

AUSTRALASIAN CLINICAL INDICATOR REPORT

17th Edition 2008-2015



Australasian Clinical Indicator Report: 2008–2015: 17th Edition.
The Australian Council on Healthcare Standards (ACHS)
Health Services Research Group, University of Newcastle

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Disclaimer

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

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ACHS would also like to acknowledge St George Hospital, Sydney, for their permission to use their premises for the photographs used within the *Australasian Clinical Indicator Report 17th Edition 2008-2015*.

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Clinical Indicator Working Parties

The Australian Council on Healthcare Standards' (ACHS') Clinical Indicators (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
- the set is regarded as useful for quality improvement.

CI set	Working Party Chair	Participating organisations
Anaesthesia and Perioperative Care	Dr Joanna Sutherland (ANZCA)	Australian and New Zealand College of Anaesthetists Australian Society of Anaesthetists
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Mental Health Inpatient	A/Prof Victor Storm (RANZCP)	The Royal Australian and New Zealand College of Psychiatrists Australian College of Mental Health Nurses
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Oral Health	Dr Hugo Sachs (ADA)	Australian Dental Association The Royal Australasian College of Dental Surgeons
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Foreword

On behalf of the Australian Council on Healthcare Standards (ACHS) I would like to present the *Australasian Clinical Indicator Report 17th Edition 2008-2015*. The report examines data sourced from a broad range of clinical specialty areas. The data provide important information regarding key aspects of health care delivery for members of ACHS, in addition to healthcare organisations worldwide. As in previous years, the *17th Edition of the Australasian Clinical Indicator Report* provides key points on significant trends, strata differences and outlier effects between 2008 and 2015 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. The *Australasian Clinical Indicator Report* provides the reader with an insight into health care in Australia and New Zealand, and provides healthcare organisations with the potential to improve quality and safety within their facility.

During the development of Clinical Indicators and the *Australasian Clinical Indicator Report*, ACHS has proudly collaborated with more than 40 Australasian medical colleges, societies and associations. The opportunity has been provided to these organisations to contribute comments within their specialist area for each of the 21 Clinical Indicator sets, which now contain 314 individual Clinical Indicators. Data from 825 healthcare organisations have been provided, which is then validated by University of Newcastle statisticians.

Working Parties were held through the year to support the continuous development of Clinical Indicator sets to ensure they remain current and valid. In 2015, Clinical Indicator sets that were reviewed include Emergency Medicine, Hospital in the Home, Intensive Care, Maternity and Paediatrics.

Dr Brian Collopy has once again written the feature report contained within the *Australasian Clinical Indicator Report*. This year the feature report presents the ACHS' experience in the use of Hospital in the Home Clinical Indicators over a 16 year period. The report indicates that Hospital in the Home services appear to be well-controlled, safe and effective, and far from being a return to "operating on the kitchen table".

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

To conclude, I have confidence that the *Australasian Clinical Indicator Report 17th Edition 2008-2015* will provide you with valuable knowledge of our healthcare industry for which it was intended. In providing this insight, I would like to extend my appreciation to all collaborating colleges, associations and societies. Their continued support of the Clinical Indicator Program allows us to continue our efforts to improve healthcare standards in Australia and internationally.



Mr John Smith PSM
ACHS President

October 2016

About the Australasian Clinical Indicator Report (ACIR)

A Printed Report

This report summarises the Clinical Indicator (CI) data submitted to the ACHS Clinical Indicator Program for the years from 2008-2015. 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 24, 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 and can be accessed by scanning this QR code with a smart phone or device.



www.achs.org.au/publications-resources/australasian-clinical-indicator-report

An *ACIR Retrospective Data in Full Report* is created for every Clinical Indicator set and provides detailed information about each CI collected in 2015. Listed within the report is the CI, its intent, the numerator and denominator. Tables summarise the data submitted in every year since 2008 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 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 2015, 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 along with a description of how to read, understand and use the retrospective data.

Improvements

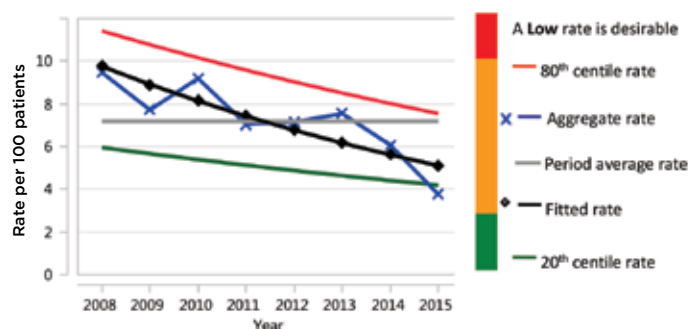
In 2015, there were 94 CIs which showed statistically significant trends in the desirable direction. Of these, 71 CIs remained significant after allowing for changes in the number of healthcare organisations (HCOs) contributing over the period. There were six CI sets that had an improvement in at least two-thirds of all trended CIs. They were Day Patient, Emergency Medicine, Intensive Care, Mental Health Inpatient, Radiation Oncology and Rehabilitation Medicine.

There were noteworthy improvements in the following four CI sets:



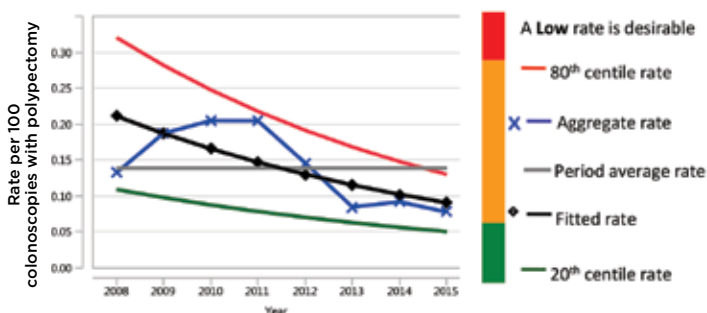
Gynaecology

The rate of unplanned intraoperative or postoperative blood transfusion during gynaecological surgery for a malignant disease (CI 1.2) continues to significantly improve and has decreased by approximately two-thirds over the last eight years. The aggregate rate has dropped by almost 40% in the last year.



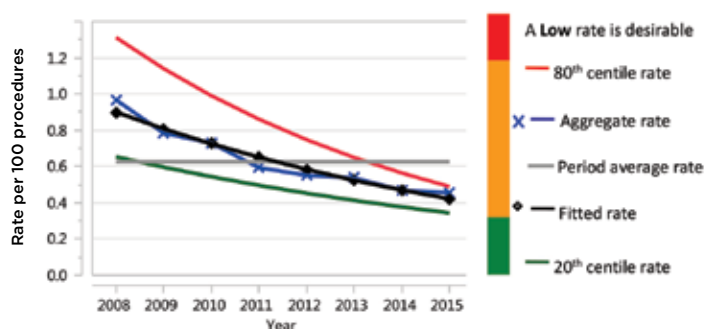
Gastrointestinal Endoscopy

Post-polypectomy haemorrhage (CI 2.3) has displayed a vast improvement, particularly in recent years. Additionally there has been a reduction in variation between the 80th and 20th centile rates, indicating a greater improvement in the poorer performing HCOs.



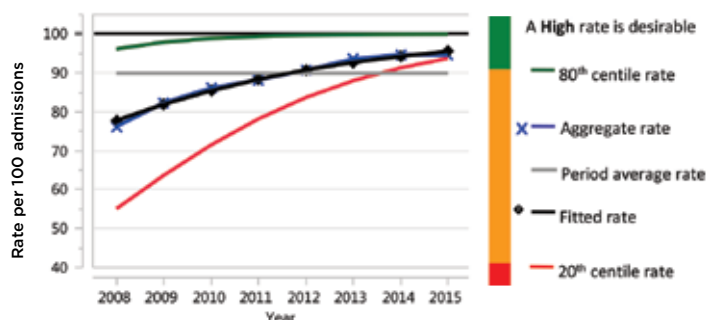
Infection Control

From 2008-2015 the rate of superficial surgical site infection (SSI) following a hip prosthesis procedure (CI 1.1) has more than halved from 0.90 to 0.42 per 100 procedures.



Intensive Care

From 2008-2015, patients treated appropriately for Venous Thromboembolism (VTE) prophylaxis within 24 hours of admission to the intensive care unit (ICU) (CI 3.1) has continued to improve from 77.9 to 95.5 per 100 admissions.



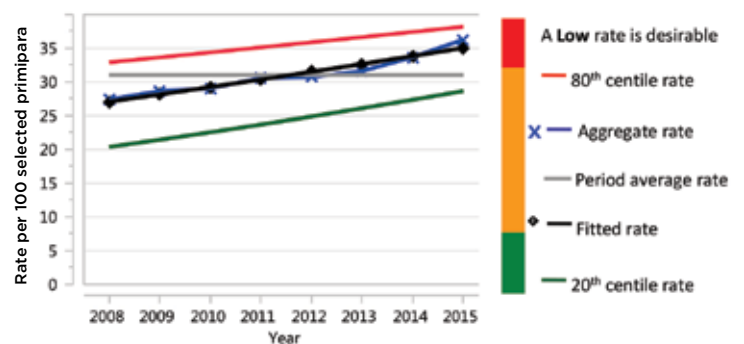
Deteriorations

In 2015, there were 44 CIs which showed statistically significant trends in the undesirable direction. Of these, 26 remained significant after allowing for changes in the number of HCOs contributing over the period.

There were noteworthy deteriorations in the following three CI sets:

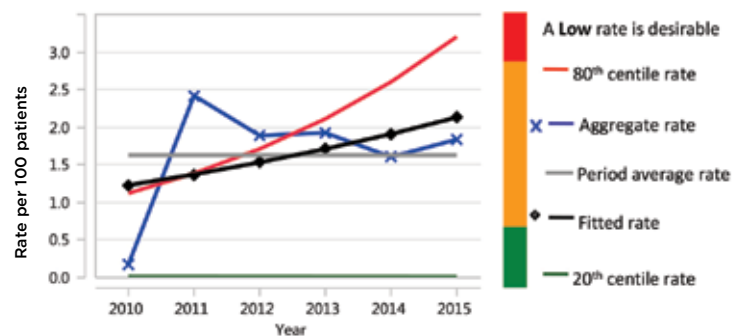
Maternity

As noted from the 2014 results, the rate of induction of labour of selected primipara (CI 1.2) continued to deteriorate in 2015. The aggregate rate deteriorated from 27.4 to 35.0 per 100 selected primipara from 2008-2015.



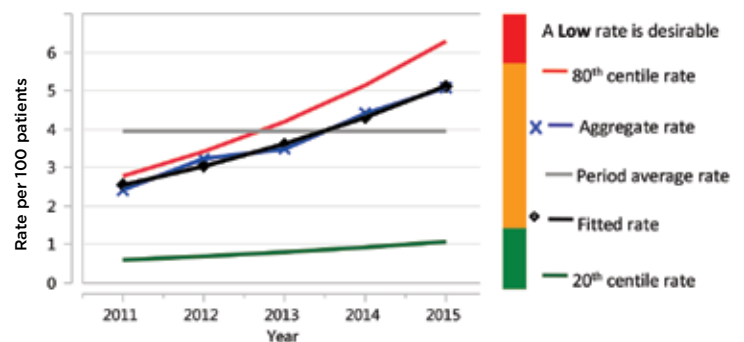
Anaesthesia and Perioperative Care

The rate of patients with a temperature less than 36°C in the recovery period (CI 3.3) has deteriorated from 1.2 to 2.1 per 100 patients.



Intensive Care

Since 2011, the rate of rapid response calls to adult ICU patients within 72 hours of ICU discharge (CI 2.1) has steadily deteriorated from 2.5 to 5.1 per 100 patients.



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About the ACHS Clinical Indicator Program

The Australian Council on Healthcare Standards (ACHS) provides the world's largest dedicated Clinical Indicator (CI) data collection and reporting service. The Clinical Indicator Program (CIP) examines data sourced from a broad range of clinical specialty areas. It includes CIs that are relevant to inpatient, outpatient, and community health facilities, which were developed by specialist clinicians. With 825 participating healthcare organisations (HCOs), it is a highly valued program developed by Australian and New Zealand clinicians.

History

The ACHS CIP was established in 1989 through the initiative of Dr Brian Collopy, a surgeon and then Chairman of the ACHS Board, who still remains involved in the program today.

The rationale for introducing the program was to provide measures to support the clinical component of the ACHS accreditation standards and to increase the involvement of medical practitioners in quality improvement initiatives within HCOs. At the time of its introduction, doctors were familiar with the use of measures to assess a patient's health status, however there were almost no tools to assess the performance of a HCO when delivering clinical care.

The first set of CIs, the Hospital-Wide Medical CIs, was introduced in 1993 and the program has continued to evolve since its inception nearly three decades ago. The program has expanded by working in collaboration with specialist colleges, societies and associations, to include a wide range of specialty areas, now totalling 21 CI sets.

Clinical Indicators and Healthcare Organisations

CIs are designed to indicate potential problems that may need addressing, rather than to provide definitive answers for HCOs. This is achieved by identifying variations within data results. CIs are used to assess, compare and determine the potential to improve care within an organisation. They are, therefore, a tool to assist in assessing whether or not a standard of patient care is being met and can provide evidence for accreditation. HCOs select those CIs that are relevant to their organisation.

Clinical Indicators and Accreditation

Accreditation with ACHS has always had a focus on quality improvement. The program continues to be free for all HCOs that are accredited by ACHS. The program is one of a number of tools that facilitates the review and development of HCO performance. While the data are not a focus for accreditation, surveyors are able to monitor the HCO's response to an outlier measure or a deteriorating trend. HCOs and surveyors are able to question what was investigated, what was learnt, what action had been, or would be, taken, and finally what was the outcome of those actions.

Supporting Clinical Indicator Program Customers

The Performance and Outcomes Service (POS) at ACHS provides email, telephone and workshop support to its members, including user access, CI collection assistance, clarification on the User Manuals and generation of customised reports.

STRENGTHS OF THE CLINICAL INDICATOR PROGRAM

- ✓ Internationally renowned
- ✓ Well established with ongoing review of CI sets
- ✓ The selection of CIs collected is determined by the HCO
- ✓ Collaboration with more than 40 Australasian healthcare colleges, societies and associations
- ✓ CI Working Parties involve wide representation from relevant healthcare colleges, societies and associations, assisted by consumers and statisticians to ensure relevancy
- ✓ External analysis and validation of data by University of Newcastle statisticians
- ✓ ICD coding provided (where applicable) to aid data collection
- ✓ Current literature review conducted on all new specialty areas available, providing background to the rationale for inclusion
- ✓ Developed by clinicians for clinicians to ensure relevancy and currency

Developed by Clinicians for Clinicians

Decisions are made on each CI set by a Working Party selected to provide broad representation. The ACHS Performance and Outcomes Service facilitate the process by providing secretariat support. When developing CIs, ACHS relies on practising clinicians from specialist areas in public and private HCOs. Members of CI Working Parties encompass relevant professions, and include personnel from non-metropolitan centres and from a number of different states and territories. The Working Party Chair is selected by the lead college, society or association, which will also oversee and endorse the revised CI User Manual.

Assisting with data analysis and offering support and advice to the Working Parties is the Health Services Research Group (HSRG) at the University of Newcastle. Prof Robert Gibberd, who has consulted on the ACHS program for more than 16 years, is supported by Mr Stephen Hancock and a team that has made healthcare data its focus.

Comparisons of Performance

The focus when collecting CI data should always be to identify opportunities for improvement. All participating HCOs receive benchmarking reports that compare their performance to that of all other HCOs submitting data for the CI, and to HCOs from their peer group. Peer groupings are determined by the Working Party and the HCO is then able to select the most appropriate stratification for their organisation. Reports are prepared every six months

following data submission. In addition, trend reports are developed annually for HCOs submitting regularly, which enable the HCOs to compare their own trended performance against that of the group overall.

By definition, 20% of all contributors of CI data must be in the poorer performing centile. This positioning does not necessarily reflect a poor performance level, as individual CIs may be associated with strong outcomes in a majority of reporting organisations. However, being in the poorer performing centile may indicate a greater opportunity for improvement.

As participation in the ACHS program is voluntary, the number of HCOs submitting data for any single CI may be small, therefore the sample may not represent the overall population. Furthermore, participating HCOs are not identified during statistical analysis, which limits comparisons between HCOs. The program's statisticians believe that, in most specialties, with greater numbers comes greater confidence that the data are representative. For this reason, ACHS reports also include outlier data which notify an HCO that their rate is more than three standard deviations from the mean. In conjunction with the centile data, outlier status provides HCOs with a realistic 'snapshot' of their performance against all other reports submitted for a specific CI.

Research in the area of organisational response to CI outcomes has identified the phenomenon of 'data denial', where HCOs are sometimes reluctant to accept the implications of CI data and reject the findings rather than investigate their implications, or seek explanations that are not associated with

their own performance. Acceptance of the data as both correct and relevant is the first step towards positive action and change.¹

It is necessary that clinicians and healthcare executives recognise that a CI result is a marker of change over time, rather than the equivalent of an 'exam result' with its designated pass/fail outcome. Although the ACHS CI reports provide data from multiple HCOs, CI data outcomes should not be considered as 'league tables'.

CI's are so named because they do not provide answers; they 'indicate'. This means an HCO's rate can raise questions for further evaluation. Considered analysis of potential reasons for trends over time and/or variation between HCOs can then be used to highlight quality issues or monitor progress of quality improvement initiatives.

Reference

1. Berwick DM, James B and Coye MJ. Connections between quality measurement and improvement. *Med Care* 2003; 41 (1 Suppl): I30-8.

CLINICAL INDICATOR USER MANUALS

The ACHS CI User Manuals contain greater information about the CI's. Members can access the User Manuals from the ACHS website. The User Manuals include information such as:

- the rationale for CI development
- suggested sources for data collection (including ICD-10-AM codes where applicable)
- desired rates (i.e. whether the organisation should be aiming for a high or low rate)
- stratification variables
- data cleaning rules
- definition of terms
- numerator and denominator details including inclusion and exclusion criteria
- evidence-based information about the CI area

Accompanying resources to the User Manuals are blank templates to assist HCOs to collect their data and retain details of their collection.

Feature Report

Hospital in the Home Clinical Indicators: A 16 year experience

Dr B. T. Collopy FRACS, FRACMA

Introduction

Hospital in the Home (HITH) is the provision of acute or subacute hospital care delivered to patients in their residence. It includes the provision of intravenous antibiotics for conditions such as cellulitis, the management of deep vein thrombosis, complex wound care, rehabilitation and monitoring that would otherwise necessitate hospital admission.¹ The complexity of the patients and their treatment is most likely increasing and will be referred to below. The HITH concept is considered to have originated in France in 1961,² but for nearly three decades its advantages were considered to be unclear in the UK and Canada.^{3,4} However, from a further decade on in the literature, in which Australia is well represented, there was agreement on the cost advantage of HITH compared with hospital care.⁵⁻⁸ This is estimated at over 20% cost savings in two separate studies, and HITH also resulted in improved patient satisfaction.⁵⁻⁸ Uncertainty concerning a possible worsening in morbidity and mortality rates was also reduced, as were concerns about program interruption or unplanned readmission to hospital for patients in HITH care.^{8,9} Far from being a return to “operating on the kitchen table” this extension of “hospital” treatment into the patient’s home appears to have been a well-controlled, safe and effectively conducted process.

The Clinical Indicators

The first version of clinical indicators (CIs) for use in the assessment of HITH care was introduced for data collection from January 2000, after a successful trial of nine CIs developed by a Working Party of representatives from a range of professional bodies involved in the delivery of HITH care. This trial was conducted across nine HITH services in Victoria in 1998.¹ The trial was supported by a Development Grant from the Victorian Department of Human Services and the Working Party was chaired by Dr Michael Montalto. With some modification the trial CIs formed the basis of the first version of HITH CIs. As only one medication administration error was reported in the three month trial covering 759 HITH admissions, this area was not included in the final CI set. The final version addressed just two areas, namely patient safety and selection, and program interruption, each area having four CIs as shown in **Table A**.

Table A: ACHS Hospital in the Home (HITH) Clinical Indicators version 1, 2000

Area	Clinical Indicator
Patient safety and selection	Number of patients making 1 unexpected phone call during the HITH admission.
	Number of patients making > 1 unexpected phone call during the HITH admission.
	Number of patients having 1 unscheduled staff callout during the HITH admission.
	Number of patients having > 1 unscheduled callout during the HITH admission.
Program interruption	Number of patients having an unplanned return to hospital and not returning to HITH.
	Number of patients having an unplanned return to hospital and transferred back to HITH within 24 hours.
	Number of patients having an unplanned return to hospital and transferred back to HITH after 24 hours.
	Total number of patients having an unplanned return to hospital.

In 2000, data were reported from 22 HCOs, reflecting care given to over 8,000 patients in the HITH setting. One or more unexpected phone calls were received from 5% of patients and an unexpected staff callout occurred with 3%. Approximately 5% of patients experienced an unexpected return to the hospital and over half of those patients did not return to HITH care.¹⁰

There have been three subsequent versions of the CIs developed. The changes for the second and third versions were not major but version 4, which was introduced in 2011, addressed a third area (unexpected patient deaths) with two CIs, one concerning deaths during the HITH phase of the admission and the second one being deaths subsequent to an unplanned return to hospital. The rates for these two CIs were between 1.3 and 4.6/10,000 patients over the last five years for the first of these mortality CIs and between 1.8 and 6.4/10,000 patients for the second one.¹¹ However, the number of HCOs addressing these newer CIs is low and may not be a true reflection of practice.

Table B shows a comparison of the data for those CIs which have been maintained since 2000. There are significant improvements in the rates for one unscheduled staff callout, and for program interruption. Whilst the reduction in the number of single unscheduled callouts may represent an improvement in patient education and information, the increase in program interruptions may represent an increase in case complexity. A scale such as the HITH Home Dependency Scale (HDS),¹² could be used to determine if the case complexity has increased, provided sufficient historical data were available.

Table B: Comparison of aggregate rates between 2000 and 2015

Clinical Indicator	Aggregate rate in 2000	Aggregate rate in 2015
≥ 1 unexpected phone call	5.06% [†]	4.83%
1 unscheduled staff callout	3.07%	0.68%*
> 1 unscheduled staff callout	0.39%	0.27%
Return to hospital – no return to HITH	3.10%*	3.93%*
Return to hospital – return to HITH within 24 hours	0.83%	1.86%*

[†]Rate for two CIs combined * Significantly different

The proportion of Australian HITH care reflected in the data is difficult to assess. It has been suggested that in 2009, Victoria accounted for 75% of HITH activity.⁶ In 2008-09, 32,500 Victorian public hospital separations had HITH care, providing a national estimate of around 43,000 patients treated. Data were received by ACHS on approximately 27,000 patients for the same period, which is approximately 60% of the possible patient load.

Clinical Interest

Clinician interest in the use of the CIs to address the quality of patient care is not readily determined in the absence of any qualitative data feedback to the ACHS and it is of concern that there has been a 30% reduction in the number of HCOs reporting on the HITH CIs since 2010. However, in preparation for a review of the current CI set, an inquiry was sent to HCOs in 2015, seeking information on what action they took following review of their 2014 data. Of 30 responders, half advised that they conducted further quality activities, over a third made policy and procedure changes and a third ran educational programs.

Reliability of the data HCOs voluntarily report to ACHS has been addressed previously.¹³ Occasionally a comparison can be made with data collected in separate Australian studies. For example, it can be seen in **Table C** that the rate of patients having an unplanned

return to hospital but not returning to HITH care, was not significantly different in a study by Montalto et al.¹⁴ compared with the ACHS data collected over the same eight year period.

Table C: Data comparison between Montalto et al. study and ACHS database for returns to hospital and no return to HITH

Data source	Years	Numerator	Denominator	Rate
Montalto et al.	2000-2007	106	3,423	3.10% *
ACHS	2000-2007	3,767	148,114	2.54% *

*No significant difference

Further Revision

In September 2015, a multidisciplinary Working Party chaired by A/Prof Mary O'Reilly - Vice President of the HITH Society Australasia, met to revise the CI set. Amongst the changes proposed for version 5 are:

- Separation of unexpected phone calls into clinical and administrative
- Inclusion of an unscheduled clinical assessment
- Retention of CIs addressing an unplanned return to hospital, but deletion of the not returning to HITH CI (due to the multiplicity of factors influencing this outcome)
- Retention of unexpected deaths during HITH admission but deletion of unexpected deaths following return to hospital (due to data issues)

The denominator for all CIs will be the number of patient bed-days within the HITH program as this is considered to better reflect the workload.

Conclusions

A number of conclusions can be drawn from the 16 years of CI use. The relative stability of the indicator areas over that period suggests that they were well chosen and the generally low levels of the aggregate rates in the ACHS database provide justification for HITH practice, which is developing as a "speciality" in its own right. Despite the recent reduction in the number of HCOs reporting to ACHS, the data still provide a reasonable picture of Australian practice.

It is likely that the complexity of the patients being entered into HITH care has increased over the period and that as the experience and skills of the clinical staff involved in this discipline grow, a further increase in that complexity and in the spectrum of conditions treated can be expected. With that expectation it will be important to maintain a program of clinical performance measurement.

References

1. Montalto M, Portelli R and Collopy B. Measuring the quality of hospital in the home care: a clinical indicator approach. *International Journal for Quality in Health Care* 1999; 11(5): 413-418.
2. Morris DE. Sante Service Bayonne: a French approach to home care. *Age Ageing* 1983; 12(4): 323-328.
3. Shepperd S and Iliffe S. The effectiveness of hospital at home compared with in-patient hospital care: a systematic review. *Journal of Public Health Medicine* 1998; 20(3): 344-350.
4. Soderstrom L, Tousignant P and Kaufman T. The health and cost effects of substituting home care for inpatient acute care: a review of the evidence. *Canadian Medical Association Journal* 1999; 160(8): 1151-1155.
5. MacIntyre CR, Ruth D and Ansari Z. Hospital in the home is cost saving for appropriately selected patients: a comparison with in-hospital care. *International Journal for Quality in Health Care*: 2002; 14(4): 285-293.
6. Deloitte Access Economics. Economic analysis of Hospital in the Home (HITH). Sydney 2011.
7. Shepperd S, Doll H, Angus R et al. Admission avoidance hospital at home. *Cochrane Database Systematic Review* 2008; Oct 8(4): CD007491.
8. Caplan GA, Sulaiman NS, Mangin DA et al. A meta-analysis of "hospital in the home". *Medical Journal of Australia* 2012; 197(9): 512-519.
9. Varney J, Weiland TJ and Jelinek G. Efficacy of hospital in the home services providing care for patients admitted from emergency departments: an integrative review. *International Journal of Evidence-based Healthcare* 2014; 12(2): 128-141.
10. Australian Council on Healthcare Standards (ACHS). *Determining the Potential to Improve Quality of Care 4th Edition*. ACHS Clinical Indicator Results for Australia and New Zealand 1998-2002. ACHS: Sydney, NSW; 2003.
11. Australian Council on Healthcare Standards (ACHS). *Australasian Clinical Indicator Report: 2008-2015*. ACHS: Sydney, NSW; 2016.
12. Santamaria N, Daly S, Addicott R et al. The development, validity and reliability of the Hospital in the Home Dependency Scale (HDS). *Australian Journal of Advanced Nursing* 2001; 18: 8-14.
13. Booth JL and Collopy BT. A national clinical indicator database: Issues of reliability and validity. *Australian Health Review* 1997; 20(4): 84-95.
14. Montalto M, Lui B, Mullins A and Woodmason K. Medically-managed Hospital in the Home: 7 year study of mortality and unplanned interruption. *Australian Health Review* 2010; 34(3): 269-275.

Clinical Indicator Program: Key Facts 2015

In this *Australasian Clinical Indicator Report 17th Edition 2008-2015*, there are a total of 314 clinical indicators (CIs) in 21 CI sets. Data within this report are submitted from healthcare organisations (HCOs) from every state and territory within Australia and HCOs within New Zealand. These HCOs are from both the public and private sectors, and from metropolitan and non-metropolitan regions.

Clinical Indicators and data submissions

Participation in the Clinical Indicator Program is voluntary for HCOs. Between 2008 and 2015, the number of HCOs participating in the Clinical Indicator Program increased from 689 to 825, representing a 20% increase over that period. While some organisations submit intermittently, most organisations make two submissions to each of their selected CIs in a year. The data are analysed and comparison reports are prepared every six months.

In 2015, the total number of six-monthly data submissions generated was 31,123 with similar numbers from the private and public sectors, 15,931 and 15,192 respectively.

In 2008, the number of six-monthly data submissions was 36,090 and reached a peak of 37,022 in 2009. Table 1 gives the number of CIs and sets by sector, the number of reporting HCOs and the number of six-monthly CI data submissions.

HCOs reporting

In previous years there were similar numbers of public and private HCOs reporting. However in 2015, there were far more public than private HCOs reporting, 511 and 314 respectively. The geographic breakdown of the number of public and private HCOs submitting data is presented in Table 2. There were 443 metropolitan HCOs and 382 non-metropolitan HCOs participating in the Clinical Indicator Program in 2015.

Clinical Indicators reported by each HCO

In 2015, the average number of individual CIs reported was 21.2, with half of all HCOs reporting between five 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 specialties.

During the last five 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 13 and 15 and the mean varied between 18.5 and 21.2.

Table 3 shows that in 2015 there were six CI sets with at least 150 HCOs providing data. While there are seven 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.

Table 1: Number of CI sets, CIs, HCOs reporting and data submissions in 2008-2015

	2008	2009	2010	2011	2012	2013	2014	2015
Clinical Indicator Sets	23	23	22	22	22	22	22	21
Clinical Indicators	366	370	332	353	335	338	328	314
Reporting HCOs								
Private	337	321	329	330	329	316	317	314
Public	352	350	336	360	341	415	490	511
Total	689	671	665	690	670	731	807	825
Submissions								
Private	17,645	17,881	17,193	16,732	16,539	15,597	16,022	15,931
Public	18,445	19,141	18,645	18,426	18,354	17,298	16,615	15,192
Total	36,090	37,022	35,838	35,158	34,893	32,895	32,637	31,123

* CI data are submitted every six months. Most HCOs submit data twice a year; however some submit data for one half of the year only.

Table 2: Number of HCOs reporting by state, sector and metropolitan/non-metropolitan characteristics in 2015

Location	Private	Public	Metropolitan	Non-metropolitan	Total
New South Wales	128	174	165	137	302
Victoria	62	109	89	82	171
Queensland	67	66	74	59	133
South Australia	21	117	58	80	138
Western Australia	18	31	33	16	49
Tasmania	7	3	6	4	10
Australian Capital Territory	6	2	8	0	8
Northern Territory	1	4	3	2	5
New Zealand	4	5	7	2	9
Total	314	511	443	382	825

Table 3: HCOs providing data for one or more CIs within each CI set in 2008-2015

Clinical Indicator Set	2008	2009	2010	2011	2012	2013	2014	2015
Anaesthesia and Perioperative Care [†]	308	295	288	292	288	273	261	250
Day Patient	400	392	397	393	370	337	318	308
Emergency Medicine	211	210	196	195	181	174	150	137
Gastrointestinal Endoscopy	86	88	103	95	91	77	78	76
Gynaecology	90	84	82	78	65	58	52	58
Hospital in the Home	48	48	50	40	37	39	34	30
Hospital-Wide [†]	460	454	458	481	478	466	468	525
Infection Control	320	325	306	324	334	424	424	401
Intensive Care [†]	104	105	105	98	104	102	107	96
Internal Medicine [†]	110	98	81	84	74	62	46	36
Maternity	180	181	187	186	188	184	175	170
Medication Safety	174	176	164	284	259	260	269	276
Mental Health Community Based	28	28	21	21	15	16	14	13
Mental Health Inpatient	121	124	112	107	110	103	104	92
Ophthalmology	99	86	87	86	77	72	75	64
Oral Health	14	11	12	15	15	14	84	90
Paediatrics	53	49	46	47	40	37	11	29
Pathology	37	49	42	42	42	40	44	39
Radiation Oncology	18	20	17	18	20	17	14	14
Radiology	65	66	60	60	69	64	41	40
Rehabilitation Medicine	109	112	122	126	122	115	105	102
Any Clinical Indicator	689	671	665	690	670	731	807	825

[†]Revised Clinical Indicator set introduced during 2015

Clinical Indicator Trends and Variation

Revealing the potential to improve performance

Within an individual facility, fluctuations in performance compared to overall performance of the submitting HCOs may focus attention on areas for further investigation.

From a health system perspective, the goal would be to see an overall trend in the desirable direction. For the majority of CIs which are process-based, a decrease in variation between the best performing HCOs and the remainder would demonstrate improvement across the system.

Using trends and variation from a systems perspective

The *Australasian Clinical Indicator Report* shows the trends in the rates for each CI (if four or more years of data are available) and three measures of the variation in rates between HCOs. The variations in clinical practice are quantified by the differences between the 20th and 80th centiles, the differences between the strata, and the rates for the HCOs that are outliers.

The report also estimates the potential improvement if:

- the mean rate was shifted to the better centile rate,
- the mean rate was shifted to the best stratum rate, and
- outlier HCOs with less desirable rates were to shift their rate to the mean rate.

This is calculated for each year and is reported using tables and graphs. The text that summarises the results is divided into:

- a summary of the trends in the mean rates and centiles,
- a table of the differences in the strata rates if they are statistically significant, and
- the number of outlier HCOs.

To view the results in full and for more information on the methodology used in this report, refer to the documentation available on the ACHS website located with this summary report.

Clinical Indicator trends 2008-2015

Of the 314 CIs in 2015, 309 are rate-based CIs, whereby data were collected for all but seven of these CIs. Of these 302 CIs, 286 had a desirable direction specified (high or low rates indicating better care). Trends could be analysed for 169 of the rate-based CIs. The CIs were not analysed for trends if there were less than four years of data, no desirable direction specified or less than five HCOs

reporting. Of the 21 sets, 19 had CIs that were tested for trend. Of these, there were 13 CI sets which had more CIs moving in the desirable direction than in the undesirable direction. There were six CI sets that had an improvement in at least two-thirds of all trended CIs. They were Day Patient, Emergency Medicine, Intensive Care, Mental Health Inpatient, Radiation Oncology and Rehabilitation Medicine.

Since the trend in CIs can be due to a changing mix of contributing HCOs, the CIs were tested again to determine whether the trend remained statistically significant after allowing for changes in the HCOs submitting data. Of those 94 statistically significant trends in the desirable direction, 71 remained significant after allowing for changes in the HCOs submitting, and of those 44 CIs whose trends were deteriorating, 26 remained significant. There were 31 CIs that showed no statistically significant trend. The trend results are summarised in Table 4.

Variation in Clinical Indicator rates

Calculating relative risk from the centiles

Given that HCOs may be large or small, there is a need to control for the differences in the random variations or confidence intervals for each HCO. To this end, 'shrunken rates' are used. The standard deviations of these 'shrunken rates' could be presented as a measure of variation between HCOs. These distributions are not symmetrical so the 20th and 80th centiles are reported. The region between these centiles contains the 'shrunken rates' for 60% of HCOs and the difference between the 20th and 80th centiles is approximately twice the standard deviation of the rates.

A measure that can be used from the centiles is the relative risk (RR) of having an event when the poorer centile applies compared to when the better centile applies. The relative risk is used to identify CIs where there is large systematic variation in rates. If the better rate is the 20th centile, then the RR is the ratio of the 80th centile to the 20th centile rates, R(80) and R(20). The formula is as follows:

When the desirable level is low: R(20) is the better rate of undesirable events (rates are usually less than 0.5).

$$RR = \frac{R(80)}{R(20)}$$

When the desirable level is high: 1 - R(80) is the better rate of non-occurring events.

$$RR = \frac{1-R(20)}{1-R(80)}$$

Table 4: Summary of the trends by CI set: CIs that have statistically significant ($p < 0.05$) trends[†] in the desirable or undesirable direction

Clinical Indicator Set	Number of CIs*	Number analysed [†]	Desirable trend‡	Undesirable trend‡	No trend
Anaesthesia and Perioperative Care	18	11	6 (2)	5 (2)	0
Day Patient	14	5	5 (2)	0 (0)	0
Emergency Medicine	20	10	8 (5)	1 (1)	1
Gastrointestinal Endoscopy	11	5	2 (2)	0 (0)	3
Gynaecology	8	4	2 (2)	1 (1)	1
Hospital in the Home	8	8	1 (1)	1 (1)	6
Hospital-Wide	26	10	6 (6)	0 (0)	4
Infection Control	30	13	8 (8)	1 (0)	4
Intensive Care	11	10	7 (5)	2 (1)	1
Internal Medicine	20	3	1 (1)	2 (1)	0
Maternity	21	19	5 (5)	11 (8)	3
Medication Safety	20	2	1 (1)	1 (1)	0
Mental Health Community Based	6	4	0 (0)	4 (2)	0
Mental Health Inpatient	28	27	23 (17)	2 (2)	2
Ophthalmology	14	11	6 (5)	2 (1)	3
Oral Health	10	7	0 (0)	4 (4)	3
Paediatrics	18	-	-	-	-
Pathology	11	11	6 (3)	5 (1)	0
Radiation Oncology	6	3	3 (3)	0 (0)	0
Radiology	8	-	-	-	-
Rehabilitation Medicine	6	6	4 (3)	2 (0)	0
Total	314	169	94 (71)	44 (26)	31
Per cent of tested			56% (42%)	26% (15%)	18%

* Includes only rate-based CIs where the desired rate is specified as either high or low.

† Trends are not reported for CIs with less than four years of data, or fewer than five HCOs reporting, and only where the desirable rate is specified as either high or low.

‡ The number in brackets is the number of CIs that had statistically significant trends after allowing for changes in the HCOs contributing the data.

The RR will be calculated for CIs where there were 20 or more submissions and potential gains of at least five events. The RR was thus calculated for 187 CIs.

While the formulae may appear somewhat daunting, the interpretation is clear. Greater values in the RR indicate greater systematic variation in rates for a given CI, and it may be appropriate to determine the causes of these variations.

Table 5: Relative Risk (RR) for CIs in each CI set – a high relative risk reveals high systematic variation between HCOs

Clinical Indicator Set	Number of CIs	CIs tested*	RR: 1 to <2	RR: 2 to <10	RR: ≥10	% ≥10
Anaesthesia and Perioperative Care	18	12	0	3	9	75%
Day Patient	14	14	0	4	10	71%
Emergency Medicine	20	9	0	8	1	11%
Gastrointestinal Endoscopy	11	7	0	6	1	14%
Gynaecology	8	6	0	6	0	0%
Hospital in the Home	8	4	0	4	0	0%
Hospital-Wide	26	18	3	10	5	28%
Infection Control	30	21	5	13	3	14%
Intensive Care	11	10	1	3	6	60%
Internal Medicine	20	-	-	-	-	-
Maternity	21	19	11	5	3	16%
Medication Safety	20	7	1	4	2	29%
Mental Health Community Based	6	-	-	-	-	-
Mental Health Inpatient	28	20	3	7	10	50%
Ophthalmology	14	5	0	4	1	20%
Oral Health	10	9	6	3	0	0%
Paediatrics	18	2	0	2	0	0%
Pathology	11	9	3	6	0	0%
Radiation Oncology	6	3	0	0	3	100%
Radiology	8	6	0	1	5	83%
Rehabilitation Medicine	6	6	0	2	4	67%
Total	314	187	33	91	63	34%
Percent of tested			18%	49%	34%	

* The relative risk can only be calculated where the centiles are not zero or 100%. CIs with 20 or more submissions and where the potential gains of the CI are at least five are included in this analysis.

Table 5 shows that there are 63 CIs (34% of those tested) with high RR (≥10). These occur in 14 of the 19 CI sets tested, and six CI sets with more than half the CIs having high RR.

Clinical Indicators with significant variations between strata

For each CI, the detailed results identify whether there were statistically different mean rates for 2015 between the three strata: Australian states and territories/NZ, public/private and metropolitan/non-metropolitan. This section summarises those results, by identifying the stratum that explains most of the variation in 2015. Table 6 shows the number of CIs that were analysed, and how many had significant stratum differences by CI set.

In 2015 there were 66 CIs with significant differences in mean rates between states and territories of Australia/

NZ, notably in Hospital-Wide (7), Maternity (10), Mental Health Inpatient (10) and Oral Health (7).

In 2015, significant differences between the mean rates for the public and private strata were found in 55 CIs, notably in Maternity (12) and Mental Health Inpatient (6).

In 2015, there were 14 CIs with significant differences between metropolitan and non-metropolitan participants, compared to 19 CIs in 2014.

Outliers

Clinical Indicators and HCOs with significantly different rates

This section uses the data for 2015 to identify desirable and less desirable rates. If a shrunken rate was more than three standard errors from the overall rate, this was considered to be statistically significant. These rates are called outliers.

