

The National Emergency Medicine Programme Adopts The International Federation of Emergency Medicine Framework for Quality and Safety in the Emergency Department.

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The International Federation for Emergency Medicine (IFEM), of which Ireland is a member, now includes over 70 countries. In countries where EM is well-established there is an increasing focus on defining, improving and assuring quality in emergency care and the IFEM framework draws on the clear synergies in the measures that IFEM member countries have advanced as “Quality Indicators” and their experience in using these indicators. The framework is also intended to support countries where EM is developing and where there are extreme pressures on the emergency care system, combined with limited resources to support that system. In general, the use of EDs exceeds population growth and changes in population morbidity, and presents particular system challenges of crowding, assessment and treatment delays and a reduction in both the quality and safety of care, if capacity cannot grow to match demand. The EMP is adopting the IFEM Framework for Quality and Safety to underpin its EM-specific quality and patient safety work and will use this framework to support compliance with The HIQA Standards for Better Safer Patient Care 2012. The EMP, in conjunction with the Academic Committee of the Irish Association for Emergency Medicine will also derive and implement additional locally relevant QIs, where needed, to measure improvement in patient safety and quality in emergency care in Ireland.

The IFEM framework states that within all countries patients in an ED can expect:

- The right personnel: healthcare staff who are appropriately trained and qualified to deliver emergency care, with the early involvement of senior doctors with specific expertise in Emergency Medicine where life-threatening/changing illness (physical or mental) or injury is suspected.
- The right facilities: a dedicated ED, which is properly equipped (e.g. monitoring equipment and disposable supplies) and where appropriate compliance with hygiene and infection control measures reduce the incidence of hospital acquired infection for the anticipated number of patients and all commonly presenting conditions, as well as less common but predictable emergencies. There should be adequate space to provide the necessary patient care in an environment that is secure and promotes patient privacy and dignity.
- The right decision making: at all levels of ED function, from managerial/administrative levels to the frontline, the importance of critical thinking in decision making should be recognised and emphasised.

- The right processes: to ensure early recognition of those patients requiring immediate attention and prompt time critical interventions, and the timely assessment, investigation and management of those with emergency conditions
- The right results: optimal outcomes from treatment within the ED for all patients presenting with emergency healthcare needs.
- The right approach: patient-centred care with an emphasis on relieving suffering, good communication and the overall experience of patients and those accompanying and/or caring for them.
- The right support: from community and hospital-based healthcare teams, and from the commissioners and managers of the ED, who should ensure that the above arrangements are sustainable. ED staff must receive the resources and training that they need, with emphasis on the development of evidence-based care and innovation.

In countries where EM is well-developed patients can also expect, in addition to the seven fundamental priorities outlined above:

- Appropriate access to, and utilization of, diagnostic support services (e.g. plain radiography, ultrasound, CT scanning and laboratory services) by EM doctors when needed for the immediate diagnosis of life threatening conditions
- Expertise in critical care in collaboration with colleagues from anaesthesia and intensive care
- Early access to specialist inpatient and outpatient services to assure appropriate on-going evaluation and treatment of patients with emergency care needs
- Appropriate duration of stay in the ED to maximise patient care and comfort, and to optimise clinical outcomes
- Development of additional services alongside core ED activity to enhance the quality and safety of emergency care. Such services may include short-stay/observation/clinical decision unit facilities, alternative patient pathways, social and mental health services or associated outpatient activity, and will vary according to local practice and circumstances. However an important component of excellent ED care is the constant development of innovative and enhanced services to support the delivery of quality and safety.

A systems approach to quality and safety

The Framework emphasizes the need to employ a systems approach. An ED cannot function in isolation, and there is a need for a systems approach to quality across systems of acute and emergency care; similarly a dysfunctional ED will adversely affect the pre-hospital environment and inpatient service. A hospital and

community which embraces a culture of quality will welcome efforts by the ED to improve quality and support the implementation of changes that will improve care across the system.

