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Perspective

Massachusetts' Health Care Reform and Emergency Department Utilization

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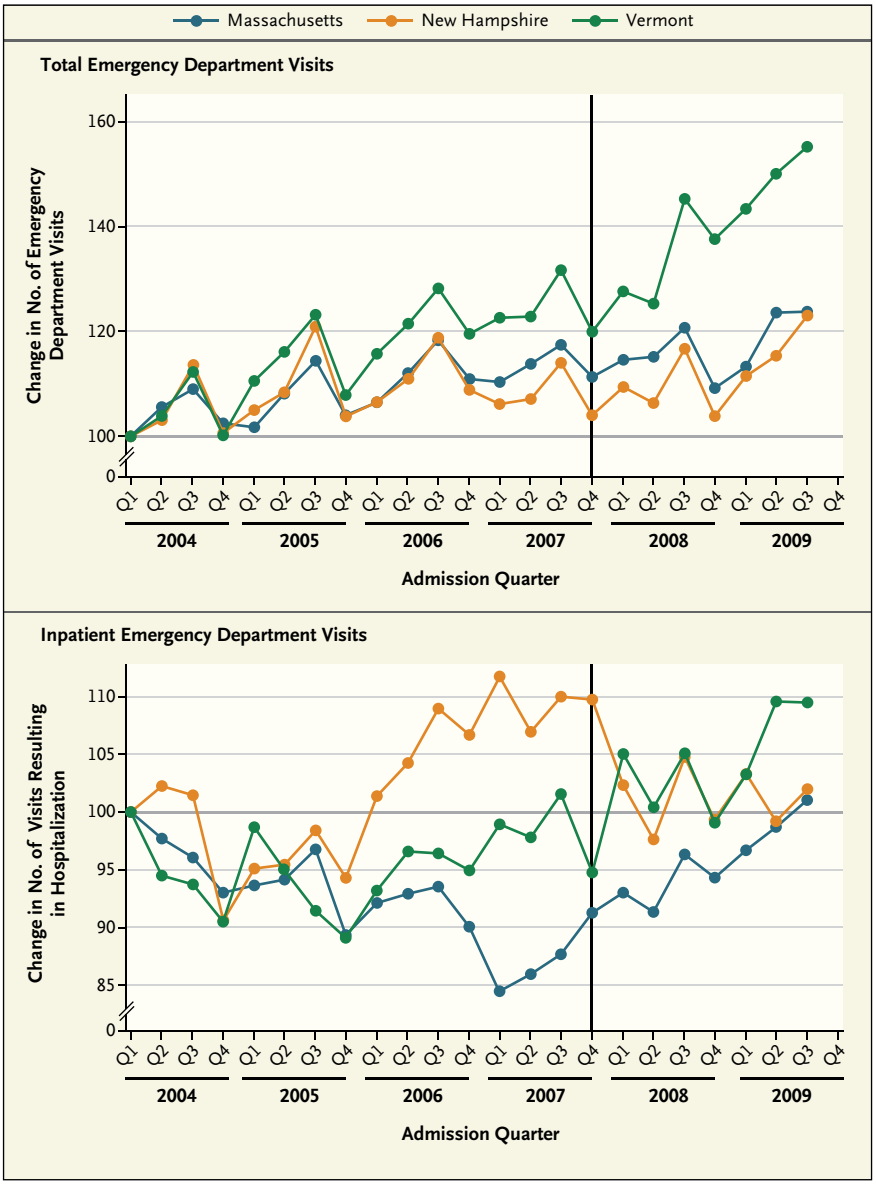
Does an expansion of health insurance increase or decrease use of the emergency department (ED)? Both predictions can be justified logically. On the one hand, research on patient cost sharing predicts that by reducing the out-of-pocket costs of an ED visit, expanded insurance coverage, especially in the face of physician shortages, could result in increased ED utilization.[1] This view has been echoed by elected leaders: Senator Jon Kyl (R-AZ), citing the Massachusetts experience with health care reform, claimed that if anything, universal coverage brought even higher rates of emergency room visits due to increased difficulty in getting appointments for outpatient physician visits.[2] Others have predicted that expanded coverage would actually reduce ED use, since previously uninsured patients would now have access to preventive care. The relative importance of these countervailing forces is a question that clearly weighs on physicians: in a survey of emergency physicians conducted in April 2010, about 71% said they expected emergency visits to increase after the passage of the Affordable Care Act (ACA).[3]

To explore the importance of these effects, we examined the Massachusetts experience. The state's 2006 health care reform was a model for the ACA and reduced the proportion of Massachusetts adults under the age of 65 who were uninsured by 7.7 percentage points between the fall of 2006 and the fall of 2009.[4] To determine whether any changes in ED utilization in Massachusetts reflected the effect of Massachusetts' reform or were merely representative of broader regional trends in ED utilization, we used New Hampshire and Vermont as control states.

ED visits are of two types: those that result in a patient's admission to the hospital ("inpatient visits") and those that do not ("outpatient visits"). We obtained data on both types of visits from each state. We examined the number of quarterly ED visits before and after the implementation of two key waves of the Massachusetts reform law. In the first major wave, Commonwealth Care, a new set of state-subsidized private insurance plans, opened for enrollment in October 2006 (initially to people with incomes below 100% of the federal poverty level and later including those with incomes up to 300% of the federal poverty level). Within a year, em-



Growth in All ED Visits (Top) and in ED Visits Resulting in Hospital Admission (Inpatient Visits, Bottom).

