

# Administration of Emergency Medicine



## HALLWAY PATIENTS REDUCE OVERALL EMERGENCY DEPARTMENT SATISFACTION

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**Abstract—Background:** Patient satisfaction impacts emergency medicine in multiple ways, including patient–physician rapport, patient compliance with medical recommendations, and individual physician and hospital reimbursement issues. **Objective:** The objective of this study was to assess the differences, if any, in satisfaction scores among patients treated in regular treatment rooms vs. those treated in hallway treatment areas. **Methods:** A cross-sectional survey study of conveniently sampled participants from both regular treatment rooms and hallway treatment areas in an urban, adult community teaching emergency department (ED) was performed confidentially, measuring overall satisfaction, as well as satisfaction with regard to treatment location only, medical care only, and their willingness to return to or recommend the ED in the future based on their experience. Each of these four outcomes was measured on a 100-mm visual analog scale. **Results:** Overall satisfaction scores were 8 mm lower for those patients treated in hallway treatment areas, and there was a 20-mm difference with regard to location only. After controlling for apparent baseline differences between the groups, a 7.6-mm difference for overall satisfaction remained. **Conclusions:** Despite differences between patients placed in regular treatment rooms vs. hallway treatment areas,

overall satisfaction levels are lower for those patients treated in hallway treatment areas. This difference is likely attributable primarily to their hallway location, and stakeholders should therefore take appropriate steps to address such discrepancies. © 2015 Elsevier Inc.

**Keywords—**satisfaction; crowding; hallways; ED administration

### INTRODUCTION

Emergency department (ED) crowding is a national problem affecting patient care issues, including waiting time and length of stay (1,2). These issues can impact patient satisfaction, which is an important part of emergency care. Many hospitals attempt to address the crowding problem by using hallway (HW) space as additional treatment areas. To date, there are no studies that compare satisfaction of patients treated in the HW with the satisfaction of those treated in regular designated treatment rooms (TRs).

#### Importance

Patients experience longer wait times when the ED is crowded, which often leads to lower satisfaction scores (3,4). Patients who are more satisfied with their care are less likely to leave the ED without being seen, more likely to communicate effectively with their physicians,

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Institutional Review Board approval was obtained before initiation of research.

and tend to comply better with prescribed treatment regimens (5). Decreasing ED waiting times is thought to improve patient satisfaction (6,7). In addition, satisfaction affects the business (Press-Ganey) aspects of medicine because more satisfied patients are more likely to use the same ED again or recommend the ED to others (8).

### *Goals of This Investigation*

Our primary goal was to estimate the effect of using HW beds on patient satisfaction by comparing the overall satisfaction of patients treated in HWs with the overall satisfaction of those treated in TRs during their ED visit. Additional goals are to compare satisfaction specific to the medical care they received, the treatment location in which they received their care, and willingness to return to the ED for future emergency care and to recommend the ED to others.

## METHODS

### *Study Design and Setting*

We performed an Institutional Review Board–approved cross-sectional cohort study in which patients completed a confidential, self-administered survey regarding their satisfaction (Appendix). The study occurred at Summa Akron City Hospital in Akron, Ohio. The ED provides care for approximately 77,000 annual adult visits and is considered an urban community teaching ED. The ED had 45 regular TRs and approximately 5 to 7 potential HW treatment areas.

### *Selection of Participants*

All patients who presented during peak ED volume hours (12:00 PM–10:00 PM; when research assistants were available) were eligible to participate. HW and TR patients were recruited concurrently and were cared for by the same ED staff. Patients who participated were verified by research assistants to have spent their entire ED visit in their respective location (either HW or TR). Recruitment for the required sample size took 8 weeks.

### *Methods*

The research assistants distributed and collected the statement of research and surveys from all patients, and answered questions that participants asked about the study or survey questions as close to the end of their ED stay as possible. The patient's age, race, sex, insurance status, and Emergency Severity Index (ESI) were noted on the survey before giving the survey to the patient. The survey asked patients to mark their satisfaction on a 100-mm visual analog scale (VAS), where a higher value represents greater satis-

faction. There were separate scales for overall satisfaction, satisfaction with medical care only, and satisfaction with treatment location only. Additionally, patients were asked to rate their willingness to return to (or recommend to others) the ED and the hospital for future emergency care needs on a similar 100-mm VAS.

Participants placed their completed surveys into sealed envelopes. The treating emergency physicians and nurses were not involved in data collection and did not have access to the survey results. Subjects were not compensated for participating and were not penalized for declining to participate; they were given a statement of research before participating. People unwilling to complete the survey, with severe psychiatric illness, alcohol/drug intoxication, or a language barrier were excluded.

### *Outcomes*

The primary outcome for the study is the overall satisfaction score of ED patients treated in HW vs. TR. Secondary outcomes were satisfaction scores specific to medical care received, the location in which they received their care, and their willingness to return to the ED for future emergency care needs.

### *Analysis*

Data were entered into a Microsoft Access® database (Microsoft, Redmond, WA) and analyzed using STATA® statistical software package (StataCorp LP, College Station, TX). Study subject characteristics for the dichotomous groups are reported as means and proportions with 95% confidence intervals (CIs). Comparisons between HW and TR subject satisfaction scores were analyzed using differences in between-group mean satisfaction scores with 95% CI. A 95% CI excluding 0 was considered significant. Linear regression was used to control for potential confounders including age, race, sex, ESI score, and insurance status for evaluating the primary outcome of the difference in overall satisfaction scores between HW and TR. In a preliminary study, the satisfaction of HW patients on a 100-mm VAS was 52.77, with a standard deviation of 29.29. One hundred and thirty-five patients per group were required to detect the minimum clinically important difference of approximately 7% (7 mm), with a similar standard deviation, an  $\alpha$  of 0.05, and a power of 0.80 (9).

## RESULTS

### *Characteristics of Study Subjects*

We enrolled 270 patients (135 in each group); 42% were male. Overall mean age was 46.3 years, ranging from 18

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