

Responding to clinical deterioration: what is meaningful to measure?

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Tuesday 2 August 2011 (10.00-10.30am)

5th International Conference

Safety Quality Audit & Outcomes Research in Intensive Care

Crowne Plaza, Hunter Valley, NSW

Safety, Quality, Performance



OVERVIEW

- Measurement in health care
- ACHS clinical indicator program
- ICU indicator set review
- Rapid response system subset

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Measurement in health care

Measurement in health care is 250 years old

Year	Person	Focus
Mid 18 th C	Uni of Penn Researchers	Outcome data
Mid 19 th C	Florence Nightingale	Mortality rates Infection rates
Early 20 th C	Ernest Amory Codman	End results Benchmarking Review meetings Audit
Mid 20 th C	Avedis Donabedian	Quality dimensions

Measurement in health care

☀ Valid

☀ Relevant

☀ Acceptable

☀ Consistent

☀ Evidence based

☀ Feasible

☀ Accurate

☀ Sensitive








☀ Reliable

☀ Specific

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ACHS clinical indicator program

-  Database comparing indicator results across 670 HCOs in AUS, NZ, and Asia
 -  Public/Private HCOs – 50/50
 -  EQulP and non-EQulP members
 -  351 rate-based indicators | 22 clinical areas
 -  External benchmarking
 -  Data entered (numerator + denominator) either monthly, quarterly, or six-monthly via PIRT Online web based software
-  Data submitted to ACHS on a six-monthly basis

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What is a clinical indicator?

- ✦ Succinct form of measurement that aims to describe the clinical management and/or outcome of care to help understand, compare, predict, improve and innovate
- ✦ Used in healthcare for:
 - ☒ **understanding** (know how a system works / how it might be improved)
 - ☒ **performance** (monitor if/how a system is performing to an agreed standard)
 - ☒ **accountability** (provide information to patients, government, organisations, etc)
- ✦ Usually rate-based - the rate of occurrence of an event

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Clinical indicator sets

- ✓ Anaesthesia
- ✓ Day Surgery
- ✓ Emergency Medicine
- ✓ Gastrointestinal Endoscopy
- ✓ Gynaecology
- ✓ Hospital in the Home
- ✓ Hospital-Wide
- ✓ Infection Control
- ✓ Intensive Care
- ✓ Internal Medicine
- ✓ Medication Safety
- ✓ Mental Health Community
- ✓ Mental Health Inpatient
- ✓ Obstetrics
- ✓ Ophthalmology
- ✓ Oral Health
- ✓ Paediatric
- ✓ Pathology
- ✓ Radiation Oncology
- ✓ Radiology
- ✓ Rehabilitation Medicine
- ✓ Surgical

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Number of Health Care Organisations (HCOs) providing data for each set of indicators by year

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Adverse Drug Reaction	118	145	164	155	150	159	172	174	176
Anaesthesia	317	331	338	326	340	333	330	308	295
Day Surgery	363	374	386	398	403	415	427	400	392
Emergency Medicine	203	186	191	204	219	217	209	211	210
Gastrointestinal Endoscopy	–	–	–	–	–	68	81	86	88
Gynaecology	143	151	150	128	119	123	88	90	94
Hospital in the Home	29	36	34	36	42	45	46	48	48
Hospital-Wide	402	372	376	387	412	433	465	460	454
Infection Control	–	125	167	169	233	265	284	320	325
Intensive Care	96	99	100	93	101	104	101	104	105
Internal Medicine	150	139	148	146	144	134	124	110	98
Mental Health Community	–	–	17	17	24	32	23	28	28
Mental Health Inpatient	104	114	121	121	123	121	124	121	124
Obstetrics	217	216	215	220	218	212	210	180	181
Ophthalmology	120	132	118	117	111	100	104	99	86
Oral Health	–	7	11	13	10	15	10	14	11
Paediatric	81	77	77	68	70	53	53	53	49
Pathology	30	32	34	30	33	41	45	37	49
Radiation Oncology	11	10	13	15	16	14	16	18	20
Radiology	70	63	67	63	63	65	67	65	66
Rehabilitation Medicine	102	98	100	101	109	107	114	109	112
Surgical	244	247	237	231	217	209	200	192	176

Intensive care indicator set

Area	Indicator Description
1	Participation in ANZICS Database QA activities <ul style="list-style-type: none">• Participation in ANZICS CORE APD• Participation in ANZICS CORE Critical Care Resource survey
2	ICU access and exit block <ul style="list-style-type: none">• Non-admission due to inadequate resources• Elective surgical cases deferred or cancelled due to bed unavailability• Transfer to another facility /area due to bed unavailability• Discharge delay > 12 hours• Discharge between 6pm and 6am
3	Intensive care patient management <ul style="list-style-type: none">• Unplanned re-admission to ICU within 72 hours
4	Intensive care patient treatment <ul style="list-style-type: none">• VTE prophylaxis within 24 hours of ICU admission

Development & review of indicator sets

Formal process of collaboration, consultation, development, testing, and refinement every 3 years with:

- Health Professional Colleges/Associations / Societies (ICU = ANZICS | ACCCN | future - CICM)
- Consumers
- Australian Private Hospital Association
- Health Services Research Group (HSRG, University of Newcastle)
- National Casemix & Classification Centre (NCCC, University of Wollongong)
- Other experts as required
- ACHS staff

