Clinician ranking of the importance of quality and safety indicators for consideration by Health Service Boards

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Abstract

Objective: Benchmarking is an important tool to improve safety and quality in healthcare services. The objective was to develop a list of clinical indicators prioritized by clinicians engaged in direct patient care.
Methods: An audit of voting outcomes from clinicians who were members of a Clinical Senate representing the State of Western Australia, Australia was undertaken. Clinicians received written information and a list of clinical indicators compiled from five reputable sources. A facilitated debate was held utilizing deliberative decision making, before clinicians voted on their top 20 indicators.
Results: There was an 81% response rate. The top ten clinical indicators were: Severity Access Code 1 event reporting, hospital acquired complications, potentially preventable hospitalisations, medication safety, clinical handover, discharge summary completion rates, staff satisfaction and engagement, links with primary care, patient experience and staff employment metrics. In the specialty disciplines of obstetrics and neonatal medicine and mental health, a strong preference was displayed for a small group of selected indicators (3 to 5) rather than full sets or single indicators.
Discussion: Clinicians can engage effectively in decision making in regard to selection of safety and quality indicators. Involving clinicians in indicator selection may facilitate improvements in care.

What is known about the topic?
Benchmarking drives improvements in safety and quality in healthcare.
What does the paper add?
It is possible to engage clinicians in decision making around the selection of important clinical indicators for their health services.
What are the implications for practitioners?
Practitioners should ask those in governance roles to consider their input into determining the clinical indicator dataset utilised to monitor safety and quality within their health service.

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Introduction

Benchmarking is a valuable tool to drive improvements within complex healthcare organisations[1,2]. Failure to benchmark can lead to adverse safety and quality outcomes, as management and those in governance roles inherently identify their own organization in a more positive light than may be warranted[3,4]. Whilst indicators suitable for benchmarking are increasingly being identified, selecting a manageable number with which to monitor and improve organizational performance is becoming increasingly difficult. The situation becomes further complicated when certain adverse benchmarking outcomes are linked to funding[5].

Selection of clinical indicators for benchmarking is typically determined at senior levels of executive management in healthcare management. However, surveys of hospital clinicians in Denmark, Israel, the United Kingdom and United States found that when management do not directly involve clinical staff in critical service decisions, organizational goals are unlikely to be achieved[6]. Therefore it is surprising that clinical staff responsible for providing safe quality care at the coal face have not been directly engaged in providing input into the prioritization of clinical indicators for management and governance bodies.

The aim of this study was to provide a prioritized list of 20 clinical indicators as voted upon by a multidisciplinary group of clinicians who provided direct patient care within a large state jurisdiction. Clinicians were asked to prioritize clinical indicators from reputable sources where a prior evidence base existed, and which were able to be reliably measured for benchmarking purposes. Clinicians were also asked to select their top indicator and to justify this decision.

Methods

An audit was undertaken of voting outcomes of members of the Clinical Senate of the State of Western Australia, Australia, in ranking safety and quality clinical indicators from five reputable sources. This State covers approximately 305 of Australia and clinicians face challenges implementing healthcare to large cities, rural and remote locations.

The Clinical Senate of the State of Western Australia is a multidisciplinary group of clinicians. It includes rural and metropolitan practitioners from primary to tertiary healthcare sectors. The constitution and rationale of the Clinical Senate has been previously documented[7,8]. Clinical Senates have been documented to promote clinician engagement and provide high quality healthcare advice into senior levels of health service administration and government[7,8].

A set of clinical indicators was collated from five sources. These were:

a) The Australian Commission on Quality and Safety in Healthcare[2];
b) The State Government of Victoria, Australia[3];
c) The State Government of Western Australia, Australia[9];
d) Private Hospitals Australia[10];
e) Prior Clinical Senate debates in Western Australia[11].

After deleting repeated indicators and merging those that were similar, a data set of clinical indicators was produced. Each clinical indicator was allocated to one of six internationally recognized domains of quality[12]. These domains were:

1) Safety;
2) Patient centeredness;
3) Efficiency;
4) Timeliness and Accessibility;
5) Effectiveness and Appropriateness; and
6) Equity

Prior to participating in the debate, Clinical Senators were provided with the

collated set of clinical indicators and two safety and quality reports to inform their reflections about indicators[9,12].