Table 6: Number of CIs whose mean rates were statistically significantly different by Australian states and territories/NZ, public/private, metropolitan/non-metropolitan in 2015

Clinical Indicator Set	Number of CIs	CIs tested [#]	State/NZ	Public/private	Metropolitan/non metropolitan	Any stratum
Anaesthesia and Perioperative Care	18	12	2	3	1	5
Day Patient	14	14	5	5	1	8
Emergency Medicine	20	9	5	0	2	7
Gastrointestinal Endoscopy	11	9	1	2	1	4
Gynaecology	8	4	2	1	0	3
Hospital in the Home	8	6	0	0	0	0
Hospital-Wide	26	22	7	4	0	10
Infection Control	30	26	2	3	1	6
Intensive Care	11	10	4	5	0	7
Internal Medicine	20	1	0	0	0	0
Maternity	21	20	10	12	0	15
Medication Safety	20	6	2	4	2	5
Mental Health Community Based	6	-	-	-	-	-
Mental Health Inpatient	28	26	10	6	3	17
Ophthalmology	14	9	2	5	0	6
Oral Health	10	9	7	0	3	9
Paediatrics	18	2	0	1	0	1
Pathology	11	6	5	0	0	5
Radiation Oncology	6	1	0	0	0	0
Radiology	8	6	1	0	0	1
Rehabilitation Medicine	6	6	1	4	0	4
Total	314	204	66	55	14	113
Percent of tested			32%	27%	7%	55%

[#]At least ten HCOs must submit for the CI to be tested.

The reporting of HCOs that are outliers is more relevant to the individual HCOs. Participating HCOs receive reports identifying those areas where their rates are statistically significantly different from the overall rate. Outliers are summarised in this report to show that they occur in all sets, and in sufficiently large numbers to suggest that all HCOs would benefit from reviewing their results.

Of the 292 rate-based CIs (with rates that are not 0 or 100%) and 30,993 six-monthly data submissions, those CIs with no preferred direction or CIs that had less than 20 six-monthly data submissions in 2015 were excluded. There remained 207 CIs and 29,233 individual data submissions.

For the 207 rate-based CIs that had a desirable direction and more than 20 six-monthly data submissions, a summary of the number of outlier data submissions is given in Table 7. The proportion of data submissions that were outliers with a desirable direction was 14%,

the proportion with less desirable rates was 10% and the remaining 76% of submissions were not outliers. These proportions varied between the specialties.

In 2015, five sets had more than 15% of submissions classified as outliers. They were Emergency Medicine, Intensive Care, Pathology, Radiation Oncology and Radiology and eight CI sets had a greater number of six-monthly data submissions in the favourable direction than in the unfavourable direction.

Those CIs with a high proportion of outliers were usually associated with process measures such as access block in emergency departments and intensive care units, delays in reporting test results in pathology and radiology, and documentation of and review processes in mental health and medication safety.

Table 7: Number of CIs, HCOs reporting and data submissions in 2015

Clinical Indicator Set	Number of CIs	CIs tested [#]	HCOs	Data submissions	Undesirable	Desirable
Anaesthesia and Perioperative Care	18	12	250	1,894	14%	32%
Day Patient	14	14	308	4,043	12%	18%
Emergency Medicine	20	10	137	1,396	19%	46%
Gastrointestinal Endoscopy	11	9	76	723	6%	0%
Gynaecology	8	6	57	285	7%	1%
Hospital in the Home	8	6	27	181	8%	4%
Hospital-Wide	26	22	525	5,401	10%	13%
Infection Control	30	24	401	3,508	3%	3%
Intensive Care	11	10	96	1,095	16%	29%
Internal Medicine	20	-	-	-	-	-
Maternity	21	20	170	4,576	7%	7%
Medication Safety	20	7	262	696	11%	9%
Mental Health Community Based	6	-	-	-	-	-
Mental Health Inpatient	28	24	92	1,987	13%	16%
Ophthalmology	14	8	64	442	6%	0%
Oral Health	10	9	90	1,028	8%	4%
Paediatrics	18	2	17	42	7%	2%
Pathology	11	9	39	405	25%	26%
Radiation Oncology	6	3	14	68	25%	18%
Radiology	8	6	39	362	21%	42%
Rehabilitation Medicine	6	6	102	1,101	14%	12%
Total	314	207	807	29,233	10%	14%

[#] CIs with no preferred direction or less than 20 six-monthly data submissions were excluded. Hence not all of the 825 contributing HCOs are represented in the above table.

Each of the 207 CIs tested were categorised according to whether there were:

- no outlier six-monthly data submissions
- at least one outlier with undesirable rates, none with desirable rates
- at least one outlier with desirable rates, none with undesirable rates
- outliers with both desirable and undesirable rates

Table 8 reveals that 24 of the 207 CIs had no six-monthly data submissions that were outliers and 134 CIs included both undesirable and desirable six-monthly data submissions as outliers.

Can outlier rates be used to rank HCOs?

This has been suggested as a way to improve quality, even though the research literature in general does not support the use of 'league tables'.

For the 24 CIs with no outliers, the variation between HCOs was not statistically significant. This means that any ranking would be equivalent to that obtained from tossing a coin or dice. For the remaining 183 CIs, 181 (87% of the 207 tested) have six-monthly data submissions that are outliers in the undesirable direction (with or without other outlier submissions in the desirable direction – Table 8).

Table 8: Number of CIs that had six-monthly data submissions that were outliers in 2015*

Outlier category	Number of CIs	Percent of CIs	Data submissions		
			Range	Median	Mean
No outliers	24	12%	20 - 284	45	94
Undesirable rates only	47	23%	20 - 652	85	128
Desirable rates only	2	1%	26 - 28	27	27
Outliers - undesirable and desirable rates	134	65%	20 - 745	112	156
Total	207	100%	20 - 745	93	141

*CIs with no preferred direction or less than 20 six-monthly data submissions were excluded.

Table 9: Number of HCOs that had CIs that were outliers in 2015*

Outlier category	Number of HCOs	Percent of HCOs	Number of CIs			Data submissions		
			Range	Median	Mean	Range	Median	Mean
No outliers	220	27	1 - 20	2	3	1 - 38	4	5
Undesirable rates only	96	12	1 - 41	8	11	2 - 82	15	18
Desirable rates only	120	15	2 - 50	14	15	2 - 87	20	27
Outliers - undesirable and desirable rates	385	47	4 - 101	29	33	7 - 195	50	60
Total	821	100	1 - 101	14	20	1 - 195	22	36

*CIs with no preferred direction or less than 20 six-monthly data submissions were excluded. Hence not all of the 825 contributing HCOs are represented in the above table.

Each of the 821 HCOs that submitted one or more of the 207 CIs tested were categorised according to whether there were:

- no outlier data submissions
- at least one outlier with undesirable rates, none with desirable rates
- at least one outlier with desirable rates, none with undesirable rates
- outliers with both desirable and undesirable rates

The analyses of the outlier rates by HCO reveal that the desirable rates do not cluster into HCOs that have better performance, but that both desirable and undesirable rates occur in 47% of HCOs (Table 9). Furthermore, the table shows that HCOs that report fewer CIs have less likelihood of having both desirable and undesirable rates compared to those reporting a greater number of CIs.

From Table 9, it can be seen that of the 821 HCOs considered, 385 (47%) HCOs have both desirable and undesirable rates whereas only 96 (12%) HCOs have outliers only in the undesirable direction, a total of 481 HCOs (59%).

The results from Table 7 and Table 9 show that:

- 14% of submissions are in the desirable direction and 10% in the undesirable direction. Thus the majority of six-monthly data submissions (the remaining 76%) are not statistically different from the average (Table 7),
- 59% of the 821 HCOs have some clinical areas with rates that are outliers in the undesirable direction (Table 9).

This suggests that CIs have a greater role in identifying areas for review, rather than for ranking performance.

Summary of Results

A summary of the main observations for each set of CIs follows

 Anaesthesia and Perioperative Care version 6	25	 Medication Safety version 4	95
 Day Patient version 5	31	 Mental Health Community Based version 2	99
 Emergency Medicine version 5.1	35	 Mental Health Inpatient version 6	103
 Gastrointestinal Endoscopy version 2	45	 Ophthalmology version 5	113
 Gynaecology version 7	49	 Oral Health version 3	117
 Hospital in the Home version 4	53	 Paediatrics version 5	123
 Hospital-Wide version 12	55	 Pathology version 3	127
 Infection Control version 4.1	65	 Radiation Oncology version 4	131
 Intensive Care version 4.2	71	 Radiology version 5	135
 Internal Medicine version 6	81	 Rehabilitation Medicine version 5	141
 Maternity version 7.2	85		

Key for 2015 Summary Data sections:

(H) - refers to a High desirable rate

(L) - refers to a Low desirable rate

(N) - refers to a Not Specified rate

EXPERT COMMENTARY

Australian and New Zealand College of Anaesthetists (ANZCA)

Key Facts:

CREATION OF
CI SET:
1996

LAST REVISION
OF CI SET:
2015

18
CIs ACROSS
6
CLINICAL AREAS

Anaesthesia and Perioperative Care

Introductory comments

ANZCA is pleased to provide feedback and commends ACHS on selecting clinical indicators (CIs) based on ANZCA's professional documents.

Interpretation of the data within the report is somewhat limited due to the relatively small number of participating HCOs and records. It is recognised that the process of data collection is voluntary and HCOs may select the CIs that they submit. This raises the concern that the interpretation may be skewed due to selection bias. The inclusion of a larger number of HCOs in the denominator may indeed result in lower 'rates' within which many of the outliers would no longer be outliers.

This is evident in the apparent high compliance with many of the CIs. Furthermore, while documentation is important the link between documentation and effective activity may be tenuous. This can be seen from the use of the World Health Organisation (WHO) Time Out as a tick sheet as opposed to a committed engagement from the whole operating room team.



Pre-anaesthesia period

The high level of compliance in CI 1.1 reflects the importance accorded to this activity by anaesthetists. The small differences between strata may reflect differences in casemix; elective versus emergency caseload. It would be interesting to identify whether the outliers are endoscopy units or facilities with high turnover that impose time pressures, which limit incidence and effectiveness of the consultation.

Smoking cessation is an important health advocacy role. The small number of HCOs and records submitted for CI 1.2 suggests that in most HCOs this activity is not undertaken, and less likely to be documented. The high compliance rate in the report is surprising and low uptake probably due to the above limitations.

Intraoperative period

This result (CI 2.1) is most likely inflated and the considerable variability reflects local factors and interpretations. The definition of a trained assistant is not clear and is dependent on the person documenting this. The anaesthesia assistant is rarely documented on anaesthesia charts and presumably it is entered by nursing staff who may incorrectly assume that any nurse acting as the assistant complies with ANZCA PS08 *Statement on the Assistant for the Anaesthetist*.

Interpretation of CI 2.2 is blurred by the lack of definition of what constitutes substantial compliance. The relevant ANZCA professional document on the anaesthesia record is PS06 *Recommendations on the Recording of an Episode of Anaesthesia Care*. The outliers for this CI may be a similar group to those in CI 1.2.

The number of HCOs reporting on CI 2.3 is low, resulting in a small denominator. Interpretation of the apparent high rate is subject to the limited denominator.

The intent of CI 2.4 is good and would be expected to capture the contribution of this process to the outcome of postoperative nausea and vomiting (PONV) addressed in a later CI. The increase in rate is most likely appropriate, although the variability in the public system as well as the outliers may reflect cost factors and/or practitioner experience (consultant/trainee). The standard error in the metropolitan group is interesting.

Patient recovery period

The large number of respondents contributing to the large denominator indicates that this problem occurs infrequently and HCOs are willing to submit data for CI 3.1. It is a reflection of improved anaesthesia care and demonstrates an encouraging pattern.

The number of 'good' outliers is a further indication of the value of large participating numbers.

There appears to be a general decrease in the incidence of treatment for PONV (CI 3.2), which may reflect better anaesthesia management. It also aligns with an earlier CI related to increasing administration of prophylactic anti-emetics. The strata variation is significant with far greater variability in public hospitals, while the differences between states and territories are most interesting. It raises the question as to whether in Victoria, for example, there was a larger proportion of private hospitals contributing to the number of HCOs. The outliers may be coming from either regional centres or from endoscopy suites.

CI 3.3 reflects the importance placed on maintenance of temperature, and this varies according to many factors. There appears to have been a concerted effort to minimise perioperative heat loss. The significant jump from 2010 is related to the time when the CI changed from 35°C to 36°C.

In the context of anaesthesia management (CI 3.4), presence of acute pain services and local factors, interpretation of this CI may be misleading. Pain protocols vary as does patient responsiveness, both of which may contribute to apparent lack of response. It is not clear whether review constitutes a visit or telephone call. The physical attendance may not be related to the outcome of severe pain not responding to pain protocol. The purpose of this CI as it is phrased may be unclear and may have contributed to the outliers across the whole range of the denominator size.

The data for CI 3.5 suggests that the incidence of unplanned delayed stays in the post-anaesthesia care unit (PACU) is small, and again there is a difference between the strata with private facilities faring better than public facilities as well as less variability. However, interpretation has to be cached in terms of delays other than clinical that may contribute to delays, including availability of ward beds or high dependency unit (HDU) / intensive care unit (ICU) beds.

Postoperative period

CI 4.1 is reasonably straightforward and demonstrates a low rate. The variation between HCOs with outliers in those with the larger denominator size would suggest increased complexity of procedures and patient comorbidities.

The small numerator for CI 4.2 suggests that many HCOs do not have hospital approved documents for handover. In those that have, the rate is expected to be high, as demonstrated in this data.

EXPERT COMMENTARY

Australian and New Zealand College of Anaesthetists (ANZCA)

Nursing staff are meticulous in handover documentation and it is no surprise that the rate for CI 4.3 is high. However, it is a process that is related to the nursing role rather than the anaesthetist.

Management of acute pain

Pain intensity scores (CI 5.1) continue to be debated. The need to record a score is not relevant to treating severe acute pain. Obtaining a score may not be feasible in a semi-conscious patient in PACU who has limited ability to respond, someone who does not speak English, or to a parturient in severe labour pains. This process step may have limited application to treating acute pain.

Given the small number of HCOs for CI 5.2, the rate appears high. However, as nursing management improves there may be fewer visits by the anaesthetist who may remain in frequent contact by phone.

Obstetric anaesthesia care

There has been an increase in the rate for CI 6.1 since 2011. This may be related to the increasing tendency towards spinal or combined spinal epidural analgesia/ anaesthesia. It would be interesting to note whether the increase is associated with spinals and therefore related to needle size or type, or whether it is epidurals where the experience tends to be diluted due to the preference of spinals over epidurals.

The incidence of obstetric patients with the risks and benefits of analgesia documented (CI 6.2) has risen. This information should be provided at antenatal visits/classes as it may be inappropriate to delay administration of epidural/spinal, and furthermore, the patient's ability to comprehend issues of consent at such times is sure to be limited. Finally, documentation is no guarantee that information is understood. The relevant ANZCA professional document is PS26 *Guidelines on Consent for Anaesthesia or Sedation*.

General/closing comments

The collection of data and CIs can contribute significantly to the management of patient care, both from a clinical perspective, but also from an organisational perspective.

To be useful, collection processes need to be standardised and uniform with an adequate denominator and minimisation of selectivity of response from HCOs.

ANZCA encourages HCOs to undertake data collection and audit with a view to safety and quality improvement in patient care.

“The indicators can be used to demonstrate compliance by hospitals and departments with a number of the National Safety and Quality Health Service Standards”

- Source: User Manual
Chair - Anaesthesia and Perioperative Care
Working Party, ANZCA



2015 Summary Data

Pre-anaesthesia period

1.1 Pre-anaesthesia consultation completed by anaesthetist (H)

In 2015, there were 76,741 patients reported from 41 HCOs. The annual rate was 96.6 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were eight outlier records from six outlier HCOs whose combined excess was 2,248 fewer patients who have complying documentation of risks and benefits of anaesthetic procedure(s) at consultation. The outlier HCO rate was 74.2 per 100 patients.

1.2 Smoking cessation advised in pre-anaesthesia consultation (H)

In 2015, there were 3,856 patients who smoke reported from four HCOs. The annual rate was 99.9 per 100 patients who smoke. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was two fewer smokers who have documented quit smoking advice recorded at consultation. The outlier HCO rate was 98.4 per 100 patients who smoke.

Intraoperative period

2.1 Presence of a trained assistant (H)

In 2015, there were 141,484 patients reported from 32 HCOs. The annual rate was 98.1 per 100 patients. The fitted rate deteriorated from 96.5 to 94.0, a change of 2.6 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were three outlier records from two outlier HCOs whose combined excess was 2,208 fewer procedures where there is a trained assistant to the anaesthetist. The outlier HCO rate was 86.8 per 100 patients.

2.2 Anaesthesia record compliance with ANZCA requirements (H)

In 2015, there were 124,093 patients reported from 52 HCOs. The annual rate was 99.0 per 100 patients. The fitted rate improved from 96.3 to 98.3, a change of 2.0 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 12 outlier records from 10 outlier HCOs whose combined excess was 978 fewer compliant anaesthesia records. The outlier HCO rate was 91.5 per 100 patients.

2.3 Time-out procedure: regional anaesthesia (H)

In 2015, there were 6,847 patients reported from six HCOs. The annual rate was 99.2 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was 47 fewer patients who have a time-out procedure documented. The outlier HCO rate was 94.5 per 100 patients.

2.4 Prophylactic anti-emetic administered to patients with history of PONV (H)

In 2015, there were 1,314 patients reported from 11 HCOs. The annual rate was 94.9 per 100 patients. The fitted rate improved from 74.3 to 97.6, a change of 23.3 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 22.6 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were five outlier records from four outlier HCOs whose combined excess was 49 fewer patients to whom a prophylactic anti-emetic has been administered. The outlier HCO rate was 58.3 per 100 patients.

Patient recovery period

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

In 2015, there were 1,316,592 patients reported from 181 HCOs. The annual rate was 0.036 per 100 patients. The fitted rate improved from 0.065 to 0.037, a change of 0.028 per 100 patients. In 2015, the potential gains totalled 380 fewer patients who require intervention to relieve respiratory distress, corresponding to a reduction by approximately three-quarters. There were 17 outlier records from 13 outlier HCOs whose combined excess was 192 more patients who require intervention to relieve respiratory distress. The outlier HCO rate was 0.35 per 100 patients.

2015 SUMMARY DATA

3.2 PONV treatment in the recovery period (L)

In 2015, there were 638,908 patients reported from 107 HCOs. The annual rate was 0.93 per 100 patients. The fitted rate improved from 1.1 to 0.76, a change of 0.34 per 100 patients. In 2015, the potential gains totalled 5,582 fewer patients undergoing treatment for postoperative nausea and vomiting, corresponding to a reduction by approximately four-fifths. There were 41 outlier records from 27 outlier HCOs whose combined excess was 3,444 more patients undergoing treatment for postoperative nausea and vomiting. The outlier HCO rate was 3.4 per 100 patients.

3.3 Temperature less than 36°C in the recovery period (L)

In 2015, there were 966,503 patients reported from 151 HCOs. The annual rate was 1.84 per 100 patients. The fitted rate deteriorated from 1.2 to 2.1, a change of 0.90 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.89 per 100 patients. In 2015, the potential gains totalled 17,634 fewer patients with a temperature of less than 36°C, corresponding to a reduction by approximately four-fifths. There were 57 outlier records from 35 outlier HCOs whose combined excess was 12,652 more patients with a temperature of less than 36°C. The outlier HCO rate was 11.2 per 100 patients.

3.4 Severe pain not responding to pain protocol in the recovery period (L)

In 2015, there were 1,314,800 patients reported from 173 HCOs. The annual rate was 0.38 per 100 patients. The fitted rate improved from 0.39 to 0.38, a change of 0.013 per 100 patients. In 2015, the potential gains totalled 4,240 fewer patients who have severe pain not responding to pain protocol, corresponding to a reduction by approximately four-fifths. There were 48 outlier records from 31 outlier HCOs whose combined excess was 2,121 more patients who have severe pain not responding to pain protocol. The outlier HCO rate was 1.4 per 100 patients.

3.5 Unplanned stay in recovery room longer than 2 hours (L)

In 2015, there were 1,069,429 patients reported from 166 HCOs. The annual rate was 1.17 per 100 patients. In 2015, the potential gains totalled 11,200 fewer patients who have an unplanned stay in the post-anaesthesia recovery room for longer than two hours, corresponding to a reduction by approximately four-fifths. There were 44 outlier

records from 27 outlier HCOs whose combined excess was 5,824 more patients who have an unplanned stay in the post-anaesthesia recovery room for longer than two hours. The outlier HCO rate was 4.2 per 100 patients.

Postoperative period

4.1 Unplanned ICU admission within 24 hours after procedure (L)

In 2015, there were 891,112 patients reported from 113 HCOs. The annual rate was 0.18 per 100 patients. In 2015, the potential gains totalled 1,316 fewer patients who have an unplanned admission to an intensive care unit within 24 hours of a procedure, corresponding to a reduction by approximately four-fifths. There were 25 outlier records from 20 outlier HCOs whose combined excess was 546 more patients who have an unplanned admission to an intensive care unit within 24 hours of a procedure. The outlier HCO rate was 0.62 per 100 patients.

4.2 Documented patient handover - operating suite to recovery area (H)

In 2015, there were 34,445 patients reported from 15 HCOs. The annual rate was 96.9 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were three outlier records from three outlier HCOs whose combined excess was 811 fewer patients with handover documentation completed from the operating suite to recovery area. The outlier HCO rate was 87.1 per 100 patients.

4.3 Documented patient handover - recovery area to ward (H)

In 2015, there were 20,665 patients reported from nine HCOs. The annual rate was 94.7 per 100 patients. In 2015, the potential gains totalled 1,089 more patients with handover documentation completed from the recovery area to ward. There were two outlier records from two outlier HCOs whose combined excess was 818 fewer patients with handover documentation completed from the recovery area to ward. The outlier HCO rate was 78.9 per 100 patients.

Management of acute pain

5.1 Pain intensity scores recorded for surgical patients (H)

In 2015, there were 12,981 patients reported from 16 HCOs. The annual rate was 98.1 per 100 patients. The fitted rate deteriorated from 94.2 to 76.1, a change of 18.1 per 100 patients. There was relatively



little variation between HCOs and so the potential gains were small in 2015. There were seven outlier records from five outlier HCOs whose combined excess was 165 fewer surgical patients having pain intensity scores recorded regularly. The outlier HCO rate was 92.6 per 100 patients.

5.2 Daily anaesthetist review following postoperative epidural analgesia (H)

In 2015, there were 594 patients reported from 11 HCOs. The annual rate was 97.8 per 100 patients. The fitted rate deteriorated from 99.7 to 97.6, a change of 2.2 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was 10 fewer patients reviewed at least daily. The outlier HCO rate was 73.3 per 100 patients.

Obstetric anaesthesia care

6.1 Obstetric patients experiencing post-dural puncture headache (L)

In 2015, there were 13,317 patients reported from 19 HCOs. The annual rate was 0.67 per 100 patients. The fitted rate deteriorated from 0.37 to 0.75, a change of 0.38 per 100 patients. In 2015, the potential gains totalled 37 fewer obstetric patients who experience a post-dural puncture headache, corresponding to a reduction by approximately one-third. There were no outlier HCOs in 2015.

6.2 Obstetric patients with risks and benefits of analgesia documented (H)

In 2015, there were 2,979 patients reported from six HCOs. The annual rate was 96.3 per 100 patients. The fitted rate improved from 64.0 to 93.7, a change of 29.7 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 28.3 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were two outlier records from two outlier HCOs whose combined excess was 81 fewer obstetric patients who have documentation of risks and benefits of spinal anaesthesia. The outlier HCO rate was 82.3 per 100 patients.

EXPERT COMMENTARY

Australian Private Hospitals
Association (APHA)

“Clinical indicators, as the title suggests, are indicators and as such any difference from the average or trend by an individual HCO should be a trigger for further investigation rather than identifying a specific problem. HCOs are strongly encouraged to compare their own CI rates with those in the report and investigate the underlying causes to determine if there is a need for corrective action.”

Day Patient

Introductory comments

The Australian Private Hospitals Association strongly supports the continuing development of clinical indicators (CIs) by ACHS.

Preadmission preparation

Overall the preadmission assessment rate (CI 1.1) remains high for 2015 at 86.6 per 100 patients. There is a small number of outlier HCOs with rates less than 45 per 100 patients, which is of concern. These outlier HCOs are encouraged to investigate the reasons for the low compliance and seek to make improvements. The value of a good system of preadmission preparation can have a positive impact on other CIs.





Procedure non-attendance

The number of HCOs reporting on CI 2.1 has been steadily falling over the eight years of the series. However it would appear that the efforts of the HCOs reporting are being rewarded by a reduction in the rate to 0.56 per 100 patients in 2015, maintaining the strong downward trend.

Procedure cancellation

Cancellation after arrival due to a pre-existing medical condition (CI 3.1) has showed a continuing improvement in the trend, with a rate of 0.17 per 100 patients in 2015. Interestingly the rate for 'Cancellation after arrival due to an acute medical condition' (CI 3.2) has increased slightly to 0.25 per 100 patients in 2015, although the fitted rate trend does show a gradual decrease. There is a strong link between these CIs and the preadmission preparation (CI 1.1). However the rate for 'Cancellation after arrival due to administrative/organisational reasons' (CI 3.3) is at a higher rate of 0.56 per 100 patients in 2015, compared to the other CIs in this area and should be an area for potential improvement.

Episode of care adverse events

It is pleasing to see a steady increase in the number of HCOs reporting against CI 4.1. A steady decrease in the rate to 0.097 per 100 patients in 2015 is considered to be an excellent result for this vitally important area of patient safety and quality of care.

Unplanned return to the operating room

The emphasis of CI 5.1 is on 'unplanned' returns to the operating room. The trend line shows that the rate for this CI has continued to decline across the series since 2008, to 0.032 per 100 patients in 2015. This CI is also strongly related to direct patient safety and quality of care.

Unplanned transfer/admission

The rate for CI 6.1 has risen slightly from 0.91 per 100 patients in 2014 to 0.95 per 100 patients in 2015. There are a number of clinical risk factors associated with day procedures which can result in transfer or admission for an overnight stay. However a split of this CI by co-located day hospital or standalone day hospital facility may be of interest to determine if easier access to overnight beds is also a factor in the decision making process to admit overnight.

Discharge

Unplanned delay in discharge for clinical reasons (CI 7.1) has increased slightly from 0.42 per 100 patients in 2014 to 0.45 per 100 patients in 2015. However as this CI has only been reported since 2013 there is no clear trend evident. Similarly 'Unplanned delay in discharge for non-clinical reasons' (CI 7.2) has increased to 0.41 per 100 patients in 2015. Again no trend is evident, but there was a small number of significant outliers which appear to have skewed the aggregate rate in 2015.

Departure

Departure without an escort (CI 8.1) has remained at a steady rate of 0.85 per 100 patients for 2014 and 2015. The 2015 aggregate rate would seem to be skewed by significant outlier HCOs in NSW as shown in the Box Plot by State. This result is considered to initially warrant further data validation to determine any basic underlying cause.

Post-discharge follow-up

The rates for post-discharge follow-up are measured through two CIs. Follow-up by phone call within 7 days (CI 9.1) measures the rate of actual follow-up calls made and shows a steady increasing trend to 92 per 100 patients. Follow-up phone call received by patient or carer within 7 days (CI 9.2) is a measure of the successful phone calls made with patients or carers and is also showing a steadily increasing trend to 82.6 per 100 patients in 2015. However only 66 HCOs reported against CI 9.1 whereas 85 HCOs reported against CI 9.2. This could indicate some confusion by HCOs regarding which CI to measure or HCOs placing more importance on successful calls rather than contact attempts.

General/closing comments

The response rates for some CIs are not very high. This possibly indicates that some CIs are considered by some HCOs to be more relevant to their operations than others. Clinical indicators, as the title suggests, are indicators and as such any difference from the average or trend by an individual HCO should be a trigger for further investigation rather than identifying a specific problem. HCOs are strongly encouraged to compare their own CI rates with those in the report and investigate the underlying causes to determine if there is a need for corrective action.

2015 Summary Data

Preadmission preparation

1.1 Booked patients assessed before admission (H)

In 2015, there were 151,179 patients reported from 74 HCOs. The annual rate was 86.6 per 100 patients. In 2015, the potential gains totalled 20,206 more patients who receive a preadmission assessment. There were 15 outlier records from 10 outlier HCOs whose combined excess was 13,598 fewer patients who receive a preadmission assessment. The outlier HCO rate was 45.1 per 100 patients.

Procedure non-attendance

2.1 Booked patients who fail to arrive (L)

In 2015, there were 756,249 patients reported from 217 HCOs. The annual rate was 0.56 per 100 patients. The fitted rate improved from 0.94 to 0.56, a change of 0.38 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.38 per 100 patients. In 2015, the potential gains totalled 4,041 fewer patients who fail to arrive, corresponding to a reduction by approximately four-fifths. There were 52 outlier records from 36 outlier HCOs whose combined excess was 2,274 more patients who fail to arrive. The outlier HCO rate was 2.9 per 100 patients.

Procedure cancellation

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

In 2015, there were 971,849 patients reported from 255 HCOs. The annual rate was 0.17 per 100 patients. The fitted rate improved from 0.20 to 0.18, a change of 0.025 per 100 patients. In 2015, the potential gains totalled 1,171 fewer patients who have a procedure cancelled, corresponding to a

reduction by approximately two-thirds. There were 39 outlier records from 30 outlier HCOs whose combined excess was 548 more patients who have a procedure cancelled. The outlier HCO rate was 0.98 per 100 patients.

3.2 Cancellation after arrival due to an acute medical condition (L)

In 2015, there were 939,907 patients reported from 254 HCOs. The annual rate was 0.25 per 100 patients. The fitted rate improved from 0.27 to 0.24, a change of 0.033 per 100 patients. In 2015, the potential gains totalled 1,734 fewer patients who have a procedure cancelled, corresponding to a reduction by approximately two-thirds. There were 53 outlier records from 42 outlier HCOs whose combined excess was 768 more patients who have a procedure cancelled. The outlier HCO rate was 1.2 per 100 patients.

3.3 Cancellation after arrival due to administrative/organisational reasons (L)

In 2015, there were 945,430 patients reported from 260 HCOs. The annual rate was 0.56 per 100 patients. The fitted rate improved from 0.60 to 0.54, a change of 0.060 per 100 patients. In 2015, the potential gains totalled 4,894 fewer patients who have a procedure cancelled, corresponding to a reduction by approximately four-fifths. There were 76 outlier records from 55 outlier HCOs whose combined excess was 3,139 more patients who have a procedure cancelled. The outlier HCO rate was 3.1 per 100 patients.

Episode of care adverse events

4.1 Patients who experience an adverse event during care delivery (L)

In 2015, there were 386,466 patients reported from 124 HCOs. The annual rate was 0.097 per 100 patients. In 2015, the potential gains totalled 288 fewer patients who experience an adverse event, corresponding to a reduction by approximately three-quarters. There were 16 outlier records from 13 outlier HCOs whose combined excess was 105 more patients who experience an adverse event. The outlier HCO rate was 0.54 per 100 patients.

Unplanned return to the operating room

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

In 2015, there were 874,824 patients reported from 228 HCOs. The annual rate was 0.032 per 100 patients. The fitted rate improved from 0.049 to 0.036, a change of 0.013 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period.



The rate change was 0.013 per 100 patients. In 2015, the potential gains totalled 120 fewer patients having an unplanned return to the operating/procedure room, corresponding to a reduction by approximately one-third. There were five outlier records from four outlier HCOs whose combined excess was 22 more patients having an unplanned return to the operating/procedure room. The outlier HCO rate was 0.41 per 100 patients.

Unplanned transfer/admission

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

In 2015, there were 955,117 patients reported from 237 HCOs. The annual rate was 0.95 per 100 patients. In 2015, the potential gains totalled 8,404 fewer patients who have an unplanned transfer or overnight admission, corresponding to a reduction by approximately four-fifths. There were 64 outlier records from 40 outlier HCOs whose combined excess was 3,946 more patients who have an unplanned transfer or overnight admission. The outlier HCO rate was 3.2 per 100 patients.

6.2 Unplanned transfer or admission related to ongoing management (L)

In 2015, there were 468,534 patients reported from 136 HCOs. The annual rate was 0.38 per 100 patients. In 2015, the potential gains totalled 1,620 fewer patients who have an unplanned transfer or overnight admission, corresponding to a reduction by approximately four-fifths. There were 29 outlier records from 20 outlier HCOs whose combined excess was 778 more patients who have an unplanned transfer or overnight admission. The outlier HCO rate was 1.2 per 100 patients.

Discharge

7.1 Unplanned delayed discharge for clinical reasons - greater than 1 hour beyond expected (L)

In 2015, there were 436,346 patients reported from 135 HCOs. The annual rate was 0.45 per 100 patients. In 2015, the potential gains totalled 1,834 fewer patients who have a delayed discharge greater than one hour, corresponding to a reduction by approximately four-fifths. There were 27 outlier records from 18 outlier HCOs whose combined excess was 1,041 more patients who have a delayed discharge greater than one hour. The outlier HCO rate was 2.2 per 100 patients.

7.2 Unplanned delayed discharge for non-clinical reasons - greater than 1 hour beyond expected (L)

In 2015, there were 307,652 patients reported from 103 HCOs. The annual rate was 0.41 per 100 patients. In 2015, the potential gains totalled 1,221

fewer patients who have a delayed discharge greater than one hour, corresponding to a reduction by approximately four-fifths. There were 21 outlier records from 14 outlier HCOs whose combined excess was 699 more patients who have a delayed discharge greater than one hour. The outlier HCO rate was 2.6 per 100 patients.

Departure

8.1 Departure without an escort (L)

In 2015, there were 177,680 patients reported from 75 HCOs. The annual rate was 0.85 per 100 patients. In 2015, the potential gains totalled 1,493 fewer patients discharged without an escort, corresponding to a reduction by approximately four-fifths. There were 15 outlier records from 10 outlier HCOs whose combined excess was 1,103 more patients discharged without an escort. The outlier HCO rate was 5.3 per 100 patients.

Post-discharge follow-up

9.1 Follow-up phone call within 7 days (H)

In 2015, there were 116,386 patients reported from 66 HCOs. The annual rate was 92.0 per 100 patients. In 2015, the potential gains totalled 9,254 more patients receiving a post-discharge telephone call. There were 24 outlier records from 17 outlier HCOs whose combined excess was 5,562 fewer patients receiving a post-discharge telephone call. The outlier HCO rate was 74.6 per 100 patients.

9.2 Follow-up phone call received by patient or carer within 7 days (H)

In 2015, there were 184,964 patients reported from 85 HCOs. The annual rate was 82.6 per 100 patients. In 2015, the potential gains totalled 32,073 more patients or carers receiving a post-discharge telephone call. There were 44 outlier records from 33 outlier HCOs whose combined excess was 15,290 fewer patients or carers receiving a post-discharge telephone call. The outlier HCO rate was 58.4 per 100 patients.

EXPERT COMMENTARY

Australasian College for
Emergency Medicine (ACEM)

Emergency Medicine

Introductory comments

ACEM notes the overall lack of engagement and participation from healthcare organisations (HCOs). The data sets for many of the clinical indicators (CI) are small, and ACEM therefore considers the interpretation/extrapolation of the data is likely to be lacking reliability.

With respect to the triage CIs, ACEM notes that South Australia (SA) consistently underperforms compared with other states across all categories. The variance between states is quite considerable. For example, Category 2 (CI 1.2): VIC = 82.5% and SA = 67.1%; Category 3 (CI 1.3): VIC = 77.6% and SA = 35.2%.

ACEM considers the low rate for acute myocardial infarction (AMI) management (CI 2.1) is likely attributed to the lack of an option for percutaneous coronary intervention (PCI). A marked feature is the difference between non-metropolitan versus metropolitan waiting times, where the metropolitan wait is considerably longer. This is important as AMI will be the management option used by all centres that are some distance from a PCI centre; i.e. a centre that has no PCI, but



The Emergency Medicine clinical indicators were reviewed in 2015 by a multidisciplinary Working Party consisting of representatives from the Australasian College for Emergency Medicine (ACEM), the College of Emergency Nursing Australasia (CENA) and the Australian Private Hospitals Association (APHA). The revised Emergency Medicine clinical indicator set has been released for data collection from July 2016.



is close to another that does (metropolitan) will be bypassed so the patient can receive PCI. At sites with no option to do this (non-metropolitan), AMI will be used and yet the time delays are quite significant. The aim should be administration in less than 30 minutes.

Regarding access block (CI 3.1), ACEM is disappointed to not see more data reported, as this is a mandated Government reporting statistic. It is interesting to note the slight 'downturn' in the figure post the National Emergency Access Target (NEAT) era, even though Governments and hospitals continue to utilise access targets, with the NEAT four hour target still used as a reporting tool.

The subsequent CIs have insignificant numbers and therefore the data cannot be extrapolated. Each of these would require a manual history tracking/audit and it is difficult to determine if this is simply not being done or not reported as being done.

Mental Health patient numbers and reporting is also low, which is disappointing given that patients with these issues present across all EDs. Similarly, with such low numbers for the paediatric CIs, the data cannot be interpreted.

It is surprising that the 'did not wait' (DNW) for mental health and general ED populations are so close at 3.58% (CI 8.1) and 3.32% (CI 8.2), when traditionally, mental health patients have a higher rate of DNW. This can probably be attributed to the data collected rather than a positive result.

Waiting time

Waiting time targets align well with Australasian Triage Scale (ATS) targets developed by ACEM.^{1,2} The CIs continue to be relevant and no changes are required.

Acute myocardial infarction management

ACEM notes that CI 2.1 is still reporting thrombolysis, which is not the treatment of choice in the majority of hospitals, where primary recommended management is percutaneous coronary intervention (PCI).³ Additionally, the number of HCOs reporting is reduced, and the percentage of rural HCOs has increased where this treatment is more common. It is suggested that the CI for AMI management is changed to reflect current practice.

Access block

The ACEM definition of Access Block is "the percentage of patients who were admitted or planned for admission, but discharged from the emergency department (ED) without reaching an inpatient bed, transferred to another hospital for admission, or died in the ED whose total ED time exceeded 8 hours".⁴ This has an evidence base and applies to all ED patients. What is presented currently are data pertaining to the compliance with the National Emergency Access Target (NEAT) of 4 hours. As mentioned in previous reports, ACEM suggests that if the data presented relates to the NEAT, then this CI should therefore be renamed 'NEAT Compliance for Mental Health and Critical Care patients who are admitted'.

In relation to 'Admitted mental health patients - total ED time exceeding 4 hours' (CI 3.1), it is noted that very few HCO reported on this CI. This is disappointing as mental health is a major issue for hospitals at the moment, and HCOs should therefore be encouraged to report on this CI. Although the number of HCOs reporting was unchanged at 23 in 2014 and 2015, there was almost double the number of patients reported suggesting there has been a considerable change in the HCOs reporting this data. ACEM considers that this means that the apparent downward trend is likely to be a result of different HCOs reporting rather than any improvement in care.

With regards to 'Admitted critical care patients - total ED time exceeding 4 hours' (CI 3.2), although the trend does seem to be improving, it is of concern that almost 50% of patients do not get timely access to critical care beds. These are the sickest patients, and the evidence is clear that delays in these patients lead to poorer outcomes. Again, there is very wide variability between HCOs, suggesting that some perform well and others perform badly. ACEM notes that in the poorly performing HCOs, over 75% of patients do not get timely access to critical care.

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For both CIs, there are large differences in the denominators each year that reflects different HCOs reporting in different years. ACEM therefore suggests that it is most likely that any apparent trends over time are simply due to different HCOs reporting data at different time points, rather than any change in quality of care over time in a group of HCOs.

As previously suggested, ACEM considers that it would therefore be better to simply list the HCOs (numbered anonymously) quoting their numbers and rate for the relevant year in a table. What can be derived from these data is that, at best, the quality of care for mental health patients with respect to NEAT compliance is poor.

Mental health assessment turnaround time

In 2015, the 'Mean time from ED referral to assessment by mental health worker' (CI 4.1) was 84.3 minutes. This was an increase over the previous year, but over the last few years there was a continuing downward trend, which is appropriate. The 'Median time from ED referral to assessment by a mental health worker' (CI 4.2) was 30 minutes.

Paediatric patient management

With regards to 'Mean time of first antibiotic administration in septic infants less than 28 days' (CI 5.1), there has consistently been a low number of reporting HCOs with only three records submitted for 2015. This reflected time to antibiotics for a total of 17 paediatric patients which means that no conclusions in relation to the improvement in mean time to antibiotics (99.3 minutes in 2014 to 29.8 minutes in 2015), and the results cannot be construed as representative of a true mean time to antibiotics in this high risk group of patients across Australian EDs.

It is, however, important to note that early administration of antibiotics for all patients with significant sepsis remains an evidence-based strategy to reduce morbidity and mortality from sepsis. The majority of EDs have structured sepsis recognition and management pathways in place that are designed to ensure staff administer antibiotics within one hour of a septic patient's arrival.

In relation to 'Salbutamol therapy within 30 minutes for paediatric asthma' (CI 5.2) - five records from four HCOs were submitted for 2015 allowing a report of salbutamol therapy within 30 minutes of arrival to the ED to be calculated from a relatively small sample size of only 153 paediatric patients. Given the large number of paediatric asthma presentations to EDs across Australia, this sample from only four HCOs, cannot therefore be viewed as representative in any way, and as such the very small fall in the value of the CI (from 61.5% in 2014 to 60.8% in 2015 receiving salbutamol therapy within 30 minutes of arrival to an ED), and is of no statistical significance.

Early salbutamol therapy remains a key element in the management of paediatric asthma and in addition to being delivered early in a child's presentation in the ED, is also frequently and appropriately delivered by the child's carer using an Asthma Action Plan, by primary care doctors and by ambulance services during pre-hospital care.

Discharge communication

It was noted that 10 HCOs reported on 'Discharge communication for ED patients 65 years or older' (CI 6.1) in 2015, with the discharge communications rate rising to 80%, an increase from 2014. This is a satisfying trend approaching the gold standard of 100%.