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Intensive care indicator set review

Content Development:

- ② Opinions on existing & proposed indicators collected from practising clinicians ✓ Feb/Mar 2010
- ② Decision made to include indicators addressing recognising and responding to clinical deterioration based on ACSQHC National Consensus Statement (Essential elements for recognising and responding to clinical deterioration)
✓ Feb/Mar 2010
- ② Working party formed to review indicator set, including ACSQHC representation from each all states/territories ✓ Mar 2010

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Content Development:

STATE	WORKING PARTY REPRESENTATION 15 April 2010 MEETING
ACT	1 Consumer Representative
NSW	2 Intensivists
QLD	2 Intensivists, 1 Medical Director
VIC	3 Intensivists, 1 ICU Liaison Dept Manager, 1 ANZICS Project Manager
SA	1 Intensivist, 1 Operations Executive Director, 1 Clinical Services Coordinator
WA	1 Safety Quality and Performance Director
STAFF	1 ACSQHC, 3 ACHS

Intensive care indicator set review

Content Development:

Literature Review completed - existing & proposed indicators

- ¹ Jones D, Bellomo R, DeVita MA. Effectiveness of the medical emergency team: the importance of dose. *Crit Care* 2009; 13(5): 313-317.
- ² Hillman K. Critical care without walls. *Curr Opin Crit Care* 2002; 8(6): 594-599.
- ³ DeVita MA, Bellomo R, Hillman K, et al. Finding of the first consensus conference on medical emergency teams. *Crit Care Med* 2006; 34(9): 2463-2478.
- ⁴ Barbetti J, Lee G. Medical emergency team: a review of the literature. *Nurs Crit Care* 2008;13(2): 80-85.
- ⁵ Thomas K, VanOyen Force M, Rasmussen D, et al. Rapid response team: challenges, solutions, benefits. *Crit Care Nurs* 2007; 27(1): 20-27.
- ⁶ Australian Commission on Safety and Quality in Health Care. National Consensus Statement: Essential Elements for Recognising and Responding to Clinical Deterioration. Sydney: Australian Commission on Safety and Quality in Health Care; 2010.
- ⁷ Calzavacca P, Licari E, Tee A, et al. A prospective study of factors influencing the outcome of patients after a medical emergency team review. *Intensive Care Med* 2008; 34(11): 2112-2116.
- ⁸ Cretikos M, Parr M, Hillman K, et al. Guidelines for the uniform reporting of data for medical emergency teams. *Resuscitation* 2006; 68(1): 11-25.

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Intensive care indicator set review

Content Approval:

-  Draft indicators developed via working party meeting discussion and email ✓ May-Sep 2010
-  Endorsement of draft indicators by the appropriate health professional college / association / society ✓ Sep 2010
-  Ratification by ACHS Board ✓ Oct 2010
-  Dissemination to all Aus & NZ indicator members & health professional colleges ✓ 2011
-  Data collection inclusion ✓ 1H 2011 (Jan)

Rapid response system subset


Area 6 Minimum standards for a RRS

-  Recognising and responding to clinical deterioration within an acute health care facility [entire hospital]

INDICATOR	DESCRIPTION
6.1	RRS calls to adult patients
6.2	RRS calls to adult patients within 24 hours of hospital admission
6.3	Adult patients experiencing a cardiopulmonary arrest
6.4	Adult patient deaths without NFR order
6.5	Adult patient deaths
DENOMINATOR	Adult hospital admissions (reported as rate per 1,000) [episode of care > 24 hours]

Rapid response system subset

Area 2 Intensive care patient management

-  Recognising and responding to clinical deterioration within 72 hours of being discharged from an ICU

INDICATOR	DESCRIPTION
2.1	RRS calls to adult ICU patients within 72 hours of discharge
DENOMINATOR	Adult patients discharged alive from ICU

Rationale (ICU indicator user manual)

- Activation of rapid response team within < 5 minutes
- Physiological instability manifesting as vital signs derangements
- Different RRS models appropriate to size, role, resources, and staffing mix of the healthcare facility
 - ❖ medical emergency teams
 - ❖ critical care outreach
 - ❖ intensive care liaison nurses
 - ❖ external clinicians or resources
- No optimal RRS call rate specified

Rationale (ICU indicator user manual)

RRS call record:

- ❖ patient identification details
- ❖ time and date of RRS calls
- ❖ primary reason for RRS call
- ❖ observations at time of RRS team arrival
- ❖ interventions implemented by RRS team
- ❖ RRS team details
- ❖ RRS call outcomes, including implementation of limitations of medical treatment

Future direction

- Dissemination of RRS indicator subset via conference presentations [2011 / 2012]
- Replication of RRS subset into the Paediatric indicator set [2012]
- First 12 months viewed as a field study [1 Jan to 31 Dec 2011]
- Dissemination of de-identified data 1H and 2H 2011 results [2011 / 2012]
- Relocation of RRS subset to the Hospital-Wide indicator set [2014-5]

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Without data,
it is just an opinion

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The Australian Council on Healthcare Standards



AUSTRALASIAN CLINICAL INDICATOR REPORT | 01-09
Full reports on all clinical indicators submitted 2009