Assessment Code (SAC) 1 or Incident Severity Rating (ISR) 1 incidents - diagnostic radiology examinations (L)	0.0004					5	
1.3 Number of Severity Assessment Code (SAC) 2 or Incident Severity Rating (ISR) 2 incidents - interventional radiology examinations (L)	0.03					9	
1.4 Number of Severity Assessment Code (SAC) 2 or Incident Severity Rating (ISR) 2 incidents - diagnostic radiology examinations (L)	0.001					13	
1.5 Contrast extravasation during an IV contrast enhanced CT procedure (L)	0.26	NSW	2 (12%)	44 (12%)	186 (51%)	364	
1.6 Percutaneous trans pleural biopsy of lung or mediastinum requiring unexpected overnight admission (L)	4.55				15 (56%)	27	
1.7 Image-guided percutaneous core biopsy of liver requiring unexpected overnight admission (L)	1.47		1 (10%)	2 (33%)	5 (83%)	6	
ICT Dosimetry							
2.1 CTDIvol for non-contrast CT head examinations (L)	1.77		5 (31%)	75 (51%)	80 (54%)	148	
2.2 CTDIvol for portal venous phase of abdominal pelvic CT examinations (L)	9.54		3 (19%)	33 (24%)	116 (84%)	138	

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

Summary Of Results

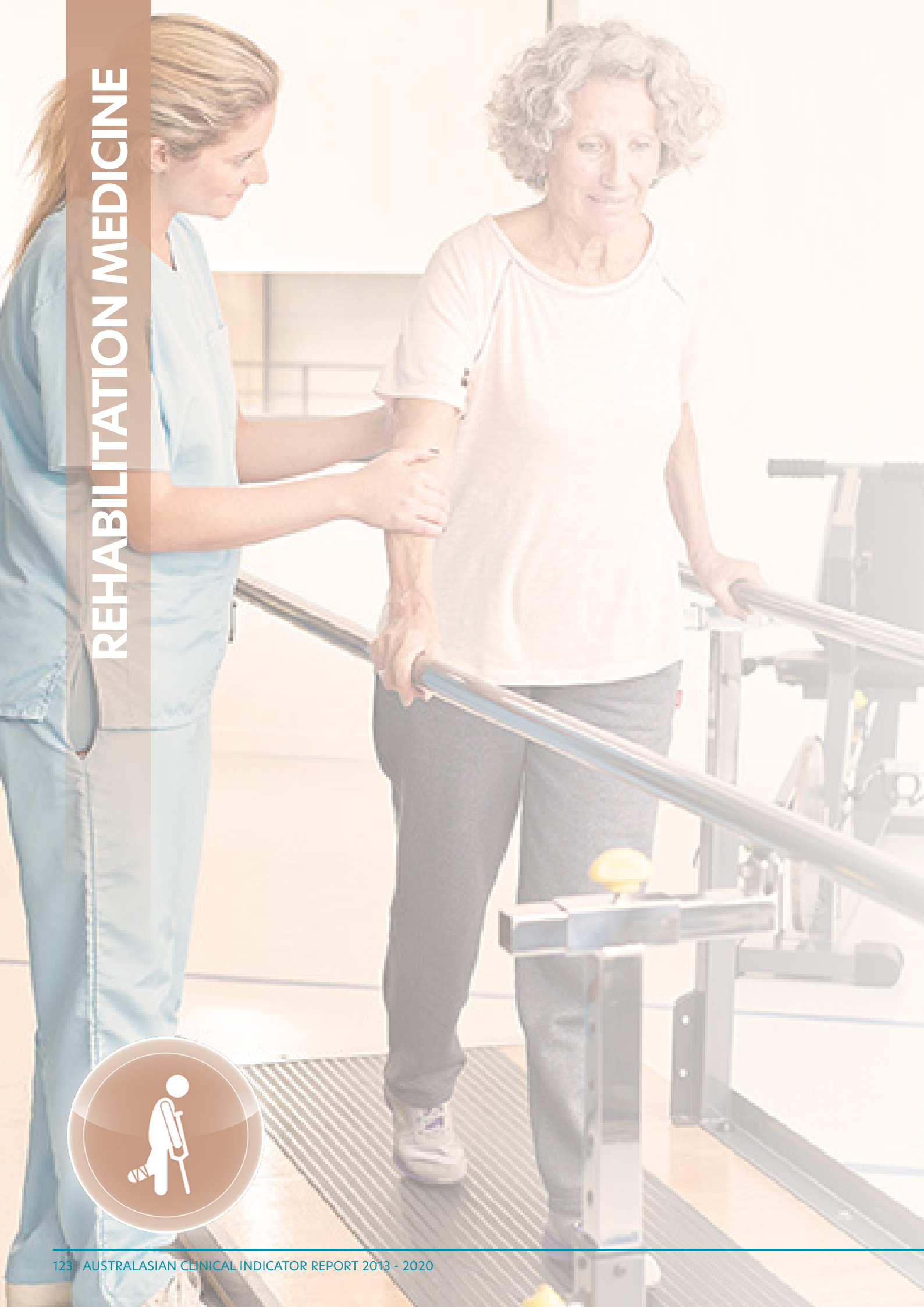
Table of Indicator Results

Indicator	Aggregate rate %	Best Stratum	Outlier HCOs (%)*	Outlier Gains (%)+	Centile Gains (%)+	Events#	Trend
Patient identification and consent							
3.1 Patient identification and consent (1) (H)	100						
3.2 Patient identification and consent (2) (H)	100						
3.3 Patient identification and consent (3) (H)	90.5						
Critical test result notification							
4.1 Critical test result notification (1) (H)	100						
4.2 Critical test result notification (2) (H)	95.0						
4.3 Critical test result notification (3) (H)	55.0						

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

RADIOLOGY

REHABILITATION MEDICINE



General Comments

The Rehabilitation Medicine set is well reported across Australasia, with 112 sites reporting data. This reporting at a high rate is due to the work performed by the Australasian Rehabilitation Outcomes Centre (AROC), which assists in the facilitation of the reporting of these indicators.