How the ED differs from other healthcare settings – Decision-making

The importance of clinical decision-making in EM is recognised within the Framework. Not only does each clinician have to identify a set of diagnostic and therapeutic priorities for each patient in limited time and with limited information, but there is an added pressure around disposition because the period of observation that can occur on a ward or in primary care may often prove difficult to implement in the ED. Safety in the ED is therefore intricately linked to thinking skills, and the creation of a working environment that allows a high decision-making density to be effectively sustained. Team working, environmental influences and other aspects of human factors are key to patient safety, and supporting clinicians in this area through a programme of human factors training will promote safe clinical care.

How the ED differs from other healthcare settings – crowding

Crowding has a direct effect on quality of care, morbidity and mortality. ED crowding worsens (as measured by average total ED length-of-stay among similar patients seen at the same time) the proportion of discharged ED patients who subsequently die or who are readmitted via the ED to hospital within a week increases significantly. Crowding therefore presents a substantial threat to quality within an ED, and is a symptom of system failure in terms of supply and demand resource management. Crowding also appears to undermine the decision-making processes.

A theoretical framework for the domains of quality and safety

The framework uses the Institute of Medicine framework as an excellent starting point, in that it encompasses the aspiration of “right patient to the right clinician at the right time in the right setting”. The domains of quality from this framework are :

Institute of Medicine Domains of Quality	Emergency Medicine Descriptors
Safe	Avoiding harm to patients
Effective	Providing services based on scientific knowledge to all who could benefit, and refraining from providing services/care to those not likely to benefit
Patient-centred	Providing care that is respectful of and responsive to individual patient preferences, needs, and values
Timely	Reducing waits and sometimes harmful delays
Efficient	Avoiding waste (personnel, resources, finance)
Equitable	Providing care that does not vary in quality because of personal characteristics, processes, protocols and guidelines or poor adherence to any guidelines that do exist; weak or absent IT structure; lack of time to develop and implement process; lack of local data to support the development of country-specific protocols.

Table 1 – Institute of Medicine Domains of Quality

Enablers and barriers to quality care in the ED

The IFEM Framework outlines the following enablers and barriers to quality in ED patient care:

a) Staff: trained, qualified and motivated to deliver efficient, effective and timely patient-centred care.

Barriers: staff burn-out, low morale, poor remuneration, inadequate career development opportunities, high turnover, adverse incidents, lack of coordinated teamwork, poor safety, complaints, high return rate of discharged attendances, weak leadership.

b) Physical Structures: appropriate size and numbers of rooms for resuscitation, major and minor cases, waiting area, reception, triage and diagnostics, staff and patient washrooms, clean areas with appropriate lighting, heating and privacy; equipment maintained regularly; consumables stocked and available.

Barriers: lack of dedicated (or shared) space, overspill into hallways and corridors, poor equipment /stocking, lack of privacy and dignity, dirty/contaminated facilities.

c) ED Processes: specific triage instruments and standard protocols for the ED phase of management including common and high risk presentations such as chest pain, head injury, sepsis, major trauma (with age appropriate modifications) that specify the need for and timing of essential

investigations/imaging/therapies and seniority of clinician involved. Also includes standard processes for safety and infection control such as hand washing.

d) Coordinated emergency care throughout the patient pathway: A systems approach that begins before the ED and runs through the whole patient pathway (healthcare system), with shared ownership and a collaborative approach involving primary care and hospital specialists.

Barriers: lack of whole-systems approach and co-ordination; lack of system support for the ED.

e) Monitoring of outcomes: There must be monitoring systems that provide informative data on the impact of the above, plus adverse incident reporting, mortality and morbidity review and complaint monitoring to highlight both individual and system failure. This should be combined with a programme to actively seek out instances of poor quality or compromised safety and ensure continuous improvement in the ED. In many healthcare systems this would fit within an overall structure of clinical governance. Any suite of emergency system indicators must go beyond the ED, to encompass the patient's entire pathway and experience.

Barriers: Lack of monitoring systems and information technology support; weak or absent systems of governance and review; failure to engage with other components of the emergency care pathway; lack of management support, with the ED viewed in isolation.

