The authors thank Anne Farland, Takiyah Pierre, and Catherine Wu for excellent research assistance with this paper.
Section I. Introduction

Purpose

The topic of this working paper, *Costs and Benefits of EMTALA*, is part of a comprehensive study of the costs and benefits of health services regulation conducted at Duke University under contract to the Agency for Healthcare Research and Quality (AHRQ) with funding from the Assistant Secretary of Planning and Evaluation, Disability, Office of Disability, Aging, and Long-Term-Care Policy (DALTCP), is DALTCP requested the working paper for use in better understanding the overall impact of health services regulation in the U.S.

Background

Rationale

Starting in the 1960’s, many states chose to enact laws requiring hospitals to provide emergency care regardless of ability to pay (Jones 1994). But in the face of rising numbers of uninsured, growing concern about whether for-profit hospitals were creating an un-level playing field (IOM 1986), and growing anecdotal evidence of “patient dumping,” Congress decided to take action in 1986.

Statutory Authority

1986: The *Emergency Medical Treatment and Active Labor Act* (EMTALA)—also known as the “anti-dumping law”—was enacted as part of the Consolidated Omnibus Budget Reconciliation Act of 1985 (P.L. 99-272). These requirements are contained in sections 1866(a)(1)(I) and 1867 of the Social Security Act (42 U.S.C. 1385cc and 42 U.S.C. 1395dd).

1994: The first EMTALA regulations are issued (42 C.F.R. Sec. 489.20 and Sec. 489.24).

1998: In response to considerable controversy over how to properly interpret its provisions, CMS (now HCFA) issues interpretive guidelines.

1999: The OIG and CMS issue a special advisory bulletin giving guidance to hospitals regarding their obligations under EMTALA.

2002: Changes in regulations are proposed, May 9, 2002 (67 FR 31469-31479).

2003: CMS issued a final rule clarifying hospital responsibilities under EMTALA (68 FR 53221-53264).

Key Elements

EMTALA imposes three obligations on Medicare-participating hospitals whenever a patient comes to an emergency department, hospital outpatient department (clinics, primary care centers, diagnostic facilities and urgent care facilities) or is transported in an

---

1 Note that the Omnibus Budget Reconciliation Act of 1989 deleted the word “active” from the title of EMTALA (GAO June 2001).

2 An excellent overview of EMTALA is at ACEP (2000).
ambulance. First, hospitals must provide a medical screening exam to determine whether an emergency medical condition exists. Second, the facility must provide treatment for patients with such conditions until they are stabilized without any delay from queries about ability-to-payment or insurance status. Third, if the hospital cannot stabilize the patient, it must provide appropriate transfer. Transfers without stabilization are not permitted unless:

- Transfer is appropriate (the transferring hospital must provide whatever care it can, minimize transfer risks and transfer only to a receiving facility that has agreed to the transfer and has the space and qualified personnel to handle it);
- The patient must make the transfer request in writing after being informed of the hospital’s EMTALA obligations and any risks of transfer;
- A physician must certify the medical benefits of transfer exceed the risks.

EMTALA imposes obligations on all facilities such as maintaining records of patients transferred to and from the hospital and maintaining a list of on-call physicians. It also obligates hospitals with specialized facilities such as burn units or neonatal intensive care units to accept transfers if they have the capacity to treat them.

**Scope**

EMTALA covers all hospitals participating in Medicare, nearly 4,900 short-term general hospitals nationwide.

**Enforcement**

CMS regional offices have responsibility for investigating EMTALA-related complaints and forwarding confirmed violations to the Office of Inspector General (OIG). OIG it may levy civil monetary penalties subject to a 2-year statute of limitations, as follows:

- Hospitals are subject to termination of their Medicare provider agreements;
- Hospitals may be fined up to $25,000 (if fewer than 100 beds) or $50,000 per violation;
- Hospitals may be sued by patients for personal injury in civil court;
- A receiving facility that has suffered a financial loss as a result of a hospital’s EMTALA violation may sue to recover damages;
- Physicians may be excluded from Medicare and Medicaid programs;
- Physicians may be fined up to $50,000.

**Research Questions**

This working paper covers two major topic areas framed within seven research questions, all of which are related to the impact of EMTALA in the U.S. Our primary goal was to identify, review, and evaluate the published literature to answer the research questions with the intent of developing an interim estimate of the costs and benefits of

---

3 Hospitals must screen and stabilize patients in hospital-owned or operated ambulances. A recent ruling by the Ninth U.S. Circuit Court of Appeals now applies EMTALA to non-hospital-owned ambulances, stating further that hospitals cannot turn away ambulances once radio contact is made unless they lack appropriate staff, facilities or equipment for treatment (Arrington v. Wong 237 F. 3d 1066, 9th Cir. January 22, 2001).
EMTALA; our secondary goal was to identify areas where no evidence exists or where the evidence has important limitations and then describe the type of data that would be needed to more fully address the question.