After reading this material, Clinical Senators were asked to consider the question:

If you were responsible for the quality and safety of a major health service that included several hospitals and community facilities, and you asked management to generate a list of 20 indicators for your Board or Committee to review, which 20 indicators would you want to see?

Participants were then able to access an online ranking tool (Qualtrics) and temporarily shortlist clinical indicators from the collated list. Clinical Senators were also asked to provide demographic data. Final submissions were not accepted prior to the debate.

On the day of debate, a series of presentations provided additional background information to Clinical Senators. Expert clinicians in the area of safety and quality were also invited to attend and provide input into the merits of particular clinical indicators. A facilitated plenary debate was then held where Clinical Senators were provided with an opportunity to debate the merits of particular indicators. The facilitation utilized the benefits of deliberative decision-making to inform critical areas around each discussion topic raised in the debate[13].

Following the debate, Clinical Senators finalised their vote. Each participant was asked to select 20 indicators (each selection carried equal weighting) and also to select their single top indicator, providing a descriptive explanation for their choice.

Responses were collated and analysed. Descriptive data were presented as number and percentage. Data were analysed as the top 20 clinical indicators overall and top three in each quality domain. Data from metropolitan and rural practitioners, and from practitioners from each major healthcare discipline were compared. Qualitative data were analysed using thematic analysis and standard techniques[14].

As the project was an audit, ethics committee approval was not required in accordance with National Health and Medical Council (Australia) requirements.

Results

The demographics of the study cohort are summarized in Table 1. Responses were obtained from 61 members of the Clinical Senate (81%). The majority of respondents were aged between 30 and 65 years (93%) and two thirds were female (67%). Three quarters were based in metropolitan regions (75%) and two thirds worked in public hospital settings (66%). Medical practitioners represented the largest group of responders (44%), with allied health, nursing and midwifery, and aboriginal health care workers constituting the remaining 28%, 25% and 3% respectively.

Table 1: Demographic characteristics of voting clinicians

Variable	N (%)
Age (years)	
• Less than 30	3 (5%)
• 30 to 49	25 (41%)
• 50 to 65	32 (52%)
• More than 65	1 (2%)
Gender	
• Male	20 (33%)
• Female	41 (67%)
Location of practice	
• Metropolitan	46 (75%)
• Rural	13 (22%)
• Not stated	2 (3%)
Clinical discipline	
• Doctor	27 (44%)
• Nurse or midwife	15 (25%)
• Allied Health	17 (28%)
• Aboriginal health	2 (3%)
Main area of practice	
• Public hospital	40 (66%)
• Private hospital	1 (2%)
• Primary care or community	10 (16%)
• Combined	10 (16%)

Table 2 summarises the top 20 ranked clinical indicators. Of note, the top ranked indicator, Severity Access Code 1 (SAC1) events, was selected by 80% of respondents. Indicators ranked 2 to 7 were also selected by over half the respondents, indicating broad levels of support.

When asked to select the single indicator of greatest importance, the indicator of SAC 1 events again received the most votes. In qualitative analysis of comments made by Clinical Senators to explain why this indicator was selected as being of greatest importance, several themes emerged. The first theme was the principle that clinicians should do no harm. One clinician wrote:

"Our first and foremost aim as clinicians is to minimise harm, prevent harm and aim for zero harm. In spite of that SAC1 incidents will happen no matter how much we try to aim for prevention. We should be learning proactively from such clinical incidents to prevent future incidents, risk manage, put controls in place, and, share lessons learnt and aim for further improvement of clinical quality and safety through a continuous, live and real-time feedback loop mechanism."

A second theme was the value in exploring how serious events happen, as frequently there are a series of events that each contribute to the adverse outcome and understanding the interplay between these

is valuable in reshaping clinical services at a system level. One clinician wrote:
"The SAC 1 events give you an indication of the type of serious events occurring within the health system and can provide valuable information across services where the highest system level risks are, (ie operating theatre, emergency, or transfer of care). The outcomes of the SAC 1 events investigations can lead to significant system level improvements."

The third theme was that investigations could lead to a timely change in practice, not often seen with other indicators. This meant systems could change and repeated mistakes could be avoided. One clinician wrote:

"Essential reporting of significant safety issues promptly, which are investigated urgently and influence practice in a timely manner."

The second top indicator was the hospital acquired complications (HAC) dataset. Two themes were identified in qualitative analysis. The first related to the comprehensive nature of the dataset, and that outcomes addressed both safety and quality outputs. As one clinician wrote:

"covers multiple areas, very relevant, outcome based, many of the datasets available."

