SALA VIOLANTE/GINEVRA

MEDICINA D'URGENZA: INDICATORI E AREA CRITICA

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Gli indicatori di PS come strumento di governo dell'ospedale

XII congresso nazionale
simeu
RICCIONE 13-15 MAGGIO 2022

Gli Indicatori in PS come Strumento di Governo dell'Ospedale

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società italiana medicina d'emergenza-urgenza

Conflicts ….

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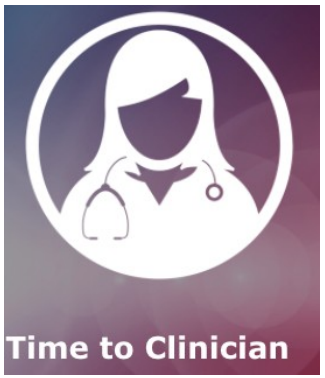
Key Performance Indicators

KPIs help to the decision-making staff to monitor the whole performance of EDs providing timely information for the improvement of their management and operation.



Keywords: KPIs in healthcare, emergency department management, continuous improvement

The panel of
Key Performance Indicators (KPI)

- Pts seen and discharged within xx hrs (hosp to determine their standard)
- Pts admitted from ED
- Time to treatment
- Patient satisfaction
- Standard of care treatment
- Correct diagnosis
- ED occupancy / crowding
- Time to treatment
- ED LOS (length of stay) / wait
- ED returns
- Left Without Being Seen
- Time to diagnosis
- Effectiveness
- Mortality
- Time to pain management
- Rate of complaints
- Provider satisfaction
- Waiting time
- Time diagnostics to treatment
- Time to diagnosis
- Patient participation in own care
- Satisfaction: pain control
  Satisfaction: hygiene
- Triage vs. time to see provider
- Staff safety

Emergency Services: 6 steps

a) **Patient Admission**: The pt is admitted to the unit and welcomed by the receptionist, who enters the pt's data in the corresponding information system.

b) **Triage**: The pts. are classified according to their status, the severity of their condition, and waiting time.

c) **Medical care:** The patient is treated by a specialist who makes a preliminary diagnosis.

d) **Nursing care**: The patient is treated by a nurse and given necessary recommendations, if required.

e) **Support and diagnostic tests**: An optional stage where tests are performed to get more information on the patient's condition.

f) **Discharge:** The pt. is sent home, to another health facility or is given indication to be admitted to the hospital.

Set of KPIs by Category & relative Importance

Category	Nº of KPIs	Nº of Very Important
Quality	23	13
Time	20	18
Economic	15	2
Capacity	11	11
Outcome	6	6
Total	**75**	**50**

Set of KPIs by Category and Importance

1. **Quality indicators ...** further divided into 3 subcategories: error, standard compliance and satisfaction indicators.
2. **Time indicators** included waiting time and process time indicators.
3. **Economic indicators** included cost and financial indicators.
4. **Capacity indicators** were divided in supply and demand indicators.
5. **Outcome indicators** were classified in one category including indicators of hospitalization, discharge, withdrawal, referrals and mortality.

A set of indicators and each institution should use them for monitoring purposes.

In addition, a selection of those KPIs that best fit the ED problems in any moment should be used for improving the unit.

Category 1: Indicators of quality Subcategory: errors
Calling rate to internal consulting physicians with no response
Reported error rate in medical and nursing procedures
Error rate in activities supporting diagnosis (tests requests, results, har
Patient readmission rate
Intrahospital infection rate
Rate of deceased patients waiting to be hospitalized
Rate of sentinel events
Rate of medical complications*
Patient accident rate (falls or others)
Personal accident rate (medical sharps , splatters)
Medication error rate
Non-applicable hospitalization rate
Applicable referral rate due to school accidents
Subcategory: standard compliance
Standard compliance rate of treatment times according to triage classifi
Standard compliance time of triage classification times
Existence of unit protocols
Getting quality certificates or renewing quality certificates
Subcategory: satisfaction
Average patient satisfaction rate
Litigations
Complaint rate
Average rate of staff satisfaction
Average quit or transfer rates by request
Training rate (RSP and infectious IAAS)

