RCEM

Metrics in Emergency Medicine

Authors
Ian Higginson | James France

Introduction

Metrics are a key building block in making sure that we deliver the right standards of care for our patients, and care for our staff in the right way. They must be carefully derived and carefully used within leadership and management paradigms that appreciate the complexity of healthcare delivery, and the application of improvement science in complex environments. [1]

Metrics will never tell the whole story about care in the Emergency Department (ED). The axiom "not everything that can be counted counts, and not everything that counts can be counted" should always be remembered. However, the wise use of appropriate metrics has the potential to help improve the standard of care that can be delivered.

Standards

1. Emergency Departments must collect data according to standards contained in the informatics chapter of this document.
2. Emergency Departments must have a quality management and improvement program in place (see Quality Improvement chapter) which should involve measurement and where appropriate, improvement of, performance against:
   a. Key national health service standards
   b. RCEM standards
   c. Locally derived standards where relevant
3. Emergency Departments in England must participate in the Getting It Right First Time (GIRFT) program for emergency medicine.
4. Emergency Departments must have access to both live and retrospective performance metrics (see Crowding chapter).

RCEM

Recommendations

1. Emergency Departments in the devolved nations should consider participating in the GIRFT program for emergency medicine

2. Emergency Departments should participate in the RCEM Quality Improvement Programs

3. Where metrics are being developed the principles and criteria described below should be applied

Background

To be successful measures that we use in Emergency Medicine need to fulfil the following criteria: [2]

- It must be possible to collect the data
- It should be easy to collect the data
- The data should relate to meaningful outcomes, either for quality of care, or for patient and staff experience
- The measures should be centred on current health priorities
- The measures should be applicable across patient groups OR all major patient groups should be represented if more than one measure is required
- In addition, metrics should focus on: [3]
  - Prioritisation of the sickest patients in terms of time to be seen
  - Prioritisation of the sickest and most complex patients being seen by the most experienced clinicians
  - Ensuring that there is not prioritisation of any single condition at the expense of the undifferentiated patient

Metrics can be viewed as either a tool for accountability or improvement. Metrics for accountability should be few in number, and intuitive. Emergency Department metrics should be relatively robust against ‘gaming’ (a reactive subversion such as “hitting the target and missing the point” [4].

The most common frameworks used for measurement of quality in Emergency Medicine (5,6)	
Structure	Effective
Process	Patient-Centred
Outcome	Timely
+/- Balancing measures	Efficient
Safe	Equitable

RCEM

Most metrics in Emergency Medicine, centre on process or structure. Outcome based indicators are much harder to develop.

- A **standard** is an agreed way of doing something. A metric measures performance around a standard.
- A **Key Performance Indicator** measures actual performance against a standard, with the aim of achieving a specific result
- **Benchmarking** compares the level of attainment reached either against a defined standard, or against other organisations.

Any form of comparison between organisations or departments will generate discussions about

- Data quality
- Case-mix: (i.e.) differences between patient groups
- Differences between organisations

Collecting high quality data requires information technology systems. The Emergency Care Data Set provides a standard dataset for UK Emergency Medicine (See informatics Chapter).

Comparison of case-mix is challenging. Examples of case-mix measures include

- Patient demographics (age, gender, ethnicity and socio-economic variables), and acuity. The latter cannot be measured by any single measure
- Triage category reflects urgency rather than severity. No initial assessment process, or triage scale has demonstrated clear superiority over any other in the three domains.
- Early warning scores such as NEWS and n-PEWS provide a common language around physiological scoring, but were originally designed for inpatient environments. Context is key; the type of patient presentation may be more important, not all ED patients require a full set of vital signs.
- The Injury Severity Score is used in UK trauma registries
- Clinical Frailty Scoring in patients aged over 65yrs.

RCEM

Differences between organisations can sometimes be brought out through the use of structural metrics e.g. numbers of treatments spaces / cubicles available versus number of attendance, staffing levels; however, differences in culture, leadership, and organisational effectiveness are much harder to measure. It is these which often provide the answers to differences in performance.

Key operational performance metrics include hospital handover delays for patients arriving by ambulance, time to triage, time to meaningful initial assessment, the 4-hour emergency access standard, the number of patients spending more than 12 hours in the ED, and the number of patients who do not wait to be seen. RCEM's recommendations around the 4-hour emergency access standard, and the 12-hour standard, are contained in the section on Crowding.

The Getting It Right First Time (GIRFT) Emergency Medicine programme [(7)] has devised a suite of metrics which look at key areas of emergency department activity including demand, capacity, flow and outcome as part of its summary emergency department indicator table (SEDIT). Whilst predominantly focussed on process measures such Admitted Patient Delay (APD) it also utilises outcome data related to litigation to provide a global overview of an emergency departments performance and includes the use of a summary metrics eg. GIRFT-EM Index of patient flow. The GIRFT SEDIT allows EDs to compare their performance across multiple areas compared to other EDs as well as the ability to benchmark against EDs with similar case mixes.

Key operational metrics will ideally be available to the clinical team in real time. Barriers to improving them are best understood and addressed in context rather than retrospectively when the context has been lost. It also encourages management teams to actively engage in understanding, and improving, what is happening in the moment. This can reduce unhelpful cycles of blame and counter-explanation.

Metrics do not work in isolation. They form one part of the Quality Improvement picture. They must be carefully derived and carefully used within leadership and management paradigms that appreciate the complexity of healthcare delivery, and the application of improvement science in complex environments. The axoim "what gets measured gets managed" highlights the power of metrics and their ability to transform healthcare if used wisely.

RCEM

References

1. *Higginson I, Photiou S, Boudi Z; European Society for Emergency Medicine Working Group on Quality and safety in Emergency Medicine (EWQSEM). Leadership for quality in Emergency Medicine. Eur J Emerg Med. 2024 Jul 1. doi: 10.1097/MEJ.0000000000001155. Epub ahead of print. PMID: 38950283.*

2. *Hansen K, Boyle A, Holroyd B on behalf of the IFEM Quality and Safety Special Interest Group, et al. Updated framework on quality and safety in emergency medicine. Emergency Medicine Journal 2020;37:437-442.*

3. *RCEM Position Statement: Improving Quality Indicators and System Metrics for Emergency Departments in England. Available at* https://rcem.ac.uk/wp-content/uploads/2021/10/RCEM_position_statement_Improving_quality_indicators_and_system_metrics.pdf. *Accessed 24.07.24*

4. *What's Measured Is What Matters: Targets and Gaming in the English Public Health Care System Public Administration 2006 84(3):517 – 538*

5. *NHS England. A model for measuring quality of care. Available at* https://aqua.nhs.uk/wp-content/uploads/2023/07/qsir-measuring-quality-care.pdf *Accessed 18.07.2024*

6. *Crossing the Quality Chasm: A New Health System for the 21st Century. Committee on Quality of Health Care in America. Institute of Medicine. 2001. Available at* https://www.ncbi.nlm.nih.gov/books/NBK222274/pdf/Bookshelf_NBK222274.pdf. *Accessed 24.07.24*

7. *GIRFT, Emergency Medicine. Available at* https://gettingitrightfirsttime.co.uk/medical_specialties/emergency-medicine/. *Accessed 18.07.2024*