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ED, Heal Thyself

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Abstract

Emergency department (ED) wait times have continued to worsen despite receiving considerable attention for more than 2 decades and despite the availability of a variety of methods to restructure care in a more streamlined fashion. This article offers an economic framework that abstracts away from the details of operations research to understand the fundamental disincentives to improving wait times. Hospitals that reduce wait times are financially penalized if they must provide more uncompensated care as a result. Pending changes under the Patient Protection and Affordable Care Act are considered. We find that the likely effect of the Patient Protection and Affordable Care Act's insurance expansion is to reduce this penalty for improving ED wait times. Consequently, mandating adoption of solutions to ED crowding may be unnecessary and counterproductive. If the insurance expansion is insufficient to fully solve the problem, the hospital value-based purchasing initiative should adopt wait times as a goal in its next iteration.

ED, heal thyself

Nora V. Becker and Ari B. Friedman

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Americans spent 13,000 years waiting to be seen in Emergency Departments (ED) in 2009, and ED crowding is only getting worse.ⁱ The Affordable Care Act's (ACA) provisions for increased care coordination, insurance coverage, and primary care rate increases have been cited as factors which may reduce crowding by shifting outpatient care to primary care providers. Concern has emerged about whether primary care workforce supply will be sufficient to serve these new customers.ⁱⁱ However, viewing these concerns in an economic framework implies that EDs may respond to newly-profitable patients by increasing capacity themselves.

A sizeable amount of high-quality operations research has described the causes of and solutions for crowding in minute detail.^{iii,iv,v,vi} In contrast, an economic framework seeks to abstract away from the details to understand the fundamental incentives that shift the behavior of organizations. In other words, operations research shows that if EDs want to, they have the tools to reduce wait times. The economic perspective allows us to see whether they will have the desire to actually do so.

When considering ED crowding, it's important to realize that it's determined by two factors: demand and supply. The final result--whether EDs are crowded or not--is a result of both whether people want to show up (demand) and

whether the hospital wants to care for them when they do (supply). In this framework, ED crowding is simply the result of too little supply relative to demand at the prevailing price. Long wait times are thus the symptoms of this underlying mismatch.

We will consider these two aspects separately, and restrict our discussion to "outpatient ED care," or ED visits that do not result in an admission, since this is the type of care that could possibly be shifted away from EDs under the ACA.^{vii}

In a classic market, price can change in response to changes in demand. If demand increases, price goes up a little bit, and suppliers respond by increasing capacity. Consider a nail salon. If the salon gets crowded, in the short term there may be a wait. But within a few months, the salon will either raise their price, or hire more employees. Even though it may cost more to serve one more customer, the increase in price covers those extra costs. If the salon doesn't expand, another salon will open next door to compete for those customers.

In the market for emergency services, the Emergency Medical Treatment and Labor Act (EMTALA) mandates that no patient be turned away. EMTALA means EDs can raise their price, but they can't turn away patients who can't pay. Consequently, if the hospital expects that the next patient to arrive will be uninsured, the hospital will never spend money to increase capacity, nor will there be any incentive for a competitor to open nearby.

Figure 1 demonstrates that this has been the *status quo* for emergency departments: ever-increasing demand without a large increase in supply, resulting in increasing wait times. Panel A shows that the quantity of ED care

demanded by patients has been increasing consistently. Panel B shows that, in the same time period, EDs have responded not by adding capacity but by removing it. Panel C shows the inevitable result: wait times for care have increased. Thus when considering the impact of the ACA on ED crowding, we care about how the ACA will change the profitability of the least profitable patients.

By insuring 28 million Americans,^{viii} the ACA will increase the per-patient profitability of the currently-uninsured—especially for the 2/3 of the newly-insured who gain private coverage^{ix} and for states with higher Medicaid reimbursement. Consequently, the next patient to walk in a hospital's door will be much less likely to be uninsured. This erases the price distortion created by EMTALA for these patients.

The ACA is also likely to change the number of patients seeking ED care. Whether ED visits will increase or decrease is difficult to predict. On the one hand, insurance tends to increase the total amount of medical services consumed. On the other, newly insured patients will see the out-of-pocket cost of a primary care visit drop more than that of an ED visit, and thus some patients will substitute primary care for ED visits. Which of these effects prevails will not be clear until data from 2014 arrives, although early results from Massachusetts suggest that non-urgent ED visits may decline.^x

This demand effect has been the subject of the majority of discussion predicting the impact of the ACA on ED crowding. But the effect of the change in per-patient profitability and its implications for ED behavior has not been given the same attention.

In classical markets like nail salons, if demand for services declines, economic theory suggests that supply will also decline. However, in this case, the concurrent increase in per-patient profitability could instead result in the opposite: EDs improving services to win back patients from primary care. Consider the plight of an Illinois hospital administrator faced with an 8% decline in ED volume but a simultaneous drop in the proportion of uninsured ED visits from 15% to 3%. Precisely for the reasons outlined above, that administrator will seek to increase physical capacity, staffing, managerial effort, friendliness, and amenities to compete on quality as a form of increasing supply. Furthermore, the incentive to compete will be strongest in the EDs that are currently the most crowded.

Although it has been taken as a given that EDs are “inappropriate” places for care that could be provided in primary care offices, some patients may actually prefer ED care for some conditions.^{xi} Given the difficulty of finding primary care appointments, patients may value the ability to get unscheduled care in EDs. And for intermediate-severity conditions, patients may find the definitive management capabilities of EDs to be reassuring. Hence EDs may actually have advantages in competing with primary care, should they choose to do so.

When the ACA changes the per-patient profitability of ED patients, they may soon make precisely that choice. The health services literature has put forth a variety of solutions to ED crowding, but the root cause -- a lack of hospital incentives to fix the problem -- has persisted. By expanding insurance, the ACA reduces the distorted incentives that result from the double-whammy of EMTALA and high uninsurance. If necessary, HHS can provide a boost to these natural incentives to reduce wait times by including wait times as a goal in its hospital value-based purchasing mechanism.

The increase in per-patient profitability will make crowded EDs expand capacity. This expansion might take many years to come to fruition because training more providers and building new physical space takes time. And the response may vary by ownership type; public and community hospitals may lack the flexibility or capital to make these investments, while for-profit or large urban hospitals may be able to more quickly change their ED operating procedures. In the short-term, hospitals that are able could reorganize their workflow to no longer disfavor ED admissions,^{xii} open more and larger fast track units, board patients in inpatient areas, and coordinate inpatient discharges before noon.^{xiii} However, caution must be taken in predicting the final impact this could have on the cost of care. Treatment in EDs for care that could be provided in an outpatient setting costs more; if EDs begin to increase capacity, this could also lead to an increase in costs. Whether or not this change in ED behavior will ultimately be harmful or beneficial to society as a whole is still unknown.

Given that pending changes will reduce ED crowding naturally, policymakers should be cautious about introducing additional regulation. The consensus view that mandating particular solutions or driving patients away from the ED is the only way to “fix” crowding may no longer be appropriate once hospitals choose to compete for them.

Figure 1: Panel A - ED volumes over time (Horwitz and Bradley 2009 plus authors' calculations). Panel B - Number of emergency departments over time (Hsia JAMA 2011). Panel C - ED wait times over time (Horwitz and Bradley 2009 plus authors' calculations).

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