Category 2: Time indicators Subcategory: waiting time
Average admission waiting time.
Average triage waiting time.
Average examination room waiting time.
Average waiting time to arrive to the internal consulting physician
Average waiting time for medical and nursing procedure
Average waiting time for activities that support the diagnosis
Average waiting time for results of supporting activities
Average waiting time for medical discharge
Average waiting time for internal and external transportation
Average waiting time for bed hospitalization
Average waiting time
Subcategory: process time
Average resuscitation time
Average admission time (collection)
Average triage time
Average examination room time
Average treatment time by internal consulting physician
Average waiting time medical and nursing procedure
Average time of activities supporting diagnosis
Average cycle time of patient per category
Average medical treatment time by category

Category 3: Economic indicators Subcategory: cost
Cost for resuscitation activities
Cost for admission activities
Cost for triage activities
Cost for primary medical treatments
Cost for calling activity and visit of internal consulting physician
Cost for medical and nursing procedure activities
Cost of activities that support diagnosis
Cost of diagnosis review activities
Cost for patient discharge activities
Cost for logistic support activities
Cost for maintenance and cleaning activities
Average patient cost per category
Subcategory: financial
Outstanding patient accounts
Budget implementation
Rate of patients that regularize their financial situation

Category 4: Capacity indicators Subcategory: supply
Quantity of assets
Use of diagnosis support
Use (cots, wheelchairs, beds)
Non-available equipment
Staff endowment per shift (physicians, nurses, paramedic and others)
Absenteeism rate (physicians, nurses, paramedic and others)
Weekly overtime work rate (physicians, nurses, paramedic and others)
Subcategory: demand
Average daily census
Patient rate morning
Patient rate evening
Patient rate night
Category 5: Outcome indicators
Rate of hospitalized patients
Discharged patients
Total abandonment rate
Total abandonment rate after triage
Rate of referred patients
Short-term mortality, after visit to the ER

Template for Uniform Reporting of ED measures, Consensus according to the Utstein Method

The Utstein Abbey near Stavanger in Norway

Objective: a template for uniform reporting of standardized measuring and describing of care provided in the ED.

Results: The final measures (minimum data set) to be reported and their definitions grouped into 6 categories:

1. Structure
2. Staffing and governance
3. Population
4. Process times
5. Hospital and healthcare system
6. Outcomes

Hruska K. Eur J Emerg Med 2019, 26:417–422

Uniform Template for Reporting of ED measures

Measure	Reported as
ED structure	
Total number of treatment spaces including resuscitation care spaces	Count
Number of resuscitation care spaces	Count
Number of spaces in ED-controlled short stay unit	Count
ED staffing and governance	
Nursing direct clinical care hours (excluding breaks) per 100 patient visits	Ratio
Physician direct clinical care hours (excluding breaks) per 100 patient visits	Ratio
Advance practice provider direct clinical care hours (excluding breaks) per 100 patient visits	Ratio
Emergency medicine specialist 24/7 coverage	Yes/no
Independent admission rights	Yes/no

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Uniform template for reporting of ED measures

Measure	Reported as
ED population	
Number of ED visits/year	Count
Proportion of patients aged 0–5	Percentage
Proportion of patients aged>75	Percentage
Case-mix level of acuity	Percentage (starting with highest priority)
Name of triage scale and proportion of patients per triage category	
Proportion of patients coming by ambulance	Percentage

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Uniform template for reporting of ED measures

Measure	Reported as
ED process times	
Length of stay	Mean in minutes
Time to first provider	Mean in minutes
Hospital and healthcare system	
Acute care beds per 1000 inhabitants	Ratio
Hospital beds	Number
ED outcomes	
Left without being seen	Percentage
Disposition	Percentage
Re-attendance within 72 h, resulting in admission	Percentage

Hruska K. Eur J Emerg Med 2019, 26:417–422

Evaluation of outcome relevance of quality indicators in the emergency department (ENQuIRE): study protocol for a prospective multicentre cohort study

BMJ Open

Aim to test the effects of Quality Indicators (ENQuIRE study) on outcome relevance in Germany using medical data from Eds.