This year's review of CI 1.1 Functional assessment within 72 hours of admission and CI 2.1 Functional assessment within 72 hours before end of rehabilitation continues to improve, with rates of 98% and 97.8%, respectively. These indicators are reaching their peak of improvement, which is why in 2021 both indicators have been merged to create a new indicator 'Timely assessment of function on admission' with a tighter timeframe of 48 hours. This new indicator aims to raise the bar and increase the timely assessment of patients to provide a baseline from which functional improvement can be measured.

The establishment of a multidisciplinary team plan within seven days (CI 3.1) has remained at a similar level since 2013, with an annual rate of 97.7 per 100 patients. This data is currently flat, but the gap between the worst performers and the best performers is closing, with the worst performers (20th centile) improving from 95.3% in 2013 to 98.3% in 2020, which shows that the clinical specialty is performing well overall. The data for this indicator was skewed this year by a singular public organisation reporting a rate below 10%, which is why the aggregate rate is not higher.

CI 4.1 measures the rate of discharge documentation, which includes a discharge plan that summarises the rehabilitation provided, any medications that the patient is taking, and suggested follow-up care. This plan must meet the Australasian Faculty of Rehabilitation Medicine (AFRM) standards that specify a formal discharge procedure for rehabilitation patients[1]. The data shows that this transition to the next phase of care is being documented well, with an aggregate rate of 97.4% and very little difference between the highest (100%) and poorest (97.3%) performers. The high performance of this indicator has led to its removal from the Rehabilitation Medicine set and replaced with an indicator measuring the rate of falls within the specialty from June 2021.

Functional gain following a completed rehabilitation program (CI 5.1) serves as a broad measure that the unit is achieving functional gain on behalf of their patients. It is encouraging to see that it has continued to increase since 2013, with a 1.9% increase overall from 95.2% to 97.1%. However, the good news is that the poorest performers (20th centile) have improved with an almost 5% gain to 95.6%. This data was skewed by one poor performer and could have been even higher. This is an excellent outcome for patients, especially as this indicator is measured with standardised instruments such as FIM, WeeFIM, Barthels Index or MMSE[2,3]. This means there is a standardised collection of the data across all patients treated so the overall function gain will be both accurately and consistently measured.

A patient's destination after rehabilitation (CI 6.1) is both an outcome and quality measure that aims to allow the patient to return to a previous, similar, or improved type of accommodation such as their private home. This indicator seeks to measure if rehabilitation results in the patient maintaining or improving their independence from the injury. The data for this in 2013 was low, with a fitted rate improvement from 85.7% to 94.3% in 2020. This area has continued to improve in performance, and the poorest performers (20th centile) are now 12.4% better in 2020 than in 2013. These results have led to substantially better outcomes overall. There is a single public outlier in this data which skews the data a little, and there is more variation in NSW than in other states, but this may be because of the wider variety of reporting sites in NSW.

General Comments

Overall there has been significant improvement in rehabilitation medicine over the 2013-2020 period, and with the release of an updated set in 2021, we hope to continue to improve the quality of rehabilitation care provided.

REFERENCES

1. Australasian Faculty of Rehabilitation Medicine. 2-11, *AFRM Standards: standards for the provision of inpatient adult rehabilitation medicine services in public and private hospitals*. Accessed from https://www.racp.edu.au/docs/default-source/default-document-library/afrm-standards-2011.pdf?sfvrsn=2 on 21/10/2021.
2. Mackintosh, S 2009, 'Functional independence measure'. *Australian Journal of Physiotherapy*, vol. 55, no. 1, p. 65.
3. Beckers, K Netz, J & Homberg, V 1999, 'The measurement of outcome in day care neurological rehabilitation: discrepancies between changes in FIM and Barthel scores and achievement of treatment goals'. *Neurophysical Rehabilitation*, vol. 9, no. 3-4, pp. 437-446.

Summary Of Results

In 2020 there were 1,128 submissions from 112 HCOs for six CIs. Of the six indicators which had a desirable level specified as 'High' or 'Low' and sufficient data (minimum of four years) to test for trend

- five improved
- none deteriorated.

Of the four trended process indicators

- three improved
- none deteriorated.

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 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
Timely assessment of function on admission							
1.1 Functional assessment within 72 hours of admission (H)	98.0		17 (19%)	597 (61%)	949 (97%)	983	↑ ✓
Assessment of function prior to episode end							
2.1 Functional assessment within 72 hours before end of rehabilitation (H)	97.8		13 (15%)	536 (56%)	921 (96%)	963	↑ ✓
Timely establishment of a multidisciplinary team rehabilitation plan							
3.1 Multidisciplinary team plan within 7 days (H)	97.7	Private	20 (18%)	805 (68%)	1,159 (97%)	1,191	
Multidisciplinary discharge documentation							
4.1 Discharge plan on separation (H)	97.3	Private	15 (14%)	1,002 (71%)	1,396 (98%)	1,421	↑ ✓
Functional gain achieved by rehabilitation program							
5.1 Functional gain following completed rehabilitation program (H)	97.1	Private	17 16%)	544 (37%)	1,139 (77%)	1,476	↑ ✓
Discharge destination							
6.1 Destination after discharge from a rehabilitation program (H)	0.82	Private	22 (27%)	1,010 (35%)	2,049 (72%)	2,854	↑ ✓

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

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