Is Outpatient Emergency Department Care Profitable? Hourly Contribution Margins by Insurance for Patients Discharged From an Emergency Department

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Study objective: We determine the contribution margin per hour (ie, profit) by facility evaluation and management (E&M) billing level and insurance type for patients treated and discharged from an urban, academic emergency department (ED).

Methods: Billing and demographic data for patients treated and discharged from an ED with greater than 100,000 annual visits between 2003 and 2009 were collected from hospital databases. The primary outcome was contribution margin per patient per hour. Contribution margin by insurance type (excluding self-pay) was determined at the patient level by subtracting direct clinical costs from contractual revenue. Hospital overhead and physician expenses and revenue were not included.

Results: In 523,882 outpatient ED encounters, contribution margin per hour increased with increasingly higher facility billing level for patients with commercial insurance ($70 for E&M level 1 to $177 at E&M level 5) but decreased for patients with Medicare ($44 for E&M level 1 to $29 at E&M level 5) and Medicaid ($73 for E&M level 1 to −$16 at E&M level 5). During the study years, cost, charge, revenue, and length of stay increased for each billing level.

Conclusion: In our hospital, contribution margin per hour in ED outpatient encounters varied significantly by insurance type and billing level; commercially insured patients were most profitable and Medicaid patients were least profitable. Contribution margin per hour for patients commercially insured increased with higher billing levels. In contrast, for Medicare and Medicaid patients, contribution margin per hour decreased with higher billing levels, indicating that publicly insured ED outpatients with higher acuity (billing level) are less profitable than similar, commercially insured patients. [Ann Emerg Med. 2014;63:404-411.]

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INTRODUCTION

Background

The cost and profitability of emergency care in the United States are complex and often misunderstood. Emergency departments (EDs) serve many functions because ED patient acuity varies. On one end, an ED needs to treat lower-acuity illnesses and provide "safety net" care to the uninsured. On the other end, an ED provides resource-intensive care for potentially life-threatening complaints and can manage the critically ill for the first few hours before hospital admission.[1,2] The economics of these functions also varies, depending on whether patients are discharged or admitted to the hospital. Hospitals benefit considerably from ED-based admissions in which facility fees (ie, the hospital part of the bill) for emergency care are typically bundled into a flat fee paid to the hospital for the admission, and emergency physicians charge separate fees.

Studies comparing the profitability of ED admissions to non-ED admissions have had varied results. In an urban hospital, ED admissions were more profitable per hospital day than non-ED admissions for patients with commercial and Medicaid insurance and less profitable for Medicare patients.[3] In an inner-city hospital, non-ED admissions generated more revenue per hospital day than ED admissions,[4] whereas in a national sample of Medicare inpatients, non-ED admissions were more profitable than ED admissions.[5]

The larger question that some hospitals often ask is whether EDs are profitable units or serve as loss leaders. Because of the complex economics of admissions, this is hard to directly assess because of the way facility fees are accrued and because the counterfactual (ie, closing the ED) is often not directly considered or a feasible option. However, the profitability of fee-for-service treat-and-release patients in isolation is a more directly answerable question because the facility fee that is charged for emergency care delivery is attributed to the ED

Editor's Capsule Summary

What is already known on this topic

Remuneration for emergency department (ED) care varies considerably from insurer to insurer.

What question this study addressed

How does profit for ED care of patients discharged from the ED vary by evaluation and management (E&M) codes (1 to 5) and insurance type?

What this study adds to our knowledge

In this single-site, 7-year, administrative record search, commercially insured patients generated mean profits that increased as billing level increased ($70 to $177). For patients with governmental insurance, profits declined as billing level increased, with Medicaid ED patients producing a net loss for E&M code 5 (–$16).

How this is relevant to clinical practice

This study demonstrates paradoxic effects of current billing and payment structures.

itself and not to any downstream department. This is important from a hospital's perspective because it can signal whether to promote the use of its ED for its outpatient function. Many EDs in the United States directly advertise their wait times to attract patients, though they are not always accurate.[6,7] Other hospitals, however, have used business tactics to intentionally marginalize their EDs.[8,9] This suggests that whether an ED is profitable likely depends on local factors, such as contractual arrangements with insurers, actual insurance mix, and case mix. Moreover, no studies to our knowledge have directly reported data on the profitability (ie, contribution margins) for ED outpatients, which is a serious gap in the literature.

Goals of This Investigation

We calculated 3 financial variables: contracted revenues, contribution margins (revenue minus direct cost), and contribution margin per hour for patients treated and released from a single, urban teaching ED during a 7-year period. We stratified these variables by insurance status, billing level, trends over time, and grouped diagnoses, measured with Healthcare Cost and Utilization Project Clinical Classifications Software.[10] Our intent was to present detailed original data from one ED over time to help elucidate the economics of outpatient ED care.

MATERIALS AND METHODS

Billing and demographic data for patients treated and released from an urban, academic ED with greater than 100,000 annual visits between October 1, 2002, and September 30, 2009, were collected from ED and hospital databases. These points were chosen so we could present our data by fiscal year, which was October 1 through September 30. The analysis was at the encounter rather than patient level because repeated patient visits were analyzed as "new" patients. Patients who left without being seen and those who were admitted were not included in the study; patients who were transferred or died in the ED were included as they were "released" from the ED. Patient visits were also excluded if they had no listed billing level or key data elements were missing or were obvious errors (ie, negative or zero costs, missing time of bed placement or discharge, missing length of stay, zero or less than 5 minutes). The institution's review board approved this study.

Table 1. Included and excluded costs and revenue.

	Excluded Costs and Revenue	
Included Costs	**Overhead**	**Other**
ED staff salaries and benefits (nurses, technicians, orderlies)	Hospital administration	Physician salaries, benefits, and revenue
ED clinical equipment and supplies	Information services	ED expenses for admitted patients*
ED pharmacy/drugs	Hospital malpractice	Physician malpractice
ED respiratory therapy	Nutrition services	Resident salary and benefits
ED equipment depreciation	Financial services	IME and DME revenue
ED laboratory/diagnostic imaging	Facility depreciation	Other teaching expenses
ED nursing administration	Engineering/ maintenance	Research-related costs
ED expenses for discharged patients	Power/water/utilities	Research grants
	ED/hospital security	Medical library

IME, Indirect medical expenses; *DME*, direct medical expenses.
*ED expenses for admitted patients include all supplies, pharmacy, and staff time for patients admitted with inpatient or observation status.

Contribution margin per case was determined at the encounter level by subtracting direct clinical costs from contractual revenue. Contribution margin was then divided by the time from bed placement to ED discharge to get the contribution margin per hour. This was our main outcome variable because profitability of an ED is based not only on the revenue generated from the patient's insurance minus the cost of their care but also on the length of time the patient was in the ED bed. In other words, in an ED that operates at high-capacity use (ie, is usually full), the longer the average patient spends in an ED bed, the fewer patients can be treated by that ED and, hence, the less the total revenue.[4,11]

Included and excluded costs are listed in Table 1. ED staff costs include the salaries and benefits for all full-time, part-time, and temporary ED nurses, clerks, medical assistants, and orderlies. ED clinical equipment and supply costs included all billable and nonbillable supplies and all equipment depreciation. ED pharmacy and drug costs included all billable and nonbillable medications used in the ED. All costs were allocated to each patient according to relative value cost accounting.[12] Each cost