



KEY POINT SUMMARY

OBJECTIVES

This paper analyzes various ED design plans and interprets their effects in order to offer suggestions for improved ED designs.

DESIGN IMPLICATIONS

ED design planners should be wary of basing building size off of average annual patient attendance due to the inevitability of unpredictable surges.

Evaluation of factors and approaches affecting emergency department space planning

Pascale, F., Achour, N., DF Price, A., & Polverino, F. 2014 | *Facilities* Volume 32, Issue 13/14, Pages 761-785

Key Concepts/Context

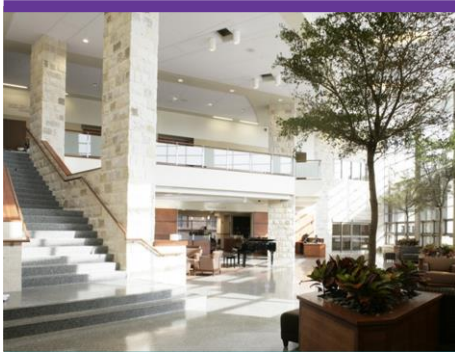
Increasing demand for care in emergency departments (EDs) is a widespread issue that has provoked the development of different processes to help reduce the struggles faced by healthcare providers. By investigating the different methods healthcare designers have implemented to reduce the costs and complications associated with ED overcrowding and inefficiency, more resilient designs may be realized in the future.

Methods

To gather information on different ED design plans, a mixed research methodology was used. The authors conducted a comprehensive literature review along with unstructured interviews featuring architects, ED staff, and healthcare managers, and also gathered data relating to ED annual attendance rates and floor area from 76 ED case studies (21 from Italy and 55 from the U.S.). The case studies were sourced from diverse areas across both countries, with a primary focus on EDs in medium-sized cities (10,000 to 100,000 inhabitants), and the data were supplemented by demographic information from the Italian National Institute of Statistics and the U.S. Census. All data were analyzed to assess the relationship between total ED floor area and city population, total floor area and average annual attendance, and total floor area and the size of aging and deprived populations in a given area.

Findings

Review of different international guidelines found that ED space planning has been generally based on the average amount of annual attendance. However, the number of patients seeking treatment from an ED often fluctuates unpredictably, leaving many EDs underprepared and inefficient during unexpected surges. Apart from



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attendance variability, the other factors that most affected ED performance were mass casualty events and vulnerable patient populations (e.g., children, the elderly, and deprived people). Analysis of the ED case studies from Italy and the U.S. found that U.S. EDs were, on average, better prepared to meet with sudden increases in demand because they were designed according to operational approaches.

Limitations

This study draws most of its conclusions and theories from a literature review; accordingly, no original empirical or quantitative data were gathered. Despite the analysis of numerous international guidelines, much of the study’s conclusions were derived from case studies focusing on Italy and the U.S., which is a relatively limited scope.

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