Do ED and hospital crowding affect admissions from the ED?

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Background
Crowding in the emergency department (ED) and in hospital wards is an increasing problem in Sweden. Despite this, there is no standardized Swedish definition of crowding. Crowding, including holding/boarding, is known to threaten patient safety and quality of care. It is unknown if crowding also affects ED physicians’ decision-making.

Method
This retrospective study at Skåne University Hospital in Lund included 17,245 patients presenting to the ED’s internal medicine and neurology sections from Jan 1 to Aug 31, 2009. Using linear regression analysis, we assessed the correlation between various crowding factors and the admission rate, i.e. admissions to inpatient care per ED patient.

Results
There was no correlation between the admission rate from the ED and the inflow of patients to the ED ($r = 0.124$; Fig. 1) or the daily number of external patients (i.e. patients admitted to wards other than planned due to lack of hospital beds) ($r = 0.063$; Fig. 2). Despite a weak positive correlation between the hourly number of patients present in the ED and the number of admissions ($r = 0.480$), there was no correlation between the hourly number of patients in the ED and the admission rate ($r = 0.129$; Fig. 3).

Conclusion
ED physicians’ decisions to admit patients to in-hospital care did not seem to be affected by ED or hospital crowding. However, since crowding threatens patient safety and quality of care, a standardized definition of crowding is important. We propose the development of a Swedish crowding tool that calculates the degree of crowding and suggests measures to be taken.