The 'Documented risk assessment for ED patients 65 years and older' (CI 6.2) rate has risen significantly to 46.4% in 2015 from 22.6% in the previous year. This is a significant increase in recording of a risk assessment, but the gold standard of 100% is still a long way from being achieved.

Pain management

This is a good CI especially as it includes reassessment of pain (CI 7.2). It includes paediatrics as a separate marker (CI 7.4), which is also good, as paediatric patients often do not have their pain addressed in a timely manner.

ACEM recommends that an additional CI could specifically look at analgesia in elderly patients who often do not receive adequate pain relief.

Patients who did not wait

ACEM is encouraged by the dramatic drop in did not wait (DNW) rates in patients with mental health complaints, although this still equates to one patient in 25 leaving before being seen.

A similar trend was seen in the broader DNW group, which has shown falls in the DNW rate over the past four years. This may be a reflection of improved compliance in the large ATS Category 4 patient cohort, which is particularly sensitive to long ED waiting times.

General/closing comments

In summary, the lack of data submitted and the low engagement of HCOs is disappointing. It is likely that the CIs chosen may not reflect the ease of data collection to audit them, the lack of audit or that HCOs audit other quality CIs.

ACEM is hopeful that the next set of Emergency Medicine CIs (version 6) will be seen as to be both easier to obtain and more relevant. There does however remain a risk that overall engagement with HCOs will remain low.



References

1. Australasian College for Emergency Medicine (ACEM). Policy on the Australasian Triage Scale. 2013. Accessed from <https://www.acem.org.au/getattachment/693998d7-94be-4ca7-a0e7-3d74cc9b733f/Policy-on-the-Australasian-Triage-Scale.aspx>
2. Australasian College for Emergency Medicine (ACEM). Guidelines on the Implementation of the Australasian Triage Scale in Emergency Department. 2013. Accessed from <https://www.acem.org.au/getattachment/d19d5ad3-e1f4-4e4f-bf83-7e09cae27d76/G24-Implementation-of-the-Australasian-Triage-Scal.aspx>
3. National Heart Foundation of Australia. Acute coronary syndromes treatment algorithm. Accessed from https://heartfoundation.org.au/images/uploads/publications/ACS_therapy_algorithm-printable.pdf
4. Australasian College for Emergency Medicine (ACEM). Policy on Standard Terminology. 2014. Accessed from <https://www.acem.org.au/getattachment/3907984e-2a6c-4789-9f11-5d1d75f0e837/Policy-on-Standard-Terminology.aspx>

EXPERT COMMENTARY

College of Emergency Nursing
Australasia (CENA)

“Emergency Department (ED) performance is strong and improving in most areas of measurement in this report. ED teams are working hard to improve their service to the public with National Emergency Access Target (NEAT) as benchmarks. A whole of hospital approach is essential to address access block and improve communication in order to optimise patient safety and efficiency within the health service.”

Waiting time

It is noted that there has been a significant reduction in the number of HCOs reporting on this data set since 2008 with a steady decrease each year, yet presentations have continued to increase each year up until 2015. In the last few years, allocations of Category 2 and rates of attendance within 10 minutes (CI 1.2) have declined. However, continued high performance in attending to Category 1 patients (CI 1.1) is evident.

The greatest gains were made in the Category 4 patients who were seen within 60 minutes (CI 1.4), this may be achieved when EDs utilise strategies such as;

- ‘Fast track’ models,
- ‘Chair’ nursing where patients with lower acuity presentations are reviewed and treated in a chair/recliner/consulting room, and
- Patient care being managed by advanced practice nurses or Nurse Practitioners.

While these strategies may be effective in managing the lower acuity presentations, it doesn’t necessarily address the Category 3 patient wait times (CI 1.3) which continue to be the most challenging and where only small improvements have been recorded since 2008. Anecdotally, the challenge with Category 3 patient management is a consistent finding in both private and public EDs across jurisdictions in Australia.

Other factors which influence patient waiting times are:

- Limited bed/assessment space and capacity of the department,
- Staffing: sick leave and skill mix on any given day,
- Patient acuity at any one time i.e. multiple Australasian Triage Scale (ATS) Category 1 and 2’s will delay assessment and treatment times of other waiting patients,
- Increases in daily presentations, which may be due to reducing access to GPs and reducing bulk billing rates in some jurisdictions,
- Access block: the number of admitted patients who wait in ED as ward beds are occupied,
- The time to inpatient team reviews and development of patient plans,
- Model of care: ‘Teaming’ is a strategy to ensure equity in distribution of patient acuity and load amongst the medical staff, and
- An allocated senior nurse to oversee the patient flow/journey/navigation from entry to the ED to discharge to the ward/home/other area.



Acute myocardial infarction management

The data indicates a significant reduction in numbers of patients being administered thrombolytic therapy within 30 minutes (CI 2.1), and also a reduction in the number of HCOs providing data on this CI. Both of these findings may reflect that thrombolytic therapy for acute myocardial infarction (AMI) is now generally only initiated in smaller/rural settings where access to the preferred treatment i.e. angiography/plasty is not readily available.

Access block

There is a continued focus on managing access block and the impact on flow throughout hospitals and support services. Strategies such as appointing dedicated nursing staff to manage 'patient flow' in conjunction with implementing NEAT are intended to manage this ongoing issue.

Anecdotally, weekends continue to be problematic as rates of discharge of patients from within the hospital reduce during this time contributing to access block. This is certainly an issue in the forefront of the public hospital system and there is pressure for medical officers to discharge patients on the weekend as appropriate, rather than waiting for Monday morning.

The data indicates that mental health consumers' waiting times to admission (CI 3.1) have continued to make solid improvements, with a big improvement reported in 2015. The context and/or background which explains this significant increase in data (without a change in reporting HCOs) is unknown. Dedicated mental health clinicians/staff employed within or working closely with the ED may be contributing to the improved time to admission for this group. Conversely, where there are examples of excess this may be due to factors such as delays in specialist team review i.e. Psychiatry Registrar or Consultant due to staffing or time of day.

The QLD data seems inconsistent with the NSW and 'other' data with regard to the number of mental health patients who were admitted i.e. six times as many as NSW, yet the number of patients who waited more than four hours for admission was comparable, therefore resulting in a very low rate of mental health consumers waiting more than four hours for admission. It is unclear if other variables may have affected this result.

Mental health assessment turnaround time

The data are of limited value as patients presenting to ED with a primary mental health disorder diagnosis is consistent with 2014, however, the mean time of referral to a mental health worker is significantly longer (mean and median). It is difficult to interpret the findings and it is noted that data was only received from three HCOs.

Delays in access to a mental health worker assessment for a mental health consumer presenting to the ED may be due to multiple issues, including:

- the requirement to wait for medical clearance prior to assessment by mental health workers, and
- resources i.e. lack of physical space, inadequate staffing and the need to appropriately allocate mental health consumers to a cubicle / acute area / seclusion depending on acuity of presentation may delay assessment.

Paediatric patient management

While improvement in time to antibiotic therapy for neonates at risk of sepsis is excellent, the data provided is significantly different from 2014 with a reduction in mean time from 2014 and the number of neonates reported on was only 17 (an increase from 2014), which is a very small sample size.

This measure does not reflect the general efficiency or inefficiency of paediatric care in EDs as it is so specific. Unwell neonates generally get assigned a Category 2 due to their vulnerability, so therefore, are assessed within ten minutes most of the time. Therefore, the use of this measure to quantify and establish efficiency in treatment of paediatrics in general is problematic.

Discharge communication

In 2015 there was a considerable increase in the data reported on this CI, however the rate of communication frequency between the ED and an older person's primary carer was not significantly different. The data indicates that 20% of people over 65 are not receiving discharge communication via their primary care provider. This finding is concerning, as the over 65 population comprise a considerable proportion of ED clientele, and furthermore, they often have chronic and complex health care needs that require co-ordination between their usual care providers, acute services and hospital support services.

Pain management

While the data gleaned for initial pain assessment in 2015 has significantly reduced from 2014, there is a slight improvement in the rate of pain assessment in this group of clients. The data sets on reassessment of pain have significantly increased since 2014 and demonstrate an improvement in the rates of reassessment. Reassessment of pain can be assessed and recorded in many different ways, without further detail about what constitutes pain reassessment, no further comment can be made on this item.

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College of Emergency Nursing Australasia (CENA)

Patients who did not wait

While the fitted rate is unchanged, the aggregate rate from 2014/2015 for 'did not wait' mental health consumers has reduced. This may reflect a more streamlined approach in the management of mental health consumers with dedicated staff and teams. The importance of mental wellbeing is a contemporary issue with mental health care receiving positive media attention which may result in consumers being more likely to wait for assessment, support and treatment in acute settings.

General/closing comments

While this report demonstrates many areas of improvement, some of the data collected has limited generalisability and requires updating for clinical relevance to get the most out of the reporting - this seems to have been addressed in the next iteration of the Emergency Medicine CIs.





2015 Summary Data

Waiting time

1.1 ATS Category 1 - attended immediately (H)

In 2015, there were 24,854 patients reported from 125 HCOs. The annual rate was 99.4 per 100 patients. The fitted rate improved from 99.2 to 99.5, a change of 0.25 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 11 outlier records from nine outlier HCOs whose combined excess was 104 fewer patients allocated ATS Category 1 who are attended to immediately. The outlier HCO rate was 91.7 per 100 patients.

1.2 ATS Category 2 - attended within 10 minutes (H)

In 2015, there were 441,226 patients reported from 134 HCOs. The annual rate was 76.7 per 100 patients. The fitted rate improved from 75.9 to 79.9, a change of 4.0 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 3.5 per 100 patients. In 2015, the potential gains totalled 66,807 more patients allocated ATS Category 2 who are attended to within 10 minutes. There were 42 outlier records from 26 outlier HCOs whose combined excess was 21,267 fewer patients allocated ATS Category 2 who are attended to within 10 minutes. The outlier HCO rate was 62.0 per 100 patients.

1.3 ATS Category 3 - attended within 30 minutes (H)

In 2015, there were 1,358,373 patients reported from 134 HCOs. The annual rate was 64.2 per 100 patients. The fitted rate improved from 61.7 to 66.1, a change of 4.4 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 3.7 per 100 patients. In 2015, the potential gains totalled 392,807 more patients allocated ATS Category 3 who are attended to within 30 minutes. There were 44 outlier records from 27 outlier HCOs whose combined excess was 100,380 fewer patients allocated ATS Category 3 who are attended to within 30 minutes. The outlier HCO rate was 45.3 per 100 patients.

1.4 ATS Category 4 - attended within 60 minutes (H)

In 2015, there were 1,488,599 patients reported from 133 HCOs. The annual rate was 73.2 per 100 patients. The fitted rate improved from 65.3 to 74.4, a change of 9.1 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 8.7 per 100 patients. In 2015, the potential gains totalled 330,243 more patients allocated ATS Category 4 who are attended to within 60 minutes. There were 58 outlier records from 33 outlier HCOs whose combined excess was 80,616 fewer patients allocated ATS Category 4 who are attended to within 60 minutes. The outlier HCO rate was 59.5 per 100 patients.

1.5 ATS Category 5 - attended within 120 minutes (H)

In 2015, there were 280,588 patients reported from 132 HCOs. The annual rate was 90.9 per 100 patients. The fitted rate improved from 85.0 to 90.0, a change of 5.0 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 5.0 per 100 patients. In 2015, the potential gains totalled 21,586 more patients allocated ATS Category 5 who are attended to within 120 minutes. There were 44 outlier records from 30 outlier HCOs whose combined excess was 8,340 fewer patients allocated ATS Category 5 who are attended to within 120 minutes. The outlier HCO rate was 79.4 per 100 patients.

Acute myocardial infarction (AMI) management

2.1 AMI patients who receive thrombolytic therapy within 30 minutes (H)

In 2015, there were 184 patients reported from 18 HCOs. The annual rate was 53.8 per 100 patients. The fitted rate deteriorated from 70.6 to 49.5, a change of 21.0 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 20.5 per 100 patients. In 2015, the potential gains totalled 29 more patients with an acute myocardial infarction who receive thrombolytic therapy within 30 minutes.

2015 SUMMARY DATA

Access block

3.1 Admitted mental health patients - total ED time exceeding 4 hours (L)

In 2015, there were 48,231 patients reported from 23 HCOs. The annual rate was 23.2 per 100 patients. The fitted rate improved from 51.2 to 29.7, a change of 21.5 per 100 patients. There were no potential gains in 2015. There were 21 outlier records from 15 outlier HCOs whose combined excess was 4,315 more mental health admitted patients whose total ED time exceeded four hours. The outlier HCO rate was 66.4 per 100 patients.

3.2 Admitted critical care patients - total ED time exceeding 4 hours (L)

In 2015, there were 27,302 patients reported from 24 HCOs. The annual rate was 41.0 per 100 patients. The fitted rate improved from 47.1 to 37.6, a change of 9.5 per 100 patients. In 2015, the potential gains totalled 4,389 fewer critical care admitted patients whose total ED time exceeded four hours, corresponding to a reduction by approximately one-third. There were 17 outlier records from 13 outlier HCOs whose combined excess was 2,902 more critical care admitted patients whose total ED time exceeded four hours. The outlier HCO rate was 71.5 per 100 patients.

Mental health assessment turnaround time

4.1 Mean time from ED referral to assessment by a mental health worker (L)

In 2015, there were 6,509 patients reported from three HCOs. The mean time from referral by an ED clinician to the mental health team to assessment by a mental health worker was 84.3 minutes.

4.2 Median time from ED referral to assessment by a mental health worker (L)

In 2015, there were 6,509 patients reported from three HCOs. The median time from referral by an ED clinician to the mental health team to assessment by a mental health worker was 30.0 minutes.

Paediatric patient management

5.1 Mean time of first antibiotic administration in septic infants less than 28 days (L)

In 2015, there were 17 infants reported from two HCOs. The mean time to first antibiotic per infant was 29.8 minutes.

5.2 Salbutamol therapy within 30 minutes for paediatric asthma (H)

In 2015, there were 153 patients reported from four HCOs. The annual rate was 60.8 per 100 patients. In 2015, the potential gains totalled 22 more paediatric ED patients who presented with asthma and who received salbutamol therapy within 30 minutes.

Discharge communication in older patients

6.1 Discharge communication for ED patients 65 years or older (H)

In 2015, there were 22,799 patients reported from 10 HCOs. The annual rate was 80.1 per 100 patients. In 2015, the potential gains totalled 3,268 more patients with discharge communication provided to a primary care provider. There were seven outlier records from five outlier HCOs whose combined excess was 1,865 fewer patients with discharge communication provided to a primary care provider. The outlier HCO rate was 55.7 per 100 patients.

6.2 Documented risk assessment for ED patients 65 years or older (H)

In 2015, there were 12,344 patients reported from eight HCOs. The annual rate was 46.4 per 100 patients. In 2015, the potential gains totalled 3,889 more patients who have had a documented risk assessment prior to discharge. There were five outlier records from four outlier HCOs whose combined excess was 1,771 fewer patients who have had a documented risk assessment prior to discharge. The outlier HCO rate was 15.6 per 100 patients.



Pain management

7.1 Documented initial pain assessment score for adult abdominal or limb pain (H)

In 2015, there were 6,099 patients reported from five HCOs. The annual rate was 44.9 per 100 patients. In 2015, the potential gains totalled 2,840 more ED patients with abdominal or limb pain who have a documented initial pain assessment score. There was one outlier record from one outlier HCO whose combined excess was 680 fewer ED patients with abdominal or limb pain who have a documented initial pain assessment score. The outlier HCO rate was 30.7 per 100 patients.

7.2 Documented pain reassessment score for adult abdominal or limb pain (H)

In 2015, there were 1,178 patients reported from four HCOs. The annual rate was 97.8 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were three outlier records from three outlier HCOs whose combined excess was 21 fewer ED patients with abdominal or limb pain who have a documented pain reassessment score. The outlier HCO rate was 78.3 per 100 patients.

7.3 Analgesic therapy within 30 minutes for adult abdominal or limb pain (H)

In 2015, there were 4,862 patients reported from two HCOs. The annual rate was 29.0 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015.

7.4 Analgesic therapy within 30 minutes for paediatric limb fracture (H)

No data was submitted in 2015.

Patients who did not wait

8.1 Mental health patients who did not wait following clinical documentation (L)

In 2015, there were 27,107 patients reported from 15 HCOs. The annual rate was 3.58 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 744 fewer ED patients with a mental health complaint who did not wait, corresponding to a reduction by approximately three-quarters. There were three outlier records from two outlier HCOs whose combined excess was 367 more ED patients with a mental health complaint who did not wait. The outlier HCO rate was 10.0 per 100 patients.

8.2 Patients who did not wait following clinical documentation (L)

In 2015, there were 1,312,959 patients reported from 42 HCOs. The annual rate was 3.32 per 100 patients. The fitted rate improved from 4.9 to 3.4, a change of 1.5 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.4 per 100 patients. In 2015, the potential gains totalled 25,510 fewer ED patients who did not wait after having clinical information documented, corresponding to a reduction by approximately one-half. There were 25 outlier records from 17 outlier HCOs whose combined excess was 9,801 more ED patients who did not wait after having clinical information documented. The outlier HCO rate was 5.1 per 100 patients.

EXPERT COMMENTARY

Australian Day Hospital Association
(ADHA)

Key Facts:

**MOST FREQUENT
CI COLLECTED
IN 2015:
CI 2.1 TREATMENT FOR
POSSIBLE PERFORATION
POST-POLYPECTOMY**
56,439
**COLONOSCOPIES WITH
POLYPECTOMY FROM
61
HCOs**

Gastrointestinal Endoscopy

Introductory comments

These Gastrointestinal Endoscopy clinical indicators (CIs) concentrate on indicators that in some way may be dependent on the equipment or clinical services provided by the facility, as well as being dependant on the expertise of the practitioner. It is noted that the Gastroenterological Society of Australia has introduced a voluntary Colonoscopy Recertification Program that measures indicators that include areas dependant on the expertise of the practitioner. The two sets of indicators should be viewed as complementary.



Failure to reach caecum

The results of the CIs on 'Failure to reach the caecum' (CIs 1.1-1.4) remain low, which is what should be expected with improvements in bowel preparation and instruments. The rate differs between public and private organisations (CIs 1.2 and 1.4), which can be expected because of the different patient populations and experience of the proceduralist.

Adverse outcomes - colonoscopy/polypectomy

The rate of perforation post-polypectomy (CI 2.1) remains stable at a low rate. The rate of perforation related to colonoscopy alone (CI 2.2) continues to decrease, possibly due to improvement in instruments and improved expertise of proceduralists. The trended rate for post-polypectomy haemorrhage (CI 2.3) continues to improve as techniques for controlling possible bleeding improve.

Colorectal cancer

There was a reduced incidence of cancer diagnosed within five years of a normal colonoscopy (CI 3.2) possibly indicating improvement in technique or improved visualisation of the colon due to improved bowel preparation or image provided by the colonoscope.

Oesophageal dilatation - perforation

A continued improvement in the rate of possible perforation (CI 4.1) is noted.

Aspiration following GI endoscopy

The rate for 'Aspiration following endoscopy' (CI 5.1) remains low with no significant change.

General/closing comments

The rates of complications related to Gastrointestinal Endoscopy remain low with some improvements possibly associated with improved instruments and ancillary equipment available to prevent complications.



2015 Summary Data

Failure to reach caecum

1.1 Failure to reach caecum due to inadequate bowel preparation (L)

In 2015, there were 85,457 colonoscopies reported from 48 HCOs. The annual rate was 0.47 per 100 colonoscopies. In 2015, the potential gains totalled 315 fewer incomplete colonoscopies performed, corresponding to a reduction by approximately three-quarters. There were 10 outlier records from eight outlier HCOs whose combined excess was 142 more incomplete colonoscopies performed. The outlier HCO rate was 2.3 per 100 colonoscopies.

1.2 Failure to reach caecum due to diseased colon (L)

In 2015, there were 75,950 colonoscopies reported from 42 HCOs. The annual rate was 0.27 per 100 colonoscopies. In 2015, the potential gains totalled 142 fewer incomplete colonoscopies performed, corresponding to a reduction by approximately two-thirds. There were 10 outlier records from eight outlier HCOs whose combined excess was 70 more incomplete colonoscopies performed. The outlier HCO rate was 1.2 per 100 colonoscopies.

1.3 Failure to reach caecum due to instrument failure (L)

In 2015, there were 71,962 colonoscopies reported from 40 HCOs. The annual rate was 0.013 per 100 colonoscopies. In 2015, the potential gains totalled eight fewer incomplete colonoscopies performed, corresponding to a reduction by approximately four-fifths. There were two outlier records from two outlier HCOs whose combined excess was seven more incomplete colonoscopies performed. The outlier HCO rate was 0.25 per 100 colonoscopies.

1.4 Failure to reach caecum for any other reason (L)

In 2015, there were 79,057 colonoscopies reported from 42 HCOs. The annual rate was 0.26 per 100 colonoscopies. In 2015, the potential gains totalled 185 fewer incomplete colonoscopies performed, corresponding to a reduction by approximately four-fifths. There were eight outlier records from six outlier HCOs whose combined excess was 79 more incomplete colonoscopies performed. The outlier HCO rate was 1.7 per 100 colonoscopies.

Adverse outcomes - colonoscopy/polypectomy

2.1 Treatment for possible perforation post-polypectomy (L)

In 2015, there were 56,439 colonoscopies with polypectomy reported from 61 HCOs. The annual rate was 0.057 per 100 colonoscopies with polypectomy. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 22 fewer patients treated for possible perforation following a polypectomy, corresponding to a reduction by approximately two-thirds. There were three outlier records from two outlier HCOs whose combined excess was nine more patients treated for possible perforation following a polypectomy. The outlier HCO rate was 0.72 per 100 colonoscopies with polypectomy.

2.2 Treatment for possible perforation post-colonoscopy (L)

In 2015, there were 58,593 colonoscopies reported from 56 HCOs. The annual rate was 0.020 per 100 colonoscopies. The fitted rate improved from 0.038 to 0.024, a change of 0.014 per 100 colonoscopies. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.015 per 100 colonoscopies. There was relatively little variation between HCOs and so the potential gains were small in 2015.

2.3 Post-polypectomy haemorrhage (L)

In 2015, there were 55,204 colonoscopies with polypectomy reported from 54 HCOs. The annual rate was 0.078 per 100 colonoscopies with polypectomy. The fitted rate improved from 0.21 to 0.091, a change of 0.12 per 100 colonoscopies with polypectomy. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.12 per 100 colonoscopies with polypectomy. In 2015, the potential gains totalled 20 fewer patients who have bleeding related to polypectomy, corresponding to a reduction by approximately one-third. There was one outlier record from one outlier HCO whose combined excess was one more patient who has bleeding related to polypectomy. The outlier HCO rate was 0.98 per 100 colonoscopies with polypectomy.



Colorectal cancer

3.1 Malignancies diagnosed at colonoscopy (N)

In 2015, there were 42,429 colonoscopies reported from 24 HCOs. The annual rate was 1.05 per 100 colonoscopy patients.

3.2 Malignancies not detected at another colonoscopy within past 5 years (L)

In 2015, there were 313 patients reported from 14 HCOs. The annual rate was 12.8 per 100 patients. In 2015, the potential gains totalled 23 fewer patients diagnosed with colorectal malignancy within five years of their most recent colonoscopy, corresponding to a reduction by approximately one-half. There was one outlier record from one outlier HCO whose combined excess was two more patients diagnosed with colorectal malignancy within five years of their most recent colonoscopy. The outlier HCO rate was 71.4 per 100 patients.

Oesophageal dilatation - perforation

4.1 Oesophageal dilatation - possible perforation (L)

In 2015, there were 3,345 patients reported from 38 HCOs. The annual rate was 0.18 per 100 patients. There was no significant trend in the fitted rate. There were no potential gains in 2015.

Aspiration following GI endoscopy

5.1 Aspiration following endoscopy (L)

In 2015, there were 95,798 patients reported from 44 HCOs. The annual rate was 0.040 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 27 fewer patients transferred or admitted for an overnight stay as a result of aspiration, corresponding to a reduction by approximately two-thirds. There were four outlier records from four outlier HCOs whose combined excess was 11 more patients transferred or admitted for an overnight stay as a result of aspiration. The outlier HCO rate was 0.67 per 100 patients.

EXPERT COMMENTARY

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG)

“The RANZCOG believes it is important that every gynaecologist consider it their responsibility to undertake practice audit and review, both on an individual and institutional level. The ACHS Clinical Indicators are a well-established tool for practice reflection and audit.”

- Source: User Manual
Chair - Gynaecology Working Party,
RANZCOG

Gynaecology

Blood transfusion

Blood transfusion rates for benign gynaecological disease (CI 1.1) continue to remain stable at a rate of 0.78 per 100 patients. Blood transfusion rates for malignant gynaecological disease (CI 1.2) continue to fall and are currently at 3.76 per 100 patients, down from 6.07 per 100 patients in 2014 and the lowest rate ever recorded. Increased acceptance of the risks of transfusion, use of cell saving technology, as well as increased efforts to improve abnormal preoperative iron levels using parenteral iron have contributed to this result. The rate of blood transfusion is higher in the public system than in the private system, which is consistent with earlier reports. Many factors may contribute to this, including patient selection. There continues to be a number of outlier HCOs whose rate of transfusion for benign disease is 2.7 per 100 patients.

Injury to a major viscus

The rate of injury to a major viscus with repair during gynaecological surgery (CI 2.1) has trended up from 0.32 per 100 patients in 2009 to 0.49 per 100 patients in 2015. This may be due to the increasing complexity of patients, but health services should be focusing on reducing risks where possible. There was no variation between public and private patients. However, there were three outlier HCOs from a total of 51 HCOs, with a rate of 1.7 per 100 patients. These outlier HCOs are mid to large sized units. Although the numbers are small and the outlier cases could be explained by statistical variation, careful review is required.

Laparoscopic management of an ectopic pregnancy

Laparoscopic surgery remains a low risk and cost effective way to surgically treat ectopic pregnancies. The rate of laparoscopic management of ectopic pregnancy (CI 3.1) has continued to trend upwards and is currently at 91.7 per 100 patients. There was only one outlier HCO with a rate of 61.4 per 100 patients. Outlier HCOs should ensure that they have the staff and facilities to provide laparoscopic surgery to this group of patients.



Thromboprophylaxis for major gynaecological surgery

The rate of thromboprophylaxis for major gynaecological surgery (CI 4.1) was 85.3 per 100 patients, which has significantly increased from 2014. In 2015, seven HCOs provided data for readmission rates for venous thromboembolism after gynaecological surgery (CI 4.2). There were two readmissions reported from the 1,531 patients undergoing major gynaecological surgery, giving a rate of clinical DVT after gynaecological surgery of 0.13 per 100 patients. This CI was significantly revised in 2014 and now in its second year of reporting, it is pleasing to see both an increase in the rate of thromboprophylaxis as well as an increase in the number of HCOs reporting. Hopefully this trend will continue.

Mesh repair

Now in its second year of reporting, the rate of use of mesh repair for pelvic organ prolapse (CI 5.1) was 11.4 per 100 patients in 2015. This has increased from 8.43 per 100 patients in 2014. This CI was reported by only 11 HCOs. There was one outlier HCO with a rate of 24.7 per 100 patients. The ideal rate of vaginal mesh repair is unknown and may vary depending on the referral patterns and skill mix of the HCO. The RANZCOG College statement on *Polypropylene Vaginal Mesh Implants for Vaginal Prolapse* states that you should 'exercise caution in using transvaginal mesh implants in: primary prolapse cases, patients younger than 50, lesser grades of prolapse, posterior compartment prolapse without significant apical descent, patients with chronic pelvic pain and postmenopausal patients who are unable to use vaginal oestrogen therapy since this will be first line therapy for erosion'. After an initial rapid uptake in vaginal mesh usage, the rate of mesh utilisation in gynaecological surgery has decreased due to FDA warnings in the USA. This CI was designed to provide HCOs with a rate that can be used for benchmarking purposes. Given the withdrawal of some mesh products in 2015/16 it would be expected that the rate of vaginal mesh repair

should fall. There will be a corresponding increase in abdominal placement of mesh, but given the nature of this surgery it should be restricted to suitably credentialed practitioners.

Menorrhagia

This new CI introduced in 2014, was designed to establish the number of preventable hysterectomies by providing a benchmark for the use of hysterectomy in treating menorrhagia (CI 6.1). Currently 12 HCOs participate in this new CI, which saw an increase from seven HCOs in 2014. The hysterectomy rate was 27.1 per 100 patients in 2015, down from 41.1 per 100 patients in 2014. There were three outlier HCOs with a rate of 67 per 100 patients. If the outlier rates were normalised, 33 less women would have undergone hysterectomies. It is difficult to comment on this CI until the participation rate increases and we have several years of data, although the large decrease is encouraging. It needs to be remembered that the denominator is 'the number of patients undergoing gynaecological surgery for menorrhagia', which includes endometrial ablations and myomectomies, but not conservative measures such as the progesterone containing intrauterine contraceptive device. This new CI should give HCOs a useful tool which they can use to benchmark their organisation against other HCOs across the country leading to more uniform hysterectomy rates and potential savings, both financial and physical.

General/closing comments

This year there was an increase in the number of participating HCOs after a downward trend over the last few years. The strength of the CIs is in their numbers and high participation rates are essential. It is important to note the improvement in the blood transfusion and thromboprophylaxis rates in 2015. One concern is the increased rates of injury to major viscous with repair. With the increased complexity and decreased number of hysterectomies this may be unavoidable. However HCOs should closely review their cases looking for possible avoidable causes.

2015 Summary Data

Blood transfusion

1.1 Gynaecological surgery for benign disease - unplanned intraoperative or postoperative blood transfusion (L)

In 2015, there were 34,863 patients reported from 44 HCOs. The annual rate was 0.78 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 138 fewer patients undergoing gynaecological surgery for benign disease receiving an unplanned blood transfusion, corresponding to a reduction by approximately one-half. There were nine outlier records from six outlier HCOs whose combined excess was 56 more patients undergoing gynaecological surgery for benign disease receiving an unplanned blood transfusion. The outlier HCO rate was 2.7 per 100 patients.

1.2 Gynaecological surgery for malignant disease - unplanned intraoperative or postoperative blood transfusion (L)

In 2015, there were 1,969 patients reported from 19 HCOs. The annual rate was 3.76 per 100 patients. The fitted rate improved from 9.8 to 5.1, a change of 4.6 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 4.6 per 100 patients. In 2015, the potential gains totalled seven fewer patients undergoing gynaecological surgery for malignant disease receiving an unplanned blood transfusion, corresponding to a reduction by approximately one-fifteenth. There were two outlier records from two outlier HCOs whose combined excess was 11 more patients undergoing gynaecological surgery for malignant disease receiving an unplanned blood transfusion. The outlier HCO rate was 10.7 per 100 patients.

Injury to a major viscus

2.1 Gynaecological surgery - injury to a major viscus with repair (L)

In 2015, there were 47,861 patients reported from 51 HCOs. The annual rate was 0.49 per 100 patients. The fitted rate deteriorated from 0.33 to 0.45, a change of 0.12 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.13

per 100 patients. In 2015, the potential gains totalled 123 fewer patients suffering an injury to a major viscus, corresponding to a reduction by approximately one-half. There were three outlier records from three outlier HCOs whose combined excess was 17 more patients suffering an injury to a major viscus. The outlier HCO rate was 1.7 per 100 patients.

Laparoscopic management of an ectopic pregnancy

3.1 Ectopic pregnancy managed laparoscopically (H)

In 2015, there were 707 patients reported from 26 HCOs. The annual rate was 91.7 per 100 patients. The fitted rate improved from 76.0 to 83.3, a change of 7.3 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 8.2 per 100 patients. In 2015, the potential gains totalled 40 more patients having laparoscopic management of an ectopic pregnancy. There was one outlier record from one outlier HCO whose combined excess was 15 fewer patients having laparoscopic management of an ectopic pregnancy. The outlier HCO rate was 61.4 per 100 patients.

Thromboprophylaxis for major gynaecological surgery

4.1 Thromboprophylaxis for major gynaecological surgery (H)

In 2015, there were 1,125 patients reported from nine HCOs. The annual rate was 85.3 per 100 patients. In 2015, the potential gains totalled 153 more patients undergoing major gynaecological surgery receiving thromboprophylaxis. There was one outlier record from one outlier HCO whose combined excess was 85 fewer patients undergoing major gynaecological surgery receiving thromboprophylaxis. The outlier HCO rate was 40.5 per 100 patients.

4.2 Readmission for venous thromboembolism within 28 days (L)

In 2015, there were 1,531 patients reported from seven HCOs. The annual rate was 0.13 per 100 patients. There were no potential gains in 2015. There was one outlier record from one outlier HCO whose combined excess was 85 fewer patients undergoing major gynaecological surgery receiving thromboprophylaxis. The outlier HCO rate was 40.5 per 100 patients.

Mesh repair

5.1 Use of mesh repair for pelvic organ prolapse (L)

In 2015, there were 783 patients reported from 11 HCOs. The annual rate was 11.4 per 100 patients. In 2015, the



potential gains totalled 62 fewer patients having mesh repair for pelvic organ prolapse, corresponding to a reduction by approximately two-thirds. There was one outlier record from one outlier HCO whose combined excess was nine more patients having mesh repair for pelvic organ prolapse. The outlier HCO rate was 24.7 per 100 patients.

Menorrhagia

6.1 Surgical intervention for menorrhagia (L)

In 2015, there were 945 patients reported from 12 HCOs. The annual rate was 27.1 per 100 patients. In 2015, the potential gains totalled 86 fewer patients undergoing a hysterectomy for menorrhagia, corresponding to a reduction by approximately one-third. There were three outlier records from two outlier HCOs whose combined excess was 33 more patients undergoing a hysterectomy for menorrhagia. The outlier HCO rate was 67.0 per 100 patients.

EXPERT COMMENTARY

Hospital in the Home Society
Australasia (HITHSA)

“Hospital in the Home (HITH) is now a well established component of our health care system.

It is important to ensure that HITH services continue to provide safe, high quality care and benchmarking using national indicators is one mode of assurance.”

- Source: User Manual
Chair - Hospital in the Home Working Party, HITHSA



The Hospital in the Home clinical indicators were reviewed in 2015 by a multidisciplinary Working Party consisting of representatives from the Hospital in the Home Society Australasia (HITHSA) and the Australian Private Hospitals Association (APHA). The revised Hospital in the Home clinical indicator set has been released for data collection from July 2016.

Hospital in the Home

Introductory comments

Hospital in the Home (HITH) services differ in casemix and complexity. The ACHS HITH clinical indicators (CIs) provide benchmarking data for HITH services and should be used in conjunction with local data for assessing service performance.

Patient safety and selection

There is significant variation in the number of unplanned phone calls received by HITH services (CI 1.1). As clinical and administrative calls are not separated it is not possible to determine if this relates to clinical issues with patient complexity or selection; or administrative calls which should be low.

Program interruption

Unplanned returns to hospital from HITH services (CI 2.1) have trended up. This may relate to the complexity of cases, but should be reviewed at a local level.

Unexpected deaths

Unexpected deaths (CI 3.1) remain low for most HITH services. The overall increase relates to one outlier HCO. It is suggested that this unit review their cases to look for preventable factors and also longitudinal data noting that as numbers are low this may not represent a trend.

General/closing comments

HITH services should review the ACHS data and their own longitudinal data in the context of their casemix to assess service performance.



2015 Summary Data

Patient safety and selection

1.1 HITH admission - 1 or more unexpected telephone calls (L)

In 2015, there were 8,143 patients reported from 13 HCOs. The annual rate was 4.83 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 279 fewer patients making unexpected telephone calls, corresponding to a reduction by approximately two-thirds. There were two outlier records from two outlier HCOs whose combined excess was 113 more patients making unexpected telephone calls. The outlier HCO rate was 11.7 per 100 patients.

1.2 HITH admission - 1 unscheduled staff callout (L)

In 2015, there were 7,067 patients reported from 17 HCOs. The annual rate was 0.68 per 100 patients. The fitted rate improved from 1.4 to 0.76, a change of 0.60 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.61 per 100 patients. In 2015, the potential gains totalled 20 fewer patients having a single unscheduled staff callout, corresponding to a reduction by approximately one-third. There were two outlier records from two outlier HCOs whose combined excess was five more patients having a single unscheduled staff callout. The outlier HCO rate was 4.3 per 100 patients.

1.3 HITH admission - more than 1 unscheduled staff callout (L)

In 2015, there were 6,036 patients reported from 15 HCOs. The annual rate was 0.27 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 13 fewer patients having more than one unscheduled staff callout, corresponding to a reduction by approximately four-fifths. There were three outlier records from three outlier HCOs whose combined excess was 10 more patients having more than one unscheduled staff callout. The outlier HCO rate was 2.4 per 100 patients.

Program interruption

2.1 Unplanned return to hospital - patients not returning to HITH program (L)

In 2015, there were 14,202 patients reported from 26 HCOs. The annual rate was 3.93 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 277 fewer patients having an unplanned return to hospital who do not return to the HITH program, corresponding to a reduction by approximately one-third. There were six outlier records from five outlier HCOs whose combined excess was 114 more patients having an unplanned return to hospital who do not return to the HITH program. The outlier HCO rate was 7.8 per 100 patients.

2.2 Unplanned return to hospital - patients returning to HITH program within 24 hours (N)

In 2015, there were 13,358 patients reported from 23 HCOs. The annual rate was 1.86 per 100 patients. There was no significant trend in the fitted rate.

2.3 Unplanned return to hospital - patients transferred back to HITH program (N)

In 2015, there were 15,829 patients reported from 26 HCOs. The annual rate was 4.38 per 100 patients. There was no significant trend in the fitted rate.

Unexpected deaths

3.1 Unexpected deaths during HITH admission (L)

In 2015, there were 7,992 patients reported from 16 HCOs. The annual rate was 0.038 per 100 patients. There was no significant trend in the fitted rate. There were no potential gains in 2015.

3.2 Unexpected deaths following unplanned return to hospital during HITH admission (L)

In 2015, there were 7,795 patients reported from 17 HCOs. The annual rate was 0.064 per 100 patients. There was no significant trend in the fitted rate. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was two more unexpected deaths subsequent to an unplanned return to hospital. The outlier HCO rate was 0.68 per 100 patients.

EXPERT COMMENTARY

The Royal Australasian College of
Medical Administrators (RACMA)

“The ACHS Clinical Indicators are designed to support clinicians and public health personnel in providing evidence-based patient care, and to guide clinical leaders and managers of clinical departments and public health programs, in quality improvement.”

- Source: User Manual
Chair - Hospital-Wide Working Party, RACMA

Hospital-Wide

Introductory comments

The Royal Australasian College of Medical Administrators (RACMA) is in a unique position within the quality assurance space. Our Fellows manage and lead health service organisations across Australia and New Zealand, within a range of roles predominantly as Chief Medical Officers and Directors of Medical Services. Our Fellows coordinate the compliance of their organisations to the Australian Commission on Safety and Quality in Health Care's ten National Standards, as well as the ACHS' additional five EQULP standards. Most health service organisations use the ACHS to conduct the compliance assessment and performance management. In addition, our Fellows will also coordinate compliance assessments for the National Standards for Mental Health Services and the Standards for Aged Care Services. Fortunately, very few health service organisations fail the aforementioned quality assurance assessments.

As for clinical indicators (CIs), once again through the inherent roles that our Fellows hold they are commonly the custodians of performance reporting frameworks and clinical data benchmarking. The health service organisations that our Fellows lead will provide performance data to state, federal and non-government groups. This data is then processed and distributed back to respective organisations through several sources such as the Core Hospital-Based Outcome Indicators (CHBOIs), state-based indicators (i.e. PRISM in Victoria), Quality Investigator (Dr Foster – Telstra Health) and the Health Roundtable (HRT).



There is generally very good compliance with indicator benchmarks across states and jurisdictions. Through independent groups such as the HRT, there is very good information-sharing and collaboration between organisations within Australia and New Zealand.

Hospital readmissions

There is a pleasing continued downward trend for 'Unplanned and unexpected readmission within 28 days' (CI 1.1) that is likely to be indicative of continued improvements in care and discharge planning. Rates of outlier HCOs continue to be more than three times the rate of the aggregate group. Careful and detailed review of the data by these HCOs is required to identify potential differences in care or discharge planning, thus identifying opportunities for improvement. HCOs should consider these results in the context of their definition of "admission", including changing models of care such as short stay units and hospital avoidance to ensure they understand the local context behind potential reasons for readmissions varying between HCOs.

Return to the operating room

The rate for 'Unplanned return to the operating room during the same admission' (CI 2.1) continues its downward trend which may be related to improvements in surgical techniques, clinician training and supervision, credentialing and defining scope of practice as well as improved preoperative assessment (including suitability for surgery) and postoperative practices. It is pleasing to note that 98.5 per 100 patients in this category have had their case reviewed (CI 2.2). Whilst this rate is impressive, 100% of these cases should be reviewed in order to accurately identify potential practice improvement issues.

It could be of interest to outlier HCOs to reflect on their case selection and access to tertiary centres as well as risk adjusted rates that include comorbidity. It may also be of use to consider this CI in the context of each outcome post-surgery (i.e. no further surgery required, further surgery required or death post-surgery). Outlier HCOs may find value in mining their data to examine both patient and non-patient factors. Important non-patient factors would include whether the primary surgery was emergency or elective and at what time of day and day of the week the primary surgery occurred.