Resources:

In addition to the barriers mentioned above, all aspects of ED quality and safety will be undermined by a lack of resources, particularly inadequate finance leading to staff and equipment shortages, deterioration of premises and inadequate systems to ensure effective clinical processes and oversight.

Leadership and Culture:

Leadership and a culture of quality are critical to sustaining all of the activities mentioned above. The IFEM Framework states that leaders must be truly invested in, and passionate about, quality. They must be able to imbue this passion in their staff and offer opportunities and resources for staff to be innovative in making improvements. It is essential to ensure that when quality measures are instituted in hospitals other aspects of care are not disadvantaged (i.e. "what gets measured, matters). A thriving culture of quality is essential to make sure that care that is not being scrutinized does not suffer.

Research:

There is very little robust research evidence in this field of quality and safety in ED care. There is an urgent need to agree upon widely applicable outcome measures that can be used to assess the impact of specific interventions and other changes in the configuration and delivery of ED services, and to develop measures of comparability between departments and between health systems.

IFEM suggested indicators

The series of quality questions and their associated measures are shown in Table 2 and these have been cross-referenced to the themes of the HIQA National Standards for Better, Safer Healthcare 2012, HSE quality indicators, EMP Report recommendations and the EMP Quality Improvement approach based on the Dartmouth Microsystem Improvement Curriculum. IFEM recognises that the questions posed cover a range of issues that are fundamental to the delivery of high quality care in any ED, but the exact measures used will depend on local factors, the availability of data, and over-arching elements of the healthcare system in any particular setting.



Figure 1: Themes for Quality and Safety, HIQA National Standards for Better, Safer Healthcare 2012

Quality Question	Structure measure	Process Measure	Outcome measure
Facilities adequate?	<ul style="list-style-type: none"> Capacity indices, such as the number of resuscitation/majors cubicles for the patient casemix (in relation to local guidelines) Specific areas for vulnerable groups (e.g. children, mentally ill, confused elderly) Presence or absence of functional equipment to ensure patient safety Adequate security Disaster/major incident plan 	<ul style="list-style-type: none"> Maintenance logs for equipment Regular cleaning records and inspections Regular stock inventory Regular testing/rehearsal of disaster plan 	<ul style="list-style-type: none"> Patient experience Incidence of hospital- acquired infection Recorded incidents of assault on staff members
Numbers and skill mix of staff adequate?	<ul style="list-style-type: none"> Total number of staff and skill mix (in relation to local guidelines) Staff turnover and sickness levels Number of new patients per staff member (with reference to staff seniority) in unit time Number of patients waiting to be seen (by triage category) 	<ul style="list-style-type: none"> Times to be seen by decision maker Times from arrival to discharge from ED Proportion leaving without being seen 	<ul style="list-style-type: none"> Complaints and critical incidents
Is there a culture of quality?	<ul style="list-style-type: none"> Is the leadership committed to quality and accountable? Is the leadership "satisfied" or constantly improving? Does the ED have clinical autonomy and an ability to develop its own evidence-based practice? Quality or safety committee is seen as part of the essential administrative structure? Is ED quality seen as a holistic health service issue? 	<ul style="list-style-type: none"> Hospital leadership visible in clinical areas Hospital-wide quality initiatives (e.g. care transitions, hand- washing) ED-led quality initiatives and guidelines Effective dashboard of quality and safety which is locally available and acted upon Quality of ED decision-making monitored and acted upon (e.g. through errors and adverse events) Adequate communication with primary care and other community services 	<ul style="list-style-type: none"> Patient experience Patient empowerment /ability to participate in own care Medication errors
Data support adequate?	<ul style="list-style-type: none"> Is there a system in place to facilitate monitoring of all above process and outcome measures? 	<ul style="list-style-type: none"> System generates reports that support departmental quality management ICT regularly maintained and developed appropriate to evolving emergency care needs 	<ul style="list-style-type: none"> Patient experience Objective measures show continuous quality improvement Contributions to public health in the local community (child protection,