Data were indexed to a value of 100 for January 2004. Patients 65 years of age or older were excluded. In 2004, Massachusetts had a total of 2,197,915 ED visits, New Hampshire had 497,298, and Vermont had 102,775; the numbers of inpatient ED visits were 168,784, 25,871, and 10,009, respectively. The vertical line indicates the start of full reform.

ployers with 11 or more full-time employees were required to make a "fair and reasonable" contribution toward an employee health care plan or pay a per-employee assessment. In the second wave, adults in Massachusetts were required to have health insurance or else face full financial penalties beginning in January 2008.[5] Given these dates, we defined three study periods: the pre-reform period was that before October 2006, the period during reform was October 2006 through December 2007, and the post-reform period began in January 2008.

The graphs show the numbers of quarterly ED visits, both overall and inpatient only. We excluded patients 65 years of age or older because they were eligible for Medicare and so did not have a change in insurance coverage. The number of monthly ED visits in each state is indexed to a value of 100 for January 2004 (the first month of the study period).

The data on combined inpatient and outpatient ED use (top graph) suggest that the Massachusetts reform did not change the state's trend in total ED utilization relative to that in states where no such reform was enacted. The continuous upward trend in ED utilization throughout the three periods is remarkably consistent from state to state; if we didn't know which state had implemented the reform law, we could not guess on the basis of these data. Although the majority of ED visits are outpatient visits, inpatient ED visits account for a large fraction of total ED costs (approximately 65% in our data set). To clarify the trends in such visits, we show in the bottom graph inpatient visits only. Here, too, we find no evidence that the Massachusetts reform significantly increased hospitalizations from the ED relative to those in other states that did not pass reforms. We also examined ED use in safety-net hospitals, which were disproportionately affected by the insurance expansion, but did not find evidence that ED utilization in these hospitals was different from that in similar hospitals in other states. In summary, ED use increased in Massachusetts after reform but also increased by similar amounts in New Hampshire

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and Vermont, states that did not implement insurance expansions.

On the basis of these findings, we conclude that Massachusetts' health care reform law has thus far neither increased nor decreased ED utilization relative to that in other states. The similarity among states is to be expected if the level of ED visits is dominated by broader trends in population health, such as health status or accidents that are not affected by a health insurance expansion. Alternatively, it is possible that this null result arises from two equal forces pushing in opposite directions — that the Massachusetts insurance expansion increased prevention, thereby reducing ED use, but that this effect has been offset by the reduced out-of-pocket cost of using the ED or difficulties in finding primary care physicians.

Our findings underscore the problem with evaluating policies by looking only at single trends and not examining simultaneous countervailing trends or comparable trends that cannot be attributed to the policies in question. The opportunities to repeat this mistake will be even greater when it comes to evaluating the ACA, since it will be hard to find appropriate controls, and rigorous evaluations will have to rely on variation in reform efforts related to differences in timing or state-level variation in the strength of implementation. This may seem like an obvious message, but its validity was ignored by those who concluded that Massachusetts reform caused an increase in ED use simply because ED use was higher after reform.

More relevant for physicians is whether the experience of Massachusetts can be used to make predictions about the effect of the ACA on ED utilization. The ACA has many of the same design features as the Massachusetts reform. The decrease in the rate of uninsured adults under the age of 65 in Massachusetts after the reform law was 7.7 percentage points. Nationally, the ACA is expected to reduce the rate by much more. The extent to which the Massachusetts experience predicts what will happen to ED visits nationally will depend primarily on how vigorously states implement the ACA, particularly the state insurance exchanges, as well as how well they cover preventive care. But the similarity between key provisions of the Massachusetts law and those of the ACA suggests that the growth rate for total and inpatient ED visits may not change significantly. At least for now, physicians' and lawmakers' fears that the ACA will increase ED visits may be unfounded.

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1. Newhouse JP, Insurance Experiment Group. Free for all? Lessons from the RAND Health Insurance Experiment. Cambridge, MA: Harvard University Press, 1993.

2. Statement by Senator Jon Kyl (R-AZ) to Congress, March 15, 2010. Congressional Record. (http://www.gpo.gov/fdsys/pkg/CREC-2010-03-15/pdf/CREC-2010-03-15-pt1-PgS1490-3.pdf.)

3. More than two-thirds of emergency physicians expect ER visits to increase despite national health care reform. Press release of the American College of Emergency Physicians, May 17, 2010. (http://www.acep.org/pressroom.aspx?id=48442.)

4. Long SK, Stockley K. Health reform in Massachusetts: an update as of fall 2009. Washington, DC: The Urban Institute, 2010. (http://bluecrossfoundation.org/~/media/Files/Publications/Policy%20Publications/060810MHRS2009FINAL.pdf.)

5. Chandra A, Gruber J, McKnight R. The importance of the individual mandate: evidence from Massachusetts. N Engl J Med 2011;364:293-5.