Pressure injuries

Both public and private HCOs have undertaken significant work to improve pressure ulcer screening, assessment, management and prevention and to improve the training of clinicians, predominantly nursing staff. This is in line with the requirements of the National Safety and Quality Health Service (NSQHS) Standard 8: Preventing and Managing Pressure Injuries. This area of clinical practice continues to require ongoing and concerted effort. The ageing of our patient population and associated co-morbidities will continue to impact on CI 3.1. This CI should also be interpreted in the context of external constraints such as funding structures and models that are designed to promote awareness, detection and early treatment of pressure injuries. It is important to note the changing definitions of pressure injuries and the impact that further detail in specific definitions will have on the data over time.

Inpatient falls

The rate of 'Inpatient falls' (CI 4.1) remains an area of improvement for both public and private sectors with no significant difference in rate noted. The outlier group of HCOs is of particular concern with a fall rate nearly double that of the aggregate rate. The rate of 'Inpatient falls resulting in fracture or closed health injury' (CI 4.2) was similar in all states except the "other group" with relatively few outliers. It is unsurprising that the fall rates remain higher in patients over the age of 65 (CI 4.3). It would be interesting to identify a sub-indicator: inpatient falls resulting in fracture or closed head injury in this age group. This would be of benefit in the continued focus on falls screening, assessment, management and prevention required by NSQHS Standard 10: Preventing Falls and Harm from Falls.

Patient deaths

The review of patient deaths addressed within a clinical audit process (CI 5.1) is of great value in understanding avoidable causes and improving clinical practice. The improving trend to 95.6 per 100 deaths reviewed is pleasing and indicates that death screening and review as part of Morbidity and Mortality meetings has been widely implemented. It is a concern that there are still outlier HCOs and that their rate was 64.3 per 100 deaths.

There are considerably fewer HCOs able to submit data for 'Deaths in adult patients who do not have an NFR order' (CI 5.2). This could in part be due to differences in definitions of treatment limiting orders

EXPERT COMMENTARY

The Royal Australasian College of Medical Administrators (RACMA)

and the way in which they are recorded and identified in the medical record. The numbers of patients who died without an NFR order is low at 0.15 per 100 patients. The data is insufficiently granular to allow interpretation on the appropriate timing of NFR orders throughout admission and before death.

Given the scoping of 'Adult deaths' (CI 5.3), this may reflect the CI's overall utility, as raw mortality rates need to be considered in the context of casemix and comorbidity. Reflection on standardised or casemix adjusted mortality rates may add understanding to the variations in mortality rate. Subsets of data, such as "unexpected deaths" and "expected deaths" will be of utility. Unexpected deaths are arguably the higher risk from a governance perspective and should be the first addressed in any death review clinical audit process.

Although Coronary Artery Graft Surgery (CAGS) related deaths (CI 5.4) are small in number, data volumes have showed consistency since 2008, allowing an interpretation that deaths related to CAGS has decreased over time. This may be due to earlier detection and proactive management of cardiovascular disease, improved surgical techniques and maintenance medical therapies postoperatively.

CI 5.6 demonstrates the higher death rate post CAGS of patients aged 71 years and over. Further detail is required to comment on whether age is an independent risk factor for death post CAGS.

There was a low data volume for death after elective abdominal aortic aneurysm (AAA) open repair (CI 5.7), which likely represents the natural incidence and clinical detection of this issue as well as the few centres nationally that are equipped to conduct these surgeries. Pleasing rates over time indicate surgical advances, including non-open surgical techniques and improved screening and earlier detection as well as advances in postoperative care.

Blood transfusion

There is a continued downward trend in the rate of 'Significant adverse blood transfusion events' (CI 6.1). It is further noted that the public rate is nearly twice that of the private rate, but the state rates are reasonably similar. Whilst the low rate for 'Transfusion episodes where informed patient consent was not documented' (CI 6.2) is noted, variation between states remain and further work needs to be undertaken particularly in the outlier HCOs where the outlier HCO rate was over six times higher at 22.1 per 100 transfusions compared to 3.23 per 100 transfusions. Similarly the low rate for 'RBC transfusion where the Hb reading is 100g/L or more' (CI 6.3) is noted, but the variation between the states and the significant spread in the box plots indicates that further improvement in this CI can occur with continued focus on appropriate prescribing and administrative practices ensuring that a scarce resource is effectively utilised.

Outlier HCOs should reflect on transfusion volumes and also indications for transfusion (i.e. emergency, intraoperative or elective). Results also demonstrate the ongoing need for patient engagement in relation to informed consent for blood transfusion. The work led by national and state jurisdictions and underpinned for HCOs by the NSQHS Standard 7: Blood and Blood Products, provides a framework for decreasing risks and improving safety in this clinical area. Outlier HCOs should carefully review these requirements, audit their practices against them and implement improvement strategies.

Thromboprophylaxis

The number of HCOs contributing data for 'VTE prophylaxis administered to high risk medical patients' (CI 7.1) remains low and it is therefore difficult to comment productively. Further work needs to be undertaken to continually raise awareness amongst clinicians of the importance of identifying high-risk patients and administering appropriate thromboprophylaxis. HCOs should be routinely examining their own data on this CI, preferably with the denominator of high risk patients who are "eligible to receive" thromboprophylaxis.



Minimum standards for rapid response system (RRS) calls

Whilst the rate of 'RRS calls to adult patients' (CI 8.1) is noted as 2.77 per 100 admissions from 109 contributing HCOs and no significant stratum differences were noted, it is impossible to make sensible comment given the lack of a definition of what an appropriate rate might be. Similarly no sensible comment is possible for the 'RRS calls to adult patients within 24 hours of admission' (CI 8.2) with a rate of 0.65 per 100 admissions and no significant stratum difference for the same reasons. Definitions of RRS calls are important, in that do they include cardiac arrest calls as well as calls regarding acute deterioration? The literature indicates that RRS type calls vary between 26-56 per 1,000 separations; as such the rate is at the lower end of what can be anticipated.

With respect to 'Adult patients experience cardiopulmonary arrest' (CI 8.3) the annual rate was 0.10 per 100 admissions from 150 HCOs with wide variation between the states and an outlier HCO rate four times that of the aggregate rate. What is not clear is the likely cause of this variation. This is an area requiring additional study and discussion with appropriate clinical groups. HCOs should consider examining their methods of detection and responding to clinical deterioration to determine the contribution to the rate of cardiopulmonary arrest calls.

It was pleasing to note that the rate for 'RRS attendances within 5 minutes' (CI 8.4), granted from a relatively small sample of 46 HCOs was 96.6 per 100 RRS calls to adult patients, with no significant stratum differences. All organisations may find benefit in differentiating RRS calls occurring "in hours" and "after hours" to further delineate the risks to the deteriorating patient.

Surgery

No significant trends noted.

EXPERT COMMENTARY

Australian College of Nursing (ACN)

“Overall, this review has shown positive outcomes for nurse sensitive criteria.”

Introductory comments

The potential for nurse sensitive indicators (NSIs) is emerging but how they are used in relation to supporting quality and safety of nursing care,¹ how nurses perceive the quality,² and the quality and safety of care of the multidisciplinary team is yet to be determined.

Hospital readmissions

The improved fitted rate of ‘Unplanned and unexpected hospital readmissions within 28 days’ (CI 1.1) is acknowledged as a significant outcome of the efforts of multiple teams and processes within HCOs. The role of nurses is integral to hospital admission risk programs, residential in-reach services, post-acute care services, rapid assessment and discharge teams, clinical response services, case management and discharge planning as consultants and members of multidisciplinary teams,³ all of which have a strategic impact on readmissions. The changing composition of contributing HCOs is noted.

Return to the operating room

This nurse sensitive criteria shows that patients are being closely monitored and the findings are being reported in a timely manner. These support the National Safety and Quality Health Service (NSQHS) Standards. Care of the patient with reference to Standard 9 of the National Standards means identification, action and reporting of the antecedents to clinical deterioration by ward/department nurses.⁴ The appropriate escalation of care⁵ by nurses for an unplanned return to the operating room (CI 2.1) ensures quality and safe standards of care observations that may cause concern.⁴ It is pleasing to note the fitted rate improved and remained significant after allowing for a change in the composition of the contributing HCOs.

Pressure injuries

Pressure injuries are largely prevented from developing or becoming worse by sound nursing practice. Nurses contribute significantly to the outcomes of this CI and it is pleasing to note a low rate in the number of patients affected. Patients with one or more pressure injuries in hospital most commonly develop them prior to admission and this indicates the need for greater education and support of carers and aged care providers as partners in care.⁶



CI 3.1 is a NSI which requires interventions of routine nursing practice for all patients, but in particular those frail and elderly individuals who are requiring hospitalisation in increasing numbers as the population ages. Such practices include regular audits, air mattresses for patients at risk, incident reporting systems and processes for identified education and supervision requirements. The research shows that continued uses of evidence-based interventions are required, especially in aged care facilities.⁷

Inpatient falls

The rate of falls in HCOs, especially in the elderly is decreasing. The Australian Commission on Safety and Quality in Health Care delivered a national resource in 2009 to aide in the reduction of falls. However, there does not appear to be a model that is consistently used nationwide as a preventative measure.

Falls prevention in acute hospitals is complex and there remains no high quality evidence of successful falls prevention strategies in wards.⁸ Patients at risk of falling require multidisciplinary involvement in care planning, pro-active and accurate assessment, various sensor devices and systems and risk identification. However, despite the lack of a successful empirical strategy, the majority of the direct care remains the responsibility of nurses and the low rates reported for CIs 4.1 - 4.3 corresponds to safe and quality nursing practice to prevent those at risk from falling, injuring themselves or others and is a pleasing trend.

References

1. Burston S, Chaboyer W and Gillespie B. Nurse-sensitive indicators suitable to reflect nursing care quality: a review and discussion of issues. *Journal of Clinical Nursing* 2014; 23(13-14): 1785-1795.
2. Stalpers D, Kieft R, Van Der Linden D et al. Concordance between nurse-reported quality of care and quality of care as publicly reported by nurse-sensitive indicators. *BMC Health Services Research* 2016; 16.
3. Department of Human Services. *Improving Care: Hospital Admission Risk Program*. Victorian Government, Melbourne; 2012.
4. Douw G, Schoonhoven L, Holwerda T et al. Nurses' worry or concern and early recognition of deteriorating patients on general wards in acute care hospitals: a systematic review. *Critical Care* 2015; 19: 230.
5. Australian Commission on Safety and Quality in Health Care (ACSQHC). Safety and Quality Improvement Guide Standard 9: Recognising and Responding to Clinical Deterioration in Acute Health Care. 2012.
6. Australian Commission on Safety and Quality in Health Care (ACSQHC). Safety and Quality Improvement Guide Standard 8: Preventing and Managing Pressure Injuries. 2012.
7. Kwong EW, Pang SM, Aboo GH and Law SS. Pressure ulcer development in older residents in nursing homes: influencing factors. *Journal of Advanced Nursing* 2009; 65(12): 2608-2620.
8. Barker AL, Morello RT, Wolfe R et al. 6-PACK programme to decrease fall injuries in acute hospitals: cluster randomised controlled trial. *BMJ* 2016; 352.

Patient deaths

Nurses as part of the health professional team ensure there has been a documented not for resuscitation (NFR) order (CI 5.2) on admission, including prior to transfer from Emergency Department, as part of the admission process.

Blood transfusion

The highest number of HCOs contributed to CI 6.1 in 2015, and the changing composition is noted. The fitted rate improved allowing for this pattern. Nurses identify the first changes to vital signs in transfusion reaction and they are responsible for patient education to ask them to alert nurses to any changes experienced. The first to be detected is usually T>37.4 followed by stopping transfusion and a decision to escalate care. Intervention by nurses contributes directly to fewer adverse transfusion events (CI 6.1).

Informed patient consent (CI 6.2) is part of the checking of documentation before administration of a blood transfusion, thus providing safe and quality care. Nurses check consent orders at the same time as checking administration orders for transfusion and provide another level of quality and safety checking for this documentation. If not present, the transfusion would be delayed until completed.

Nurses check Hb prior to transfusion (CI 6.3), but reported blood is not provided by pathology departments where Hb is 100g/L or more. Fewer transfusions in this range were reported in 2015, and there were nine outlier records of a combined excess of 136 transfusions.

2015 Summary Data

Hospital readmissions

1.1 Unplanned and unexpected readmissions within 28 days (L)

In 2015, there were 3,648,033 separations reported from 288 HCOs. The annual rate was 1.25 per 100 separations. The fitted rate improved from 1.6 to 1.1, a change of 0.49 per 100 separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.49 per 100 separations. In 2015, the potential gains totalled 40,248 fewer unplanned and unexpected readmissions within 28 days, corresponding to a reduction by approximately four-fifths. There were 88 outlier records from 57 outlier HCOs whose combined excess was 22,622 more unplanned and unexpected readmissions within 28 days. The outlier HCO rate was 4.4 per 100 separations.

Return to the operating room

2.1 Unplanned return to the operating room during the same admission (L)

In 2015, there were 2,002,383 patients reported from 221 HCOs. The annual rate was 0.25 per 100 patients. The fitted rate improved from 0.37 to 0.26, a change of 0.11 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.11 per 100 patients. In 2015, the potential gains totalled 3,382 fewer patients having an unplanned return to the operating room, corresponding to a reduction by approximately one-half. There were 40 outlier records from 30 outlier HCOs whose combined excess was 1,087 more patients having an unplanned return to the operating room. The outlier HCO rate was 0.64 per 100 patients.

2.2 Reviewed cases following an unplanned return to the operating room (H)

In 2015, there were 1,122 patients having an unplanned return to the operating room reported from 51 HCOs. The annual rate was 98.5 per 100 patients having a reviewed case following an unplanned return to the operating room. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were three outlier records from three outlier HCOs whose combined excess was 14 fewer

cases reviewed following an unplanned return to the operating room. The outlier HCO rate was 84.8 per 100 patients having a reviewed case following an unplanned return to the operating room.

Pressure injuries

3.1 Inpatients who develop 1 or more pressure injuries (L)

In 2015, there were 12,412,612 bed-days reported from 432 HCOs. The annual rate was 0.073 per 100 bed-days. In 2015, the potential gains totalled 6,753 fewer patients who develop one or more pressure injuries, corresponding to a reduction by approximately two-thirds. There were 58 outlier records from 45 outlier HCOs whose combined excess was 2,172 more patients who develop one or more pressure injuries. The outlier HCO rate was 0.17 per 100 bed-days.

Inpatient falls

4.1 Inpatient falls (L)

In 2015, there were 15,304,836 bed-days reported from 408 HCOs. The annual rate was 0.35 per 100 bed-days. In 2015, the potential gains totalled 24,075 fewer inpatient falls, corresponding to a reduction by approximately one-third. There were 153 outlier records from 104 outlier HCOs whose combined excess was 9,463 more inpatient falls. The outlier HCO rate was 0.65 per 100 bed-days.

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

In 2015, there were 14,069,400 bed-days reported from 349 HCOs. The annual rate was 0.010 per 100 bed-days. In 2015, the potential gains totalled 713 fewer inpatient falls resulting in a fracture or closed head injury, corresponding to a reduction by approximately one-half. There were eight outlier records from eight outlier HCOs whose combined excess was 282 more inpatient falls resulting in a fracture or closed head injury. The outlier HCO rate was 0.089 per 100 bed-days.

4.3 Inpatient falls - patients 65 years and older (L)

In 2015, there were 5,722,089 bed-days reported from 223 HCOs. The annual rate was 0.52 per 100 bed-days. In 2015, the potential gains totalled 10,639 fewer inpatient falls in inpatients aged 65 years and older, corresponding to a reduction by approximately one-third. There were 69 outlier records from 47 outlier HCOs whose combined excess was 5,194 more inpatient falls in inpatients aged 65 years and older. The outlier HCO rate was 0.97 per 100 bed-days.



Patient deaths

5.1 Patient deaths addressed within a clinical audit process (H)

In 2015, there were 20,086 deaths reported from 192 HCOs. The annual rate was 95.6 per 100 deaths. The fitted rate improved from 93.0 to 95.6, a change of 2.7 per 100 deaths. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.6 per 100 deaths. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 22 outlier records from 18 outlier HCOs whose combined excess was 678 fewer patient deaths addressed within a clinical audit process. The outlier HCO rate was 64.3 per 100 deaths.

5.2 Deaths in adult patients who do not have a NFR order (L)

In 2015, there were 784,447 patients reported from 65 HCOs. The annual rate was 0.15 per 100 patients. In 2015, the potential gains totalled 985 fewer deaths in adult patients who do not have a not for resuscitation order, corresponding to a reduction by approximately four-fifths. There were 14 outlier records from 12 outlier HCOs whose combined excess was 469 more deaths in adult patients who do not have a not for resuscitation order. The outlier HCO rate was 0.66 per 100 patients.

5.3 Adult deaths (L)

In 2015, there were 914,036 patients reported from 71 HCOs. The annual rate was 1.00 per 100 patients. In 2015, the potential gains totalled 6,246 fewer adult deaths, corresponding to a reduction by approximately two-thirds. There were 28 outlier records from 20 outlier HCOs whose combined excess was 1,935 more adult deaths. The outlier HCO rate was 1.8 per 100 patients.

5.4 Coronary artery graft surgery - death (L)

In 2015, there were 5,057 patients reported from 30 HCOs. The annual rate was 1.29 per 100 patients. The fitted rate improved from 1.9 to 1.1, a change of 0.73 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.68 per 100 patients. There were no potential gains in 2015.

5.5 Elective coronary artery graft surgery - death (L)

In 2015, there were 1,957 patients reported from 17 HCOs. The annual rate was 1.48 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled five fewer elective patients

who die in the same admission as having coronary artery graft surgery, corresponding to a reduction by approximately one-tenth.

5.6 Coronary artery graft surgery patients aged 71 years or older - death (L)

In 2015, there were 1,225 patients reported from 20 HCOs. The annual rate was 2.53 per 100 patients. There was no significant trend in the fitted rate. There were no potential gains in 2015.

5.7 Elective abdominal aortic aneurysm open repair - death (L)

In 2015, there were 117 patients reported from 16 HCOs. The annual rate was 0.85 per 100 patients. The fitted rate improved from 2.9 to 1.1, a change of 1.9 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.2 per 100 patients. There were no potential gains in 2015.

Blood transfusion

6.1 Significant adverse blood transfusion events (L)

In 2015, there were 95,433 transfusions reported from 183 HCOs. The annual rate was 0.15 per 100 transfusions. The fitted rate improved from 0.28 to 0.16, a change of 0.12 per 100 transfusions. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.13 per 100 transfusions. In 2015, the potential gains totalled 48 fewer significant adverse blood transfusion events, corresponding to a reduction by approximately one-quarter. There were three outlier records from three outlier HCOs whose combined excess was 12 more significant adverse blood transfusion events. The outlier HCO rate was 0.65 per 100 transfusions.

6.2 Transfusion episodes where informed patient consent was not documented (L)

In 2015, there were 23,449 transfusions reported from 99 HCOs. The annual rate was 3.23 per 100 transfusions. In 2015, the potential gains totalled 686 fewer transfusion episodes performed without consent, corresponding to a reduction by approximately four-fifths. There were 19 outlier records from 15 outlier HCOs whose combined excess was 496 more transfusion episodes performed without consent. The outlier HCO rate was 22.1 per 100 transfusions.

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6.3 RBC transfusion where Hb reading is 100 g/L or more (L)

In 2015, there were 24,128 transfusions reported from 85 HCOs. The annual rate was 1.54 per 100 transfusions. In 2015, the potential gains totalled 244 fewer transfusions where Hb reading is 100g/L or more, corresponding to a reduction by approximately one-half. There were nine outlier records from seven outlier HCOs whose combined excess was 136 more transfusions where Hb reading is 100g/L or more. The outlier HCO rate was 3.1 per 100 transfusions.

Thromboprophylaxis

7.1 VTE prophylaxis administered to high risk medical patients (N)

In 2015, there were 4,953 high-risk medical patients reported from 10 HCOs. The annual rate was 55.8 per 100 high-risk medical patients.

Minimum standards for rapid response system (RRS) calls

8.1 Rapid response system calls to adult patients (N)

In 2015, there were 1,473,637 admissions reported from 109 HCOs. The annual rate was 2.77 per 100 admissions.

8.2 Rapid response system calls to adult patients within 24 hours of admission (N)

In 2015, there were 1,080,934 admissions reported from 79 HCOs. The annual rate was 0.65 per 100 admissions.

8.3 Adult patients experiencing cardiopulmonary arrest (L)

In 2015, there were 1,689,241 admissions reported from 150 HCOs. The annual rate was 0.10 per 100 admissions. In 2015, the potential gains totalled 1,104 fewer adult patients who experience a cardiopulmonary arrest, corresponding to a reduction by approximately one-half. There were 13 outlier records from 10 outlier HCOs whose combined excess was 472 more adult patients who experience a cardiopulmonary arrest. The outlier HCO rate was 0.40 per 100 admissions.

8.4 Rapid response system attendances within 5 minutes (H)

In 2015, there were 12,532 rapid response system calls to adult patients reported from 46 HCOs. The annual rate was 96.6 per 100 rapid response system calls to adult patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were seven outlier records from seven outlier HCOs whose combined excess

was 213 fewer rapid response system calls attended to within five minutes. The outlier HCO rate was 86.2 per 100 rapid response system calls to adult patients.

8.5 Adult deaths avoided by rapid response system calls (H)

In 2015, there were 3,870 rapid response system calls to adult patients reported from 12 HCOs. The annual rate was 93.1 per 100 rapid response system calls to adult patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were two outlier records from two outlier HCOs whose combined excess was 36 fewer adult deaths avoided due to rapid response system calls. The outlier HCO rate was 87.2 per 100 rapid response system calls to adult patients.

Surgery

9.1 Pre-operative acute appendicitis (children) - normal histology (L)

In 2015, there were 750 children with a pre-operative diagnosis of acute appendicitis who undergo appendectomy reported from 16 HCOs. The annual rate was 13.7 per 100 children with a pre-operative diagnosis of acute appendicitis who undergo appendectomy with normal histology. There were no potential gains in 2015.

9.2 Laparoscopic cholecystectomy - bile duct injury requiring operative intervention (L)

In 2015, there were 12,301 patients reported from 65 HCOs. The annual rate was 0.35 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 14 fewer patients having a laparoscopic cholecystectomy with a bile duct injury requiring operative intervention, corresponding to a reduction by approximately one-quarter. There was one outlier record from one outlier HCO whose combined excess was two more patients having a laparoscopic cholecystectomy with a bile duct injury requiring operative intervention. The outlier HCO rate was 2.2 per 100 patients.

9.3 Tonsillectomy - significant reactionary haemorrhage (L)

In 2015, there were 11,284 patients reported from 56 HCOs. The annual rate was 0.62 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 27 fewer patients who have a significant reactionary haemorrhage following tonsillectomy, corresponding to a reduction by approximately one third. There were two outlier records from two outlier HCOs whose combined excess was six more patients who have a significant reactionary haemorrhage following tonsillectomy. The outlier HCO rate was 5.7 per 100 patients.



EXPERT COMMENTARY

Australasian College for Infection Prevention and Control (ACIPC)

“The prevention of healthcare-associated infection (HAIs) is everybody’s business, and surveillance of HAIs is crucial to good infection prevention. HAI surveillance data is used to identify problem areas, target interventions and then ultimately measure their effect.”



The ACHS has scheduled a revision of the Infection Control clinical indicator set to take place in November 2016 and will provide secretariat support to the Infection Control Working Party throughout the revision process.

Infection Control

Introductory comments

The prevention of healthcare-associated infection (HAIs) is everybody’s business, and surveillance of HAIs is crucial to good infection prevention. HAI surveillance data is used to identify problem areas, target interventions and then ultimately measure their effect. Without reliable data, resources are potentially wasted on practices that do not provide optimal patient and healthcare worker safety.

As the peak body for infection prevention and control in Australasia, the Australasian College for Infection Prevention and Control (<http://www.acipc.org.au>) welcomes the opportunity to provide commentary on the ACHS Clinical Indicator data for 2015.

Infection surveillance

Of the eight CIs in this section, there were improvements reported in six CIs, with no obvious difference reported in deep or organ / space knee and chest infections. Of the remaining six CIs, four report superficial surgical site infection (SSI). Caution is advised when interpreting data reporting superficial SSIs as there is no valid method to identify SSI that will frequently manifest post-discharge. Deep and organ space SSI data are generally more reliable as they often result in readmission of the patient, however they may not always present at the hospital where the procedure was performed.¹

Surgical antibiotic prophylaxis (SAP)

Inappropriate antimicrobial use is a driver of antimicrobial resistance, and is a major area of work under the National Antimicrobial Resistance (AMR) Strategy.² Surgical antibiotic prophylaxis is the most common reason for antibiotics to be prescribed in a hospital setting³ and recent national surveys have demonstrated areas for improvement. The data in these CI further support the need to improve prescribing practices. National work is being undertaken specific to surgical antibiotic prophylaxis by the National Centre for Antimicrobial Stewardship and the National Antimicrobial Prescribing Survey.⁴



Haemodialysis access-associated bloodstream infection surveillance

Although for the majority of the CIs no obvious gain was demonstrated, haemodialysis patients remain a high at risk group due to their underlying illness and the frequency of medical procedures performed. Ongoing effort is required to minimise the risk of HAIs in this group.

Vancomycin Resistant Enterococci (VRE)

Vancomycin Resistant Enterococci (VRE) is one of several multi-resistant organisms (MROs) of concern. The Australian Commission on Safety and Quality in Health Care (ACSQHC) is currently undertaking major work to address this issue through the Antimicrobial Use and Resistance in Australia (AURA) Project.⁵ The AURA project is working towards a uniform reporting process to identify trends across all MROs at a national level and will provide meaningful data to inform infection prevention policy.

Staff Immunisation

Healthcare worker immunisation is a major infection prevention strategy and affects both patients and staff. All health care workers (HCWs) should be vaccinated in alignment with recommendations in *The Australian Immunisation Handbook*.⁶ These data indicated that further effort to immunise HCWs are needed.

References

1. Tanner J, Padley W, Kiernan M et al. A benchmark too far: findings from a national survey of surgical site infection surveillance. *The Journal of Hospital Infection* 2013; 83(2): 87-91.
2. Department of Health. *Antimicrobial resistance (AMR)*. Accessed from <http://www.health.gov.au/internet/main/publishing.nsf/Content/ohp-amr.htm>
3. Australian Commission on Safety and Quality in Health Care (ACSQHC). *Antimicrobial prescribing practice in Australian hospitals: results of the 2014 National Antimicrobial Prescribing Survey*. 2015.
4. National Centre for Antimicrobial Stewardship (NCAS). *National Antimicrobial Prescribing Survey*. Accessed from <https://www.naps.org.au>
5. Australian Commission on Safety and Quality in Health Care. *Antimicrobial Use and Resistance in Australia Project*. Accessed from <http://www.safetyandquality.gov.au/national-priorities/amr-and-au-surveillance-project/>
6. Department of Health. *The Australian Immunisation Handbook*, 10th edition. Canberra ACT; Australian Government Department of Health. Accessed from <http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home>

Occupational exposures to blood and/or body fluids

These data from over 300 HCOs indicate that occupational exposure to blood and body fluids remain a major concern for all HCWs despite recent advances in the safety of medical devices. Detailed data analysis is required to inform ongoing efforts to reduce the number of exposures.

General/closing comments

Data from these CIs display a reduction in the reported infection outcomes and an improvement in many of the reported process CIs. Detailed analysis of the data may reveal areas where targeted interventions could be implemented. It is not possible to form any strong conclusions from these data as there are many limitations when attempting to generate national data particularly as Australia does not have a national HAI surveillance program.

The College supports the ongoing work of the ACSQHC's National Surveillance Initiative to explore options for a national surveillance system to monitor HAIs.

2015 Summary Data

Infection surveillance

1.1 Superficial SSI - hip prosthesis procedure (L)

In 2015, there were 24,188 procedures reported from 149 HCOs. The annual rate was 0.45 per 100 procedures. The fitted rate improved from 0.90 to 0.42, a change of 0.48 per 100 procedures. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.47 per 100 procedures. In 2015, the potential gains totalled 21 fewer superficial incisional SSIs, corresponding to a reduction by approximately one-tenth.

1.2 Deep or organ / space SSI - hip prosthesis procedure (L)

In 2015, there were 24,615 procedures reported from 149 HCOs. The annual rate was 0.58 per 100 procedures. The fitted rate improved from 0.72 to 0.60, a change of 0.12 per 100 procedures. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.12 per 100 procedures. In 2015, the potential gains totalled 25 fewer deep incisional / organ space SSIs, corresponding to a reduction by approximately one-tenth.

1.3 Superficial SSI - knee prosthesis procedure (L)

In 2015, there were 34,718 procedures reported from 149 HCOs. The annual rate was 0.34 per 100 procedures. The fitted rate improved from 0.74 to 0.35, a change of 0.39 per 100 procedures. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.38 per 100 procedures. In 2015, the potential gains totalled 46 fewer superficial incisional SSIs, corresponding to a reduction by approximately one-third. There was one outlier record from one outlier HCO whose combined excess was two more superficial incisional SSIs. The outlier HCO rate was 3.3 per 100 procedures.

1.4 Deep or organ / space SSI - knee prosthesis procedure (L)

In 2015, there were 34,834 procedures reported from 148 HCOs. The annual rate was 0.27 per 100 procedures. The fitted rate improved from 0.43 to 0.33, a change of 0.10 per 100 procedures. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.093 per 100 procedures. There were no potential gains in 2015.

1.5 Superficial SSI to chest incision site - CABG (L)

In 2015, there were 6,328 procedures reported from 38 HCOs. The annual rate was 1.06 per 100 procedures. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 25 fewer superficial incisional SSIs, corresponding to a reduction by approximately one-third. There were two outlier records from two outlier HCOs whose combined excess was five more superficial incisional SSIs. The outlier HCO rate was 5.6 per 100 procedures.

1.6 Deep or organ / space SSI to chest incision site - CABG (L)

In 2015, there were 6,610 procedures reported from 39 HCOs. The annual rate was 0.82 per 100 procedures. There was no significant trend in the fitted rate. There was relatively little variation between HCOs and so the potential gains were small in 2015.

1.7 Superficial SSI - LSCS (L)

In 2015, there were 36,744 procedures reported from 83 HCOs. The annual rate was 0.59 per 100 procedures. The fitted rate improved from 0.85 to 0.54, a change of 0.31 per 100 procedures. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.28 per 100 procedures. In 2015, the potential gains totalled 119 fewer superficial incisional SSIs, corresponding to a reduction by approximately one-half. There were seven outlier records from six outlier HCOs whose combined excess was 31 more superficial incisional SSIs. The outlier HCO rate was 3.7 per 100 procedures.

1.8 Deep or organ / space SSI - LSCS (L)

In 2015, there were 36,595 procedures reported from 82 HCOs. The annual rate was 0.13 per 100 procedures. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 16 fewer deep incisional / organ space SSIs, corresponding to a reduction by approximately one-third. There were two outlier records from two outlier HCOs whose combined excess was three more deep incisional / organ space SSIs. The outlier HCO rate was 1.3 per 100 procedures.



Surgical antibiotic prophylaxis (SAP)

2.1 Timing of SAP for the hip prosthesis procedure (H)

In 2015, there were 2,743 procedures reported from 26 HCOs. The annual rate was 91.8 per 100 procedures. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 207 more patients who receive surgical antibiotic prophylaxis within one hour prior to induction. There were four outlier records from four outlier HCOs whose combined excess was 112 fewer patients who receive surgical antibiotic prophylaxis within one hour prior to induction. The outlier HCO rate was 59.9 per 100 procedures.

2.2 Correct SAP and dose for the hip prosthesis procedure (H)

In 2015, there were 2,680 procedures reported from 25 HCOs. In 2015, the potential gains totalled 423 more patients who receive the correct surgical antibiotic prophylaxis and dose. There were seven outlier records from six outlier HCOs whose combined excess was 183 fewer patients who receive the correct surgical antibiotic prophylaxis and dose. The outlier HCO rate was 40.6 per 100 procedures.

2.3 Discontinuation of SAP within 24 hours of the hip prosthesis procedure (H)

In 2015, there were 2,435 procedures reported from 23 HCOs. The annual rate was 77.4 per 100 procedures. In 2015, the potential gains totalled 444 more patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. There were eight outlier records from six outlier HCOs whose combined excess was 231 fewer patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. The outlier HCO rate was 48.1 per 100 procedures.

2.4 Timing of SAP for the knee prosthesis procedure (H)

In 2015, there were 3,377 procedures reported from 22 HCOs. The annual rate was 95.1 per 100 procedures. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were two outlier records from two outlier HCOs whose combined excess was 59 fewer patients who receive surgical antibiotic prophylaxis within one hour prior to induction. The outlier HCO rate was 67.0 per 100 procedures.

2.5 Correct SAP and dose for the knee prosthesis procedure (H)

In 2015, there were 3,000 procedures reported from 21 HCOs. The annual rate was 87.4 per 100 procedures. In 2015, the potential gains totalled 278 more patients who receive the correct surgical antibiotic prophylaxis and dose. There were four

outlier records from three outlier HCOs whose combined excess was 84 fewer patients who receive the correct surgical antibiotic prophylaxis and dose. The outlier HCO rate was 58.1 per 100 procedures.

2.6 Discontinuation of SAP within 24 hours of the knee prosthesis procedure (H)

In 2015, there were 2,822 procedures reported from 20 HCOs. The annual rate was 83.1 per 100 procedures. In 2015, the potential gains totalled 411 more patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. There were eight outlier records from six outlier HCOs whose combined excess was 213 fewer patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. The outlier HCO rate was 58.3 per 100 procedures.

2.7 Timing of SAP for the CABG procedure (H)

In 2015, there were 653 procedures reported from six HCOs. The annual rate was 89.0 per 100 procedures. In 2015, the potential gains totalled 51 more patients who receive surgical antibiotic prophylaxis within one hour prior to induction. There was one outlier record from one outlier HCO whose combined excess was 26 fewer patients who receive surgical antibiotic prophylaxis within one hour prior to induction. The outlier HCO rate was 34.0 per 100 procedures.

2.8 Correct SAP and dose for the CABG procedure (H)

In 2015, there were 393 procedures reported from four HCOs. The annual rate was 90.6 per 100 procedures. In 2015, the potential gains totalled 29 more patients who receive the correct surgical antibiotic prophylaxis and dose.

2.9 Discontinuation of SAP within 24 hours of the CABG procedure (H)

In 2015, there were 422 procedures reported from five HCOs. The annual rate was 68.7 per 100 procedures. In 2015, the potential gains totalled 103 more patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. There was one outlier record from one outlier HCO whose combined excess was 25 fewer patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. The outlier HCO rate was 43.8 per 100 procedures.

2.10 Timing of SAP for the LSCS procedure (H)

In 2015, there were 3,806 procedures reported from 12 HCOs. The annual rate was 85.9 per 100 procedures. In 2015, the potential gains totalled 418 more patients who receive surgical antibiotic prophylaxis within one hour prior to induction. There were two outlier records from two outlier HCOs whose combined excess was 115 fewer patients who receive surgical antibiotic prophylaxis within one hour

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prior to induction. The outlier HCO rate was 66.2 per 100 procedures.

2.11 Correct SAP and dose for the LSCS procedure (H)

In 2015, there were 3,380 procedures reported from 10 HCOs. The annual rate was 77.5 per 100 procedures. In 2015, the potential gains totalled 467 more patients who receive the correct surgical antibiotic prophylaxis and dose. There were four outlier records from four outlier HCOs whose combined excess was 120 fewer patients who receive the correct surgical antibiotic prophylaxis and dose. The outlier HCO rate was 63.5 per 100 procedures.

2.12 Discontinuation of SAP within 24 hours of the LSCS procedure (H)

In 2015, there were 3,624 procedures reported from 12 HCOs. The annual rate was 84.9 per 100 procedures. In 2015, the potential gains totalled 540 more patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. There were two outlier records from one outlier HCO whose combined excess was 239 fewer patients whose surgical antibiotic prophylaxis is discontinued within 24 hours. The outlier HCO rate was 53.2 per 100 procedures.

Haemodialysis access-associated bloodstream infection surveillance

3.1 Haemodialysis - AV-fistula access-associated BSI (L)

In 2015, there were 17,724 patient-months reported from 23 HCOs. The annual rate was 0.068 per 100 patient-months. The fitted rate improved from 0.24 to 0.031, a change of 0.21 per 100 patient-months. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.21 per 100 patient-months. There were no potential gains in 2015.

3.2 Haemodialysis - synthetic and native vessel graft access-associated BSI (L)

In 2015, there were 1,399 patient-months reported from 20 HCOs. The annual rate was 0.57 per 100 patient-months. There were no potential gains in 2015.

3.3 Haemodialysis - CI non-cuffed line access-associated BSI (L)

In 2015, there were 270 patient-months reported from 12 HCOs. The annual rate was 2.59 per 100 patient-months. There was no significant trend in the fitted rate. There was relatively little variation between HCOs and so the potential gains were small in 2015.

3.4 Haemodialysis - CI cuffed line access-associated BSI (L)

In 2015, there were 3,104 patient-months reported from 22 HCOs. The annual rate was 1.87 per 100

patient-months. The fitted rate improved from 2.1 to 1.0, a change of 1.0 per 100 patient-months. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.1 per 100 patient-months. In 2015, the potential gains totalled 39 fewer bloodstream infections, corresponding to a reduction by approximately two-thirds. There was one outlier record from one outlier HCO whose combined excess was three more bloodstream infections. The outlier HCO rate was 9.8 per 100 patient-months.

Vancomycin Resistant Enterococci (VRE)

4.1 VRE infection within the ICU (L)

In 2015, there were 138,896 bed-days reported from 45 HCOs. The annual rate was 3.53 per 10,000 bed-days. In 2015, the potential gains totalled 42 fewer new VRE healthcare-associated infections, corresponding to a reduction by approximately four-fifths. There were four outlier records from four outlier HCOs whose combined excess was 25 more new VRE healthcare-associated infections. The outlier HCO rate was 65.1 per 10,000 bed-days.

4.2 VRE infection within non-ICU areas (L)

In 2015, there were 4,068,442 bed-days reported from 84 HCOs. The annual rate was 0.31 per 10,000 bed-days. In 2015, the potential gains totalled 98 fewer new VRE healthcare-associated infections, corresponding to a reduction by approximately three-quarters. There were seven outlier records from seven outlier HCOs whose combined excess was 49 more new VRE healthcare-associated infections. The outlier HCO rate was 1.9 per 10,000 bed-days.

Staff Immunisation

5.1 Flu vaccination for permanent staff (H)

In 2015, there were 24,285 permanent healthcare employees reported from 53 HCOs. The annual rate was 55.1 per 100 permanent healthcare employees. In 2015, the potential gains totalled 5,712 more permanent healthcare employees who receive a flu vaccination. There were 16 outlier records from 15 outlier HCOs whose combined excess was 2,414 fewer permanent healthcare employees who receive a flu vaccination. The outlier HCO rate was 19.9 per 100 permanent healthcare employees.

5.2 Hepatitis B vaccination for permanent staff (H)

In 2015, there were 13,272 permanent Category A healthcare employees reported from 28 HCOs. The annual rate was 73.2 per 100 permanent Category A healthcare employees. In 2015, the potential gains totalled 2,790 more permanent Category A healthcare employees vaccinated for Hepatitis B. There were 13 outlier records from 10 outlier HCOs whose combined



excess was 1,280 fewer permanent Category A healthcare employees vaccinated for Hepatitis B. The outlier HCO rate was 48.8 per 100 permanent Category A healthcare employees.

Occupational exposures to blood and/or body fluids

6.1 Reported parenteral exposures sustained by staff (L)

In 2015, there were 11,831,652 bed-days reported from 347 HCOs. The annual rate was 0.054 per 100 bed-days. The fitted rate deteriorated from 0.035 to 0.042, a change of 0.007 per 100 bed-days. In 2015, the potential gains totalled 5,415 fewer reported parenteral exposures, corresponding to a reduction by approximately four-fifths. There were seven outlier records from five outlier HCOs whose combined excess was 2,625 more reported parenteral exposures. The outlier HCO rate was 7.3 per 100 bed-days.

6.2 Reported non-parenteral exposures sustained by staff (L)

In 2015, there were 11,491,394 bed-days reported from 338 HCOs. The annual rate was 0.012 per 100 bed-days. The fitted rate improved from 0.015 to 0.012, a change of 0.003 per 100 bed-days. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.002 per 100 bed-days. In 2015, the potential gains totalled 703 fewer reported non-parenteral exposures, corresponding to a reduction by approximately one-half. There were 12 outlier records from 11 outlier HCOs whose combined excess was 107 more reported non-parenteral exposures. The outlier HCO rate was 0.041 per 100 bed-days.

EXPERT COMMENTARY

Australian and New Zealand Intensive Care Society (ANZICS) and College of Intensive Care Medicine of Australia and New Zealand (CICM)



The Intensive Care clinical indicators were reviewed in 2015 by a multidisciplinary Working Party consisting of representatives from the Australian and New Zealand Intensive Care Society (ANZICS), the College of Intensive Care Medicine of Australia and New Zealand (CICM), the Australian College of Critical Care Nurses (ACCCN) and the Australian Private Hospitals Association (APHA). The revised Intensive Care clinical indicator set has been released for data collection which commenced in January 2016.