The primary aims of the study are:

- Identification of strengths and weaknesses of the QI.
- Checking feasibility of QIs in real-life.
- Evaluation of the outcome relevance of QIs in the ED by determination of the influence of QI performance on mortality, morbidity.

Drynda S, et al. BMJ Open 2020;

BMJ Open

Table 2 Core set of quality indicators for analysis

Quality indicator	Reference
Time from arrival to CT	12
Length of stay (LOS) of admitted patients	12 41–49
LOS of non-admitted patients	12
Left before/without being seen	12 46–48
Time from arrival to initial triage	12 46
Brain imaging in stroke suspicious patients	50
Time from arrival to pain management	7 47
Emergency department staffing: nurses (full-time equivalent) per patients	41 46 48
Left before treatment completion	41 46 48 49
Time from arrival to provider	41 42 46 48
Left against medical advice	48
Time from arrival to first ECG in suspected cardiac chest pain or acute myocardial infarction	49 51
Time from arrival to brain CT for patients presenting within 4 hours of onset of symptoms consistent with a stroke	42 49
ECG within 10 min of arrival for patients presenting with chest pain	51
ECG for patients with non-traumatic chest pain	51
Time from arrival to intravenous tissue plasminogen activator within 4.5 hours of symptom onset in patients with acute ischaemic stroke	42 52
ECG performed for syncope	53
Time from arrival to chest radiography for admitted patients	54
Time from arrival to chest radiography for non-admitted patients	54
Determination of the respiratory rate at admission for patients with outpatient-acquired pneumonia	55
Time from arrival to reperfusion for patients with acute myocardial infarction	56

Drynda S, et al. BMJ Open 2020;

Conclusions

- Key Performance Indicators indicators should aim to improve care for pts at the greatest risk of avoidable harm.
- These pts. might be best identified by a combination of high risk presentations and abnormal physiology. These pts are the most likely to benefit from an appropriately skilled emergency physician.

- Quality indicators should not prioritise individual conditions at the expense of the undifferentiated pts unless clinical priority dictates.
- Any changes to the current system metrics and quality indicators should be based upon an evidence base and robustly evaluated.

Conclusions

The Availablists: Emergency Care without the Emergency Department

Judd E. Hollander, MD, FACEP, Rahul Sharma, MD, MBA, FACEP

"It is time to think about emergency care, rather than emergency departments»

It is time to think about emergency care outside the ED, rather than input-throughput-output model inside the ED.

Urgent care centers and retail clinics has not become a cost-effective substitute for emergency care, but rather has turned out to be a more convenient alternative to care.

The future of emergency care will involve development of a "**virtual ED**" where emergency care providers can render remote care in a lower-cost environment.

NEJM Catalyst

Judd E. Hollander, *NEJM 2022*

Conclusions

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The Emergency Department of the Future

The ED will likely continue to serve as the physical entry point for many hospital admissions, however, it will need to be redesigned.

Large shared "waiting rooms" are no longer acceptable. EDs will need for other types of smaller "waiting rooms" or "holding areas" that eliminate risk of infectious transmission and maintain privacy.

Irrespective of the form and space, technology will be at the core of all future ED. Imaging care beginning asynchronously via text, e-visit. Then, if necessary, the care can be escalated to a synchronous audio-video visit.

NEJM Catalyst

Judd E. Hollander, NEJM 2022

Conclusions

The Availablists: Emergency Care without the Emergency Department

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The Emergency Department of the Future

Apps may be able to eliminate the need for waiting rooms.

We should not define emergency care providers by their location in the literal "acute care space" of the ED.

….. we are always open, always available: we are the availablists….

NEJM Catalyst

Judd E. Hollander, *NEJM Catalist* 2022

Gli Indicatori in PS quale Strumento di Governo dell'Ospedale

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