The questions are listed below by topic area, along with a brief description of our analytical approach, including outcomes of interest.

**Costs of EMTALA**

**Question 1a.** *What is the amount of government regulatory costs related to EMTALA?* This includes federal costs to monitor and enforce EMTALA rules.

**Question 1b.** *What is the amount of industry compliance costs related to EMTALA?* This includes all administrative costs and enforcement penalties borne by private, state or locally owned health facilities subject to EMTALA.

**Question 1c.** *What is the resource cost of uncompensated care induced by EMTALA?* Theoretically, EMTALA may impose an added cost on a particular facility, but it is not clear how much added cost it imposes on the health care system overall given that those benefited by it often may have gotten care somewhere in the system in any case. To the extent that EMTALA serves as an unfunded mandate, any incremental costs can be viewed as a transfer cost, i.e., should have an offsetting benefit.

**Question 1d.** *What is the impact and associated cost of EMTALA on the number of uninsured?* Skeptics of EMTALA have argued that by mandating the availability of coverage, EMTALA has stimulated reductions in insurance coverage resulting from increased awareness that hospitals cannot turn away emergency patients (imposing a cost equal to the social cost of being uninsured for each individual so persuaded).

**Question 1e.** *What is the impact and associated cost of EMTALA on use of the ER for non-emergency medical care?* Some have argued that EMTALA has increased use of ER for non-emergency conditions (imposing a cost equal to the resource cost difference between an ER visit and physician office visit).

**Question 1f.** *What is the impact and associated cost of EMTALA on use of the ER for non-emergency medical care?* Some have argued that EMTALA has led to reductions in physician willingness to provide on-call services to ER’s (imposing a cost equal to the consumer surplus related to any resultant reduction in services).

**Benefits of EMTALA**

**Question 2a.** *What is the value of uncompensated care induced by EMTALA?* EMTALA is intended to expand access to individuals who otherwise would lack access to emergency care, and in theory should reduce avoidable deaths and disabilities. Likewise, one might even postulate EMTALA as cost-reducing if on balance more speedily-delivered emergency care is less expensive than the avoidable downstream costs of delayed care.

**Limitations of Working Paper**

In requesting this research, DALTCP sought evidence from the medical and scientific literature to determine the magnitude of costs and benefits of EMTALA as part of a broader assessment of the impact of health services regulation. Seven specific questions were framed within two topic areas. The information compiled in this report may permit
policymakers to identify areas in which regulatory costs appear excessive relative to benefits. This working paper is not designed, however, to provide specific guidance on ways in which the objectives of EMTALA might be pursued more cost-effectively.
Section II. Methods

Literature Search and Review

Sources

Peer-Reviewed Literature

We performed electronic subject-based searches of the literature using the following databases:

- MEDLINE® (1975-June 30, 2004) and CINAHL® (1975-June 30, 2004) which together cover all the relevant clinical literature and leading health policy journals
- *Health Affairs*, the leading health policy journal, whose site permits full text searching of all issues from 1981-present
- ISI Web of Knowledge (1978-June 30, 2004) which includes the *Science Citation Expanded®, Social Sciences Citation Index®,* and *Arts & Humanities Citation Index™* covering all major social sciences journals
- Lexis-Nexis (1975-June 30, 2004) which covers all major law publications
- Public Affairs Information Service (PAIS), including PAIS International and PAIS Periodicals/Publishers (1975-June 30, 2004) which together index information on politics, public policy, social policy, and the social sciences in general. Covers journals, books, government publications, and directories.
- Books in Print (1975-June 30, 2004)

A professional librarian assisted in the development of our search strategy, customizing the searches for each research question. In cases where we already had identified a previous literature synthesis that included items known to be of relevance, we developed a list of search terms based on the subject headings from these articles and from the official indexing terms of MEDLINE and other databases being used. We performed multiple searches with combinations of these terms and evaluated the results of those searches for sensitivity and specificity with respect to each topic. We also performed searches on authors known or found to have published widely on a study topic. In addition to performing electronic database searches, we consulted experts in the field for further references. Finally, we reviewed the references cited by each article that was ultimately included in the synthesis. We did not hand search any journals. This review was limited to the English-language research literature. A complete listing of search terms and results is found in Appendix A.