The second theme involved the capacity for self-reflection on how and why patients develop complications in hospital and how this could lead to harm and increased costs of healthcare. One clinician wrote:

"This incorporates a component of reflecting on falls prevention/management which is a very important issue with older adult patients in our health service. Complications that occur in hospital can often times increase costs associated with managing new complications."

The third top indicator was potentially preventable hospitalisations (PPH). The consistent theme identified by respondents was the need for strong collaboration between the community and hospital sectors. By measuring outputs, both State and Federal sides of healthcare governance are held accountable, and this would encourage resource allocation into appropriate areas. One clinician wrote:

"We'll be on hiding to nowhere running a hospital system which is fighting a losing battle with a primary health care system under capacity. So, PPH is an agreed indicator world-wide to assess capacity in PHC. Benchmark and work with the PHN to reduce to Australia's best achievable i.e. North Sydney. If PPH continues unchecked, we waste money and can't justify to taxpayers."

Another feature of voting outcomes was the strong preference expressed in the two specialty areas of obstetrics and neonatal medicine and mental health services to benchmark using a small number of selected indicators, rather than a large indicator set or individual indicators from a set. The group of five selected obstetric and neonatal indicators and group of three selected mental health indicators were voted as the 12th and 13th overall top choices. In contrast, the entire indicators sets in these disciplines, options of individual indicators from these disciplines, and other indicator combinations received few votes. The preferred indicators were:

<u>Obstetrics and Neonatal Medicine (five indicators)</u>

- Percentage of term babies requiring admission to SCU or NICU

- Caesarean section rate in low risk
- Documented evidence of a physical examination and physical health assessment in a mental health inpatient at time of discharge
- Health of the Nation Outcome Scale (HoNOS)
- Readmission within 30 days
- primigravid woman with term pregnancy
- Postpartum haemorrhage rate
- Documented evidence of advice on smoking cessation
- Vaccination rates for influenza and Pertussis

Mental Health Medicine (three indicators)

- Documented evidence of a physical examination and physical health assessment in a mental health inpatient at time of discharge
- Health of the Nation Outcome Scale (HoNOS)
- Readmission within 30 days

Table 2: Top 20 clinician voted clinical indicators

Rank	Indicator	Domain
1	SAC 1 (Severity Access Code) events • Reports completed within 28 days • Timeliness of evaluation reports • Related to failure to escalate care • Related to failure of clinical handover • Open disclosure	Safety
2	Hospital acquired complications dataset (HACs)	Safety
3	Potentially Preventable hospitalisations indicators • Vaccine preventable indicators • Chronic conditions (CCF, Diabetes, COPD, angina) • Acute condition (UTI, Cellulitis, dental, ENT)	Equity
4	Medication Safety • Percentage of patients who require medical intervention as a result of a medication safety incident	Safety
5	Clinical Handover • Documented clinical handover in high risk settings	Safety
6	Discharge summary • Completion rates within 48 hours	Timeliness and Accessibility
7	Staff satisfaction and engagement survey	Effectiveness and appropriateness
8	Links with primary care • Presence of a formal agreement at Board or senior health service management level with the local primary care provider that is reviewed on an annual basis with that provider	Equity

9	National patient experience survey • In patients • Outpatient • Paediatric patients	Patient centredness and Timeliness
10	Staff measurements • Sickness (Days lost) • Turnover • Annual leave outstanding • Executive team turnover	Efficiency
11	Staff attitudes towards management Percentage of clinical staff who agree with the following: • Patient care errors are handled appropriately in my work area; • This health service does a good job of training new and existing staff; • I am encouraged by my colleagues to report any patient safety concerns I may have • The culture in my work area makes it easy to learn from the errors of others; • Trainees in my discipline are adequately supervised; • My suggestions about patient safety would be acted upon if I expressed them to my manager; • Management is driving us to be a safety-centred organisation; • I would recommend a friend or relative to be treated as a patient here.	Effectiveness and Appropriateness
12	Selected obstetric and neonatal dataset • Percentage of term babies requiring admission to SCU or NICU • Caesarean section rate in low risk primigravid woman with term pregnancy • Postpartum haemorrhage rates • Documented evidence of advice on smoking cessation • Vaccination rates for influenza and Pertussis	Safety
13	Selected mental health data set • Documented evidence of a physical examination and physical health assessment in a mental health inpatient at time of discharge • Health of the nation outcome scale (HoNOS) • Readmission within 30 days	Effectiveness and Appropriateness
14	Patient reported outcome measures	Patient Centeredness
15	Mortality audits within each discipline	Safety
16	Readmission within 28 days	Effectiveness and Appropriateness