Key process measures in place?		<ul style="list-style-type: none"> • Time from arrival to cubicle • Time to decision maker • Time to analgesia • Audit against other EDs and national guidelines • Left without being seen rate • Bed turnovers 	<p>police liaison etc)</p> <ul style="list-style-type: none"> • Patient experience • Survival/functional status for time sensitive conditions (e.g. stroke, MI, sepsis) • Time intervals in journey • Diagnostic errors • Avoidable patient returns to the ED.
Access block present?	<ul style="list-style-type: none"> • Proportion of time that patients are on trolleys in corridor. • Frequency with which meal rounds and drug rounds are required in the ED. 	<ul style="list-style-type: none"> • Time to offload patients from ambulances • Trolley waits above a locally agreed threshold • Time to admission from decision to admit • Median length of stay for all patients • Left without being seen rate 	<ul style="list-style-type: none"> • Case mix survival measures for high mortality conditions • Length of stay, complication rates for hospitalised patients • Proportion returning to ED within 7 days • Incidence of hospital- acquired infection (depending on length of stay in ED)
Clinical outcomes satisfactory?	<ul style="list-style-type: none"> • Presence of clinical pathways to support best evidence-based practice • Appreciation of cost effectiveness 	<ul style="list-style-type: none"> • Pathway compliance • Times to critical interventions such as reperfusion or antibiotics 	<ul style="list-style-type: none"> • Patient mortality (general or specified conditions) • Risk adjusted outcomes (e.g. from registry data). • Other clinical outcome data • Proportion returning to ED within 7 days
Patient experience measured and acted upon?	<ul style="list-style-type: none"> • Use of patient feedback tools • Inclusion of patients on hospital boards 	<ul style="list-style-type: none"> • Changes implemented on the basis of patient feedback 	<ul style="list-style-type: none"> • Progressive improvements in patient feedback
ED Staff experience measured and acted upon?	<ul style="list-style-type: none"> • Feedback at ED staff appraisals • Use of staff feedback tools including other specialties • Training and education programmes for ED staff 	<ul style="list-style-type: none"> • ED staff empowered and supported by management/leadership team • Changes implemented on the basis of staff feedback 	<ul style="list-style-type: none"> • Progressive improvements in staff feedback • Improving trainee and student feedback in training departments

Table 2: IFEM suggested quality indicators for EDs, grouped by the domains of structure, process and outcome to address all IOM domains

Table 3: Cross reference of IFEM Framework to Quality Initiatives relevant to Emergency Medicine in Ireland

Quality Question	Structure measure	Process Measure	Outcome measure
<p>Facilities adequate? <i>(National Standards - Effective Care)</i></p>	<ul style="list-style-type: none"> Capacity indices, such as the number of resuscitation/majors cubicles for the patient casemix (in relation to local guidelines) <i>(Infrastructure audit and recommendations -EMP work-stream 2013)</i> Specific areas for vulnerable groups (e.g. children, mentally ill, confused elderly) <i>(EMP Recommendation)</i> <i>(IAEM Delphi Study recommendation)</i> Presence or absence of functional equipment to ensure patient safety Adequate security <i>(EMP Report Chapter 13)</i> 	<ul style="list-style-type: none"> Maintenance logs for equipment Regular cleaning records and inspections Regular stock inventory Regular testing/rehearsal of disaster plan <i>(Ref. Lean 5S approach in EMP Implementation Support – work-stream 2012)</i> 	<ul style="list-style-type: none"> Patient experience Incidence of hospital- acquired infection <i>(HSE QI)</i> Recorded incidents of assault on staff members
<p>Numbers and skill mix of staff adequate? <i>(National Standards - Effective Care & Workforce themes)</i></p>	<ul style="list-style-type: none"> Total number of staff and skill mix (in relation to local guidelines) <i>(EMP work-stream 2012)</i> Staff turnover and sickness levels <i>(Sickness levels measured at ED level; EMP measured Nursing Staff turnover measured 2010/2011; Medical staff turnover data unavailable)</i> Number of new patients per staff member (with reference to staff seniority) in unit time <i>(not currently measured)</i> Number of patients waiting to be seen (by triage category) <i>(EMP states an ED-level measure – ICT dependent)</i> 	<ul style="list-style-type: none"> Times to be seen by decision maker <i>(National ED Process Dataset)</i> <i>(IAEM Delphi Study recommendation)</i> Times from arrival to discharge from ED <i>(National KPI)</i> Proportion leaving without being seen <i>(EMP Recommendation)</i> <i>(HIQA Tallaght Report)</i> 	<ul style="list-style-type: none"> Complaints and critical incidents <i>(Managed at ED/hospital level)</i> <i>(EMP/Patient Advocacy Taking Patient Feedback Seriously Report September 2012)</i> <i>(IAEM Delphi Study recommendation)</i>
<p>Is there a culture of quality? <i>(National Standards - Leadership, Governance and Management)</i></p>	<ul style="list-style-type: none"> Is the leadership committed to quality and accountable? Is the leadership "satisfied" or constantly improving? Does the ED have clinical autonomy 	<ul style="list-style-type: none"> Hospital leadership visible in clinical areas Hospital-wide quality initiatives (e.g. care transitions, hand- washing) <i>(EMP draft Transition of Care Protocol)</i> 	<ul style="list-style-type: none"> Patient experience <i>(EMP implementation – Dartmouth Microsystems Improvement Curriculum tool available; EMP/Patient Advocacy Taking Patient Feedback Seriously Report September 2012 and pending)</i>