“Fugitive” Literature

In some cases, relevant “fugitive” literature was cited, in which case we made every effort to track it down. We also performed systematic Web searches at the following sites:

- Health law/regulation Web sites
- Health industry trade organizations
- State agency trade organizations and research centers
• Major health care/health policy consulting firms
• Health policy research organizations
• Academic health policy centers
• Major health policy foundations

These searches varied by site. In cases where a complete publications listing was readily available, it was hand-searched. In other cases, we relied on the search function within the site itself to identify documents of potential relevance. Because of the volume of literature obtained through the peer-reviewed literature, including literature syntheses, we avoided material that simply summarized existing studies. Instead, we focused on retrieval of documents in which a new cost estimate was developed based on collection of primary data (e.g., surveys of state agencies) or secondary analysis of existing data (e.g., compilation of agency enforcement costs available from some other source). We excluded studies that did not report sufficient methodological detail to permit replication of their approach to cost estimation.

Inclusion Criteria

We developed the following inclusion criteria:

• Sample: wherever results from nationally representative samples were available, these were used in favor of case studies or more limited samples.
• Multiple Publications: whenever multiple results were reported from the same database or study, we selected those that were most recent and/or most methodologically sound.
• Outcomes: we selected only studies in which a measurable impact on costs was either directly reported or could be estimated from the reported outcomes in a reasonably straightforward fashion.
• Methods: we only selected studies in which sufficient methodological detail was reported to assess the quality of the estimate provided.

Where possible, we limited the review to studies using from 1975 through June 30, 2004 reasoning that any earlier estimates could not be credibly extrapolated to the present given the sizable changes in the health care industry during the past two decades. Other exclusions were as follows:

• Unless we had no other information for a particular category of costs or benefits, we excluded qualitative estimates of impact.
• Estimates of impacts derived from unadjusted comparisons were discarded whenever high quality multivariate results were available to control for differences between states or across time.
• Estimates that focused on measuring system-wide impact generally were selected over narrower estimates (e.g., per capita health spending vs. cost per inpatient day) on grounds that savings achieved in one sector may have induced higher spending elsewhere in the system; hence narrower comparisons might inadvertently lead to an inappropriate conclusion.
Section III. Results

Empirical Evidence

Few of these theoretical cost impacts have been expressly measured.

- **Government Regulatory Costs.** A recent GAO study found that from 1995-2000, on average, CMS investigated 400 hospitals annually, cited about half of them for EMTALA violations (GAO June 2001), but no cost figures for EMTALA enforcement were located.

- **Industry Compliance Costs: Administrative Costs.** We found no literature that summarized or estimated health industry compliance costs.

- **Industry Compliance Costs: Enforcement Penalties.** Of the cases referred by CMS for violations in 1995-2000, OIG imposed fines totaling $5.6 million on 194 hospitals and 19 physicians over the entire period; only 4 hospitals’ Medicare provider agreements have been terminated due to EMTALA and these all occurred more than 15 years ago (GAO June 2001).

- **Industry Compliance Costs: EMTALA-Related Hospital Uncompensated Care.** Although use of ER’s for non-emergency care is well documented (Billings et al. 2000; Baker et al. 1994; Grumbach et al. 1993; GAO January 1993), we found no studies that have formally estimated EMTALA’s contribution. A recent study documenting the growing problem of ER diversions reported that “in Phoenix, many downtown hospitals attributed increased provision of ER services primarily to greater focus on EMTALA compliance (Brewster, Rudell and Lesser 2001: 2), while another assessment of rising ER use concludes that in light of so many other contributing factors (e.g., growing uninsured), determining EMTALA’s share is difficult (GAO June 2001). EMTALA regulations were not issued until 1994 (42 CFR Sec. 489.20 and Sec. 489.24), but between 1994-2000, ER visits grew only 5 percent—the same as population growth—no “excess” growth can be attributed to EMTALA.

- **Industry Compliance Costs: EMTALA-Related Physician Uncompensated Care.** The American Medical Association estimated that in 2001, all physicians incur an average level of bad debt attributable to EMTALA equal to $4.2 billion, or $12,300 per physician (Kane 2003). Bad debts included only services for which payment was expected but not made (i.e., charity care and deductions from revenue due to Medicaid/Medicare were excluded).