Intensive Care

Introductory comments

The ACHS Intensive Care set provides valuable information about the performance of intensive care units (ICUs). Findings are likely to be representative of current practices even though not all hospitals contribute to the program. Contributing hospitals should interpret their own performance in light of knowledge about patients' underlying severity of illness, casemix, processes and organisation. Submission of clinical indicators (CIs) to benchmarking programs such as the ACHS Clinical Indicator Program should be seen as being of the highest priority for all hospitals. ANZICS and CICM support and thank the ACHS for the development and assessment of these important CIs of Intensive Care practice.

Access and exit block

CIs 1.1-1.3 relate to the provision of services for critically ill patients and their admission to an ICU. Overall CIs 1.1-1.3 demonstrate improving access for patients who need admission to an ICU. However improvements in access to critical care services were most marked in the late 2000's. More recent years have demonstrated little change and there remains considerable variability between hospitals and jurisdictions.

Provision of ICU beds has mirrored population growth so it is likely that factors other than just the number of available ICU beds have accounted for these trends. Increasing awareness of access to critical care services as a problem and earlier treatment of patients on wards are likely to have been important. However failure to continue early rates of improvement raises the question about how best to further improve access to ICU.

In addition, recording numbers of refusals and non-admissions requires resources which may not be available in all hospitals. It is likely that hospitals which do not report CIs to the ACHS due to a lack of resources may also be those where access to critical care is also a problem.



CIs 1.4 and 1.5 relate to patient flow and discharge from the ICU. Over time, there has been little change in the numbers of 'Adult discharge delay more than 6 hours' (CI 1.4) after being deemed ready to leave the ICU. Many factors may affect the ability to discharge a patient such as the definition used to determine the 'readiness to leave ICU', staff and management culture, occupancy of the wards and actual likely time the patient is expected to leave the ICU. Delaying a patient's discharge may actually be beneficial if it facilitates transfer during daylight hours. However leaving an ICU bed occupied with a patient who does not need it, may also delay the admission of an acutely unwell patient.

After-hours discharge from an ICU (CI 1.5) has consistently been shown to be associated with increased risk of death and had not seen much change recently in Australian ICUs, so it is pleasing to see a reduction, albeit minor, over the past few years from contributing hospitals.

Although there is great variation between sites, access to critical care services, exit block and after hours discharge from ICU appear to be much greater problems for public hospitals. This is likely a consequence of the predominantly elective surgical casemix of private hospitals which ensures timing of discharge can be more easily planned.

Intensive care patient management

Rapid response calls to adult ICU patients within 72 hours of ICU discharge (CI 2.1) captures those patients discharged from an ICU that are vulnerable to clinical deterioration. High ICU occupancy rates sometimes result in patients being discharged prior to a team-planned discharge day. Following ICU discharged patients also need to be monitored more closely for deterioration and responded to appropriately.

In the period from 2011 to 2015, the rate of rapid response calls to adult patients within 72 hours of ICU has increased from 2.42 per 100 patients to 5.08 per 100 patients. It is not clear if this represents increased discharge pressure on intensive care or improvements in rapid response call activation and/or data collection. During this same period there was an increase in the number of HCOs reporting data from 45 HCOs to 61 HCOs.

There was a significantly lower rate for private hospitals at 1.60 per 100 patients compared with the public hospital of 6.33 per 100 patients. This may reflect a larger cohort of post-surgical patients in the private hospital or differences in the private hospital rapid response systems. There were 12 outlier records from nine outlier HCOs, where the

outlier HCO rapid response call rate was 12.4 per 100 patients. This higher rate tended to occur in HCOs with larger numbers as reflected in the denominator size, however the cause is unclear. It may reflect a sicker patient cohort or different systems for rapid response activation and/or data collection.

Intensive care patient treatment

The percentage of patients being treated appropriately for VTE prophylaxis according to local protocol within 24 hours of admission to the ICU (CI 3.1) was 94.5 patients per 100 admissions in 2015, and has improved progressively since records were first submitted in 2008. Rates were higher in private than in public HCOs, likely reflecting the predominance of major elective surgery as a reason for ICU admission in the private sector, when VTE prophylaxis is typically planned in advance.

As noted in previous years the 80th percentile is close to 100% and there are a number of outlier HCOs that provide VTE prophylaxis to a lesser proportion of patients. Nonetheless, this outlier HCO rate has improved progressively since 2008. It is disappointing that these outlier HCOs exist as the CI allows for protocols that define circumstances when VTE prophylaxis is contraindicated or should be delayed beyond 24 hours after admission.

Central line-associated bloodstream infection

The rate of infection associated with centrally inserted central lines (CI 4.1) has improved further in 2015 and has shown a progressive decrease since rates were first submitted in 2008. This is particularly gratifying as the number of HCOs submitting data has increased progressively over this same period suggesting that the apparent improvement is real and not the result of small sample size. It is not clear why the rate of adult ICU-associated CLABSI per 1,000 line days should be approximately three times higher in Queensland than in other states.

The rate of infections associated with peripherally inserted central lines (CI 4.2) was almost three times higher than that of centrally inserted central lines although the number of line days and the number of HCOs submitting data were smaller. Although the report indicates there was no significant trend in infection rates for peripherally inserted central lines, the two outlier HCOs that had significantly more infections should review their processes for insertion, care and removal of peripherally inserted central lines.

EXPERT COMMENTARY

Australian and New Zealand Intensive Care Society (ANZICS)
and College of Intensive Care Medicine of Australia and New Zealand (CICM)

Utilisation of patient assessment systems

The high proportion of ICU admissions submitted to the ANZICS Adult Patient Database (APD) and the high proportion of hospitals contributing to the ANZICS Critical Care Resources Survey (CCRS), support the proposition that the ANZICS registries can provide an accurate picture of ICU resource provision and meaningful benchmarking of outcomes throughout Australia and New Zealand. The hospitals reporting this CI to the ACHS represent approximately half of those who actually contribute data to ANZICS within Australia and New Zealand. ANZICS and CICM would like to see 100% participation by all hospitals. It has been suggested that failure to participate in a peer review process may in itself be an indicator of poor performance.

General/closing comments

The importance for ICUs to monitor their own performance and to benchmark against their peers cannot be underestimated. Contribution to the ACHS Intensive Care set is an ideal way to do this. ANZICS and CICM recommend that all hospitals with ICUs in Australia and New Zealand submit data. It is reassuring to see that overall there have been improvements in many of the CIs reported. However there are outliers in every CI measured, where improvements in performance could be targeted and lead to better outcomes for patients admitted to ICUs in Australia and New Zealand.





References

1. Gantner D, Farley K, Bailey M et al. Mortality related to after-hours discharge from intensive care in Australia and New Zealand, 2005-2012. *Intensive Care Medicine* 2014; 40(10): 1528-1535.
2. Santamaria JD, Duke GJ, Pilcher DV et al. The timing of discharge from the intensive care unit and subsequent mortality. A prospective, multicenter study. *American Journal of Respiratory and Critical Care Medicine* 2015; 191(9): 1033-1039.
3. ANZICS Centre for Outcome and Resource Evaluation. *Annual Report 2013-2014*. ANZICS Melbourne; 2015.
4. Trinkle RM and Flabouris A. Documenting Rapid Response System afferent limb failure and associated patient outcomes. *Resuscitation* 2011; 82(7): 810-814.
5. Guinane JL, Bucknall TK, Currey J and Jones DA. Missed medical emergency team activations: tracking decisions and outcomes in practice. *Critical Care and Resuscitation* 2013; 15(4): 266-272.
6. Jones D, Hicks P, Currey J et al. Findings of the first ANZICS conference on the role of intensive care in Rapid Response Teams. *Anaesthesia and Intensive Care Journal* 2015; 43(3): 369-379.
7. Robertson MS, Nichol AD, Higgins AM et al. Venous thromboembolism prophylaxis in the critically ill: a point prevalence survey of current practice in Australian and New Zealand intensive care units. *Critical Care and Resuscitation* 2010; 12(1): 9-15.
8. Harrington G, Richards M, Solano T and Spelman D. Adult intensive care unit acquired infection (Ch 10) In: Cruickshank M and Ferguson J (eds.) *Reducing harm to patients from health care associated infection: the role of surveillance*. Australian Commission on Safety and Quality in Health Care; 2008.
9. Worth LJ, Spelman T, Bull AL et al. Central line-associated bloodstream infections in Australian intensive care units: Time-trends in infection rates, etiology, and antimicrobial resistance using a comprehensive Victorian surveillance program, 2009-2013. *American Journal of Infection Control* 2015; 43(8): 848-852.
10. Pilcher DV, Hoffman T, Thomas C et al. Risk-adjusted continuous outcome monitoring with an EWMA chart: could it have detected excess mortality among intensive care patients at Bundaberg Base Hospital? *Critical Care and Resuscitation* 2010; 12(1): 36-41.

EXPERT COMMENTARY

Australian College of Critical Care Nurses (ACCCN)

“Hospitals must recognise the importance of data collection and analysis in contemporary clinical practice. Increasing the number of HCOs reporting data will allow the statistics to accurately reflect current practice and allow for benchmarking.

It remains important that clinicians are vigilant in continual improvement in practice and all ICUs should benchmark themselves against this data. The ACCCN encourages HCOs who do not currently contribute data to commence this practice as a priority.”

Introductory comments

The ACCCN welcomes the opportunity to provide commentary on the ACIR 2008-2015. Databases are becoming an increasingly important mode of knowledge generation and allow individual ICUs to reflect on and benchmark their practice. It is difficult to draw broad conclusions from data provided by a select group of HCOs, however the data provided gives an insight into the current trends in intensive care in Australia. The ACCCN encourages all ICUs to contribute data to the ACHS Clinical Indicator Program to ensure the report is representative of clinical practice.

Access and exit block

Access and exit block is an important issue for ICUs to monitor as ICU beds are limited and generally subject to high demand. In 2015, the number of ‘ICU adult non-admission due to inadequate resources’ (CI 1.1) was 2.09 per 100 admissions. This was a slight increase from 2014, but shows a declining trend since 2008 when the rate was 5.37 per 100 admissions. There may be several reasons for this improved rate including the increasing use of ICU admission/discharge criteria and the growth of the ICU liaison nurse position which extends intensive care services to the ward setting.¹

Discharge delay from the ICU more than 6 hours (CI 1.4) has similarly increased since 2014. Ongoing delay of discharge from ICU may be due to continuing national bed shortages.

There continues to be a high number of adult patients discharged from ICUs between 6pm and 6am (CI 1.5). Research has shown that outcomes for these patients are poorer compared to those who are discharged in-hours,² although it has recently been suggested that patient status at time of discharge is a more accurate indicator of mortality risk.³ The ACCCN recognises that while it is commendable that this rate has decreased, the logistics of patient movement throughout hospitals make it unlikely this rate will ever reach zero. Emphasis should therefore also be on making structured contingency plans in case of discharge overnight, a thorough clinical plan for patients who may be discharged from the ICU and compulsory referral to the ICU liaison nurse.⁴



It is noted that access block remains higher in public compared to private facilities, probably due to a myriad of factors that are unique to public hospitals such as a higher number of admissions and emergency presentations. It has also been identified that Queensland has performed poorly for CI 1.1 compared to the other states, the reason for which is unclear.

Intensive care patient management

There has been an increase in the number of 'Rapid response calls to adult patients within 72 hours of discharge from an ICU' (CI 2.1). This may in part be due to premature discharge from ICU in an effort to clear beds, however this is probably only a small contributor as CI 1.4 shows ICUs continue to experience discharge delays. It should be taken into account that in some parts of Australia there has been a restructure of critical care services including the eradication of high dependency units. This necessitates the transfer of patients from ICU directly to the ward without a 'step down', resulting in sicker patients at the ward level and, presumably, an increase in rapid response calls.

It is likely the increasing number of rapid response calls within 72 hours of discharge from an ICU is a reflection of the overall increasing number of rapid responses due to the growing use of rapid response systems.⁵ The higher number of calls seen in the public sector is likely effected by this as rapid response systems have widely been implemented in public hospitals.⁶ A high number of rapid response activations does not automatically constitute poor clinical management. It would be useful for hospitals to collect and analyse data from their rapid response teams to determine the reason for rapid response activation. It has recently been suggested that using CI results⁷ at the time of ICU discharge and other indicators derived from the literature⁸ may assist to flag patients at risk of deterioration post-ICU discharge.

Intensive care patient treatment

The number of HCOs reporting on 'VTE prophylaxis in adults within 24 hours of ICU admission' (CI 3.1) has increased from 43 in 2008 to 71 in 2015, a positive improvement. The rate of VTE prophylaxis within 24 hours of admission to an ICU has continued to grow and was reported to be 94.5 per 100 admissions in 2015. The rate was higher in private HCOs compared to public, the reasons for which are unclear. The growing adherence to VTE prophylaxis overall is likely due to an increasing physician awareness of best practice. The release of the Antithrombotic Therapy and Prevention of Thrombosis evidence-based guidelines⁹ in 2012 have provided clear instructions for correct prescription

of antithrombotic therapies. In intensive care specifically, there has also been increased use of daily checklists and mnemonics that incorporate prompts for staff to ensure VTE prophylaxis has been prescribed.^{10, 11}

Central line-associated bloodstream infection

There continues to be a strong emphasis on prevention of central line-associated bloodstream infections in ICUs. Central line care bundles have been implemented widely in Australia and have resulted in a decrease in the rates of CLABSI.^{12, 13} This is reflected in CI 4.1 which shows a continuing decrease in the number of CLABSI from 2.11 per 1,000 line-days in 2008 to 0.44 per 1,000 line-days in 2015.

It is noted that, particularly for adult associated PI-CLABSI (CI 4.2), the data was affected by several outlier HCOs, where the outlier HCO rate was 38.3 per 1,000 line days. This is significant, particularly in the context of the overall data. The ACCCN advocates for all hospitals, particularly those with high rates of CLABSI, to implement clinical practices to decrease this incidence. Hospitals must also incorporate central line bundles into their training and recognise that these are applicable to peripherally inserted central lines. Improvement of clinical practice is particularly important in Queensland as it had higher rates of CLABSI reported compared to the other states. The reason for which is unclear, but possibly due to differing policy and practice.

Utilisation of patient assessment systems

The number of HCOs participating in the ANZICS CORE Adult Patient Database (CI 5.1) has decreased from 68 in 2008 to 66 in 2015, with some variation throughout the reported time period. It is disappointing that this number of HCOs contributing is not larger or increasing. Hospitals must recognise the importance of data collection and analysis in contemporary clinical practice. Increasing the number of HCOs reporting data will allow the statistics to accurately reflect current practice and allow for benchmarking.

General/closing comments

The ACCCN would like to acknowledge the continuing improvements in the majority of CIs represented in this report. It remains important that clinicians are vigilant in continual improvement in practice and all ICUs should benchmark themselves against this data. The ACCCN encourages HCOs who do not currently contribute data to commence this practice as a priority.

EXPERT COMMENTARY

Australian College of Critical Care Nurses (ACCCN)

References

1. Chaboyer W, Thalib L, Foster M et al. The impact of an ICU liaison nurse on discharge delay in patients after prolonged ICU stay. *Anaesthesia and Intensive Care Journal* 2006; 34(1): 55-60.
2. Gantner D, Farley K, Bailey M et al. Mortality related to after-hours discharge from intensive care in Australia and New Zealand, 2005-2012. *Intensive Care Medicine* 2014; 40(10): 1528-1535.
3. Santamaria JD, Duke GJ, Pilcher DV et al. The timing of discharge from the intensive care unit and subsequent mortality. A prospective, multicenter study. *American Journal of Respiratory and Critical Care Medicine* 2015; 191(9): 1033-1039.
4. Williams TA, Leslie GD, Elliott N et al. Introduction of discharge plan to reduce adverse events within 72 hours of discharge from the ICU. *Journal of Nursing Care Quality* 2010; 25(1): 73-79.
5. Herod R, Frost SA, Parr M et al. Long term trends in medical emergency team activations and outcomes. *Resuscitation* 2014; 85(8): 1083-1087.
6. Jones D, Hicks P, Currey J et al. Findings of the first ANZICS conference on the role of intensive care in Rapid Response Teams. *Anaesthesia and Intensive Care Journal* 2015; 43(3): 369-379.
7. Lee H, Lim CW, Hong HP et al. Efficacy of the APACHE II score at ICU discharge in predicting post-ICU mortality and ICU readmission in critically ill surgical patients. *Anaesthesia and Intensive Care Journal* 2015; 43(2): 175-186.
8. Hosein FS, Roberts DJ, Turin TC et al. A meta-analysis to derive literature-based benchmarks for readmission and hospital mortality after patient discharge from intensive care. *Critical Care* 2014; 18(6): 715.
9. Guyatt GH, Akl EA, Crowther M et al. Executive summary: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. *Chest* 2012; 141(2 Suppl): 7s-47s.
10. Cavalcanti AB, Bozza FA, Machado FR et al. Effect of a Quality Improvement Intervention With Daily Round Checklists, Goal Setting, and Clinician Prompting on Mortality of Critically Ill Patients: A Randomized Clinical Trial. *Journal of the American Medical Association* 2016; 315(14): 1480-1490.
11. Duncan C. FAST-HUGS-WIPP: A successful modification and implementation of an ICU mnemonic device. *Australian Critical Care*; 25(2): 123.
12. Entesari-Tatafi D, Orford N, Bailey MJ et al. Effectiveness of a care bundle to reduce central line-associated bloodstream infections. *The Medical Journal of Australia* 2015; 202(5): 247-250.
13. Blot K, Bergs J, Vogelaers D et al. Prevention of central line-associated bloodstream infections through quality improvement interventions: a systematic review and meta-analysis. *Clinical infectious diseases: an official publication of the Infectious Diseases Society of America* 2014; 59(1): 96-105.



2015 Summary Data

Access and exit block

1.1 ICU adult non-admission due to inadequate resources (L)

In 2015, there were 62,105 admissions reported from 62 HCOs. The annual rate was 2.09 per 100 admissions. The fitted rate improved from 3.8 to 1.5, a change of 2.3 per 100 admissions. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.3 per 100 admissions. In 2015, the potential gains totalled 1,270 fewer patients who could not be admitted to the ICU due to access block, corresponding to a reduction by approximately four-fifths. There were 19 outlier records from 12 outlier HCOs whose combined excess was 676 more patients who could not be admitted to the ICU due to access block. The outlier HCO rate was 7.0 per 100 admissions.

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

In 2015, there were 63,002 admissions reported from 64 HCOs. The annual rate was 1.11 per 100 admissions. The fitted rate improved from 1.8 to 0.74, a change of 1.0 per 100 admissions. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.0 per 100 admissions. In 2015, the potential gains totalled 672 fewer elective surgical cases deferred or cancelled, corresponding to a reduction by approximately four-fifths. There were nine outlier records from six outlier HCOs whose combined excess was 376 more elective surgical cases deferred or cancelled. The outlier HCO rate was 6.3 per 100 admissions.

1.3 ICU - adult transfer to another facility/area due to unavailability of bed (L)

In 2015, there were 57,031 admissions reported from 58 HCOs. The annual rate was 0.75 per 100 admissions. The fitted rate improved from 1.0 to 0.73, a change of 0.30 per 100 admissions. In 2015, the potential gains totalled 409 fewer patients transferred to another facility/ICU, corresponding to a reduction by approximately four-fifths. There were 14 outlier records from 10 outlier HCOs whose combined excess was 247 more patients transferred to another facility/ICU. The outlier HCO rate was 4.2 per 100 admissions.

1.4 ICU - adult discharge delay more than 6 hours (L)

In 2015, there were 67,416 patients reported from 67 HCOs. The annual rate was 26.3 per 100 patients. The fitted rate deteriorated from 24.6 to 25.6, a change of 1.1 per 100 patients. In 2015, the potential gains totalled

15,820 fewer patients whose discharge from ICU was delayed more than six hours, corresponding to a reduction by approximately four-fifths. There were 34 outlier records from 23 outlier HCOs whose combined excess was 5,319 more patients whose discharge from ICU was delayed more than six hours. The outlier HCO rate was 45.6 per 100 patients.

1.5 ICU - adult discharge between 6pm and 6am (L)

In 2015, there were 75,323 patients reported from 77 HCOs. The annual rate was 14.4 per 100 patients. The fitted rate improved from 16.5 to 14.6, a change of 1.9 per 100 patients. In 2015, the potential gains totalled 7,651 fewer patients discharged from the ICU between 6pm and 6am, corresponding to a reduction by approximately two-thirds. There were 44 outlier records from 29 outlier HCOs whose combined excess was 3,396 more patients discharged from the ICU between 6pm and 6am. The outlier HCO rate was 27.7 per 100 patients.

Intensive care patient management

2.1 Rapid response calls to adult ICU patients within 72 hours of ICU discharge (L)

In 2015, there were 61,360 patients reported from 61 HCOs. The annual rate was 5.08 per 100 patients. The fitted rate deteriorated from 2.5 to 5.1, a change of 2.6 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.6 per 100 patients. In 2015, the potential gains totalled 2,449 fewer rapid response calls within 72 hours of discharge from ICU, corresponding to a reduction by approximately three-quarters. There were 12 outlier records from nine outlier HCOs whose combined excess was 979 more rapid response calls within 72 hours of discharge from ICU. The outlier HCO rate was 12.4 per 100 patients.



Intensive care patient treatment

3.1 VTE prophylaxis in adults within 24 hours of ICU admission (H)

In 2015, there were 69,090 admissions reported from 71 HCOs. The annual rate was 94.5 per 100 admissions. The fitted rate improved from 77.9 to 95.5, a change of 17.7 per 100 admissions. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 16.7 per 100 admissions. In 2015, the potential gains totalled 3,679 more patients given VTE prophylaxis within 24 hours. There were 26 outlier records from 19 outlier HCOs whose combined excess was 1,627 fewer patients given VTE prophylaxis within 24 hours. The outlier HCO rate was 86.0 per 100 admissions.

Central line-associated bloodstream infection

4.1 Adult ICU-associated CI-CLABSI (L)

In 2015, there were 107,887 line-days reported from 54 HCOs. The annual rate was 0.44 per 1,000 line-days. The fitted rate improved from 1.9 to 0.37, a change of 1.5 per 1,000 line-days. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.5 per 1,000 line-days. In 2015, the potential gains totalled 20 fewer adult ICU-associated CI-CLABSI, corresponding to a reduction by approximately one-third. There was one outlier record from one outlier HCO whose combined excess was one more adult ICU-associated CI-CLABSI. The outlier HCO rate was 9.3 per 1,000 line-days.

4.2 Adult ICU associated PI-CLABSI (L)

In 2015, there were 17,838 line-days reported from 34 HCOs. The annual rate was 1.01 per 1,000 line-days. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 14 fewer adult ICU-associated PI-CLABSI, corresponding to a reduction by approximately three-quarters. There were two outlier records from two outlier HCOs whose combined excess was 11 more adult ICU-associated PI-CLABSI. The outlier HCO rate was 38.3 per 1,000 line-days.

Utilisation of patient assessment systems

5.1 Participation in the ANZICS CORE Adult Patient Database (H)

In 2015, there were 68,454 admissions reported from 66 HCOs. The annual rate was 96.9 per 100 admissions. The fitted rate improved from 89.3 to 95.3, a change of 6.0 per 100 admissions. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 5.7 per 100 admissions. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 12 outlier records from nine outlier HCOs whose combined excess was 1,571 fewer complete submissions to the ANZICS Database. The outlier HCO rate was 73.6 per 100 admissions.

5.2 Participation in the ANZICS CORE Critical Care Resources survey (N)

In 2015, there were 69 survey responses from 41 HCOs. The survey completion rate was 95.7%.

EXPERT COMMENTARY

Internal Medicine Society of
Australia and New Zealand
(IMSANZ)

Key Facts:

CREATION OF
CI SET:
1996

LAST REVISION
OF CI SET:
2015

20
CIs ACROSS
7
CLINICAL AREAS

Internal Medicine

Introductory comments

IMSANZ notes the poor uptake by HCOs and patchy use of the CIs across the Internal Medicine set.

Cardiovascular disease

There is potential for change in practice such as shorter length of stay (LOS) and increased access to chronic disease management programs and heart failure nurse practitioner programs following discharge to change the likelihood of commencement of ACEI/A2RA (CI 1.1) as an inpatient or to specifically mention direct referral to a rehabilitation program (CI 1.4) in the discharge summary.

Endocrine disease

IMSANZ expects the desirable rate of inpatient hypoglycaemia to be zero (CI 2.1).

Acute stroke management

IMSANZ questions whether the words “stroke service” should be used instead of “stroke unit” (CI 3.4) and whether LOS is a potentially useful CI as well, with shorter LOS being more desirable.

Care of the elderly

IMSANZ seriously questions whether it is useful to screen for cognitive assessment using a validated tool (CI 4.1) in all medical emergency admissions over 65 years of age.

The pre/post assessment of functional status (CI 4.2) is a condition of funding in Victoria and is undertaken on every patient in subacute care using the Functional Independence Measure (FIM). The value it adds is unclear.



Respiratory disease

For chronic obstructive pulmonary disease (COPD) patients, the emerging reality is that it is useful to refer to a chronic disease management program (CI 5.1) without necessarily mentioning access to a pulmonary rehabilitation program, as the latter may well be a component of the former. Thus, the space has become confusing. The discharging resident won't have a clue and will just refer to the respiratory chronic disease management program by whatever name.

There is no evidence that the assessment of severity for acute asthma (CI 5.2) has changed really since it was introduced 30 years ago. However, only one centre responded so it's not clear what the data mean.

Gastrointestinal disease

Arguably there is a subtle shift in clinical practice that means that an urgent gastroscopy (CI 6.1) will only be performed if there is evidence of ongoing bleeding.

There is a long term favourable trend for 'Haematemesis / melaena with blood transfusion and subsequent death' (CI 6.2).

Oncology

Time to administration of antibiotics for patients admitted with febrile neutropenia (CI 7.1) is an important and useful measure, so why are there only a small number of contributing centres?

General/closing comments

There has been a disappointing uptake of these CIs by a small number of centres. It could be really useful if there was widespread uptake and transparent reporting in as close to real time as possible. Trend data within centres and comparisons between centres could be useful, particularly between relevant comparator sets of contributing centres. Ideally in conjunction with the national safety data set of indicators. This would allow you to analyse the effect of the size of the service and geographical location and other socioeconomic status (SES) type variables on outcomes. This space is crowded now with Dr Foster and the IHI type initiatives. I am sure there is a lot of wasted effort across jurisdictions and no linkage to closing the loop to drive improvement.

2015 Summary Data

Cardiovascular disease

1.1 CHF - prescribed ACEI / A2RA (H)

In 2015, there were six patients reported from one HCO. The annual rate was 83.3 per 100 patients. There were no potential gains in 2015.

1.2 CHF - prescribed beta blocker (H)

There were no data submitted in 2015.

1.3 CHF and AF - prescribed warfarin (H)

There were no data submitted in 2015.

1.4 CHF - chronic disease management referral including physical rehabilitation (H)

There were no data submitted in 2015.

1.5 PTCA - vessels where primary success achieved (H)

In 2015, there were 4,455 vessels reported from nine HCOs. The annual rate was 95.6 per 100 vessels. The fitted rate deteriorated from 96.7 to 95.5, a change of 1.2 per 100 vessels. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.3 per 100 vessels. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was 28 fewer vessels where primary success is achieved. The outlier HCO rate was 88.4 per 100 vessels.

Endocrine disease

2.1 Hospitalised patients with severe hypoglycaemia less than 2.8 mmol/L (L)

In 2015, there were 92 patients reported from one HCO. The annual rate was 3.26 per 100 patients. There were no potential gains in 2015.

Acute stroke management

3.1 Acute stroke - documentation of swallowing screen conducted within 24 hours prior to food or fluid intake (H)

In 2015, there were 893 inpatients reported from 10 HCOs. The annual rate was 73.2 per 100 inpatients. In 2015, the potential gains totalled 119 more inpatients with acute stroke who have timely swallowing screen. There were two outlier records from two outlier HCOs whose combined excess was 33 fewer inpatients with acute stroke who have timely swallowing screen. The outlier HCO rate was 46.9 per 100 inpatients.

3.2 Acute stroke - documented physiotherapy assessment within 48 hours of presentation (H)

In 2015, there were 739 inpatients reported from nine HCOs. The annual rate was 86.2 per 100 inpatients. The fitted rate improved from 77.1 to 85.6, a change of 8.6 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 9.0 per 100 inpatients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was seven fewer inpatients having physiotherapy assessment within 48 hours. The outlier HCO rate was 67.7 per 100 inpatients.

3.3 Acute stroke - plan for ongoing community care provided to patient/family (H)

In 2015, there were 468 inpatients reported from nine HCOs. The annual rate was 85.3 per 100 inpatients. In 2015, the potential gains totalled 50 more inpatients with evidence of a documented plan prior to discharge.

3.4 Acute stroke - documented treatment in a stroke unit during hospital stay (H)

In 2015, there were 1,176 inpatients reported from 10 HCOs. The annual rate was 81.1 per 100 inpatients. In 2015, the potential gains totalled 94 more inpatients that have documented treatment in a stroke unit. There were three outlier records from three outlier HCOs whose combined excess was 40 fewer inpatients that have documented treatment in a stroke unit. The outlier HCO rate was 52.5 per 100 inpatients.

Care of the elderly

4.1 Medical patients 65 years or older - cognition assessment using validated tool (H)

In 2015, there were 2,981 patients reported from five HCOs. The annual rate was 74.5 per 100 patients. The fitted rate deteriorated from 74.9 to 71.2, a change of 3.8 per 100 patients. In 2015, the potential gains totalled 708 more patients who have had their cognition assessed. There were five outlier records from three outlier HCOs whose combined excess was 398 fewer patients who have had their cognition assessed. The outlier HCO rate was 41.1 per 100 patients.



4.2 Geriatric patients - documented assessment of physical function (H)

In 2015, there were 3,177 patients reported from six HCOs. The annual rate was 96.6 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were two outlier records from two outlier HCOs whose combined excess was 29 fewer patients having documented objective assessment of physical function. The outlier HCO rate was 93.2 per 100 patients.

4.3 Documentation of delirium plan (H)

In 2015, there were eight patients reported from one HCO. The annual rate was 100 per 100 patients. There were no potential gains in 2015.

4.4 Documentation of follow-up plan after discharge (H)

There were no data submitted in 2015.

Respiratory disease

5.1 COPD - chronic disease management service referral (H)

In 2015, there were 183 patients reported from two HCOs. The annual rate was 57.9 per 100 patients. In 2015, the potential gains totalled 21 more patients referred for chronic disease management service. There was one outlier record from one outlier HCO whose combined excess was 10 fewer patients referred for chronic disease management service. The outlier HCO rate was 0 per 100 patients.

5.2 Acute asthma - assessment of severity documented on admission (H)

In 2015, there were six patients reported from one HCO. The annual rate was 83.3 per 100 patients.

5.3 Acute asthma - appropriate discharge plan documented (H)

In 2015, there were six patients reported from one HCO. The annual rate was 100 per 100 patients.

Gastrointestinal disease

6.1 Haematemesis / melaena with blood transfusion - gastroscopy within 24 hours (H)

In 2015, there were 169 patients reported from three HCOs. The annual rate was 78.7 per 100 patients. In 2015, the potential gains totalled 13 more patients who have a gastroscopy within 24 hours of admission. There was one outlier record from one outlier HCO whose combined excess was three fewer patients who have a gastroscopy within 24 hours of admission. The outlier HCO rate was 14.3 per 100 patients.

6.2 Haematemesis / melaena with blood transfusion and subsequent death (L)

In 2015, there were 156 patients reported from two HCOs. The annual rate was 1.92 per 100 patients. There were no potential gains in 2015.

Oncology

7.1 Time to administration of antibiotics for patients admitted with febrile neutropenia (H)

In 2015, there were 61 patients reported from three HCOs. The annual rate was 23.0 per 100 patients. In 2015, the potential gains totalled 18 more patients administered antibiotics within 60 minutes of presentation of febrile neutropenia.

EXPERT COMMENTARY

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG)



The Maternity clinical indicators were reviewed in 2015 by a multidisciplinary Working Party consisting of representatives from the Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG), the Australian College of Midwives (ACM) and ObstetriX Consortium. The revised Maternity clinical indicator set has been released for data collection to commence in January 2017.

Maternity

Introductory comments

Congratulations to all at ACHS for the provision of further valuable statistical data on maternity care throughout Australia. In 2016, the Maternity Clinical Indicator set version 7.2 will be used for the last time and we look forward to the implementation of version 8 in 2017.

Outcome of selected primipara

There has been a further slight decrease in the number of 'Spontaneous vaginal births in the selected primipara' (CI 1.1), but it remains very constant at around 45%. There are several reasons why the number of spontaneous vaginal births may be expected to lessen over time:

- a) Women are becoming more risk averse and therefore more often requesting of obstetric procedures to minimise risk. This applies to all women but increasingly in relation to common issues such as suspected fetal macrosomia.
- b) Increasing maternal age.
- c) Reducing maternal parity with the consequential reduced morbidity from caesarean section in subsequent pregnancies.

Stratum differences were again demonstrated in relation to private and public HCOs (34.7% vs 51.5% respectively). This is expected as most of the above factors are more prevalent in the private than public sector.

The rate for 'Selected primipara - induction of labour' (CI 1.2) have continued to increase, reaching their highest rate of 36.3%. This last year saw the biggest increase for some time and probably reflects the impact of publications cited below that provide evidence that induction of labour not only improves fetal outcomes in the presence of many pregnancy complications, but may actually reduce the likelihood of caesarean section. Paramount in the paper by Boulvain et al which suggests lowered rates of caesarean section after induction of labour for suspected macrosomia.

The rate for 'Selected primipara - instrumental vaginal birth' (CI 1.3) remains at just over 25% and shows a continuing upward trend. The most likely explanation is differences in the utilisation by women of regional analgesia for pain relief in labour - a factor which is



known to change rates of instrumental birth. It would be informative to compare trends in instrumental birth to trends in rates of epidural anaesthesia during labour.

The rate for 'Selected primipara – caesarean section' (CI 1.4) remains remarkably constant at just under 29.0%. This percentage has barely changed over the last eight years and shows no clear trend upward. It is conceivable that the evidence-led rising rate of induction of labour in the presence of many pregnancy complications has helped avert the previous seemingly inevitable upward trend in caesarean section rates.

A rising caesarean section rate might be expected through developed countries for reasons specified already. These include a more risk averse population of women, who are older and less likely to have many future pregnancies (and therefore less likely to have complications of a previous caesarean section in subsequent pregnancies). The higher rate in the private sector is to be expected, given that the drivers for caesarean section are even more pronounced in that sector.

Vaginal birth after caesarean section (VBAC)

Vaginal delivery following a previous primary caesarean section (CI 2.1) remains at a fairly constant rate of 12-15%. There is a slight rise relative to 2014 (12.5% to 13.4%). Falling rates of this CI might have been expected with the publication in 2012, with data showing better fetal outcomes and lower rates of severe maternal haemorrhage in women who plan an elective caesarean section, rather than plan a vaginal birth after a primary caesarean section.

Major perineal tears and surgical repair of the perineum

The rate for 'Selected primipara – intact perineum' (CI 3.1) continues to decline (15%), but the change could be almost entirely explained by the parallel rise of instrumental birth (for reasons discussed above). Few clinicians would regularly perform instrumental birth in a selected primipara with an expectation of an intact perineum.

The rate for 'Selected primipara – episiotomy and no perineal tear' (CI 3.2) remains fairly constant at around 33% with a slight decline in 2015. The optimal rate of episiotomy is unknown. Opinion is divided as to whether a mediolateral episiotomy affects the incidence of obstetric anal sphincter injuries (OASIS) and/or anorectal incontinence from neural injury. These injuries are some of the worst outcomes for women delivering vaginally. Rates are expected to be higher in the private sector (39.2%) where there are more instrumental births in association with greater utilisation of regional analgesia for pain relief in labour.

The rate for 'Selected primipara – perineal tear and NO episiotomy' (CI 3.3) vary quite markedly across the states with lowest rate in Victoria (40.4%) and highest in Queensland (48.3%). As expected, this is the exact opposite of the rates of episiotomy and no tears where Victoria is the highest (39.3%) and Queensland the lowest (26.8%). Exactly the same regional differences were observed in 2013 and 2014, but the gap is narrowing.

The rate for 'Selected primipara – episiotomy and perineal tear' (CI 3.4) remains around 6% and is possibly increasing slowly. It is interesting that the state with the lowest episiotomy rate (Queensland) has the highest rate of both episiotomy and vaginal tear (8.84%). Perhaps suggesting that delayed use of an episiotomy makes it more likely to end up with both episiotomy and tears.

The public HCO rate for 'Selected primipara – surgical repair of perineum for third degree tear' (CI 3.5), is almost double that of the private HCOs (6.07% vs 3.34%). There may be several reasons for this. One reason could be under reporting of third degree tears in the private sector. Also, if the more difficult instrumental births were less likely to be performed in the private sector (possibly due to a more risk averse population), a lower rate of major perineal tears would be expected.

The rate for 'Selected primipara – surgical repair of perineum for fourth degree tear' (CI 3.6) remain very low at 0.27% which is the lowest rate recorded in the last eight years. The low numbers may reflect fewer difficult instrumental births with a more risk averse population.

General anaesthesia for caesarean section

The rates for 'General anaesthetic for caesarean section' (CI 4.1) have remained constant at 6.05–6.55% over the last eight years, however the private HCO rate is much lower than the public HCO rate (3.38 vs 7.80 per 100 caesareans).

Higher rates of general anaesthesia in public hospitals are likely attributable to multiple factors including technical difficulties in morbidly obese patients and the ability to perform a "code" general anaesthetic (GA) caesarean section in a public hospital in the event of sudden severe fetal compromise in a situation not suitable for instrumental birth.

Antibiotic prophylaxis and caesarean section

The rate for 'Appropriate prophylactic antibiotic at time of caesarean section' (CI 5.1) has been in the range of 90-93% for the last four years. Further increases may prove difficult for many reasons. All hospitals should regularly audit compliance with local guidelines

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across a sample of CIs which should, from time to time, include antibiotic prophylaxis at caesarean section. It is noteworthy that, unlike some overseas guidelines, the College is not prescriptive as to the timing of antibiotic administration. Whilst there is evidence that early administration (before skin incision) is more effective in the prevention of postpartum febrile morbidity, there is also unequivocal evidence that anaphylaxis with the fetus in utero can be followed by long term sequelae.

Pharmacological thromboprophylaxis and caesarean section

The rate for 'Pharmacological thromboprophylaxis and unplanned caesarean section' (CI 6.1) of 80.2% is up on last year's 75.8% and close to the 2013 figure of 80.9%. The rate should not be 100% in view of circumstances where the risk of life-threatening bleeding will exceed the risk of thromboembolism.

Substantially lower rates in Western Australia (56.5%) and New South Wales (65.3%) compared to other states (75.3-93.1%) presumably reflect differences in local guidelines. This should not have impacted however as the wording of the CI is to reflect compliance with guidelines (not whether thromboprophylaxis was administered). Lower rates in the private sector (58.1%) may reflect a relative absence of clinical guidelines in that setting.

The rate for 'Planned LSCS - pharmacological thromboprophylaxis' (CI 6.2) indicated wide variation between those states reporting. This suggests guideline differences between Western Australia (41.2%) and Victoria (92.2%). The contemporary presence or absence of maternal deaths from thromboembolism would be expected to influence guideline development in individual states. It is noteworthy that relatively few HCOs contribute to this particular CI.

Postpartum haemorrhage / blood transfusions

The rate for 'Vaginal birth - blood transfusion' (CI 7.1) have remained low since 2008 (1.11-1.34%), with the most recent figure (1.29%) trending down on the previous year.

Postpartum haemorrhage (PPH) rates seem to be rising worldwide, so it is pleasing to see that the data for this CI is still low. The difference in private (0.89%) and public (1.43%) rates is a little narrower than 2014 and may reflect more "physiological third stage" management in the public sector which carries treble the rate of PPH. Casemix may also contribute to this difference.

The rate of blood transfusions at planned caesarean section (CI 7.2) is more than twice as high in the public sector (1.68%) than in the private sector (0.73%). Higher rates of blood transfusion in the public sector at

caesarean section may reflect:

- Longer labours in the public sector as evidenced by the lower threshold for caesarean section in the private sector and,
- the more complex caesarean sections being delivered in the public sector e.g. placenta accreta.

The rates for South Australian HCOs (2.06%) remain higher than other states (1.05-1.85%). This was also observed in 2013 and 2014, but remains unexplained.

Intrauterine growth restriction (IUGR)

The rate for 'Birth with birth weight <2,750g at 40 weeks gestation or beyond' (CI 8.1) has been steadily improving and is now down to 1.40% after beginning at 1.85% when this data was first collected eight years ago. It would be very gratifying if the collection of this CI in some way was contributing to the improved clinical performance in this area. Failure to diagnose IUGR remains the most obvious preventable factor in perinatal mortality at term and is an increasingly recognised contributor to the developmental origins of adult disease. Further improvement is desirable and the downward trend should continue with further increased vigilance of staff responsible for antenatal care in detecting antenatal placental insufficiency.

Apgar score

It is disturbing to see the rate of 'Term babies - Apgar score less than 7 at five minutes post-delivery' (CI 9.1) slowly rising. The reasons are not clear. While year to year changes are small, an overall upward trend is clear. It will be interesting to see if increased attention of HCOs to fetal surveillance education of maternity staff leads to a reversal of this disturbing upward trend.