17	Patient Complaints (Response to complaints dataset) • Number • Percentage resolved • Type	Patient Centeredness
18	Selected theatre data set • Unplanned return to theatre • Incidence of blood transfusion in surgical patients • Cancellation of day surgery patient on day of surgery	Safety
19	Number of Selected Inappropriate tests performed (Inappropriate tests as suggested by Choosing Wisely.) See http://www.choosingwisely.org.au/recommendations?displayby=MedicalTest	Effectiveness and Appropriateness
20	Staff credentialing metrics	Effectiveness and Appropriateness

Table 3 summarises the top three voted indicators from each of the six domains of safety and quality. SAC1 events was the top ranked safety indicator. Responses to a National patient experience survey was the top ranked patient experience indicator. The top ranked efficiency indicator was staff measurements of sickness, turnover, outstanding annual leave and executive team turnover. Completion of discharge summaries within 48 hours after discharge was the top ranked timeliness and accessibility indicator. Staff satisfaction and engagement survey results was the top ranked effectiveness and appropriateness indicator and potentially preventable hospitalisations was voted the top equity indicator.

Table 3: Top three clinician voted clinical indicators in the six domains of quality

Rank	**Indicator**
Safety	
1	SAC 1 (Severity Access Code) events • Reports completed within 28 days • Timeliness of evaluation reports • Related to failure to escalate care • Related to failure of clinical handover • Open disclosure
2	Hospital acquired complications dataset (HACs)
3	Medication Safety • Percentage of patients who require medical intervention as a result of a medication safety incident
Patient centeredness	

1	National patient experience survey
	• In patients
	  • Outpatient
	  • Paediatric patients

2	Patient reported outcome measures
3	Patient Complaints (Response to complaints dataset) • Number • Percentage resolved • Type
Efficiency	

1	Staff measurements
	• Sickness (Days lost)
	• Turnover
	  • Annual leave outstanding
	  • Executive team turnover

2	Antibiotics • percentage of antibiotics prescribed that comply with clinical guidelines

3	Myocardial infarction
	  • ECG for all patients presenting with suspected Acute coronary syndrome (ACS) and management in accordance with a an evidence based ACS assessment protocol
	  • Use of primary PCI or fibrinolytic therapy for STEMI patients
	  • Cardiac rehabilitation for all patients hospitalised with ACS

Timeliness and Accessibility	
1	Discharge summary • Completion rates within 48 hours
2	Emergency centre • Percentage of patients seen within recommended times
3	Outpatients • Percentage of patients waiting longer than recommended for 1st appointment
Effectiveness and Appropriateness	
1	Staff satisfaction and engagement survey

2	Staff attitudes towards management
	Percentage of clinical staff who agree with the following:
	  • Patient care errors are handled appropriately in my work area;
	  • This health service does a good job of training new and existing staff;
	  • I am encouraged by my colleagues to report any patient safety concerns I may have
	  • The culture in my work area makes it easy to learn from the errors of others;
	  • Trainees in my discipline are adequately supervised;
	  • My suggestions about patient safety would be acted upon if I expressed them to my manager;
	  • Management is driving us to be a safety-centred organisation;
	  • I would recommend a friend or relative to be treated as a patient here.

3	Selected mental health data set
	  • Documented evidence of a physical examination and physical health assessment in a mental health inpatient at time of discharge
	  • Health of the nation outcome scale (HoNOS)
	  • Readmission within 30 days

Equity	
1	Potentially Preventable hospitalisations
2	Links with primary care • Presence of a formal agreement at Board or senior health service management level with the local primary care provider that is reviewed on an annual basis with that provider
3	Percentage discharge against medical advice a) Aboriginal b) Non-Aboriginal

Discussion

This paper reports on a novel method of evaluating the relative importance of clinical indicators that might be utilized by a Governing Board or Health Service to benchmark various clinical services. Clinicians who were members of the WA Clinical Senate and who each work directly with patients in a variety of clinical settings, were provided with background publications to educate, and then participated in a multidisciplinary debate utilising the principals of deliberative decision-making[13]. Clinicians were asked to select clinical indicators that would enable those responsible for governance to have greater capacity to understand both the breadth and depth of quality and safety in their health service.

