An emergency department organizational assessment questionnaire: a Delphi study to create standardized comparators for emergency department directors

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Research letter

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An emergency department organizational assessment questionnaire: a Delphi study to create standardized comparators for emergency department directors

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The last 20 years have seen a dramatic increase worldwide in the number of emergency department (ED) visits, and resulted in overcrowding and increased stress in the workplace [1]. The increase in ED visits has also contributed to longer waiting room times and lengths of stay, and has had resulted in worsening morbidity and mortality [2,3]. Some health systems, such as the Swedish National Healthcare Service, have strategized to respond better to the increase in volume. In the Swedish model, triage nurses aided by digital tools act as gatekeepers by limiting admissions through iterative decision-making [4]. It seems necessary; however, to evaluate any new strategy for combatting overcrowding in a reliable and reproducible manner both between hospitals and within a single hospital over time. To our knowledge, there is no current method for comparing how EDs are organized. The organization of an ED can be effective in one hospital and not in another for a variety of reasons (e.g., patient population, disease prevalence, supporting infrastructure, etc.). When assessing the value of a given strategy for making appropriate comparisons, it is, therefore, difficult to limit oneself to a few indicators. Some indicators have been proposed by national regulatory bodies overseeing hospital EDs, but they are ineffective at allowing comparisons both over time and between institutions [5]. Further, these government-proposed indicators have not reached consensus among experts, and hence, do not adequately address the underlying problem [6]. Our objective was to survey a group of experts in the management and organization of EDs to develop a standardized questionnaire to make appropriate comparisons regarding capacity, staffing needs, patient demographics, and other parameters.

We conducted a Delphi study in order to obtain consensus among experts about relevant indicators that can affect ED overcrowding. This study was completed in accordance with the accepted Delphi methodology [7]. We selected clinical directors of French EDs as the most appropriate personnel to respond to the survey. These professionals, in addition to their expertise as managers, also represent the diversity of EDs in terms of patient volume, beds per hospital, and whether university-affiliated or not. We carried out four rounds of surveying utilizing the Delphi method. Thirteen experts responded to all four rounds of questioning. More than half of the experts (7/13) had more than 15 years of management experience, four had 10–15 years, one had 5–10 years, and one had less than 5 years. The EDs they managed varied in size with an average of 68 000 patients/year (range 36 000–100 000 patients/year).

Forty-nine indicators were proposed by the experts; among them 40 were agreed upon by consensus (Table 1).

Existing tools for the ED director to make objective observations are still limited in their functionality. The indicators we propose offer a tool for evaluating the activity and organization of an ED, allowing comparisons over time and between hospitals. In addition, our questionnaire allows for insights into an ED's staffing needs. Indeed, understaffing is a factor that leads to overcrowding. Other factors are an ED's organizational structure, its level of preparation for unplanned challenges, and its ability to manage disturbances both upstream and downstream, such as availability of primary care, healthcare worker strikes, holidays, and bed capacity [8].

In France, most of the indicators used by regulatory authorities to finance the number of emergency physicians at a given ED are based on population level or on the institution's number of ED visits per year [9]. This assessment often results in a mismatch between perceived needs and actual needs and can result in overcrowding [10]. Other essential external factors exacerbating the problem include nonurgent visits, medical nomadism, epidemics, and shortages of hospital beds [11]. These factors in combination have resulted in overworked caregivers and crowded conditions for ED patients [12,13]. Our questionnaire may assist ED directors in considering daily needs and assessing the potential impact of newly implemented strategies to combat overcrowding.

Table 1 Indicators with consensus

- Average number of ED visits per year
- Percentage of patients admitted to an ICU
- Percentage of patients over 75 years old
- Percentage of patients hospitalized or transferred
- Average length of stay in the ED
- Average length of stay in a CDU
- Number of patients waiting for a bed at 8 a.m.
- Average of visits per week
- Percentage of patients admitted to the CDU
- Percentage of patients left without being seen
- Percentage of patients per triage acuity range (1–5)
- Filling rate for the monitoring unit
- Number of visits during daytime, evening, and overnight
- Percentage of patients for each ED area/zone
- Specific sectors (resuscitation area, bedded zone, and ambulatory zone, etc.)
- Upstream presence of an emergency service call center
- Existence of an on-duty general practitioner: on-duty medical center, on-call doctors, urgent care center, availability of nearby emergency departments, public or private systems
- ED call center medical advice
- Percentage undergoing blood tests
- Percentage undergoing radiology imaging studies
- Percentage of patients receiving point-of-care testing
- Number of establishments accepting transfers
- Availability of Emergency Medical Services (EMS) transport
- Active city-hospital system
- Physician shift duration
- Number of examination rooms
- Number of temporary workers
- Number of overtime periods
- Organization of rest periods
- Working hours
- Seasonality of staffing in the ED
- Number of practitioners needed versus actual number
- Time to nurse triage
- Time to nurse evaluation
- Time between admission and disposition (admit versus discharge)
- Average door-to-physician time
- Waiting time for test results (blood tests, imaging studies, etc.)
- Time between decision to disposition (admission versus discharge) and effective discharge
- Total length of stay
- Time for sub-specialty consultation (orthopedics, cardiology, etc.)

CDU, clinical decision unit; ED, emergency department; ICU, intensive care unit.

Additionally, these indicators may potentially be used to anticipate hospitalizations and unscheduled care needs and may serve as tools for predicting ED flow [14,15]. In addition to providing organizational value to ED directors and hospital administrators, these indicators may assist in setting expectations for ED providers and patients by being displayed in real-time in the ED and in waiting areas. Patients may potentially rely on data from these indicators to generate more precise estimates of waiting times.

Finally, the concept of a reliable list of indicators to guide decision-making to address ED overcrowding could be utilized elsewhere in Europe, in order to better understand the similarities and functioning of EDs throughout the continent and make improvements to their organizational structure. This important topic was discussed in Berlin by the European Society of Emergency Medicine (EUSEM) professional committee and is awaiting publication.

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Conflicts of interest

There are no conflicts of interest.

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