- **Indirect Costs: Increased Number of Uninsured.** Epstein (1997) suggests EMTALA contributes to higher uninsured rates, but provides no empirical evidence regarding the magnitude of this effect. However, in other work, Rask and Rask (2000) have shown that the presence of hospital uncompensated care pools increases the fraction of the population that is uninsured by 20.4 percent among the poor, by 36.6 percent among those with low incomes and by 28.4 percent among middle income families.

- **Indirect Costs: External Costs of Being Uninsured.** Hadley and Holahan (2003) have estimated that the typical uninsured person generates $1,587 in annual health spending each year, of which slightly more than one third ($554) is uncompensated
care provided by hospitals, physicians or publicly-financed clinics and direct care programs.

- **Indirect Costs: Mortality Losses.** Using evidence from studies showing that being uninsured elevates mortality risk by 25 percent, the Institute of Medicine (2002) has calculated there were 18,314 excess deaths in 2000 attributable to lack of health insurance coverage.

- **Efficiency Losses from Tax Collection.** To account for the efficiency losses associated with raising taxes to pay for public administration, we multiply the latter times the marginal cost of income tax collections. This figure, 52.5% (30.9%, 184.5%), accounts for the costs of tax administration, tax compliance costs and efficiency losses (deadweight burden) associated with federal income taxes (see Table B-1 for how these costs are calculated).

- **Efficiency Losses from Regulatory Costs.** All industry compliance costs, including additional uncompensated care induced by pools are presumed to be roughly equivalent to an excise tax, i.e., raising prices and reducing demand/output correspondingly. We therefore multiply these costs times the marginal excess burden associated with income taxes, using 40% (23.0%, 162.9%) as the expected value of MEB (See Table B-1 for details of how MEB is calculated).

Likewise, hard empirical evidence regarding EMTALA’s benefits is sparse:

- A GAO study found the hospital and physician representatives thought that EMTALA had been beneficial in ensuring access and reduce patient dumping, but because there are no data on the incidence of patient dumping prior to EMTALA, the overall impact is difficult to measure (GAO 2001).

- An OIG survey of ER directors showed that 44 percent thought EMTALA had improved quality of care, chiefly through its patient protections, but 41 percent thought patient care was unaffected since they already had provided screening and stabilization services prior to its enactment (OIG 2001).

**Net Assessment**

In light of the available estimates, we have calculated the regulatory costs of EMTALA in the following fashion (minimum and maximum parameter estimates are shown in parentheses: full details of methods and sources are in Table C-1):

- **Government Regulatory Costs.** Absent hard DHHS annual budget allotments for EMTALA enforcement costs, we approximated by assuming $27,500 ($5,000, $50,000) per investigation, multiplying by the average number of investigations completed annually; we subtracted enforcement penalties from this total since this represents a shifting of costs from taxpayers to the health industry.

- **Industry Compliance Costs: Administrative Costs.** Absent hard information regarding hospital administrative costs in response to EMTALA compliance investigations, we assumed the ratio of hospital compliance costs to federal administrative costs to be 1:1.

- **Industry Compliance Costs: Enforcement Penalties.** We used the average annual amount of fines from 1995-2000 without further adjustment for inflation (note
above these were subtracted from Public Administration costs to avoid double-counting).

- **Industry Compliance Costs: EMTALA-Related Hospital Uncompensated Care.** Absent hard information, we estimated the ER share of total hospital uncompensated care was 13.7% (6.8%, 20.5%) and that the portion of this “induced” by EMTALA might be 6% (2%, 10%). This cost is a transfer to patients, so we include it both as a cost and benefit. But because it is free care, patients do not value it at its cost, so we adjust the figure downward using RAND Health Insurance Experiment estimates of the amount of “waste” involved in providing patients with free care as the basis for this adjustment.

- **Industry Compliance Costs: EMTALA-Related Physician Uncompensated Care.** We used the $4.2 billion figure reported by the AMA as our maximum on grounds that at least some of this would have been incurred regardless of EMTALA; the minimum was assumed to be 25% of this, with the expected value in between. Note that the Medicare fee schedule for emergency medicine physicians is adjusted upward assuming that 55 percent of their time treating patients is uncompensated (see 67 F.R. 79972 for discussion); thus at least a portion of this “uncompensated” care actually is borne by the public sector. Nevertheless, regardless of how it is financed, such care is a legitimate EMTALA-related cost, so we include it here. We use the previously-noted method to waste-adjust estimated benefits.