The markedly higher rates of low Apgar scores in the public sector (1.53%) relative to the private sector (0.99%) may reflect casemix or other factors such as rates of continuous electronic fetal monitoring. It should be noted that Apgar scores are very subjective and open to bias - yet remain the only parameter of newborn condition that is available in nearly all labours. The College applauds those centres that have introduced routine cord biochemistry of all births to have objective measurement of fetal condition at all births.

All admissions of a term baby to special care nursery (SCN) or neonatal intensive care nursery (NICN)

Variation between HCOs in admissions to NICN/SCNs can be both negative and positive. Low admission rates might reflect better care (e.g. better management of gestational diabetes resulting in less neonatal hypoglycaemia) or alternatively it might reflect less vigilance in the diagnosis and/or management of neonatal hypoglycaemia. The same would apply



to respiratory compromise and the other common indicators for term babies being admitted to NICN/SCNs.

It is disturbing to note that statistics around admissions of a term baby to NICN with grade 2 or 3 hypoxic ischaemic encephalopathy are not collected by anyone! The Australian and New Zealand Neonatal Network (ANZNN) specifically does NOT collect this data – yet it is a strong predictor of cerebral palsy in term infants.

Peer review of serious adverse events

The rate for ‘Peer review of serious adverse events’ (CI 11.1) has increased to 100% in 2014 and 99.3% in 2015. However, most HCOs are not reporting this CI. It would be disturbing if non-reporting reflected non-compliance with peer review of serious adverse events.

References

1. Walker SP, Mccarthy EA, Ugoni A et al. Cesarean delivery or vaginal birth: a survey of patient and clinician thresholds. *Obstetrics and Gynecology* 2007; 109(1): 67-72.
2. Darney BG, Snowden JM, Cheng YW et al. Elective induction of labor at term compared with expectant management: maternal and neonatal outcomes. *Obstetrics and Gynecology* 2013; 122(4): 761-769.
3. Cheng YW, Sparks TN, Laros Jr RK et al. Impending macrosomia: will induction of labour modify the risk of caesarean delivery? *BJOG: An International Journal of Obstetrics and Gynaecology* 2012; 119(4): 402-409.
4. Boulvain M, Senat M-V, Perrotin F et al. Induction of labour versus expectant management for large-for-date fetuses: a randomised controlled trial. *The Lancet* 2015; 385(9987): 2600-2605.
5. Anim-Somuah M, Smyth RM and Jones L. Epidural versus non-epidural or no analgesia in labour. *The Cochrane Database of Systematic Reviews* 2011; 12: CD000331.
6. Crowther CA, Dodd JM, Hiller JE et al. Planned Vaginal Birth or Elective Repeat Caesarean: Patient Preference Restricted Cohort with Nested Randomised Trial. *PLoS Medicine* 2012; 9(3): e1001192.
7. Begley CM, Gyte GM, Devane D et al. Active versus expectant management for women in the third stage of labour. *The Cochrane Database of Systematic Reviews* 2011; (11): CD007412.

General/closing comments

Many of the 2015 CIs are showing consistent trends across the eight year period of collection. The Maternity Clinical Indicator set version 7.2 has proved valuable and there is some evidence that it might be modifying clinical practice – or at least contributing to that improvement. It is hoped that the updated Maternity Clinical Indicator set version 8 will further improve this valuable work.

EXPERT COMMENTARY

Australian College of Midwives
(ACM)

“The data supports clinicians to benchmark the clinical services they currently provide to women and their babies and work towards improving outcomes as required.”

Introductory comments

The opportunity to provide commentary on the Maternity Clinical Indicator set version 7.2 in the 17th Edition of the Australasian Clinical Indicator Report is appreciated. The data supports clinicians to benchmark the clinical services they currently provide to women and their babies and work towards improving outcomes as required.

Outcome of selected primipara

Whilst the data remains relatively unchanged, despite attempts to keep the first birth normal, work continues to employ strategies such as providing one to one midwifery care in labour and ideally continuity of carer during pregnancy care and labour to address increasing normal vaginal birth rates across Australia.

The complexity of Australian women impacts the outcomes data in public maternity hospitals as women requiring higher level of care are moving from lower level facilities and private hospitals to the public tertiary referral units to have the most appropriate care for their needs.

The data also includes women accessing private obstetricians and private hospital which has shown to have less spontaneous vaginal births (CI 1.1) and therefore reporting on the model of care is a factor to birth outcome.

Given the increasing complexity of women on the rise in Australia, this may be reflected in the increasing need to intervene by inducing labour (CI 1.2). There has been more active induction of labour (IOL) at term for women with previous pregnancy loss at term, diabetes and pregnancy associated with in vitro fertilisation (IVF). There is an increasing incidence of pre-pregnancy obesity and this can be associated with co-morbidities including placental insufficiency, hypertension and diabetes. Consideration of the screening for gestational diabetes mellitus (GDM) has meant there are more women diagnosed with GDM.

Vaginal birth after caesarean section (VBAC)

There have been a number of initiatives to increase the rate of women to be supported for a Vaginal Birth After Caesarean Section (CI 2.1). This initiative has been predominately for women accessing public health care yet this data includes private maternity services.

This data does not reflect public health strategies and therefore not reliable to benchmark against. Local public health care facilities should compare with similar units. Separation of the data would be recommended.



Major perineal tears and surgical repair of the perineum

If vaginal birth in this category includes instrumental births this may have influence over the amount of perineal trauma experienced by women in this category. Interestingly CI 1.3 shows an increase in selected primigravida women requiring instrumental births. Also to note there has been an increase in episiotomy rates reflecting the increase in instrumental births.

Antibiotic prophylaxis and caesarean section

This data shows an increase in prophylaxis (CI 5.1) which reflects the incorporation of this practice into usual care across Australian maternity services.

Pharmacological thromboprophylaxis and caesarean section

Since the international and national recommendation for venous thromboembolism (VTE) programs for all patients admitted to hospital, it appears there has been a slow implementation in maternity settings. This data shows maternity services have improved in incorporating recommendations particularly to unplanned caesarean operations (CI 6.1).

The data also shows some states and territories do better than others, which may be due to Ministry of Health (MOH) programs and initiatives to support maternity sites.

References

1. Wong N, Browne J, Ferguson S et al. Getting the first birth right: A retrospective study of outcomes for low-risk primiparous women receiving standard care versus midwifery model of care in the same tertiary hospital. *Women and birth: Journal of the Australian College of Midwives* 2015; 28(4): 279-284.
2. AIHW. *Australia's health 2014*. Australia's health series Canberra: AIHW; 2014.
3. AIHW. *Australia's mothers and babies 2013 - in brief*. Perinatal statistics series Canberra: AIHW; 2015.
4. Nankervis A, McIntyre H, Moses R et al. ADIPS Consensus Guidelines for the Testing and Diagnosis of Gestational Diabetes Mellitus in Australia. 2014.
5. HealthQuest (NSW). *Maternity: towards normal birth in NSW*. 2010.
6. National Health and Medical Research Council (NHMRC). *Clinical practice guideline for the prevention of venous thromboembolism in patients admitted to Australian hospitals*. Canberra ACT; NHMRC; 2009. Accessed from http://www.nhmrc.gov.au/_files_nhmrc/file/nics/programs/vtp/guideline_prevention_venous_thromboembolism.pdf
7. The Australia & New Zealand Working Party on the Management and Prevention of Venous Thromboembolism. *Prevention of venous thromboembolism*. 4th ed. Accessed from http://www.surgeons.org/media/19372/VTE_Guidelines.pdf
8. Royal College of Obstetricians and Gynaecologists (RCOG). *Reducing the risk of venous thromboembolism during pregnancy and the puerperium*. Green-top Guideline No 37a. RCOG; 2015.
9. National Institute for Health and Clinical Excellence. NICE clinical guideline 92 (Ch: *Venous Thromboembolism: Reducing the Risk of Venous Thromboembolism (Deep Vein Thrombosis and Pulmonary Embolism) in Patients Admitted to Hospital*). London; Royal College of Physicians (UK) National Clinical Guideline Centre - Acute and Chronic Conditions; 2010.

Postpartum haemorrhage / blood transfusions

Massive transfusion protocol is well imbedded into practice. Notably, women accessing public maternity services have more postpartum haemorrhage / blood transfusions than women accessing private care (CIs 7.1 and 7.2).

All admissions of a term baby to special care nursery (SCN) or neonatal intensive care nursery (NICN)

Work needs to continue to keep mothers and babies together. This may reflect SCN and NICN admitting babies (CI 10.1) for observation as a safety control when wards cannot provide staffing levels to observe babies at risk.

Peer review of serious adverse events

There has been an increase in reporting serious adverse events (CI 11.1) and perhaps this is due to attempts to learn from these events.

General/closing comments

The Australian College of Midwives appreciates the opportunity to comment. Being able to benchmark and compare outcomes for women and babies is important. Separating the outcomes of women and babies accessing different models of care is a challenge. As healthcare providers we know there are variations to care and also women that access these models, making comparisons difficult.

2015 Summary Data

Outcome of selected primipara

1.1 Selected primipara - spontaneous vaginal birth (H)

In 2015, there were 46,393 selected primipara reported from 150 HCOs. The annual rate was 44.9 per 100 selected primipara. The fitted rate deteriorated from 45.7 to 44.5, a change of 1.2 per 100 selected primipara. In 2015, the potential gains totalled 4,057 more selected primipara who have a spontaneous vaginal birth. There were 22 outlier records from 13 outlier HCOs whose combined excess was 1,165 fewer selected primipara who have a spontaneous vaginal birth. The outlier HCO rate was 27.0 per 100 selected primipara.

1.2 Selected primipara - induction of labour (L)

In 2015, there were 46,832 selected primipara reported from 153 HCOs. The annual rate was 36.3 per 100 selected primipara. The fitted rate deteriorated from 27.1 to 35.0, a change of 8.0 per 100 selected primipara. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 8.0 per 100 selected primipara. In 2015, the potential gains totalled 3,176 fewer selected primipara who undergo induction of labour, corresponding to a reduction by approximately one-tenth. There were 13 outlier records from nine outlier HCOs whose combined excess was 603 more selected primipara who undergo induction of labour. The outlier HCO rate was 48.0 per 100 selected primipara.

1.3 Selected primipara - instrumental vaginal birth (L)

In 2015, there were 46,630 selected primipara reported from 149 HCOs. The annual rate was 26.0 per 100 selected primipara. The fitted rate deteriorated from 23.7 to 25.7, a change of 1.9 per 100 selected primipara. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.9 per 100 selected primipara. In 2015, the potential gains totalled 2,554 fewer selected primipara who undergo an instrumental vaginal birth, corresponding to a reduction by approximately one-fifth. There were 13 outlier records from nine outlier HCOs whose combined excess was 505 more selected primipara who undergo an instrumental vaginal birth. The outlier HCO rate was 40.6 per 100 selected primipara.

1.4 Selected primipara - caesarean section (L)

In 2015, there were 46,209 selected primipara reported from 149 HCOs. The annual rate was 28.9 per 100 selected primipara. The fitted rate deteriorated from 28.1 to 28.9, a change of 0.75 per 100 selected primipara. In 2015, the potential gains totalled 2,628 fewer selected primipara who undergo a caesarean section, corresponding to a reduction by approximately one-tenth. There were 22 outlier records from 14 outlier HCOs whose combined excess was 786 more selected primipara who undergo a caesarean section. The outlier HCO rate was 43.7 per 100 selected primipara.

Vaginal birth after caesarean section (VBAC)

2.1 Vaginal delivery following previous birth of caesarean section (N)

In 2015, there were 19,893 deliveries reported from 121 HCOs. The annual rate was 13.4 per 100 deliveries. There was no significant trend in the fitted rate.

Major perineal tears and surgical repair of the perineum

3.1 Selected primipara - intact perineum (H)

In 2015, there were 31,705 selected primipara reported from 137 HCOs. The annual rate was 15.4 per 100 selected primipara. The fitted rate deteriorated from 18.7 to 15.3, a change of 3.4 per 100 selected primipara. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 3.5 per 100 selected primipara. In 2015, the potential gains totalled 2,860 more selected primipara with an intact perineum. There were 17 outlier records from 13 outlier HCOs whose combined excess was 407 fewer selected primipara with an intact perineum. The outlier HCO rate was 7.1 per 100 selected primipara.

3.2 Selected primipara - episiotomy and no perineal tear (L)

In 2015, there were 29,735 selected primipara reported from 123 HCOs. The annual rate was 33.0 per 100 selected primipara. The fitted rate deteriorated from 27.3 to 33.1, a change of 5.8 per 100 selected primipara. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 5.6 per 100 selected primipara. In 2015, the potential gains totalled 3,250 fewer



selected primipara undergoing episiotomy without perineal tear, corresponding to a reduction by approximately one-quarter. There were 17 outlier records from 10 outlier HCOs whose combined excess was 809 more selected primipara undergoing episiotomy without perineal tear. The outlier HCO rate was 52.7 per 100 selected primipara.

3.3 Selected primipara - perineal tear and NO episiotomy (L)

In 2015, there were 29,493 selected primipara reported from 126 HCOs. The annual rate was 43.9 per 100 selected primipara. The fitted rate improved from 46.6 to 44.4, a change of 2.2 per 100 selected primipara. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.2 per 100 selected primipara. In 2015, the potential gains totalled 1,895 fewer selected primipara sustaining a perineal tear without episiotomy, corresponding to a reduction by approximately one-tenth. There were 10 outlier records from seven outlier HCOs whose combined excess was 325 more selected primipara sustaining a perineal tear without episiotomy. The outlier HCO rate was 60.7 per 100 selected primipara.

3.4 Selected primipara - episiotomy and perineal tear (L)

In 2015, there were 30,020 selected primipara reported from 125 HCOs. The annual rate was 6.58 per 100 selected primipara. The fitted rate deteriorated from 5.5 to 6.4, a change of 0.86 per 100 selected primipara. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.90 per 100 selected primipara. In 2015, the potential gains totalled 948 fewer selected primipara undergoing episiotomy and sustaining a perineal tear, corresponding to a reduction by approximately one-third. There were 12 outlier records from nine outlier HCOs whose combined excess was 344 more selected primipara undergoing episiotomy and sustaining a perineal tear. The outlier HCO rate was 15.2 per 100 selected primipara.

3.5 Selected primipara - surgical repair of perineum for third degree tear (L)

In 2015, there were 32,006 selected primipara reported from 135 HCOs. The annual rate was 5.18 per 100 selected primipara. The fitted rate

deteriorated from 4.2 to 5.3, a change of 1.1 per 100 selected primipara. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.1 per 100 selected primipara. In 2015, the potential gains totalled 645 fewer selected primipara undergoing surgical repair of the perineum for third degree tear, corresponding to a reduction by approximately one-third. There were three outlier records from three outlier HCOs whose combined excess was 43 more selected primipara undergoing surgical repair of the perineum for third degree tear. The outlier HCO rate was 10.0 per 100 selected primipara.

3.6 Selected primipara - surgical repair of perineum for fourth degree tear (L)

In 2015, there were 32,988 selected primipara reported from 146 HCOs. The annual rate was 0.27 per 100 selected primipara. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 15 fewer selected primipara undergoing surgical repair of the perineum for fourth degree tear, corresponding to a reduction by approximately one-tenth.

General anaesthesia for caesarean section

4.1 General anaesthetic for caesarean section (L)

In 2015, there were 59,343 caesareans reported from 138 HCOs. The annual rate was 6.2 per 100 caesareans. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 1,535 fewer women having a general anaesthetic for a caesarean section, corresponding to a reduction by approximately one-third. There were 21 outlier records from 13 outlier HCOs whose combined excess was 464 more women having a general anaesthetic for a caesarean section. The outlier HCO rate was 12.2 per 100 caesareans.

Antibiotic prophylaxis and caesarean section

5.1 Appropriate prophylactic antibiotic at time of caesarean section (H)

In 2015, there were 40,972 caesareans reported from 97 HCOs. The annual rate was 92.4 per 100 caesareans. The fitted rate improved from 74.3 to 94.9, a change of 20.5 per 100 caesareans. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 19.3 per 100 caesareans. In 2015, the potential gains totalled 2,604 more

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women who receive an appropriate prophylactic antibiotic at the time of caesarean section. There were 28 outlier records from 22 outlier HCOs whose combined excess was 1,328 fewer women who receive an appropriate prophylactic antibiotic at the time of caesarean section. The outlier HCO rate was 72.9 per 100 caesareans.

Pharmacological thromboprophylaxis and caesarean section

6.1 Unplanned LSCS - pharmacological thromboprophylaxis (H)

In 2015, there were 13,243 unplanned caesareans reported from 63 HCOs. The annual rate was 80.2 per 100 unplanned caesareans. In 2015, the potential gains totalled 2,406 more women receive appropriate pharmacological thromboprophylaxis. There were 28 outlier records from 17 outlier HCOs whose combined excess was 1,408 fewer women receive appropriate pharmacological thromboprophylaxis. The outlier HCO rate was 40.9 per 100 unplanned caesareans.

6.2 Planned LSCS - pharmacological thromboprophylaxis (H)

In 2015, there were 12,973 planned caesareans reported from 54 HCOs. The annual rate was 70.3 per 100 planned caesareans. In 2015, the potential gains totalled 3,627 more women receive appropriate pharmacological thromboprophylaxis. There were 24 outlier records from 14 outlier HCOs whose combined excess was 1,773 fewer women receive appropriate pharmacological thromboprophylaxis. The outlier HCO rate was 34.1 per 100 planned caesareans.

Postpartum haemorrhage / blood transfusions

7.1 Vaginal birth - blood transfusion (L)

In 2015, there were 120,431 vaginal births reported from 148 HCOs. The annual rate was 1.29 per 100 vaginal births. The fitted rate deteriorated from 1.2 to 1.3, a change of 0.18 per 100 vaginal births. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.18 per 100 vaginal births. In 2015, the potential gains totalled 607 fewer women who give birth vaginally who receive a blood transfusion, corresponding to a reduction by approximately one-third. There were 11 outlier records from 11 outlier HCOs whose combined excess was 126 more women who give birth vaginally who

receive a blood transfusion. The outlier HCO rate was 2.9 per 100 vaginal births.

7.2 Caesarean section - blood transfusion (L)

In 2015, there were 63,286 caesareans reported from 141 HCOs. The annual rate was 1.27 per 100 caesareans. The fitted rate improved from 1.7 to 1.3, a change of 0.40 per 100 caesareans. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.36 per 100 caesareans. In 2015, the potential gains totalled 354 fewer women who undergo caesarean section who receive a blood transfusion, corresponding to a reduction by approximately one-third. There were nine outlier records from seven outlier HCOs whose combined excess was 88 more women who undergo caesarean section who receive a blood transfusion. The outlier HCO rate was 3.5 per 100 caesareans.

Intrauterine growth restriction (IUGR)

8.1 Babies - birth weight less than 2750g at 40 weeks gestation or beyond (L)

In 2015, there were 58,481 deliveries reported from 131 HCOs. The annual rate was 1.4 per 100 deliveries. The fitted rate improved from 1.9 to 1.5, a change of 0.43 per 100 deliveries. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.43 per 100 deliveries. There was relatively little variation between HCOs and so the potential gains were small in 2015.

Apgar score

9.1 Term babies - Apgar score less than 7 at 5 minutes post-delivery (L)

In 2015, there were 169,173 babies reported from 148 HCOs. The annual rate was 1.33 per 100 babies. The fitted rate deteriorated from 1.1 to 1.4, a change of 0.29 per 100 babies. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.30 per 100 babies. In 2015, the potential gains totalled 766 fewer term babies born with an Apgar score of less than seven at five minutes post delivery, corresponding to a reduction by approximately one-third. There were nine outlier records from nine outlier HCOs whose combined excess was 128 more term babies born with an Apgar score of less than seven at five minutes post delivery. The outlier HCO rate was 3.2 per 100 babies.



All admissions of a term baby to special care nursery (SCN) or neonatal intensive care nursery (NICN)

10.1 Term babies - transferred or admitted to NICN or SCN (L)

In 2015, there were 157,850 babies reported from 141 HCOs. The annual rate was 10.2 per 100 babies. The fitted rate deteriorated from 9.6 to 10.2, a change of 0.60 per 100 babies. In 2015, the potential gains totalled 9,998 fewer term babies transferred/admitted to a neonatal intensive care nursery or special care nursery, corresponding to a reduction by approximately one-half. There were 42 outlier records from 27 outlier HCOs whose combined excess was 2,728 more term babies transferred/admitted to a neonatal intensive care nursery or special care nursery. The outlier HCO rate was 17.7 per 100 babies.

Peer review of serious adverse events

11.1 Serious adverse events addressed within peer review process (H)

In 2015, there were 2,378 serious adverse events reported from 34 HCOs. The annual rate was 99.3 per 100 serious adverse events. The fitted rate improved from 45.2 to 99.6, a change of 54.5 per 100 serious adverse events. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 36.2 per 100 serious adverse events. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was five fewer serious adverse events that are peer reviewed. The outlier HCO rate was 46.7 per 100 serious adverse events.



EXPERT COMMENTARY

NSW Therapeutic Advisory Group
(NSW TAG)

“While all areas of medicines management are not covered by the CIs, they do seek to address areas of known gaps in care.”

Medication Safety

General comments

NSW Therapeutic Advisory Group supports the use of the clinical indicators (CIs) in the Medication Safety User Manual version 4. Eighteen of the 37 National Quality Use of Medicine (QUM) Indicators for Australian Hospitals have been adapted for use in the ACHS User Manual. These National QUM Indicators have been through a rigorous development process and have been shown to be clinically meaningful, valid and useful in driving improvement towards best practice. While all areas of medicines management are not covered by the CIs, they do seek to address areas of known gaps in care. Importantly in this updated User Manual, the scope and number of CIs have increased and now include new indicators targeting medication reconciliation processes. It is clear from the Australasian Clinical Indicator Report 2008-2015, that hospitals have increased their measurement of medication reconciliation processes during hospitalisation and delivery of medication information at discharge (CIs 3.1, 4.1, 5.1, 5.2, 5.3, 5.5, and 5.6). Improvement in these CIs should be seen in future years as hospitals focus on these very important aspects of care. A substantial number of hospitals have continued to measure various aspects of documentation on the National Inpatient Medication Chart (NIMC) with good compliance with the CIs demonstrated (CIs 3.2 and 3.3). Given the limited resources and increasing demand for audits, hospitals need to carefully consider how often and which CIs need to be measured to ensure that they are targeting their gaps and demonstrating improvements over time. At this stage, comparisons of the results between sectors, whether public versus private or metropolitan versus rural, need to be interpreted very cautiously as they may not have been measured using the same methodology or have the same casemix.



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Antithrombotic therapy

1.1 Percentage of patients prescribed enoxaparin whose dosing schedule is appropriate (H)

In 2015, there were 292 patients reported from two HCOs. The annual rate was 82.9 per 100 patients. There were no potential gains in 2015.

1.2 Percentage of patients prescribed hospital initiated warfarin whose loading doses are consistent with a drug and therapeutics committee (DTC) approved protocol (H)

In 2015, there were 104 patients reported from five HCOs. The annual rate was 74.0 per 100 patients. In 2015, the potential gains totalled 25 more patients on hospital initiated warfarin whose loading doses are consistent with a DTC approved protocol.

1.3 Percentage of patients with an INR above 4 whose dosage has been adjusted or reviewed prior to the next warfarin dose (H)

In 2015, there were 328 patients reported from 12 HCOs. The annual rate was 92.7 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015.

Antibiotic therapy

2.1 Percentage of prescriptions for restricted antibiotics that are concordant with drug and therapeutics committee (DTC) approved criteria (H)

In 2015, there were 1,805 prescriptions for restricted antibiotics reported from six HCOs. The annual rate was 76.0 per 100 prescriptions for restricted antibiotics. There were no potential gains in 2015. There was one outlier record from one outlier HCO whose combined excess was 50 fewer prescriptions for restricted antibiotics that are concordant with DTC approved criteria. The outlier HCO rate was 57.7 per 100 prescriptions for restricted antibiotics.

2.2 Percentage of patients in whom doses of empirical aminoglycoside therapy are continued beyond 48 hours (L)

In 2015, there were 40 patients reported from four HCOs. The annual rate was 30.0 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015.

2.3 Percentage of patients presenting with community acquired pneumonia (CAP) that are prescribed guideline concordant antibiotic therapy (H)

In 2015, there were 90 patients reported from four HCOs. The annual rate was 65.6 per 100 patients. In 2015, the potential gains totalled 28 more patients with CAP prescribed guideline concordant antibiotic therapy.

Medication ordering

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

In 2015, there were 5,514 patients reported from 24 HCOs. The annual rate was 87.8 per 100 patients. In 2015, the potential gains totalled 655 more patients whose current medications are documented and reconciled at admission. There were 12 outlier records from eight outlier HCOs whose combined excess was 412 fewer patients whose current medications are documented and reconciled at admission. The outlier HCO rate was 56.7 per 100 patients.

3.2 Percentage of patients whose known adverse drug reactions (ADRs) are documented on the current medication chart (H)

In 2015, there were 29,748 patients reported from 49 HCOs. The annual rate was 96.8 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 21 outlier records from 16 outlier HCOs whose combined excess was 609 fewer patients whose known ADRs are documented on the current medication chart. The outlier HCO rate was 80.8 per 100 patients.

3.3 Percentage of medication orders that include error-prone abbreviations (L)

In 2015, there were 81,195 medication orders reported from 30 HCOs. The annual rate was 4.85 per 100 medication orders. In 2015, the potential gains totalled 2,788 fewer medication orders that include error-prone abbreviations, corresponding to a reduction by approximately two-thirds. There were 11 outlier records from nine outlier HCOs whose combined excess was 1,916 more medication orders that include error-prone abbreviations. The outlier HCO rate was 17.8 per

2015 SUMMARY DATA

100 medication orders.

3.4 Percentage of patients receiving cytotoxic chemotherapy whose treatment is guided by a hospital approved chemotherapy treatment protocol (H)

In 2015, there were 790 patients reported from four HCOs. The annual rate was 95.9 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There was one outlier record from one outlier HCO whose combined excess was 13 fewer patients starting a cycle of chemotherapy treatment guided by a hospital approved protocol. The outlier HCO rate was 90.4 per 100 patients.

Pain management

4.1 Percentage of postoperative patients that are given a written pain management plan at discharge AND a copy is communicated to the primary care clinician (H)

In 2015, there were 325 patients reported from two HCOs. The annual rate was 83.1 per 100 patients. In 2015, the potential gains totalled 52 more patients discharged with a pain management plan that was communicated to their primary care clinician. There was one outlier record from one outlier HCO whose combined excess was 22 fewer patients discharged with a pain management plan that was communicated to their primary care clinician. The outlier HCO rate was 66.9 per 100 patients.

Continuity of care

5.1 Percentage of discharge summaries that include medication therapy changes and explanations for changes (H)

In 2015, there were 754 discharge summaries reported from eight HCOs. The annual rate was 73.3 per 100 discharge summaries. In 2015, the potential gains totalled 68 more discharge summaries that include medication therapy changes. There were two outlier records from two outlier HCOs whose combined excess was 27 fewer discharge summaries that include medication therapy changes. The outlier HCO rate was 47.3 per 100 discharge summaries.

5.2 Percentage of patients discharged on warfarin that receive written information regarding warfarin management prior to discharge (H)

In 2015, there were 947 patients reported from nine HCOs. The annual rate was 84.9 per 100 patients. In 2015, the potential gains totalled 117 more patients who receive written information

regarding warfarin management prior to discharge. There were three outlier records from two outlier HCOs whose combined excess was 58 fewer patients who receive written information regarding warfarin management prior to discharge. The outlier HCO rate was 51.7 per 100 patients.

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)

In 2015, there were 282 patients reported from eight HCOs. The annual rate was 27.7 per 100 patients. In 2015, the potential gains totalled 102 more patients discharged with ADR information that was also communicated to their primary care clinician.

5.4 Percentage of patients receiving sedatives at discharge that were not taking them at admission (L)

In 2015, there were 15 patients reported from one HCO. The annual rate was 60.0 per 100 patients. There were no potential gains in 2015.

5.5 Percentage of patients whose discharge summaries contain a current, accurate and comprehensive list of medicines (H)

In 2015, there were 1,132 patients reported from eight HCOs. The annual rate was 77.3 per 100 patients. In 2015, the potential gains totalled 45 more patients whose discharge summaries contain a current, accurate and comprehensive medicines list. There were five outlier records from three outlier HCOs whose combined excess was 69 fewer patients whose discharge summaries contain a current, accurate and comprehensive medicines list. The outlier HCO rate was 49.2 per 100 patients.

5.6 Percentage of patients who receive a current, accurate and comprehensive medication list at the time of hospital discharge (H)

In 2015, there were 10,702 patients reported from 15 HCOs. The annual rate was 48.0 per 100 patients. In 2015, the potential gains totalled 4,884 more patients who received a current, accurate and comprehensive medication list at hospital discharge. There were three outlier records from two outlier HCOs whose combined excess was 1,264 fewer patients who received a current, accurate and comprehensive medication list at



hospital discharge. The outlier HCO rate was 30.4 per 100 patients.

Hospital wide policies

6.1 Percentage of patients that are reviewed by a clinical pharmacist within one day of admission (H)

In 2015, there were 2,034 patients reported from 12 HCOs. The annual rate was 74.7 per 100 patients. In 2015, the potential gains totalled 297 more patients who are reviewed by a clinical pharmacist within one day of admission. There were four outlier records from two outlier HCOs whose combined excess was 150 fewer patients who are reviewed by a clinical pharmacist within one day of admission. The outlier HCO rate was 47.0 per 100 patients.

6.2 Adverse drug reactions reported to TGA (N)

In 2015, there were 397,304 separations reported from 84 HCOs. The annual rate was 0.13 per 100 separations. The fitted rate increased from 0.097 to 0.15, a change of 0.055 per 100 separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.054 per 100 separations.

6.3 Medication errors - adverse event requiring intervention (L)

In 2015, there were 9,408,367 bed-days reported from 246 HCOs. The annual rate was 0.017 per 100 bed-days. The fitted rate improved from 0.047 to 0.008, a change of 0.039 per 100 bed-days. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.038 per 100 bed-days. In 2015, the potential gains totalled 1,536 fewer medication errors resulting in an adverse event requiring intervention, corresponding to a reduction by approximately four-fifths. There were 24 outlier records from 15 outlier HCOs whose combined excess was 1,009 more medication errors resulting in an adverse event requiring intervention. The outlier HCO rate was 0.091 per 100 bed-days.

EXPERT COMMENTARY

The Royal Australian and New Zealand College of Psychiatrists (RANZCP)

“The participating organisations are to be commended for their commitment to monitoring the appropriateness of care they provide.”



The Mental Health Community Based clinical indicators were reviewed in 2014 by a multidisciplinary Working Party consisting of representatives from the Royal Australian and New Zealand College of Psychiatrists (RANZCP), the Australian College of Mental Health Nurses (ACMHN), the Mental Health Information Strategy Standing Committee and the Australian Private Hospitals Association (APHA). The revised Mental Health clinical indicator set incorporates the Mental Health Inpatient and Community Based clinical indicators and has been released for data collection which commenced in January 2016.

Mental Health Community Based

Introductory comments

Community mental health care is where most people with mental illness wish to, and do, receive mental health care. This reinforces the importance of these CIs, but raises questions regarding why the number of participating organisations continues to decline. The range of providers of care, and community expectations, continue to evolve and this, combined with the declining number of participating organisations, means caution should be applied in CI interpretation.

Community

Noting the caution that should be taken in interpreting the data; the overall picture presented by the community CIs is one of consumers of participating specialist community mental health services progressively receiving a higher proportion of services through face-to-face contact; and more frequently receiving more intense contact. However consumers of these services also have an increased likelihood of being admitted to hospital. The reason for these trends that may superficially appear contradictory and requires exploration within each service. Possibilities include data quality, changes in participating organisations, or changes within participating organisations. Within organisations, factors to consider include the severity and complexity of problems experienced by consumers receiving care within specialist mental health services, the range of other clinical, support and social services available, and the models of care enacted by services.



Care planning

The RANZCP supports collaborative care planning with both consumers (CI 2.1) and carers (CI 2.2) as an essential component of effective community mental health care.¹ The very small number of organisations participating in collection of these CIs prevents any extrapolation of their significance to the broader mental health system. The participating organisations are encouraged to both utilise their efforts in improving care, and communicate any lessons from this to other services.

General/closing comments

The participating organisations are to be commended for their commitment to monitoring the appropriateness of care they provide. The RANZCP supports the participation of all services in activities with this goal; and actions to review or improve care when this is required from either CIs, or the feedback of consumers, carers, staff or evolving evidence-based guidance.

References

1. Royal Australian and New Zealand College of Psychiatrists. *PS62: Consumer, family/whānau and carer engagement*. Melbourne, VIC; RANZCP; 2014.



EXPERT COMMENTARY

Australian College of Mental Health Nurses (ACMHN)

Introductory comments

A possible consideration in this suite of clinical indicators (CIs) is the percentage of community clients with a completed 91 day clinical review. The National Standards for Mental Health Service (NSMHS) 10.4.6 stipulates that the mental health service conducts a review of the consumer's treatment, care and recovery plan at least every three months. This CI sits within the inpatient suite of CIs, but perhaps is better suited for community episodes given the longer duration of care.

Another area for CI consideration is carer recognition. NSMHS 7.11 states that the mental health service actively encourages routine identification of carers in relapse prevention plans. Another consideration might be the percentage of clients being treated on a community treatment order or under *Mental Health Act* legislation in the community.

The focus of reducing restrictive interventions in the inpatient context has been significant, but there has not been the same regard for reducing restrictive practices in the community such as the use and rate of community treatment orders per 100 patients.

Community

CIs 1.1-1.4 are all appropriate measures of quality for the community service. It is pleasing to see in 2015 a reduction by approximately two-thirds in consumers admitted once or more within the first year of treatment commencing (CI 1.4).

Care planning

The annual rate was 49.9 per 100 consumers with evidence of care plan with signature (CI 2.1). Administrative and electronic medical records may be factors for health services struggling to report on this CI. Collaborative care planning (CI 2.2) is often measured in health services by consumer experience of care surveys that target collaborative care. Questions asked around the level of involvement in the care planning process, and extent to which the person's wishes and that of their families were considered. A national mental health experience of care survey for inpatients and community might say more about collaborative care planning than the current measure.



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Community

1.1 Consumers seen face-to-face by community service (N)

In 2015, there were 60,839 consumers reported from 12 HCOs. The annual rate was 82.5 per 100 consumers. The fitted rate increased from 77.8 to 84.0, a change of 6.2 per 100 consumers.

1.2 Consumers / nominated carers - more than 24 treatment days over 3 month period (N)

In 2015, there were 42,906 consumers reported from 12 HCOs. The annual rate was 22.2 per 100 consumers. The fitted rate increased from 5.6 to 25.7, a change of 20.1 per 100 consumers. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 16.9 per 100 consumers.

1.3 Consumers / nominated carers - 3 or more face-to-face contacts within 7 day period (N)

In 2015, there were 49,133 consumers reported from 11 HCOs. The annual rate was 34.0 per 100 consumers. The fitted rate increased from 16.2 to 33.7, a change of 17.4 per 100 consumers. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 16.4 per 100 consumers.

1.4 Consumers - admitted to hospital for psychiatric reasons (L)

In 2015, there were 25,954 consumers reported from nine HCOs. The annual rate was 16.7 per 100 consumers. The fitted rate deteriorated from 12.5 to 16.9, a change of 4.4 per 100 consumers. In 2015, the potential gains totalled 3,013 fewer consumers who were admitted to hospital for psychiatric reasons, corresponding to a reduction by approximately two-thirds. There were three outlier records from two outlier HCOs whose combined excess was 1,361 more consumers who were admitted to hospital for psychiatric reasons. The outlier HCO rate was 32.6 per 100 consumers.

Care planning

2.1 Consumers - current completed care plans (H)

In 2015, there were 3,926 consumers reported from three HCOs. The annual rate was 49.9 per 100 consumers. In 2015, the potential gains totalled 1,739 more consumers with current completed care plans. There was one outlier record from one outlier HCO whose combined excess was 154 fewer consumers with current completed care plans. The outlier HCO rate was 45.4 per 100 consumers.

2.2 Carers - involvement in care plan development (H)

In 2015, there were 132 consumers reported from one HCO. The annual rate was 43.9 per 100 consumers. There were no potential gains in 2015.

EXPERT COMMENTARY

The Royal Australian and New Zealand College of Psychiatrists (RANZCP)

“The Royal Australian and New Zealand College of Psychiatrists (RANZCP) commends the trends in most CIs in this data set which show an ongoing commitment to, and achievement of, improving standards of mental health care in the participating organisations.”



The Mental Health Inpatient clinical indicators were reviewed in 2014 by a multidisciplinary Working Party consisting of representatives from the Royal Australian and New Zealand College of Psychiatrists (RANZCP), the Australian College of Mental Health Nurses (ACMHN), the Mental Health Information Strategy Standing Committee and the Australian Private Hospitals Association (APHA). The revised Mental Health clinical indicator set incorporates the Mental Health Inpatient and Community Based clinical indicators and has been released for data collection which commenced in January 2016.

Mental Health Inpatient

Introductory comments

Whilst most mental health care occurs in the community; high quality, safe, inpatient mental health care remains an essential component of the mental health system. Caution should be taken in interpreting CIs, and their most important function is probably to assist individual organisations in prioritising areas for local improvement in the context of, and in collaboration with, their community (including consumers and carers). The Royal Australian and New Zealand College of Psychiatrists (RANZCP) commends the trends in most CIs in this data set which show an ongoing commitment to, and achievement of, improving standards of mental health care in the participating organisations.

Diagnosis and care planning

Timely and accurate diagnosis (CI 1.1) is an essential component of effective inpatient mental health care. It is pleasing to see this occurring in a high proportion of records of people entering such services, and an improving proportion of records including communication of this diagnosis at discharge (CI 1.2). However the variation in achieving this communication provides an opportunity for some services to target improvement activities. The RANZCP highly values collaborative care planning (CI 1.3) with both consumers and carers as an essential component of effective mental health care¹ and is pleased to see the ongoing improvement in consumer participation in care planning, whilst noting the opportunities for improvement that remain.

Physical examination of patients

People with severe mental illness have well recognised high rates of physical health problems and these must be appropriately addressed in all settings.² Physical examination is a core component in guiding appropriate action. Whilst it is pleasing to see ongoing improvement in the proportion of people entering inpatient mental health care who receive a physical examination (CI 2.1), the variability between services is of concern.



Prescribing patterns

Guidelines^{3,4} regarding effective and appropriate prescription of psychotropic medications includes minimising the number of medications used to those essential for improved outcomes for the individual taking the medications. The RANZCP therefore welcomes the trend towards lower rates of people on three or more psychotropic medications from one subgroup category at the time of discharge (CI 3.1), but notes the opportunities for outlying organisations to review the reasons for higher rates.

Electroconvulsive therapy

The RANZCP encourages the highest standards of practice in conducting electroconvulsive therapy (ECT).³⁻⁵ Application of such standards supports both safety and efficacy of ECT. The RANZCP welcomes the ongoing reduction in an already very low rate of major medical complications while undergoing ECT (CI 4.2); and lack of significant outlying organisations on this CI. This is consistent with established evidence³⁻⁵ regarding the safety of ECT. The most notable feature of the CI regarding inpatients undergoing more than 12 treatments of ECT (CI 4.1) is the degree of variability between organisations. It is most likely that this variability is multifactorial in origin and the RANZCP encourages further exploration of practice by organisations.

Use of seclusion and restraint

The RANZCP is committed to achieving the aim of reducing, and where possible eliminating, the use of seclusion and restraint in a way that supports good clinical practice and provides safe and improved care for consumers. However reducing the use of seclusion and restraint is complex and requires commitment and leadership to changing practices and continued investment in delivering high quality care.⁶ The results of this set of CIs are consistent with this reality. There has been a significant reduction in the number of organisation and records contributing to these CIs, possibly related to the commencement of national public reporting.⁷ Therefore the ability to validly interpret trends as they relate to 2015 data is limited. If the reported increased rates of physical restraint (CI 5.7) represent actual increase of use on restraint within units, this requires significant attention. However with a clearly communicated intention to move to national public reporting of restraint rates,⁷ this could also represent changes in data reporting, as well as changes in organisations contributing to a quite small set of records for this CI. Use of the data by contributing services to understand and improve their practices would appear the greatest opportunities provided by these CIs given the broader context of their collection.

Major critical incidents

This set of CIs is important in that misunderstanding exists in the general community about the nature of present day mental health care, which contributes to barriers to people accessing care.⁸ Services should continue to strive to improve safety within all care settings, but this data highlights the ongoing improvement in safety within inpatient units, and the low rates of serious incidents that occur. However the data also highlights two opportunities for improvement in safety. Firstly, there remains a very high rate of repeat assaults amongst inpatients (CI 6.6) who have been involved already in an assault. Whilst this is not an easy issue to address, this represents an identifiable group of people who have the potential to benefit from identifying, implementing and evaluating alternate approaches to care. Secondly, there remain services with significantly higher rates of people experiencing adverse incidents during care. Whilst in some cases this may represent specific roles or functions of services; or a greater commitment to reporting adverse incidents; there would appear to be opportunities for such organisations to explore the potential to apply lessons from other organisations to improve the safety of people receiving inpatient care.