The top ranked clinical indicator was SAC1 events[14]. While prevention is always the best strategy, clinicians clearly believed it was vital to investigate and address clinical incidents when they occur in a timely manner. The reporting and investigation of a clinical incident enables strategies to be put into place to improve the safety of health care delivery and prevent another patient being harmed. SAC 1 includes all clinical incidents/near misses where **serious harm or death** is/could be specifically caused by health care rather than the patient's underlying condition or illness[14]. SAC 1 includes the 8 eight nationally endorsed sentinel event categories:

1. Procedure involving wrong patient or body part resulting in death or major permanent loss of function.

2. Suicide of a patient in an inpatient unit (or whilst on leave).

3. Retained instruments or other material after surgery requiring return to theatre.

4. Intravascular gas embolism resulting in death or neurological damage.

5. Haemolytic blood transfusion reaction resulting from ABO incompatibility.

6. Medication error resulting in death of a patient.

7. Maternal death or serious morbidity associated with labour or delivery1

8. Infant discharged to wrong family or infant abduction.

In qualitative analysis, the three identified themes supporting this as the lead indicator were the principle that clinicians should do no harm,
the value in exploring how serious events happen in order to understand the unique series of actions that lead to the adverse event so that system redesign can occur, and the time limitations on investigations meant practice changes could occur rapidly to avoid further mistakes.

The second top ranked indicator was the HAC dataset[15]. The Australian Commission on Safety and Quality in Health Care (ACSQHC) developed the HAC dataset, which includes conditions where appropriate risk mitigation

strategies in hospitals might lead to lower rates of the identified adverse outcomes[15]. The HAC dataset consists of 16 complications: pressure injuries, falls, healthcare associated infection, surgical complications resulting in unplanned return to theatre, unplanned intensive care admissions, respiratory complications, venous thromboembolism, renal failure, gastrointestinal tract bleeding, medication complications, delirium, persistent incontinence, malnutrition, cardiac complications and severe maternal and newborn birth trauma[15]. The Independent Hospital Pricing Authority (IHPA) have determined that funding of hospital services will be reduced for care episodes where HAC occur which is an incentive to ensure measures are actively taken to prevent harm. The reduction in funding will reflect the additional costs of providing hospital care which are attributable to the occurrence of the HAC[5].

The third top ranked indicator was the rate of potentially preventable hospitalisations (PPH)[16]. This is a systems indicator where higher rates reflect suboptimal capacity in primary health care services that, in turn, raise unnecessary demand on secondary and tertiary services[16]. PPHs are defined as admissions to hospital for a condition where the hospitalisation could have potentially been prevented through the provision of appropriate individualised preventative health interventions and early disease management[16]. Whenever rates of PPH rise, those in governance roles receive direct feedback that there is dysfunction in the capacity and performance of primary health care at system level[16]. In Australia, all reporting agencies now use a standard list of 22 conditions for which a hospitalisation is considered to be potentially preventable. Rates are conventionally age-standardised, permitting comparisons and benchmarking[16]. PPH rates have been included in jurisdictional agreements with the Commonwealth government for several years.

The fourth ranked indicator was medication safety[17]. Medicines are the most common treatment used in health care and contribute to significant improvements in health when used appropriately. However, medicine use can also be associated with harm and the common use of medicines means they are associated with more errors and adverse events than any other aspect of health care. While rates of serious harm are low, errors do affect health outcomes for people and healthcare costs. The prevalence of medication errors is of particular concern because the majority of these errors are preventable[17].

Knowing how adverse medication events occur and how they can be prevented is important for understanding how the safety and quality of medicines use can be improved, at the level of both individual practice and within systems for managing medicines. Information on medication errors i)provides evidence on who is most at risk of an adverse medicines event, ii)where the errors are occurring and iii)what interventions are more successful in reducing the risk of adverse events. This information can be used by individual practitioners, healthcare facilities and policy makers to improve the quality and safety of medicines use in all healthcare settings[17].