	<p>and an ability to develop its own evidence-based practice?</p> <ul style="list-style-type: none"> • Quality or safety committee is seen as part of the essential administrative structure? • Is ED quality seen as a holistic health service issue? 	<ul style="list-style-type: none"> • ED-led quality initiatives and guidelines (<i>EMP recommendations and guidelines</i>) (<i>IAEM Delphi Study recommendation</i>) • Effective dashboard of quality and safety which is locally available and acted upon • Quality of ED decision-making monitored and acted upon (e.g. through errors and adverse events) • Adequate communication with primary care and other community services (<i>HIQA Tallaght Report</i>) 	<p><i>National ED Patient Experience Measurement Tool development</i></p> <ul style="list-style-type: none"> • Patient empowerment /ability to participate in own care • Medication errors (<i>IAEM Delphi Study recommendation</i>)
<p>Data support adequate? (<i>National Standards - Use of Information</i>)</p>	<ul style="list-style-type: none"> • Is there a system in place to facilitate monitoring of all above process and outcome measures? (<i>EMP ICT Recommendations, EDIS proposal and EM Clinical Audit Proposal 2012</i>) 	<ul style="list-style-type: none"> • System generates reports that support departmental quality management (<i>EMP EDIS project</i>) (<i>IAEM Delphi Study recommendation</i>) • ICT regularly maintained and developed appropriate to evolving emergency care needs (<i>EMP EDIS</i>) 	<ul style="list-style-type: none"> • Patient experience (<i>EMP Implementation using DMIC</i>) • Objective measures show continuous quality improvement (<i>National Standards - Leadership, Governance and Management & Effective Care themes</i>) • Contributions to public health in the local community (child protection, police liaison etc)
<p>Key process measures in place? (<i>National Standards - Use of Information</i>)</p>		<ul style="list-style-type: none"> • Time from arrival to cubicle (<i>not currently measured</i>) • Time to decision maker (<i>National ED Process Dataset</i>) • Time to analgesia (<i>EMP Clinical Guidelines for implementation –Quality KPI to follow</i>) • Audit against other EDs and national guidelines (<i>EMP Quality KPIs</i>) • Left without being seen rate (<i>EMP Recommendation</i>) (<i>HIQA Tallaght Report</i>) • Bed turnovers (<i>not currently measured in Irish context</i>) (<i>IAEM Delphi Study recommendation</i>) 	<ul style="list-style-type: none"> • Patient experience (<i>EMP Implementation using DMIC</i>) • Survival/functional status for time sensitive conditions (e.g. stroke, MI, sepsis) • Time intervals in journey • Diagnostic errors • Avoidable patient returns to the ED.