Readmissions to hospital

The significance of the unplanned readmissions (CI 7.1) trend graph for all organisations is difficult to confidently comment upon. Readmission rates are markedly different between private and public organisations, which reflects the different nature of these organisations, the consumers they serve, and types of care provided. Therefore it would appear most useful for each organisation to consider their own progress in reducing unplanned readmission. The overall trend of falling readmission rates is consistent with nationally reported public hospital data,⁹ but significantly lower than the 13.7% reported in such data. It should be noted that the nationally reported data includes all readmissions due to the inaccurate delineation between 'planned' and 'unplanned' readmissions.

Mortality

CI 8.1 is important in a similar way to those CIs regarding major critical incidents. The significance of any death should not be minimised, but nor should it be assumed that all deaths are preventable, or inappropriate to occur in an inpatient psychiatric service if an Advanced Care Plan has been set out, and staff are equipped to provide appropriate care.¹⁰ This data highlights that very few people die in inpatient psychiatric care, and the number has reduced over time.

EXPERT COMMENTARY

The Royal Australian and New Zealand College of Psychiatrists (RANZCP)



Continuity of care

Improved communication generally promotes improved patient outcomes in all settings,¹¹ and the importance of this in transiting from inpatient to community care is well recognised. The trend towards improvement in the availability of a discharge summary at the time of discharge (CI 9.1) and within two weeks (CI 9.2) is welcomed, but insufficient; and the number of outlier HCOs with low rates in public and private systems is of concern. The RANZCP would encourage ongoing improvement in the recognition of the importance, and completion, of this discharge communication.

Long term care

The RANZCP welcomes the high proportion of consumers with documented three monthly multidisciplinary reviews (CI 10.1) as appropriate. However, the significant reduction in the number of people receiving such care (in both participating organisations and the Australian mental health care system) is possibly the most significant matter to be considered in interpreting this CI.

Average length of stay

The gradual reduction in the length of stay greater than 30 days (CI 11.1) is consistent with the trend in public mental health services.⁹ This is to be welcomed where it means that a person is well enough to return to the community quicker, and receive appropriate care and support in the community. However, the ideal number for this CI is dependent upon the needs of consumers of inpatient care, and the community support available for them and the RANZCP would encourage all organisations to interpret their results in this context.

Admission

The RANZCP recognises the importance of adopting recovery-oriented practices for all providers of mental health care, and that this requires maximising the role of the person living with mental illness in decision-making.¹² This applies to the decision to enter inpatient mental health care. However, it also acknowledges that many factors impact upon the proportion of people who may enter inpatient care as a voluntary admission (CI 12.1). The absence of information regarding the proportion of public and private organisations contributing to this CI makes further commentary upon the significance problematic.

General/closing comments

The participating organisations are to be commended for their commitment to collecting the information that forms this indicator set. The results suggest that this commitment in previous years has been used to improve care, and the RANZCP encourages the use of this year's data to that end. Without detracting from the value of these efforts, the RANZCP notes the importance of readers recognising that mental health organisations may also participate in alternate activities to measure and improve their standards of care.



References

1. Royal Australian and New Zealand College of Psychiatrists. *PS62: Consumer, family/whānau and carer engagement*. Melbourne, VIC; RANZCP; 2014.
2. Royal Australian and New Zealand College of Psychiatrists. *Keeping body and mind together: Improving the physical health and life expectancy of people with serious mental illness*. Melbourne, VIC; RANZCP; 2015.
3. Malhi GS, Bassett D, Boyce P et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for mood disorders. *The Australian and New Zealand Journal of Psychiatry* 2015; 49(12): 1087-1206
4. Galletly C, Castle D, Dark F et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the management of schizophrenia and related disorders. *The Australian and New Zealand Journal of Psychiatry* 2016; 50(5): 410-472.
5. Royal Australian and New Zealand College of Psychiatrists. *PS74: Electroconvulsive Therapy (ECT)*. Melbourne, VIC; RANZCP; 2014.
6. Royal Australian and New Zealand College of Psychiatrists. *PS 61: Minimising the use of seclusion and restraint in people with mental illness*. Melbourne, VIC; RANZCP; 2010.
7. Australian Institute of Health and Welfare. *Use of restrictive practices during admitted patient care. Mental Health Services Australia*. Accessed from <https://mhsa.aihw.gov.au/services/admitted-patient/restrictive-practices/> on 1/06/2016.
8. Royal Australian and New Zealand College of Psychiatrists. *PS 84: Acknowledging and learning from past mental health practices*. Melbourne, VIC; RANZCP; 2016.
9. Australian Institute of Health and Welfare. *Key performance indicators for Australian public mental health services*. Mental Health Services Australia. Accessed from <https://mhsa.aihw.gov.au/indicators/nkpi/> on 2/06/2016.
10. NSW Ministry of Health. *Dignity, Respect and Choice: Advance Care Planning for End of Life for People with Mental Illness - A Comprehensive Guide*. 2015.
11. Royal Australian and New Zealand College of Psychiatrists. *Professional Practice Guideline: Best practice referral, communication and shared care arrangements between psychiatrists, general practitioners and psychologists*. Melbourne, VIC; RANZCP; 2014.
12. Royal Australian and New Zealand College of Psychiatrists. *PS 86: Recovery and the psychiatrist*. Melbourne, VIC; RANZCP; 2016.

EXPERT COMMENTARY

Australian College of Mental Health Nurses (ACMHN)

Diagnosis and care planning

The clinical indicators (CIs) remain an important measure of quality. Documented diagnosis at discharge (CI 1.2) is perhaps less relevant as it is a requirement for coding an episode and linked to funding, so the service compliance is high. Given the impact of activity-based funding, this CI perhaps has less meaning to inpatient units. Whether a patient was offered a copy of the discharge summary would perhaps be a more contemporary indication of quality.

Physical examination of patients

CI 2.1 measures completion of a physical examination within 48 hours. In the acute inpatient context physical examination should ideally be within 24 hours. Patients are often admitted with comorbidities and drug intoxication requiring commencement of early treatment. Treatment decisions should be informed by a physical examination. The length of stay (LOS) in inpatient units is going down giving rise to more efficient throughput. In this context, physical examination completion rates would be useful to understand within a 24 hour time period post admission.

Prescribing patterns

CI 3.1 remains an important CI for service prescribing patterns in mental health settings. The definitions remain appropriate. It is pleasing to see that in 2015 there were fewer patients discharged with three or more psychotropic medications in a sub-group category.

Electroconvulsive therapy

Electroconvulsive therapy remains an important area to monitor. There are not any suggested changes to the definitions or type of CI being collected.

Use of seclusion and restraint

It is pleasing to see seclusion episodes reduced and the state-wide comparisons. There are six CIs regarding seclusion which are based on the number of episodes. Capturing episode numbers and seclusion hours would be better captured through a per 1,000 bed-days measure to equalise across benchmarking organisations. It would be useful to understand the percentage of all patients admitted who have an episode of seclusion to compare seclusion usage in populations. The review of patients every 30 minutes (CI 5.4) is irrelevant for Victoria as it has a minimum requirement of 15 minute observations. The annual rate was 0 per 100



inpatient separations. This suggests that all health services comply with the 30 minute requirement, making it less relevant for quality and benchmarking comparisons. The terminology 'bodily restraint', which would include physical and mechanical restraint as per new *Mental Health Act* terminology in Victoria, might be useful for future definition changes. Alternatively there could be a differentiation between physical restraint and mechanical restraint. A long stay episode in seclusion is defined here as longer than four hours (CI 5.4). It's noted that the report confirms that 50% of episodes of seclusion are longer than four hours, suggesting an average LOS rather than an extended stay. In Victoria a variation report was required for stays in seclusion over eight hours. The group may find long stay episodes of more interest for benchmarking purposes. This would be worth further discussion across jurisdictions.

Major critical incidents

The rate of major deliberate self-harm on inpatient units per 1,000 bed-days would be a suggested alternative to the current indicator (CI 6.4) and the description. Self-harm is a more common reference than self-mutilation. It was pleasing to see a reduction in assaults (CI 6.2) in the context of reducing seclusion overall. The number of inpatient injuries (CI 6.5) has also reduced which is pleasing and an important CI to be monitoring.

Readmissions to hospital

Unplanned readmission within 28 days (CI 7.1) remains an important CI. Some health services include a readmission rate within seven days, which might be useful as a supplementary CI as it is suggestive of failed discharge.

Mortality

The CI monitoring the number of deaths (CI 8.1) remains relevant.

Continuity of care

Final discharge summaries within two weeks of discharge (CI 9.2) is an out-dated timeframe with health services now expected to have a completed discharge summary on the day of discharge as the benchmark with the provision of a copy to the patient. Provision of a discharge summary on the day of discharge (CI 9.1) is an important CI that should remain in place.

Long term care

A 91 day clinical review (CI 10.1) cycle remains a national mental health standard which health services need to meet for accreditation purposes. It remains more relevant for community-based episodes of care than inpatients. A weekly multidisciplinary team review would perhaps be a more relevant CI for inpatient services given the shorter length of stay and low numbers of patients who stay longer than three months.

Average length of stay

A length of stay longer than 30 days (CI 11.1) remains a relevant and appropriate inpatient CI.

Admission

The proportion of voluntary admission (CI 12.1) is an important CI in the context of least restrictive care provision. There are not any suggested changes to this CI.

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Diagnosis and care planning

1.1 Diagnosis allocated within 24 hours of admission (H)

In 2015, there were 39,777 inpatients reported from 61 HCOs. The annual rate was 95.2 per 100 inpatients. The fitted rate improved from 92.6 to 95.0, a change of 2.4 per 100 inpatients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 17 outlier records from 13 outlier HCOs whose combined excess was 1,071 fewer inpatients allocated a diagnosis within 24 hours of admission. The outlier HCO rate was 78.9 per 100 inpatients.

1.2 Documented diagnosis upon discharge (H)

In 2015, there were 41,978 inpatient separations reported from 53 HCOs. The annual rate was 92.6 per 100 inpatient separations. The fitted rate improved from 87.0 to 93.4, a change of 6.4 per 100 inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 6.4 per 100 inpatient separations. In 2015, the potential gains totalled 2,987 more inpatients with a diagnosis on hospital discharge recorded in the medical record. There were 26 outlier records from 18 outlier HCOs whose combined excess was 1,474 fewer inpatients with a diagnosis on hospital discharge recorded in the medical record. The outlier HCO rate was 79.6 per 100 inpatient separations.

1.3 Individual care plan - regularly reviewed with consumer (H)

In 2015, there were 29,193 inpatient separations reported from 44 HCOs. The annual rate was 92.4 per 100 inpatient separations. The fitted rate improved from 78.1 to 90.9, a change of 12.8 per 100 inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 13.0 per 100 inpatient separations. In 2015, the potential gains totalled 2,101 more inpatients involved in the construction and review of their care plan. There were 19 outlier records from 13 outlier HCOs whose combined excess was 803 fewer inpatients involved in the construction and review of their care plan. The outlier HCO rate was 76.9 per 100 inpatient separations.

Physical examination of patients

2.1 Physical examination documented within 48 hours of admission (H)

In 2015, there were 36,106 inpatients reported from 59 HCOs. The annual rate was 91.2 per 100 inpatients. The fitted rate improved from 83.7 to 90.0, a change of 6.3 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 7.2 per 100 inpatients. In 2015, the potential gains totalled 3,049 more inpatients with a complete documented physical examination within 48 hours of admission. There were 27 outlier records from 17 outlier HCOs whose combined excess was 1,348 fewer inpatients with a complete documented physical examination within 48 hours of admission. The outlier HCO rate was 79.7 per 100 inpatients.

Prescribing patterns

3.1 Discharged on 3 or more psychotropic medications from 1 sub-group category (L)

In 2015, there were 20,722 inpatients reported from 36 HCOs. The annual rate was 5.33 per 100 inpatients. The fitted rate improved from 6.5 to 4.5, a change of 1.9 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 3.1 per 100 inpatients. In 2015, the potential gains totalled 1,070 fewer inpatients on three or more psychotropic medications from one sub-group category on discharge, corresponding to a reduction by approximately four-fifths. There were nine outlier records from six outlier HCOs whose combined excess was 684 more inpatients on three or more psychotropic medications from one sub-group category on discharge. The outlier HCO rate was 26.7 per 100 inpatients.

Electroconvulsive therapy

4.1 Acute inpatients undergoing more than 12 treatments of ECT (L)

In 2015, there were 3,907 inpatients reported from 55 HCOs. The annual rate was 8.32 per 100 inpatients. The fitted rate improved from 10.8 to 7.6, a change of 3.2 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing



over the period. The rate change was 2.7 per 100 inpatients. In 2015, the potential gains totalled 145 fewer inpatients undergoing more than 12 treatments of ECT, corresponding to a reduction by approximately one-third. There were 10 outlier records from seven outlier HCOs whose combined excess was 72 more inpatients undergoing more than 12 treatments of ECT. The outlier HCO rate was 30.2 per 100 inpatients.

4.2 Major medical complications while undergoing ECT (L)

In 2015, there were 3,684 inpatients reported from 49 HCOs. The annual rate was 0.35 per 100 inpatients. The fitted rate improved from 0.71 to 0.42, a change of 0.29 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.28 per 100 inpatients. There was relatively little variation between HCOs and so the potential gains were small in 2015.

Use of seclusion and restraint

5.1 Seclusion - at least 1 episode during admission (L)

In 2015, there were 20,537 inpatient separations reported from 27 HCOs. The annual rate was 5.28 per 100 inpatient separations. The fitted rate improved from 9.2 to 5.6, a change of 3.7 per 100 inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 3.8 per 100 inpatient separations. In 2015, the potential gains totalled 796 fewer inpatients having at least one episode of seclusion, corresponding to a reduction by approximately two-thirds. There were five outlier records from four outlier HCOs whose combined excess was 220 more inpatients having at least one episode of seclusion. The outlier HCO rate was 8.8 per 100 inpatient separations.

5.2 Seclusion - at least 2 episodes of seclusion (L)

In 2015, there were 927 inpatient separations reported from 21 HCOs. The annual rate was 31.7 per 100 inpatient separations. The fitted rate improved from 39.9 to 26.8, a change of 13.1 per 100 inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 13.0 per 100 inpatient separations. There was relatively little variation between HCOs and so the potential gains were small in 2015.

5.3 Seclusion - more than 4 hours in 1 episode (L)

In 2015, there were 1,044 inpatient separations reported from 23 HCOs. The annual rate was 50.1 per 100 inpatient separations. The fitted rate improved from 50.0 to 37.1, a change of 12.9 per 100 inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 10.5 per 100 inpatient separations. In 2015, the potential gains totalled 209 fewer inpatients having seclusion for more than four hours in one episode, corresponding to a reduction by approximately one-third. There were two outlier records from one outlier HCO whose combined excess was 85 more inpatients having seclusion for more than four hours in one episode. The outlier HCO rate was 71.0 per 100 inpatient separations.

5.4 Seclusion - not reviewed by sight at least half-hourly (L)

In 2015, there were 639 inpatient separations reported from 18 HCOs. The annual rate was 0 per 100 inpatient separations. The fitted rate improved from 0.95 to 0.050, a change of 0.90 per 100 inpatient separations. There were no potential gains in 2015.

5.5 Seclusion - major complications (L)

In 2015, there were 867 inpatient separations reported from 20 HCOs. The annual rate was 0.23 per 100 inpatient separations. The fitted rate improved from 0.49 to 0.17, a change of 0.32 per 100 inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.30 per 100 inpatient separations. There were no potential gains in 2015.

5.6 Total seclusion episodes (L)

In 2015, there were 25 inpatient separations from 17 HCOs. The average number of episodes of seclusion among those who had at least one episode of seclusion was 1.7.

5.7 Physical restraint - at least 1 episode (L)

In 2015, there were 15,389 inpatient separations reported from 22 HCOs. The annual rate was 2.58 per 100 inpatient separations. The fitted rate deteriorated from 1.2 to 2.6, a change of 1.4 per 100 inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.5 per 100 inpatient separations. In 2015, the potential gains totalled 389 fewer inpatients having at least one episode

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of physical restraint, corresponding to a reduction by approximately four-fifths. There were four outlier records from three outlier HCOs whose combined excess was 167 more inpatients having at least one episode of physical restraint. The outlier HCO rate was 5.2 per 100 inpatient separations.

5.8 Physical restraint - major complications (L)

In 2015, there were 485 inpatient separations reported from eight HCOs. The annual rate was 0.62 per 100 inpatient separations. There was no significant trend in the fitted rate. There were no potential gains in 2015.

Major critical incidents

6.1 Attempted or actual suicide (L)

In 2015, there were 54,460 inpatients reported from 77 HCOs. The annual rate was 0.28 per 100 inpatients. The fitted rate improved from 0.53 to 0.25, a change of 0.27 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.27 per 100 inpatients. In 2015, the potential gains totalled 43 fewer inpatients with an attempted or actual suicide, corresponding to a reduction by approximately one-quarter. There was one outlier record from one outlier HCO whose combined excess was two more inpatients with an attempted or actual suicide. The outlier HCO rate was 1.8 per 100 inpatients.

6.2 Assault (L)

In 2015, there were 47,130 inpatients reported from 66 HCOs. The annual rate was 1.58 per 100 inpatients. The fitted rate improved from 2.3 to 1.2, a change of 1.1 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.1 per 100 inpatients. In 2015, the potential gains totalled 724 fewer inpatients who assault, corresponding to a reduction by approximately four-fifths. There were 14 outlier records from 11 outlier HCOs whose combined excess was 451 more inpatients who assault. The outlier HCO rate was 8.2 per 100 inpatients.

6.3 Assault - 2 or more occasions (L)

In 2015, there were 401 inpatients reported from 25 HCOs. The annual rate was 30.9 per 100 inpatients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 26 fewer inpatients who assault twice or more, corresponding to a reduction by approximately

one-fifth.

6.4 Significant self-mutilation (L)

In 2015, there were 52,315 inpatients reported from 71 HCOs. The annual rate was 0.45 per 100 inpatients. The fitted rate improved from 0.48 to 0.40, a change of 0.083 per 100 inpatients. In 2015, the potential gains totalled 187 fewer inpatients who undertake significant self-mutilation, corresponding to a reduction by approximately three-quarters. There were five outlier records from four outlier HCOs whose combined excess was 87 more inpatients who undertake significant self-mutilation. The outlier HCO rate was 2.8 per 100 inpatients.

6.5 Inpatient injured, not self-inflicted (L)

In 2015, there were 39,498 inpatients reported from 50 HCOs. The annual rate was 0.14 per 100 inpatients. The fitted rate improved from 0.40 to 0.12, a change of 0.29 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.29 per 100 inpatients. In 2015, the potential gains totalled 40 fewer inpatients suffering significant other injuries, corresponding to a reduction by approximately two-thirds. There were three outlier records from two outlier HCOs whose combined excess was 16 more inpatients suffering significant other injuries. The outlier HCO rate was 1.9 per 100 inpatients.

6.6 Inpatient assaulted (L)

In 2015, there were 33,117 inpatients reported from 43 HCOs. The annual rate was 0.62 per 100 inpatients. The fitted rate improved from 0.94 to 0.61, a change of 0.33 per 100 inpatients. In 2015, the potential gains totalled 196 fewer inpatients assaulted, corresponding to a reduction by approximately four-fifths. There were 10 outlier records from seven outlier HCOs whose combined excess was 119 more inpatients assaulted. The outlier HCO rate was 2.9 per 100 inpatients.



Readmissions to hospital

7.1 Unplanned readmissions within 28 days (L)

In 2015, there were 53,149 separations reported from 71 HCOs. The annual rate was 4.73 per 100 separations. The fitted rate improved from 8.2 to 4.9, a change of 3.3 per 100 separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 3.3 per 100 separations. In 2015, the potential gains totalled 1,714 fewer unplanned readmissions within 28 days of separation, corresponding to a reduction by approximately two-thirds. There were 16 outlier records from 14 outlier HCOs whose combined excess was 620 more unplanned readmissions within 28 days of separation. The outlier HCO rate was 10.5 per 100 separations.

Mortality

8.1 Deaths (L)

In 2015, there were 51,770 inpatients reported from 64 HCOs. The annual rate was 0.041 per 100 inpatients. The fitted rate improved from 0.087 to 0.051, a change of 0.036 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.034 per 100 inpatients. There was relatively little variation between HCOs and so the potential gains were small in 2015.

Continuity of care

9.1 Discharge summary/letter upon discharge (H)

In 2015, there were 37,723 inpatient separations reported from 55 HCOs. The annual rate was 78.3 per 100 inpatient separations. The fitted rate improved from 71.6 to 76.5, a change of 4.9 per 100 inpatient separations. In 2015, the potential gains totalled 6,973 more inpatients who have a discharge summary or letter at discharge. There were 24 outlier records from 16 outlier HCOs whose combined excess was 2,789 fewer inpatients who have a discharge summary or letter at discharge. The outlier HCO rate was 45.8 per 100 inpatient separations.

9.2 Final discharge summary recorded within 2 weeks of discharge (H)

In 2015, there were 32,117 inpatient separations reported from 49 HCOs. The annual rate was 82.0 per 100 inpatient separations. The fitted rate improved from 74.0 to 81.2, a change of 7.2 per 100

inpatient separations. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 6.7 per 100 inpatient separations. In 2015, the potential gains totalled 4,748 more inpatients who have a final discharge summary recorded within two weeks of discharge. There were 22 outlier records from 16 outlier HCOs whose combined excess was 2,281 fewer inpatients who have a final discharge summary recorded within two weeks of discharge. The outlier HCO rate was 46.6 per 100 inpatient separations.

Long term care

10.1 Three-monthly multidisciplinary review (H)

In 2015, there were 280 inpatients reported from 17 HCOs. The annual rate was 93.6 per 100 inpatients. The fitted rate improved from 86.6 to 95.7, a change of 9.1 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 12.1 per 100 inpatients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were five outlier records from four outlier HCOs whose combined excess was 10 fewer inpatients who have a multidisciplinary review recorded every three months. The outlier HCO rate was 36.4 per 100 inpatients.

Average length of stay

11.1 Acute unit - length of stay greater than 30 days (L)

In 2015, there were 37,747 inpatient episodes reported from 57 HCOs. The annual rate was 15.2 per 100 inpatient episodes. The fitted rate improved from 16.5 to 14.6, a change of 1.9 per 100 inpatient episodes. In 2015, the potential gains totalled 2,360 fewer inpatients in an acute unit with a length of stay greater than 30 days, corresponding to a reduction by approximately one-third. There were 25 outlier records from 17 outlier HCOs whose combined excess was 876 more inpatients in an acute unit with a length of stay greater than 30 days. The outlier HCO rate was 24.5 per 100 inpatient episodes.

Admission

12.1 Voluntary inpatient admissions (N)

In 2015, there were 19,098 admissions reported from 25 HCOs. The annual rate was 69.2 per 100 admissions. The fitted rate increased from 51.6 to 71.8, a change of 20.2 per 100 admissions. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 16.8 per 100 admissions.

EXPERT COMMENTARY

Australian Ophthalmic Nurses' Association (AONA)

“The data collected is a valuable tool and this is an ever-changing document as changes occur in knowledge, surgical techniques and technology.”



The Ophthalmology clinical indicators were reviewed in 2016 by a multidisciplinary Working Party consisting of representatives from the Royal Australian and New Zealand College of Ophthalmologists (RANZCO), the Australian Ophthalmic Nurses' Association (AONA) and the Australian Private Hospitals Association (APHA).

Ophthalmology

Introductory comments

AONA continues to support the ongoing data collection in this report as a valuable tool in combination with other data to improve eye care for our patients. It shows it can be used in comparison with other data such as NSQHS and EQulP National Standards. We particularly welcome the inclusion of toxic anterior segment syndrome (TASS) data in the upcoming revised set as we believe it will provide nurses not only in theatre, but also be of value to ophthalmic nurses working in emergency departments, outpatient and inpatient areas in contributing to evidence-based care and education for patients. AONA has been working on improving the knowledge base of nurses in this area with education and discussions regarding the Australian context. We agree with the Australian Day Hospital Association (ADHA) that collecting nationwide data is valuable.



Cataract surgery

Patient satisfaction may not be able to be read as an outcome of CIs 1.1 and 1.2 but these CIs used in conjunction may be able to further explore reasons for delayed surgery. For example, wider issues of general health, social issues or patient satisfaction outside the scope of this document.

Intraocular glaucoma surgery

We see the changes to this CI as improving the information across all sectors as the global trend of micro-invasive glaucoma surgery (MIGS) technique is evolving.

Retinal detachment surgery

We agree with the high success of CI 3.3 and see that patient stays are generally becoming shorter in the absence of other health or social issues. Posturing compliance has been observed as an issue with length of stay but is outside the scope of these CIs and other research will provide information relevant to this nursing issue.

General/closing comments

We agree that the data collected is a valuable tool and this is an ever-changing document as changes occur in knowledge, surgical techniques and technology. We are comfortable that at this time the data collection is relevant and obtainable in a wide variety of centres whether large or small, day procedure or long stay facilities. In some instances we are now beginning to see cataract surgery occurring as part of multiple procedures with more changes in the future. We would like to take this opportunity to thank all for their contributions to this report. AONA Vic and AONA NSW have represented all state AONA organisations on this project. Through our National Co-ordination Committee, feedback goes to all states to endeavour to provide a national AONA nursing perspective in this report.

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Cataract surgery

1.1 Cataract surgery - readmission within 28 days (L)

In 2015, there were 52,242 patients reported from 49 HCOs. The annual rate was 0.15 per 100 patients. The fitted rate improved from 0.33 to 0.19, a change of 0.14 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.14 per 100 patients. In 2015, the potential gains totalled 33 fewer patients readmitted within 28 days, corresponding to a reduction by approximately one-third.

1.2 Cataract surgery - readmission within 28 days due to endophthalmitis (L)

In 2015, there were 47,355 patients reported from 43 HCOs. The annual rate was 0.011 per 100 patients. The fitted rate improved from 0.043 to 0.017, a change of 0.025 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.025 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015.

1.3 Cataract surgery - unplanned overnight admission (L)

In 2015, there were 46,402 patients reported from 46 HCOs. The annual rate was 0.39 per 100 patients. The fitted rate improved from 0.50 to 0.43, a change of 0.065 per 100 patients. In 2015, the potential gains totalled 171 fewer patients who had an unplanned overnight admission, corresponding to a reduction by approximately four-fifths. There were 11 outlier records from eight outlier HCOs whose combined excess was 95 more patients who had an unplanned overnight admission. The outlier HCO rate was 2.3 per 100 patients.

1.4 Cataract surgery - anterior vitrectomy (L)

In 2015, there were 55,248 patients reported from 49 HCOs. The annual rate was 0.57 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 149 fewer patients having an anterior vitrectomy,

corresponding to a reduction by approximately one-third. There were seven outlier records from six outlier HCOs whose combined excess was 55 more patients having an anterior vitrectomy. The outlier HCO rate was 1.8 per 100 patients.

Intraocular glaucoma surgery

2.1 Intraocular glaucoma surgery - readmission within 28 days (L)

In 2015, there were 1,256 patients reported from 20 HCOs. The annual rate was 2.07 per 100 patients. The fitted rate improved from 4.8 to 2.7, a change of 2.1 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.3 per 100 patients. In 2015, the potential gains totalled 22 fewer patients readmitted within 28 days, corresponding to a reduction by approximately four-fifths. There were three outlier records from three outlier HCOs whose combined excess was four more patients readmitted within 28 days. The outlier HCO rate was 28.0 per 100 patients.

2.2 Intraocular glaucoma surgery - readmission within 28 days due to endophthalmitis (L)

In 2015, there were 1,219 patients reported from 18 HCOs. The annual rate was 0 per 100 patients. The fitted rate improved from 0.28 to 0.008, a change of 0.27 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.21 per 100 patients. There were no potential gains in 2015.

2.3 Intraocular glaucoma surgery - LOS greater than 3 days (L)

In 2015, there were 749 patients reported from 10 HCOs. The annual rate was 3.07 per 100 patients. There was no significant trend in the fitted rate. In 2015, the potential gains totalled five fewer patients with a LOS greater than three days, corresponding to a reduction by approximately one-fifth.

Retinal detachment surgery

3.1 Retinal detachment surgery - readmissions within 28 days (L)

In 2015, there were 3,149 patients reported from 11 HCOs. The annual rate was 4.67 per 100 patients. The fitted rate deteriorated from 2.4 to 4.7, a change of 2.3 per 100 patients. This trend was



also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.0 per 100 patients. In 2015, the potential gains totalled 74 fewer patients readmitted within 28 days, corresponding to a reduction by approximately one-half. There were three outlier records from two outlier HCOs whose combined excess was 39 more patients readmitted within 28 days. The outlier HCO rate was 10.5 per 100 patients.

3.2 Retinal detachment surgery - unplanned readmission within 28 days due to endophthalmitis (L)

In 2015, there were 3,644 patients reported from 12 HCOs. The annual rate was 0.027 per 100 patients. There was no significant trend in the fitted rate. There were no potential gains in 2015.

3.3 Retinal detachment surgery - LOS greater than 4 days (L)

In 2015, there were 2,727 patients reported from seven HCOs. The annual rate was 0.62 per 100 patients. The fitted rate improved from 1.6 to 0.35, a change of 1.2 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.84 per 100 patients. In 2015, the potential gains totalled 11 fewer patients with a LOS greater than four days, corresponding to a reduction by approximately one-half. There were two outlier records from one outlier HCO whose combined excess was seven more patients with a LOS greater than four days. The outlier HCO rate was 5.8 per 100 patients.

3.4 Retinal detachment surgery - unplanned reoperation within 28 days (L)

In 2015, there were 3,050 patients reported from 13 HCOs. The annual rate was 4.69 per 100 patients. The fitted rate deteriorated from 2.0 to 3.2, a change of 1.2 per 100 patients. In 2015, the potential gains totalled 83 fewer patients having an unplanned reoperation within 28 days, corresponding to a reduction by approximately one-half. There were three outlier records from two outlier HCOs whose combined excess was 57 more patients having an unplanned reoperation within 28 days. The outlier HCO rate was 12.6 per 100 patients.

Toric intraocular lens implantation

4.1 Intraocular lens implantation with planning record present at time of surgery (H)

In 2015, there were 11,498 intraocular lenses reported from 12 HCOs. The annual rate was 100 per 100 intraocular lenses. There were no potential gains in 2015.

4.2 Toric lens implantation (N)

In 2015, there were 13,297 intraocular lenses reported from 13 HCOs. The annual rate was 28.1 per 100 intraocular lenses. There were no potential gains in 2015.

4.3 Toric intraocular lens implantation with planning record present at time of surgery (H)

In 2015, there were 3,260 toric intraocular lenses reported from 12 HCOs. The annual rate was 100 per 100 toric intraocular lenses. There were no potential gains in 2015.

EXPERT COMMENTARY

Australian Dental Association (ADA)

Oral Health

Unplanned returns to the dental centre

There are many reasons that may explain the differences in attendances for restorative treatment (CI 1.1). For example this could be caused by different materials used in different jurisdictions or even longer waiting lists in some areas, particularly rural areas where more extensive caries need to be treated, resulting in larger cavities. The rate appears high and it is disappointing that it has increased. It may be expected that with the improvement in materials such as better bonding systems the rate would be stable at the worst. The rate of return for complications (CI 1.2) appears to be quite good. Again varying rates could be explained by different waiting times, resulting in teeth being in a poorer condition when they are extracted, and access to postoperative treatment. It is important to consider the availability of appointments and recognise that some postoperative pain might be self-treated with analgesics. The return rate following surgical extraction (CI 1.3) appears to be low although perhaps routine follow-up appointments made at the time of surgery are not included. With rates of dry socket often being reported as being around 25% for third molar surgery the return rate appears low. There appears to be a few issues with the data regarding CI 1.4.

Endodontic treatment

The results for CIs 2.1 and 2.2 are hard to give meaningful interpretation to because there are so many variables. Emergency treatment to relieve pain where extraction is planned needs to be removed from these numbers. The data can be impacted, for example, by longer waiting lists where infection is more established.

Children's dental care

The rates for CIs 3.1 and 3.2 are low and stable and it is acknowledged that the results can be affected by many variables including technique and type of restoration. The rate of replacement of fissure sealants (CI 3.3) is consistently low and much better than those reported in centres around the world where loss in the vicinity of 15% is reported.



The Oral Health clinical indicators were reviewed in 2016 by a multidisciplinary Working Party consisting of representatives from the Australian Dental Association (ADA), the Royal Australasian College of Dental Surgeons (RACDS), State dental services and the Australian Private Hospitals Association (APHA). The revised Oral Health clinical indicator set has been released for data collection to commence in January 2017.



Radiographs

The data from CI 4.1 is too limited to make an informed comment. The number of facilities reporting needs to be much higher and the development of a standardised review needs to be taken into consideration.

General/closing comments

The data show fairly consistent results and the only worrying trend is in the data relating to restoration failure in adults. While it would be ideal to have private practices participating, it is hard to see this happening in any significant way because of the administrative burden this would cause.

EXPERT COMMENTARY

Chair - Oral Health Working Party

Introductory comments

There has been a significant increase in the number of public sector dental HCOs who are now providing patient data for analysis, which has approximately tripled the number of cases for many clinical indicators (CIs) compared with a few years ago. A single private HCO reports on one CI. Most of the rates for the adult CIs have deteriorated. A considered analysis is needed to see if this is due to higher rates, or if the changes are attributed to new customers of the ACHS Clinical Indicator Program. Unlike the adult CI, the three children's CIs all show consistent and very stable rates reported over time.

Unplanned returns to the dental centre

The denture remake rate (CI 1.4) shows a stable national rate for denture remakes within 12 months (below 3% since 2009). The large number of denture cases reported by seven HCOs (3.9%), indicates there is room for improvement when compared with the public clinics in NSW, SA and Vic which average about 1.8%. The other three adult CIs all show deterioration from 2014 to 2015. A small deterioration in the annual rate of restoration retreatments (CI 1.1) in 2015 is noted (7.1% compared with 5.4% in 2012 and 2013). The number of cases under consideration has tripled since 2012. The retreatment rate is higher from new organisations joining the ACHS Clinical Indicator Program. Restored teeth for adults needing further treatments may arise from provision of different fillings on different days (rather than providing all care at the same visit), early failure of some fillings, need for retreatment, or need for more complicated treatments, e.g. root canal therapy. Similar to CI 1.1, there has been a small deterioration in the rate of returns following extractions (CI 1.2), now at 1.8% compared with 1.5% in 2012 and 2013 (slightly higher in non-metropolitan areas). There are now three times as many denominator cases in the sample, from a larger number of organisations, which may contribute to the slightly higher return rate observed in 2015. It is pleasing to see an improvement in the upper 80th centile rates over time, leading to less variation. A similar profile is also seen for CI 1.3, with deterioration in the observed rate of returns following surgical extraction, due to the increased number of HCO sites resulting in tripling of participants.



Endodontic treatment

Over the past four years about half of all commenced root canal treatments were completed within six months (CI 2.1). This CI has generated much debate in the public sector, and recommendations to exclude emergency/relief of pain endodontic procedures are being put forward for national consideration. Non-emergency root canal treatments have a high degree of success when completed in a timely manner. A greater proportion of emergency root canal commencements are likely to be subsequently extracted, impacting adversely on this current measure. It will be recommended to limit analysis of this CI to non-emergency cases in the future. Additional cases were included for CI 2.2 from one state dental service during 2015, resulting in a substantial increase from below 6% in 2014, to up to 10% (in one area) in 2015. In 2015 about one in every 14 teeth (7.1%) where root canal treatment was started, were subsequently extracted within a year.

Children's dental care

Unlike the adult CIs discussed above, the three children's CIs have all sustained very low rates over many years. In 2013 only 43,000 children's filled teeth were included in the analysis of CI 3.1. By 2015, almost 240,000 filled teeth from 76 children's dental clinics were available for review, and the treatment rate was maintained at a very low 2.6%, less than half the adult rate (CI 1.1). Pulp treatments aim to save compromised teeth, but a number of treated deciduous (baby) teeth may subsequently require extraction due to ongoing pathology. Extraction following pulp treatment in deciduous teeth (CI 3.2) that eventually exfoliate is sometimes required to remove the cause of the infection. The current rate of 3.87 per 100 teeth receiving pulp treatment is similar to the average rate between 2008 and 2014 (3.74%). The current rate of teeth requiring restoration within two years (CI 3.3) is 2.5 from every 100 fissure sealed teeth (CI 3.1) is a sustained positive result, maintained at this level since 2010. Preventive services, such as fissure sealants, are a proven public health and non-invasive clinical preventive measure in the control of tooth decay for children at risk. A very low retreatment rate of about or below 2.8 per 100 teeth has been sustained for the past six years by public sector HCOs.

Radiographs

Very few submitting HCOs contribute data for the CI examining the diagnostic ability of bite-wing radiographs (CI 4.1). Only one or two HCOs have submitted annually over each of the past four years. The data from all other CI areas can be calculated using a database report from electronic patient record information systems, but CI 4.1 requires a visual review of each case/radiograph against the eight assessment criteria. This is a more time-consuming manual review and audit process which may be seen as a barrier to collection. It is probably the main reason why more HCOs do not contribute data to this specific CI. ACHS and member organisations should strongly encourage participation and submission of audits of diagnostic quality of radiographs for analysis under this CI area.

General/closing comments

The three children's CIs all show positive and sustained very low rates reported over many years. Most of the CIs for unplanned adult returns (following restorations or extractions), or endodontics, all show deterioration in 2015, and are therefore highlighted as areas for reflection of clinical practice and systems performance. Only the denture remake for adults remains consistent with previous years' low rates. The addition of a large number of new dental public health organisations to the CI set is welcomed, and allows for a deeper analysis in variation between states and for metropolitan/rural settings. The challenge for HCOs is to encourage greater participation in this quality process from the private sector, and for more organisations to publish audit results from diagnostic quality of radiographs.

2015 Summary Data

Unplanned returns to the dental centre

1.1 Restorative treatment - teeth retreated within 6 months (L)

In 2015, there were 290,573 teeth restored reported from 68 HCOs. The annual rate was 7.18 per 100 teeth restored. The fitted rate deteriorated from 5.1 to 7.1, a change of 1.9 per 100 teeth restored. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.3 per 100 teeth restored. In 2015, the potential gains totalled 6,999 fewer teeth retreated within six months, corresponding to a reduction by approximately one-third. There were 17 outlier records from 12 outlier HCOs whose combined excess was 1,870 more teeth retreated within six months. The outlier HCO rate was 9.3 per 100 teeth restored.

1.2 Routine extraction - complications within 7 days (L)

In 2015, there were 105,390 patients reported from 68 HCOs. The annual rate was 1.82 per 100 patients. The fitted rate deteriorated from 1.5 to 1.9, a change of 0.39 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 0.57 per 100 patients. In 2015, the potential gains totalled 775 fewer attendances for complications within seven days, corresponding to a reduction by approximately one-third. There were 12 outlier records from nine outlier HCOs whose combined excess was 283 more attendances for complications within seven days. The outlier HCO rate was 4.0 per 100 patients.

1.3 Surgical extraction - complications within 7 days (L)

In 2015, there were 10,737 patients reported from 42 HCOs. The annual rate was 3.72 per 100 patients. The fitted rate deteriorated from 1.6 to 3.6, a change of 2.0 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 2.2 per 100 patients. In 2015, the potential gains totalled 99 fewer attendances for complications within seven days, corresponding to a reduction by approximately one-fifth. There were five outlier records from five outlier HCOs whose combined excess was 42 more attendances for

complications within seven days. The outlier HCO rate was 15.0 per 100 patients.

1.4 Denture remade within 12 months (L)

In 2015, there were 33,031 dentures reported from 41 HCOs. The annual rate was 2.97 per 100 dentures. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 592 fewer dentures remade within 12 months, corresponding to a reduction by approximately one-half. There were four outlier records from three outlier HCOs whose combined excess was 174 more dentures remade within 12 months. The outlier HCO rate was 5.4 per 100 dentures.

Endodontic treatment

2.1 Endodontic treatment - same tooth within 6 months of initial treatment (H)

In 2015, there were 8,215 teeth reported from 38 HCOs. The annual rate was 48.6 per 100 teeth. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 1,061 more completed courses of endodontic treatment within six months. There were eight outlier records from five outlier HCOs whose combined excess was 273 fewer completed courses of endodontic treatment within six months. The outlier HCO rate was 26.7 per 100 teeth.

2.2 Endodontic treatment - teeth extracted within 12 months (L)

In 2015, there were 14,998 teeth reported from 63 HCOs. The annual rate was 7.13 per 100 teeth. The fitted rate deteriorated from 5.3 to 6.9, a change of 1.6 per 100 teeth. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.4 per 100 teeth. In 2015, the potential gains totalled 228 fewer teeth extracted within 12 months of endodontic treatment commencement, corresponding to a reduction by approximately one-fifth. There were four outlier records from three outlier HCOs whose combined excess was 66 more teeth extracted within 12 months of endodontic treatment commencement. The outlier HCO rate was 14.3 per 100 teeth.



Children's dental care

3.1 Restorative treatment (children) - teeth retreated within 6 months (L)

In 2015, there were 239,157 teeth reported from 76 HCOs. The annual rate was 2.58 per 100 teeth. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 829 fewer teeth retreated within six months, corresponding to a reduction by approximately one-tenth. There were 14 outlier records from 10 outlier HCOs whose combined excess was 217 more teeth retreated within six months. The outlier HCO rate was 4.6 per 100 teeth.