The fifth ranked indicator was to benchmark the incidence of documented clinical handover in high risk settings. Clinical handover involves the transfer of professional responsibility and accountability for some or all aspects of care for a patient, or group of patients, to another person or professional group on a temporary or permanent basis[18,19]. In 2010, the American Joint Commission reported that breakdown in communication was the leading root cause of sentinel events reported during 1995–2006, and that *miscommunication during handover*

between medical providers contributed to an estimated *80% of serious medical errors*[18.] The magnitude of risk is amplified in the context of critical transfer of care between services such as emergency departments, intensive care units, labor and delivery, and discharge from hospital admission.

In developing the National Safety and Quality Health Service Standards (NSQHSS), the Australian Commission on Safety and Quality in Health Care (ACSQHC) recognised the importance of clinical handover by including it as Standard 6 in the NSQHSS. Handover checklists and mnemonics [like SBAR and iSoBAR], have been developed to increase implementation[19].

One unexpected finding was our observation that clinicians largely rejected single issue indicators and also large datasets directed at individual disciplines. Instead, preference was to select specific indicators from larger datasets to monitor specialty areas that carry high risk such as obstetrics and mental health. These selected indicators have the advantage of being able to be benchmarked across both secondary and tertiary hospital settings.

In the six domains of safety and quality now internationally recognized, SAC 1 and PPH were the top safety and equity indicators respectively.

The top ranked timeliness indicator was discharge summary completion rates. This indicator reflects a hospital's approach to continuity of care planning, by recognizing the seminal place of primary health care for immediate follow-up and long-term continuity of care. When a discharge summary is not provided to the service provider who will manage the patient care in the community, then adverse events may occur[20]. This is particularly the case in vulnerable patient groups such as those with mental illness or complex needs[20]. Delays in the provision of discharge summaries adversely impacts on continuity of care and increases the risk of avoidable readmission[20].

The importance of discharge summaries to general practitioners should never be underestimated[21]. With the advent of affordable and reliable hospital-based electronic clinical information and management systems, ACSQHC undertook an evaluation in 2010 of the safety and quality impacts of implementing an electronic discharge summary (EDS) system at two lead sites and reported several important safety and quality benefits (19). The ACSQHC subsequently released a toolkit and set of national guidelines for on-screen presentation of discharge summaries specifying the sequence, layout and format of the core elements of hospital discharge summaries[21,22].

The top ranked efficiency indicator and top ranked effectiveness and appropriateness indicator both related to staff measurements. The staff measurements of sickness, turnover, outstanding annual leave and executive team turnover can reflect workplace stress. Research suggests that increasing complexity in care has resulted in progressive rises in levels of clinician workplace stress[23]. An unintended consequence of workplace stress and physician burnout was observed to be a reduction in quality and increased costs in healthcare provision[23]. Strategies to reduce workplace stress can positively impact on patient care and efficiency. One recent that explored the behavior of clinical staff in work units where successful change was implemented to reduce workplace stress, versus those where change was unsuccessful, found improvements in efficiency and safety[24]. Staff working in successful transitioning units described their work environment as acquiring the positive qualities of engagement, loyalty and acceptance[24].

This data emphasises the need for positive staff engagement with management. This was the top voted staff effectiveness and appropriateness indicator. A number of high profile inquiries into health system failings have cited toxic culture as a critical reason for failing to providing safe care for patients[3,4]. The Francis report into the Mid Staffordshire NHS Foundation Trust (2013) highlighted issues of poor culture, tolerance of poor standards, and a focus on compliance over quality of care. Whilst the deficiencies occurred both at clinician and management level, there was disconnect between the goals of management and the clinicians delivering care, resulting in systemic failures and poor outcomes[3]. Similarly, the Duckett report into the Victorian hospital system also found that inadequate governance and system failings resulted in poor outcomes for patients[4].

Conclusion

This is the first attempt to shortlist a set of safety and quality indicators voted by a multidisciplinary group of clinicians who work on a daily basis with patients. Clinicians were able to assimilate data from existing data sets and rank indicators.

As the list of possible clinical indicators that governing bodies could review grows longer, it is increasingly desirable to adopt an approach to surveillance and benchmarking that enables clinicians to be engaged. This will help drive ownership of results. We have documented that such an approach is feasible and can generate a sensible data set of prioritized clinical indicators likely to attract the ongoing attention of clinicians. Whilst the opinions of healthcare managers remains important, engaging clinicians with direct patient care responsibilities in the safety and quality agenda may lead to greater ownership of clinical outcomes and drive improved performance outcomes.

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