<p>Access block present?</p> <p><i>(HIQA Tallaght Report)</i> <i>(National Standards - Safe Care)</i></p>	<ul style="list-style-type: none"> • Proportion of time that patients are on trolleys in corridor. <i>(SDU priority)</i> <i>(HIQA Tallaght Report)</i> • Frequency with which meal rounds and drug rounds are required in the ED. <i>(not currently measured)</i> 	<ul style="list-style-type: none"> • Time to offload patients from ambulances <i>(EMP Access KPI)</i> • Trolley waits above a locally agreed threshold <i>(EMP 6-hour standard)</i> • Time to admission from decision to admit <i>(National ED Process Dataset)</i> • Median length of stay for all patients <i>(EMP Recommendation - EDIS-dependent)</i> <i>(IAEM Delphi Study recommendation)</i> • Left without being seen rate <i>(EMP Recommendation)</i> <i>(HIQA Tallaght Report)</i> 	<ul style="list-style-type: none"> • Case mix survival measures for high mortality conditions • Length of stay, complication rates for hospitalised patients • Proportion returning to ED within 7 days <i>(EMP Recommendation to monitor 7 and 28 day unscheduled returns)</i> <i>(HIQA Tallaght Report)</i> • Incidence of hospital-acquired infection (depending on length of stay in ED)
<p>Clinical outcomes satisfactory?</p> <p><i>(National Standards - Effective Care)</i></p>	<ul style="list-style-type: none"> • Presence of clinical pathways to support best evidence-based practice • Appreciation of cost effectiveness <i>(EMP Clinical Guidelines for implementation)</i> 	<ul style="list-style-type: none"> • Pathway compliance <i>(ED-level audit pending national clinical audit support)</i> • Times to critical interventions such as reperfusion or antibiotics <i>(EMP Clinical Guidelines for implementation; Clinical Audit at local and national level)</i> <i>(IAEM Delphi Study recommendation)</i> 	<ul style="list-style-type: none"> • Patient mortality (general or specified conditions) <i>(ED-level audit pending national clinical audit support)</i> • Risk adjusted outcomes (e.g. from registry data). • Other clinical outcome data <i>(EM Clinical Audit proposal 2012)</i> <i>(IAEM Delphi Study recommendation)</i> • Proportion returning to ED within 7 days <i>(EMP Recommendation monitor 7 and 28 day unscheduled returns)</i> <i>(HIQA Tallaght Report)</i> <i>(IAEM Delphi Study recommendation)</i>
<p>Patient experience measured and acted upon?</p> <p><i>(National Standards - Person-Centred Care)</i> <i>National Standards - Leadership, Governance and</i></p>	<ul style="list-style-type: none"> • Use of patient feedback tools <i>(EMP Implementation using DMIC)</i> • Inclusion of patients on hospital boards. <i>(HIQA Tallaght Report)</i> 	<ul style="list-style-type: none"> • Changes implemented on the basis of patient feedback <i>(EMP Implementation using DMIC)</i> 	<ul style="list-style-type: none"> • Progressive improvements in patient feedback <i>(EMP Implementation using DMIC)</i>

<i>Management</i>			
ED Staff experience measured and acted upon? <i>(National Standards - Leadership, Governance and Management)</i>	<ul style="list-style-type: none"> • Feedback at ED staff appraisals • Use of staff feedback tools • Use of staff feedback tools including other specialties • Training and education programmes for ED staff 	<ul style="list-style-type: none"> • ED staff empowered and supported by management/leadership team • Changes implemented on the basis of staff feedback <i>(EMP Implementation using DMIC)</i> 	<ul style="list-style-type: none"> • Progressive improvements in staff feedback <i>(EMP Implementation using DMIC)</i> • Improving trainee and student feedback in training departments

Table 3: IFEM suggested quality indicators for EDs, grouped by the domains of structure, process and outcome, with cross reference to HIQA Standards for Safer, Better Patient Care 2012 Themes for Quality and Safety, HSE Quality Indicators, EMP Recommendations and the Dartmouth Microsystems Improvement Curriculum (DMIC). This table will be reviewed as further recommendations from the IAEM Academic Committee Delphi Study on the Development of Key Performance Indicators for Irish Emergency Departments become available.

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