3.2 Pulpotomy (children) - deciduous teeth extracted within 6 months (L)

In 2015, there were 7,279 teeth reported from 68 HCOs. The annual rate was 3.87 per 100 teeth. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 35 fewer teeth extracted within six months, corresponding to a reduction by approximately one-tenth. There was one outlier record from one outlier HCO whose combined excess was nine more teeth extracted within six months. The outlier HCO rate was 8.4 per 100 teeth.

3.3 Fissure sealant treatment (children) - re-treatment within 24 months (L)

In 2015, there were 224,748 teeth reported from 75 HCOs. The annual rate was 2.54 per 100 teeth. There was no significant trend in the fitted rate. In 2015, the potential gains totalled 1,063 fewer teeth retreated within 24 months of initial fissure sealant treatment, corresponding to a reduction by approximately one-tenth. There were 19 outlier records from 15 outlier HCOs whose combined excess was 553 more teeth retreated within 24 months of initial fissure sealant treatment. The outlier HCO rate was 4.7 per 100 teeth.

Radiographs

4.1 Radiographs (bite-wing) that meet all 8 criteria (H)

In 2015, there were 129 bite-wing radiographs reported from one HCO. The annual rate was 96.9 per 100 bite-wing radiographs. There was no significant trend in the fitted rate. There were no potential gains in 2015.

EXPERT COMMENTARY

Paediatrics and Child Health Division
of The Royal Australasian College of
Physicians (RACP)

Paediatrics

Introductory comments

Once again the minimal number of healthcare organisations (HCOs) responding makes this data interesting, but difficult to interpret.

Appropriateness

The clinical indicators (CIs) chosen are valid but not comprehensive and this may be why the engagement of HCOs is low.

Adverse events

It is interesting to note that adverse events in children admitted to paediatric units (CI 2.3) were higher than those admitted to non-paediatric units (CI 2.2), although numbers are too low for statistically valid conclusions to be drawn.

Documentation

Of note is that not all children are comprehensively admitted or examined by either medical or nursing staff. Although there appears to be no progress in having one set of admission documentation by healthcare professionals.

Paediatric ICU

Paediatric ICU unplanned returns (CI 4.1) appear to have trended down and there were no data submitted for adverse events.

Paediatric anaesthesia

It appears that adherence to six hours fasting (CI 5.1) has improved, but it would be interesting to know how many children have fasted for too long, which is a distressing and at times clinically disadvantageous situation.

General/closing comments

Few HCOs are now submitting data, which may be because of the more comprehensive data collection now undertaken by the Children's Healthcare Australasia (CHA). Perhaps the ACHS should consider working with the CHA to share and improve on data collection and therefore validity.



Appropriateness

The rate of qualification of 92.8% for registered nurses (CI 1.1) and 100% for medical practitioners is a positive result (CI 1.2), yet some HCOs need to improve the nurses' compliance rate. There is also a need to follow the Australian Resuscitation Council (ARC) guidelines and provide further categories to differentiate cardiopulmonary resuscitation (CPR) competency levels according to the child's age (e.g. infants versus children or adolescents). The annual rate of 88.8 per 100 paediatric admissions to a paediatric ward/area (CI 1.3) is acceptable compared to previous years. However HCOs need to be aiming for 100% in order to reduce adverse events i.e. medication errors as well as to ensure a well-established family centred care environment for the child and their family.

Adverse events

It is unclear where and how the medication errors (CI 2.1) were reported. There is a need for further clarification regarding whether the medication errors were mainly related to errors in prescription of doses by medical practitioners or by nurses during the preparation and administration stages. In addition the location of where medication errors were reported is also significant for interpretation of the results (e.g. Emergency Department, PICU, NICU or general paediatric ward). The significant differences in medication errors reported by the private and public hospital sector is also worthy of further investigation; in particular accuracy of reporting.

It is noted that the rate of adverse events involving paediatric patients in a paediatric ward (CI 2.3) is higher than those that occurred in a ward/area that was not specifically dedicated to paediatric patients (CI 2.2). It would be helpful to obtain data that details the nature of these adverse events. One HCO had 26 more adverse events involving paediatric patients

References

1. The Australian Resuscitation Council. *ANZCOR Guideline 12.1 - Introduction to Paediatric Advanced Life Support*. Accessed from <http://resus.org.au/guidelines/> on 4/05/2016.
2. Hill MK, Pawsey M, Cutler A et al. Consensus standards for the care of children and adolescents in Australian health services. *The Medical Journal of Australia* 2011; 194(2): 78-82.
3. The Royal Australasian College of Physicians (RACP). *Policy on the co-location of adults with children and adolescents in healthcare settings*. Sydney NSW; Paediatrics & Child Health Division, RACP. Accessed from <https://www.racp.edu.au/index.cfm?objectid=74ABBD76-CF93-A9A6-C9EFADC99AD1690> on 10/05/2015.

when not in a dedicated paediatric ward/area, which supports the aim of CI 1.3 to have all children cared for in a dedicated paediatric ward/area.

Documentation

The reporting rate for asthma management plans (CI 3.1) is positive, and demonstrates an improvement when compared to previous years. The reporting rate for post-surgical documentation (CI 3.2) is positive and well-maintained for the periods indicated. The reporting rate for physical assessment completed by registered nurses (CI 3.4) is low (70.7%) compared to the 94.3% reporting rate by medical practitioners (CI 3.3). HCOs need to be aiming for an improvement in nurses' documentation. The reporting rate for medical discharge summary (CI 3.5) is exceptional and reflects good documentation; however, this rate is based on one HCO.

Paediatric ICU

There is a distinct lack of reporting of adverse events at the paediatric intensive care unit (PICU). It is noted that there is a reduction by half for returns to the PICU (CI 4.1).

Paediatric anaesthesia

The reporting rate for parent/guardian present at induction of anaesthesia (CI 5.3) is positive, but could be improved, as could the figures for children fasting for more than six hours (CI 5.1). However the rate of reporting of adverse events due to non-adherence to fasting guidelines (CI 5.2) demonstrated no potential gains in 2015 and should be carefully monitored.

General/closing comments

The majority of reporting rates of CIs are positive, yet it cannot be extrapolated to the general child/young person population as there are a limited number of records from participating HCOs.

2015 Summary Data

Appropriateness

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

In 2015, there were 402 registered nurses reported from 12 HCOs. The annual rate was 92.8 per 100 registered nurses. In 2015, the potential gains totalled 21 more registered nurses with current paediatric life support qualifications. There was one outlier record from one outlier HCO whose combined excess was five fewer registered nurses with current paediatric life support qualifications. The outlier HCO rate was 70.4 per 100 registered nurses.

1.2 Medical practitioners with paediatric basic life support qualifications (H)

In 2015, there were 89 medical practitioners reported from three HCOs. The annual rate was 100 per 100 medical practitioners. There were no potential gains in 2015.

1.3 Paediatric patients admitted to a paediatric ward/area (H)

In 2015, there were 21,831 paediatric admissions reported from 14 HCOs. The annual rate was 88.8 per 100 paediatric admissions. In 2015, the potential gains totalled 2,430 more paediatric patients admitted to a dedicated paediatric ward/area. There were four outlier records from three outlier HCOs whose combined excess was 1,085 fewer paediatric patients admitted to a dedicated paediatric ward/area. The outlier HCO rate was 68.8 per 100 paediatric admissions.

Adverse events

2.1 Medication errors (L)

In 2015, there were 19,088 paediatric admissions reported from 12 HCOs. The annual rate was 0.29 per 100 paediatric admissions. In 2015, the potential gains totalled 34 fewer paediatric adverse medication incidents due to incorrect dose, corresponding to a reduction by approximately one-half. There was one outlier record from one HCO whose combined excess was four more paediatric adverse medication incidents due to incorrect dose. The outlier HCO rate was 1.0 per 100 paediatric admissions.

2.2 Adverse events when not in a paediatric ward/area (L)

In 2015, there were 7,402 paediatric admissions reported from four HCOs. The annual rate was 1.88 per 100 paediatric admissions. In 2015, the potential gains totalled 136 fewer adverse events involving paediatric patients, corresponding to a reduction by approximately four-fifths. There was one outlier record from one outlier HCO whose combined excess was 26 more adverse events involving paediatric patients. The outlier HCO rate was 2.9 per 100 paediatric admissions.

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

In 2015, there were 13,858 paediatric admissions reported from five HCOs. The annual rate was 3.03 per 100 paediatric admissions. In 2015, the potential gains totalled 410 fewer adverse events involving paediatric patients, corresponding to a reduction by approximately four-fifths. There were two outlier records from one outlier HCO whose combined excess was 211 more adverse events involving paediatric patients. The outlier HCO rate was 7.0 per 100 paediatric admissions.

Documentation

3.1 Completed asthma action plan - paediatrics (H)

In 2015, there were 415 separations reported from three HCOs. The annual rate was 93.5 per 100 separations. In 2015, the potential gains totalled 27 more paediatrics discharged with asthma action plans. There was one outlier record from one outlier HCO whose combined excess was 22 fewer paediatrics discharged with asthma action plans. The outlier HCO rate was 60.9 per 100 separations.

3.2 Paediatric surgery post-procedural report (H)

In 2015, there were 170 separations reported from one HCO. The annual rate was 100 per 100 separations. There was no significant trend in the fitted rate. There were no potential gains in 2015.

3.3 Physical assessment completed by medical practitioner and documented (H)

In 2015, there were 123 paediatric admissions reported from two HCOs. The annual rate was 94.3 per 100 paediatric admissions. There was relatively little variation between HCOs and so the potential gains were small in 2015.



3.4 Physical assessment completed by registered nurse and documented (H)

In 2015, there were 123 paediatric admissions reported from two HCOs. The annual rate was 70.7 per 100 paediatric admissions. In 2015, the potential gains totalled 34 more paediatrics given a physical assessment.

3.5 Medical discharge summary completed - paediatrics (H)

In 2015, there were 846 separations reported from one HCO. The annual rate was 100 per 100 separations. There were no potential gains in 2015.

Paediatric ICU

4.1 Unplanned return to PICU (L)

In 2015, there were 639 paediatric admissions reported from two HCOs. The annual rate was 2.66 per 100 paediatric admissions. In 2015, the potential gains totalled 10 fewer unplanned returns to the PICU, corresponding to a reduction by approximately one-half. There was one outlier record from one outlier HCO whose combined excess was two more unplanned returns to the PICU.

4.2 Adverse events - PICU clinical handover between registered nurses (L)

In 2015, there were 10 paediatric patients reported from one HCO. The annual rate was 0 per 100 paediatric patients. There was no significant trend in the fitted rate. There were no potential gains in 2015.

4.3 Adverse events - PICU clinical handover between medical practitioners (L)

No data was submitted in 2015.

4.4 Adverse events - PICU clinical handover to another area (L)

No data was submitted in 2015.

Paediatric anaesthesia

5.1 Paediatric patients who fast 6 hours prior to anaesthesia (H)

In 2015, there were 1,553 paediatric patients reported from four HCOs. The annual rate was 91.0 per 100 paediatric patients. In 2015, the potential gains totalled 140 more paediatrics fasting for more than six hours prior to anaesthesia. There were two outlier records from one outlier HCO whose combined excess was 105 fewer paediatrics fasting for more than six hours prior to anaesthesia. The outlier HCO rate was 63.6 per 100 paediatric patients.

5.2 Adverse event due to non-adherence to paediatric fasting guidelines (L)

In 2015, there were 1,168 paediatric patients reported from three HCOs. The annual rate was 0 per 100 paediatric patients. There were no potential gains in 2015.

5.3 Parent/guardian present at induction of anaesthesia (N)

In 2015, there were 163 paediatric patients reported from two HCOs. The annual rate was 99.4 per 100 paediatric patients.

EXPERT COMMENTARY

The Royal College of Pathologists of Australasia (RCPA)

“It is important to provide data on the entire “request-test-report cycle” to measure the entire process as this reflects the clinical need.”

- Source: User Manual
Chair - Pathology Working Party, RCPA



The Pathology clinical indicators were reviewed in 2014 by a multidisciplinary Working Party consisting of representatives from the Royal College of Pathologists of Australasia (RCPA), the Australian College of Nursing (ACN) and the Australian Private Hospitals Association (APHA). The revised Pathology clinical indicator set has been released for data collection which commenced in January 2016.

Pathology

Introductory comments

The College does not consider it possible to make any detailed interpretation of the patterns observed. The statistical approach used allows a wide variance in the calculated indices. As such, while some changes can be observed in the statistics, they are generally well within the variance and hence should not be interpreted with any significance.

Chemical pathology

There appears to have been a slight deterioration in the turnaround time for urgent serum/plasma potassium in the Emergency Department (CI 1.1). The change is not deemed to be significant.

Haematology

There appears to have been a significant improvement in three out of four haematology CIs, they are Emergency Department turnaround times for haemoglobin within 40 minutes (CI 2.1) and 60 minutes (CI 2.2) and coagulation tests within 40 minutes (CI 2.3). It is hard to understand why the coagulant testing turnaround time within 60 minutes (CI 2.4) did not improve.

Anatomical pathology

The large biopsy turnaround time within 92 hours (CI 3.2), and to a lesser extent within 96 hours (CI 3.4), appears to have deteriorated significantly. Changes in the practice of pathology as a consequence of molecular testing of histology specimens allowing more targeted therapies may contribute to this delay. Workforce pressures in Anatomical Pathology continue to be a concern.

Microbiology

The cerebrospinal fluid (CSF) CI addressing turnaround time within 60 minutes (CI 4.2) appears to have improved significantly which if true, is a pleasing improvement.



2015 Summary Data

Chemical pathology

1.1 Serum / plasma potassium for ED or urgent - turnaround time within 60 minutes (H)

In 2015, there were 153,717 requests reported from 37 HCOs. The annual rate was 82.6 per 100 requests. The fitted rate deteriorated from 83.6 to 82.4, a change of 1.2 per 100 requests. In 2015, the potential gains totalled 16,513 more validated serum / plasma potassium report results within 60 minutes. There were 18 outlier records from 12 outlier HCOs whose combined excess was 4,960 fewer validated serum / plasma potassium report results within 60 minutes. The outlier HCO rate was 75.0 per 100 requests.

Haematology

2.1 Haemoglobin from ED - received to validated time within 40 minutes (H)

In 2015, there were 152,315 requests reported from 37 HCOs. The annual rate was 92.9 per 100 requests. The fitted rate improved from 84.6 to 92.3, a change of 7.6 per 100 requests. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 8.4 per 100 requests. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 17 outlier records from 13 outlier HCOs whose combined excess was 3,333 fewer validated haemoglobin report results within 40 minutes. The outlier HCO rate was 83.9 per 100 requests.

2.2 Haemoglobin from ED - collected to validated time within 60 minutes (H)

In 2015, there were 155,113 requests reported from 35 HCOs. The annual rate was 85.6 per 100 requests. The fitted rate improved from 77.4 to 84.6, a change of 7.2 per 100 requests. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 6.7 per 100 requests. In 2015, the potential gains totalled 10,815 more validated haemoglobin report results within 60 minutes. There were 23 outlier records from 16 outlier HCOs

whose combined excess was 7,677 fewer validated haemoglobin report results within 60 minutes. The outlier HCO rate was 71.4 per 100 requests.

2.3 Coag from ED - received to validated time within 40 minutes (H)

In 2015, there were 24,548 requests reported from 34 HCOs. The annual rate was 74.8 per 100 requests. The fitted rate improved from 51.4 to 68.7, a change of 17.3 per 100 requests. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 18.8 per 100 requests. In 2015, the potential gains totalled 2,774 more validated coagulation report results within 40 minutes. There were 15 outlier records from 13 outlier HCOs whose combined excess was 1,095 fewer validated coagulation report results within 40 minutes. The outlier HCO rate was 63.6 per 100 requests.

2.4 Coag from ED - collected to validated time within 60 minutes (H)

In 2015, there were 24,427 requests reported from 34 HCOs. The annual rate was 67.1 per 100 requests. The fitted rate deteriorated from 63.0 to 62.3, a change of 0.76 per 100 requests. In 2015, the potential gains totalled 2,301 more validated coagulation report results within 60 minutes. There were 14 outlier records from 11 outlier HCOs whose combined excess was 1,165 fewer validated coagulation report results within 60 minutes. The outlier HCO rate was 49.0 per 100 requests.

Anatomical pathology

3.1 Small biopsy - received to validated time within 44 hours (H)

In 2015, there were 7,196 biopsies reported from 14 HCOs. The annual rate was 62.6 per 100 biopsies. The fitted rate deteriorated from 60.4 to 58.5, a change of 1.9 per 100 biopsies. In 2015, the potential gains totalled 1,043 more validated small biopsy results within 44 hours. There were eight outlier records from seven outlier HCOs whose combined excess was 586 fewer validated small biopsy results within 44 hours. The outlier HCO rate was 38.7 per 100 biopsies.



3.2 Large biopsy - received to validated time within 92 hours (H)

In 2015, there were 893 biopsies reported from 15 HCOs. The annual rate was 50.8 per 100 biopsies. The fitted rate deteriorated from 63.3 to 51.8, a change of 11.5 per 100 biopsies. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 12.3 per 100 biopsies. In 2015, the potential gains totalled 140 more validated large biopsy results within 92 hours. There were two outlier records from one outlier HCO whose combined excess was 40 fewer validated large biopsy results within 92 hours. The outlier HCO rate was 19.9 per 100 biopsies.

3.3 Small biopsy - collected to validated time within 48 hours (H)

In 2015, there were 5,854 biopsies reported from 11 HCOs. The annual rate was 65.7 per 100 biopsies. The fitted rate improved from 57.0 to 59.1, a change of 2.2 per 100 biopsies. In 2015, the potential gains totalled 456 more validated small biopsy results within 48 hours. There were six outlier records from six outlier HCOs whose combined excess was 423 fewer validated small biopsy results within 48 hours. The outlier HCO rate was 43.3 per 100 biopsies.

3.4 Large biopsy - collected to validated time within 96 hours (H)

In 2015, there were 588 biopsies reported from 11 HCOs. The annual rate was 56.6 per 100 biopsies. The fitted rate deteriorated from 48.0 to 43.1, a change of 4.9 per 100 biopsies. There was relatively little variation between HCOs and so the potential gains were small in 2015.

Microbiology

4.1 Validated CSF results from ED - received to validated time within 40 minutes (H)

In 2015, there were 552 samples reported from 13 HCOs. The annual rate was 79.2 per 100 samples. The fitted rate improved from 72.1 to 77.5, a change of 5.4 per 100 samples. In 2015, the potential gains totalled 32 more validated CSF results within 40 minutes. There was one outlier

record from one outlier HCO whose combined excess was three fewer validated CSF results within 40 minutes. The outlier HCO rate was 18.2 per 100 samples.

4.2 Validated CSF results from ED - collected to validated time within 60 minutes (H)

In 2015, there were 596 samples reported from 13 HCOs. The annual rate was 65.6 per 100 samples. The fitted rate improved from 63.0 to 73.2, a change of 10.2 per 100 samples. In 2015, the potential gains totalled 49 more validated CSF results within 60 minutes. There were two outlier records from two outlier HCOs whose combined excess was 37 fewer validated CSF results within 60 minutes. The outlier HCO rate was 38.8 per 100 samples.

EXPERT COMMENTARY

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

Radiation Oncology

Introductory comments

The ACHS Clinical Indicator Program in Radiation Oncology should provide insights into patterns of practice and outcomes in Radiation Oncology organisations across Australia, allowing identification of variation to stimulate reflection about comparison with peers, and the identification of opportunities for improvement in quality and safety. The Faculty of Radiation Oncology of the Royal Australian and New Zealand College of Radiologists (RANZCR) is committed to a sustained programmatic effort to foster and improve safety and quality in the radiation treatment of patients in Australia.



The ACHS has scheduled a revision of the Radiation Oncology clinical indicator set to take place in early 2017 and will provide secretariat support to the Radiation Oncology Working Party throughout the revision process.



Consultation process

The reported waiting time (CI 1.1) has shown a steady improvement reflecting a progressively increased capacity of radiation therapy facilities nationally over the last eight years. This increased capacity was associated with a period of national investment into radiation therapy particularly in regional areas of Australia, stimulated by the Baume report.¹ The decrease in waiting time leads to improvements in rates of cure and of local control for many cancer types, and a reduction in anxiety and fear for thousands of patients and their families.

Access to prospective clinical trials for cancer patients (CI 1.2) is associated in a general sense with better outcomes and higher quality care, and so on the face of it, this metric has merit, and is going in the right direction. However, there are caveats to this. The sample size is small, and diminishing. There may well be bias in this reporting as HCOs with the trials infrastructure and the interest to carry out research are more likely to have the infrastructure to capture and report these statistics. There is a material compliance cost in recording the number of “screened” patients, and some ambiguity in “eligible”, with more rigorous definitions of eligible leading to lower denominators and better performance in this metric. This might even occur in HCOs that have very few trials open and very low rates of participation in trials when the total number of patients they see is considered as a denominator. Another ambiguity in this statistic is the definition of “prospective clinical trial” for Radiation Oncology patients.

Treatment process

The ACHS rationale section for ‘Staging annotation for current radiotherapy course’ (CI 2.1) seems to miss the point. It does not so much assist with external communication, but the more important aspects are to assist with internal communication, synoptic standard-based record keeping, decision making, assessment of prognosis, and treatment recommendations. Nevertheless, high rates of explicit recording should be expected and the ACHS statistics show this. It does not make any sense to highlight and query (as it automatically happens) “over-performance” on this metric.

Communication within the team of people and organisations providing care and support for cancer patients is critical and the presence of a letter from the Radiation Oncology unit to the referring doctor or service (CI 2.2) is a useful CI of performance. It is pleasing to see the steady improvement in this CI over time.

Outcome process

The ‘IMRT for nasopharyngeal cancer’ indicator (CI 3.1) is appropriate and it is encouraging to see continued improvement in this metric. The ‘EBRT for prostate cancer’ indicator (CI 3.2) is problematic. The numerator in this CI is the “number of patients who had definitive EBRT for prostate cancer (high or very high risk) with a prescribed dose of 78Gy or greater”. If the dose is less than 78Gy then the patient is not included in the numerator.

The UK National Institute for Clinical Excellence (2014)² recommends “a minimum dose of 74Gy to the prostate at no more than 2Gy per fraction”. The Cancer Council Australia recommends “Consideration should be given to dose escalation (74Gy or higher) if it can be delivered safely”.³ The NSW Cancer Institute, in their eviQ⁴ policy recommend “Dose Prescription: 73.8-81Gy in 1.8-2Gy/fraction”. Recent Australian non-randomised data also showed no benefit to dose-escalation above 74Gy in high-risk men treated with adjuvant androgen deprivation.⁵ There are no randomised comparative trials that show a survival advantage to dose escalation for high-risk prostate cancer. There is considerable evidence that higher radiation doses with all other things being equal, is associated with higher rates of long term complications. It would be compatible with all of these guidelines to administer doses of between 74 and 77.9Gy and not be counted in this CI by ACHS. Given this, the rate in the report is not surprising and is compatible with high-quality evidence-based care. This metric may become even more difficult in the future as evidence for hypofractionated prostate radiation therapy emerges.

General/closing comments

This CI process is laudable, however it is not achieving its aims as well as it should. The Radiation Oncology CIs have many problems and need review and reform. A minority of eligible HCOs report on them. The measurements from the reported CIs might not be “generalisable” across Australia. Some of the CIs themselves are problematic, with ambiguity and subjectivity built into them at the clinical level within the unit, and are not easily appreciated at the national aggregate level.

To make matters worse, there is considerable cost in methodically collecting some of the data for these CIs and generating the necessary HCO aggregate reports, given that these data are not necessarily used for other purposes. Worse still some statistics to track the same type of CI are

EXPERT COMMENTARY

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

collected in a different format or definition for other reporting purposes leading to a duplication of effort. The costs associated with this reporting, especially as more is demanded, is not part of funding mechanisms and private or public fund-holders are reluctant to provide additional resources to support this data activity.

The ACHS CIs are not well mapped to the Tripartite Radiation Oncology Practice Standards, and so efforts by Radiation Oncology HCOs to comply with that standard can compete with benchmarking with the CIs.

There would be merit in revisiting and reviewing the CIs with more clinical engagement from HCOs providing this service, rather than persisting with some CIs that are obviously selectively reported, ambiguous, or irrelevant.

References

1. Baume P. *Radiation Oncology Inquiry. A vision for radiotherapy*. Canberra ACT; Department of Health and Ageing, Commonwealth of Australia; 2002.
2. National Institute for Health and Clinical Excellence (NICE). *Prostate cancer: diagnosis and management*. NICE clinical guideline 175. Manchester, United Kingdom. Accessed from <https://www.nice.org.uk/guidance/cg175>
3. Australian Cancer Network Management of Metastatic Prostate Cancer Working Party. *Clinical Practice Guidelines for the Management of Locally Advanced and Metastatic Prostate Cancer*. Cancer Council Australia and Australian Cancer Network, Sydney; 2010.
4. Cancer Institute NSW. *eviQ*. Accessed from <https://www.eviq.org.au/>
5. Shakespeare TP, Wilcox SW and Aherne NJ. Can we avoid high levels of dose escalation for high-risk prostate cancer in the setting of androgen deprivation? *OncoTargets and Therapy* 2016; 9: 2819-2824.



2015 Summary Data

Consultation process

1.1 Radiotherapy - waiting time more than 28 days from the 'ready for care' date (L)

In 2015, there were 2,613 patients reported from 14 HCOs. The annual rate was 4.4 per 100 patients. The fitted rate improved from 43.6 to 8.9, a change of 34.7 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 31.9 per 100 patients. In 2015, the potential gains totalled 101 fewer patients waiting more than 28 days before commencing radiotherapy, corresponding to a reduction by approximately four-fifths. There were four outlier records from three outlier HCOs whose combined excess was 40 more patients waiting more than 28 days before commencing radiotherapy. The outlier HCO rate was 11.6 per 100 patients.

1.2 MEBR - prospective clinical trials (H)

In 2015, there were 416 patients reported from nine HCOs. The annual rate was 26.4 per 100 patients. The fitted rate improved from 1.2 to 13.5, a change of 12.3 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 9.4 per 100 patients. In 2015, the potential gains totalled 81 more patients receiving radiotherapy entered on prospective clinical trials.

Treatment process

2.1 Staging annotation for current radiotherapy course (H)

In 2015, there were 10,015 patients reported from 12 HCOs. The annual rate was 91.2 per 100 patients. In 2015, the potential gains totalled 878 more patients who have staging information about their current radiotherapy course. There were nine outlier records from five outlier HCOs whose combined excess was 586 fewer patients who have staging information about their current radiotherapy course. The outlier HCO rate was 71.8 per 100 patients.

2.2 Current referral letter on file (H)

In 2015, there were 2,381 patients reported from 11 HCOs. The annual rate was 95.5 per 100 patients. The fitted rate improved from 87.2 to 97.0, a change of 9.9 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 9.4 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were four outlier records from three outlier HCOs whose combined excess was 65 fewer patients who have a letter to the referring doctor regarding their current radiotherapy course. The outlier HCO rate was 78.1 per 100 patients.

Outcome process

3.1 IMRT for nasopharyngeal cancer (H)

In 2015, there were 45 patients reported from 11 HCOs. The annual rate was 95.6 per 100 patients. There were no potential gains in 2015.

3.2 EBRT for prostate cancer (H)

In 2015, there were 410 patients reported from 11 HCOs. The annual rate was 72.4 per 100 patients. In 2015, the potential gains totalled 70 more patients who had definitive EBRT for prostate cancer. There was one outlier record from one outlier HCO whose excess was 27 fewer patients who had definitive EBRT for prostate cancer. The outlier HCO rate was 52.6 per 100 patients.

EXPERT COMMENTARY

The Royal Australian and New Zealand College of Radiologists (RANZCR)

Radiology

Introductory comments

RANZCR is pleased to be able to provide commentary on the ACIR 2008–2015. Report availability continues to be a key performance indicator (KPI), which address the core business of the radiology specialty. There is also continued monitoring of the rate of adverse clinical events and report addenda.

There is an increase in the number of HCOs participating in the reporting of these CIs, as well as the number of exams in each category, which are positive trends and helps to strengthen data analysis.

Report availability

The 2015 results show a marginal decline in report non-availability rates, but the effect is not statistically significant. A statistically significant improvement may only be apparent by assessment of the general trend over a number of years. The 2015 report non-availability rates were significantly higher for plain film studies (CIs 1.1 and 1.2) when compared to cross-sectional modality (CT and ultrasound) rates (CIs 1.3-1.6). This is consistent with 2014 results. The results suggest HCO reporting efforts continue to be preferentially directed to cross-sectional modality reporting. The use of centile data to project gains may require further validation as the uncontrolled variables in the underlying HCO reporting policy (X% reported in Y hours) may confound the data reported. The interstate comparison of CT report non-availability rate (CI 1.4) indicates that there are major variations in CT report rates between reporting HCOs and across geographical regions. Wherein, 26 of 60 records logged non-availability rates of 5% or less. Non-availability rates as high as 30-45% were recorded in outlier HCOs, and an active intervention to help these HCOs to improve report turnaround time (TAT) may be appropriate depending on the level of their internal reporting standards.



The ACHS has scheduled a revision of the Radiology clinical indicator set to take place in early 2017 and will provide secretariat support to the Radiology Working Party throughout the revision process.



Adverse events

There are no significant strata differences in the rate of reported adverse events (CI 2.1) in 2014 versus 2015. Variations in the underlying HCO adverse incident reporting practice and definitions of an adverse event make meaningful comparison of the data set difficult.

Report addendum

There are no significant strata differences in the rate of report addendum (CI 3.1) in 2014 versus 2015. The reported addendum rate of 0.35% is low compared to the literature which suggests a rate of approximately 1.7% by Hussain et al.¹

General/closing comments

It is pleasing that report TAT continues to be a key focus of ACHS data compilation as it has the potential to encourage Radiology services to provide reports in clinically relevant timeframes. Caution in interpretation is needed as data collection is determined largely by the individual HCO's guidelines. The College recommends ACHS continue to work towards a uniform data collection methodology and standards in order to improve data integrity. Collection of standardised CIs can provide an impetus and a toll for HCOs to benchmark and improve quality of care. The rate of reports notification and acknowledgement, TAT of patient follow-up, as well as peer review rate are CIs which are worthy of consideration for future data collection. The former can improve communication and clinical care in the setting of a multidisciplinary team and the latter encourages quality of reporting.

References

1. Hussain S, Hussain JS, Karam A and Vijayaraghavan G. Focused peer review: the end game of peer review. *Journal of the American College of Radiology* 2012; 9(6): 430-433.e431.



EXPERT COMMENTARY

Medical Imaging Nurses
Association (MINA)

“Careful analysis of the factors leading to the statistically significant difference in the rates is required by the individual HCOs.”

Introductory comments

The Medical Imaging Nurses Association of Australia welcomes the opportunity to provide commentary on the Radiology Clinical Indicators (CIs) version 5 contained within the Australasian Clinical Indicator Report 17th Edition 2008-2015. It is noted that there remains an emphasis on analysis of report availability trends. However CIs of specific adverse events have been substituted for CIs relying on the HCOs adhering to the CI reporting guidelines in a similar manner to ensure accuracy of this data. It is noted that all 40 participating facilities are from the public sector.

Report availability

Again there has been an overall reduction in the rate of reports not being available to the referring doctor within each HCO's specified timeframe. This may reflect increasing uptake of Picture Archiving and Communication System (PACS) / Radiology Information System (RIS) and voice recognition software decreasing Report Turnaround Times (RTATs). CIs 1.3 and 1.5 were the lowest rate of report availability outside the time specified by the HCOs at 7.8 and 8.96 per 100 requests respectively. This is pleasing as emergency department CT and ultrasound imaging is time critical and requires specialist interpretation by a radiologist prior to treatment implementation by the treating doctor. However the outlier rates were significantly higher at 23.6 and 24.4 per 100 requests respectively. Careful analysis of the factors leading to the statistically significant difference in the rates is required by the individual HCOs.

Adverse events

The rate of adverse events reported by the HCOs reduced slightly to 0.043 per 100 imaging studies, however it is disappointing to have a lack of detail in order to provide a more meaningful analysis of the figures. More detail would allow analysis of modalities and particular interventional procedures which place patients



at a higher risk of an adverse event. There is room for individual interpretation by the HCO of what constitutes an adverse event which makes meaningful analysis difficult. Outliers are not recorded as there is no desirable rate for benchmarking. This prevents identification of individual HCOs who may have higher rates of adverse events and denies them the opportunity to identify contributing factors and improve safety processes.

Report addendum

There were 27 HCOs that reported on CI 3.1 with no significant differences from the previous year. There is no specified desirable rate for this CI. Addendums reflect a healthy culture of quality improvement within an HCO and the increased number of HCOs reporting on this CI is pleasing.

General/closing comments

The data supplied was used to provide commentary and response from the Medical Imaging Nurses Association. The heavy emphasis remains on data measuring report availability times which although imperative for timely decisions on treatment options for patients, means there is less emphasis on other patient safety issues which are specific to Radiology. A significant rise in adverse event reporting would be difficult to analyse with the data presented in its current format. The Medical Imaging Nurses Association is pleased to be able to review and comment on the CIs and thanks the ACHS once again for this opportunity.



2015 Summary Data

Report availability

1.1 Emergency department / critical care unit plain radiography reports (L)

In 2015, there were 112,022 requests reported from 38 HCOs. The annual rate was 25.8 per 100 requests. In 2015, the potential gains totalled 25,763 fewer reports not available, corresponding to a reduction by approximately four-fifths. There were 22 outlier records from 19 outlier HCOs whose combined excess was 11,730 more reports not available. The outlier HCO rate was 53.4 per 100 requests.

1.2 Inpatient unit plain radiography reports (L)

In 2015, there were 63,422 requests reported from 39 HCOs. The annual rate was 23.5 per 100 requests. In 2015, the potential gains totalled 13,561 fewer plain radiography reports not available, corresponding to a reduction by approximately four-fifths. There were 13 outlier records from 12 outlier HCOs whose combined excess was 4,840 more plain radiography reports not available. The outlier HCO rate was 46.6 per 100 requests.

1.3 Emergency department / critical care unit CT scan reports (L)

In 2015, there were 30,597 requests reported from 36 HCOs. The annual rate was 7.8 per 100 requests. In 2015, the potential gains totalled 2,328 fewer CT scan reports not available, corresponding to a reduction by approximately four-fifths. There were 12 outlier records from nine outlier HCOs whose combined excess was 1,214 more CT scan reports not available. The outlier HCO rate was 23.6 per 100 requests.

1.4 Inpatient unit CT scan reports (L)

In 2015, there were 21,689 requests reported from 36 HCOs. The annual rate was 12.5 per 100 requests. In 2015, the potential gains totalled 2,418 fewer CT scan reports not available, corresponding to a reduction by approximately four-fifths. There were eight outlier records from six outlier HCOs whose combined excess was 1,010 more CT scan reports not available. The outlier HCO rate was 28.9 per 100 requests.

1.5 Emergency department / critical care unit ultrasound scan reports (L)

In 2015, there were 8,026 requests reported from 36 HCOs. The annual rate was 8.96 per 100 requests. In 2015, the potential gains totalled 667 fewer ultrasound reports not available, corresponding to a reduction by approximately four-fifths. There were 11 outlier records from nine outlier HCOs whose combined excess was 343 more ultrasound reports not available. The outlier HCO rate was 24.4 per 100 requests.

1.6 Inpatient unit ultrasound scan reports (L)

In 2015, there were 16,612 requests reported from 37 HCOs. The annual rate was 14.4 per 100 requests. In 2015, the potential gains totalled 2,122 fewer ultrasound reports not available, corresponding to a reduction by approximately four-fifths. There were 11 outlier records from nine outlier HCOs whose combined excess was 974 more ultrasound reports not available. The outlier HCO rate was 37.2 per 100 requests.

Adverse events

2.1 Adverse events (N)

In 2015, there were 2,016,442 imaging studies reported from 33 HCOs. The annual rate was 0.043 per 100 imaging studies.

Report addendum

3.1 Report addendum (N)

In 2015, there were 1,535,333 imaging studies reported from 27 HCOs. The annual rate was 0.35 per 100 imaging studies.



EXPERT COMMENTARY

Australasian Faculty of
Rehabilitation Medicine (AFRM)

Rehabilitation Medicine

General comments

The Australasian Faculty of Rehabilitation Medicine (AFRM) and the Australasian Rehabilitation Outcomes Centre (AROC) are proud of the continuing high rate of compliance with the ACHS Rehabilitation Medicine CIs. This should be seen in the context of very high compliance in provision of detailed outcome data (including data items required to calculate the CIs) to AROC, and a culture of continuous improvement within the Rehabilitation Medicine community. This demonstrates a commitment to evidence-based clinical care to our disabled population.

Outcome and process measures demonstrated by these CIs show a continued improvement and less outliers; improvement which is also reflected by the shorter lengths of stay and more functional improvement for similar diagnostic groups demonstrated by AROC benchmarking data.

Where differences in CI outcomes are evident between sectors (public compared with private facilities) or jurisdictions, they should be interpreted very cautiously because these data are not casemix adjusted.



The Rehabilitation Medicine clinical indicators were reviewed in 2016 by a multidisciplinary Working Party consisting of representatives from the Australasian Rehabilitation Outcomes Centre (AROC) and the Australasian Faculty of Rehabilitation Medicine (AFRM).



2015 Summary Data

Timely assessment of function on admission

1.1 Functional assessment within 72 hours of admission (H)

In 2015, there were 55,470 patients reported from 97 HCOs. The annual rate was 98.5 per 100 patients. The fitted rate improved from 94.6 to 98.1, a change of 3.5 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 3.4 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 26 outlier records from 19 outlier HCOs whose combined excess was 425 fewer patients with a documented functional assessment within 72 hours of admission. The outlier HCO rate was 92.7 per 100 patients.

Assessment of function prior to episode end

2.1 Functional assessment within 72 hours before end of rehabilitation (H)

In 2015, there were 52,012 inpatients reported from 97 HCOs. The annual rate was 98.2 per 100 inpatients. The fitted rate improved from 94.4 to 98.6, a change of 4.2 per 100 inpatients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 4.1 per 100 inpatients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 14 outlier records from nine outlier HCOs whose combined excess was 599 fewer inpatients with a documented functional assessment before cessation of rehabilitation program. The outlier HCO rate was 81.7 per 100 inpatients.

Timely establishment of a multidisciplinary team rehabilitation plan

3.1 Multidisciplinary team plan within 7 days (H)

In 2015, there were 51,439 patients reported from 101 HCOs. The annual rate was 98.2 per 100 patients. The fitted rate improved from 97.0 to 98.2, a change of 1.2 per 100 patients. This trend was also significant after allowing for the changing composition of HCOs contributing over the period. The rate change was 1.2 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 29 outlier records

from 21 outlier HCOs whose combined excess was 522 fewer patients with a documented multidisciplinary rehabilitation plan within seven days of admission. The outlier HCO rate was 89.4 per 100 patients.

Multidisciplinary discharge documentation

4.1 Discharge plan on separation (H)

In 2015, there were 51,931 separations reported from 97 HCOs. The annual rate was 97.6 per 100 separations. The fitted rate deteriorated from 98.3 to 97.5, a change of 0.78 per 100 separations. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 17 outlier records from 13 outlier HCOs whose combined excess was 875 fewer separations for which there is an appropriate discharge plan. The outlier HCO rate was 80.3 per 100 separations.

Functional gain achieved by rehabilitation program

5.1 Functional gain following completed rehabilitation program (H)

In 2015, there were 51,612 patients reported from 100 HCOs. The annual rate was 95.8 per 100 patients. The fitted rate improved from 95.0 to 95.7, a change of 0.68 per 100 patients. There was relatively little variation between HCOs and so the potential gains were small in 2015. There were 27 outlier records from 21 outlier HCOs whose combined excess was 729 fewer patients discharged with documented evidence of functional gain. The outlier HCO rate was 84.6 per 100 patients.

Discharge destination

6.1 Return to pre-episode or new accommodation allowing for greater independence (H)

In 2015, there were 49,119 patients reported from 93 HCOs. The annual rate was 87.6 per 100 patients. The fitted rate deteriorated from 88.9 to 87.8, a change of 1.1 per 100 patients. In 2015, the potential gains totalled 4,174 more patients discharged to their pre-episode accommodation or one that allows for greater independence. There were 42 outlier records from 30 outlier HCOs whose combined excess was 1,960 fewer patients discharged to their pre-episode accommodation or one that allows for greater independence. The outlier HCO rate was 69.7 per 100 patients.

Abbreviations

ACE inhibitor	ACEI
Angiotensin II receptor antagonist	A2RA
Australasian Clinical Indicator Report	ACIR
Bloodstream infection	BSI
Coronary artery bypass graft	CABG
Congestive heart failure	CHF
Clinical Indicator	CI
Centrally-inserted central line-associated bloodstream infection	CI-CLABSI
Central line-associated bloodstream infection	CLABSI
External beam radiation therapy	EBRT
Haemoglobin	Hb
Healthcare organisation	HCO
Intensity-modulated radiation therapy	IMRT
Lower segment caesarean section	LSCS
Megavoltage external beam radiotherapy	MEBR
Neonatal intensive care unit	NICU
Peripherally-inserted central line-associated bloodstream infection	PI-CLABSI
Percutaneous transluminal coronary angioplasty	PTCA
Red blood cell	RBC
Surgical antibiotic prophylaxis	SAP
Turnaround time	TAT
Venous thromboembolism	VTE

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