- **Indirect Costs: External Costs of Being Uninsured.** We roughly calculate the estimated increase in uninsured by assuming that EMTALA has an effect that is at least 1% as large as the effect proposed by Rask and Rask (2000), but no greater than 10% (averaging these extremes as an expected value). The estimated increase in the number uninsured is multiplied by the external cost of being uninsured. Note that while being uninsured is associated with higher rates of avoidable hospital use (IOM, 2002), the added costs associated with such care are already accounted for in the foregoing calculation. On the benefits side, we adjust this figure downward to account for waste.

- **Indirect Costs: Mortality Losses.** We calculate the expected increase in uninsured deaths by multiplying the added number of uninsured times the excess mortality ratio. These are then multiplied by the estimated willingness-to-pay value of an uninsured life using an expected value of $2.9 million ($1.1, $4.4); details are in Table F-2. This is based on the estimated willingness-to-pay to avoid mortality risk among the uninsured, taking into account their somewhat younger age and their lower average income.

- **Social Welfare Losses: Efficiency Losses from Tax Collection.** To account for the efficiency losses associated with raising taxes to pay for government regulatory costs, we multiply the latter times the marginal cost of income tax collections (see Table B-1 for how these costs are calculated).

- **Social Welfare Losses: Efficiency Losses from Regulatory Costs.** All industry compliance costs, including additional uncompensated care induced by pools are presumed to be roughly equivalent to an excise tax, i.e., raising prices and reducing demand/output correspondingly. We therefore multiply these costs times the
marginal excess burden associated with output taxes, using 21% (15%, 28%) as the expected value of MEB (see Table B-1 for details of how MEB is calculated).

All told, EMTALA results in expected costs of $4.4 billion ($1.3, $11.0) and expected benefits of $2.1 billion ($0.4, $4.9).

**Acronyms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMS</td>
<td>Centers for Medicare and Medicaid Services</td>
</tr>
<tr>
<td>HHS</td>
<td>Department of Health and Human Services</td>
</tr>
<tr>
<td>OIG</td>
<td>Office of Inspector General, HHS</td>
</tr>
<tr>
<td>RBRVS</td>
<td>Resource-Based Relative Value Scale (Medicare fee schedule)</td>
</tr>
<tr>
<td>HCFA</td>
<td>Health Care Financing Administration</td>
</tr>
</tbody>
</table>
Listing of Included Studies


45. Perkins, J. and Y. Vera. "Legal Protections


Listing of Excluded Studies

Key for Reasons for Exclusion

1. Studies with no original data
2. Studies with no outcomes of interest
3. Studies performed outside U.S.
4. Studies published in abstract form only
5. Case-report only
6. Unable to obtain the article


### Appendix A. Evidence Tables

#### Table F-1.1 Costs and Benefits of EMTALA (millions of 2004 dollars)

<table>
<thead>
<tr>
<th>Cost Category</th>
<th>Expected</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Expected</th>
<th>Benefits</th>
<th>Minimum</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government Regulatory Costs</td>
<td>0.55</td>
<td>0.28</td>
<td>1.10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Federal</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>State</td>
<td>0.55</td>
<td>0.28</td>
<td>1.10</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Industry Compliance Costs</td>
<td>763.7</td>
<td>-</td>
<td>1,566.8</td>
<td>528.4</td>
<td>-</td>
<td>1,084.0</td>
<td></td>
</tr>
<tr>
<td>Administration costs</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Pool-related uncompensated hospital care</td>
<td>763.7</td>
<td>-</td>
<td>1,566.8</td>
<td>528.4</td>
<td>-</td>
<td>1,084.0</td>
<td></td>
</tr>
<tr>
<td>Indirect Costs</td>
<td>6,914.2</td>
<td>598.3</td>
<td>-</td>
<td>1,570.8</td>
<td>229.6</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>External costs of higher number of uninsured</td>
<td>2,270.5</td>
<td>598.3</td>
<td>-</td>
<td>1,570.8</td>
<td>229.6</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Health Losses</td>
<td>4,634.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Morbidity losses</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Mortality losses</td>
<td>4,634.8</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Social Welfare Losses</td>
<td>635.2</td>
<td>88.0</td>
<td>439.2</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Efficiency losses from tax collection</td>
<td>0.3</td>
<td>0.1</td>
<td>2.0</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Efficiency losses from regulatory costs</td>
<td>634.9</td>
<td>87.9</td>
<td>437.1</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td><strong>GRAND TOTAL</strong></td>
<td>8,313.7</td>
<td>686.6</td>
<td>2,007.1</td>
<td>2,099.2</td>
<td>229.6</td>
<td>1,084.0</td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**

[A] Regulatory costs were assumed to be at least $50,000 each [P28] in the 11 states with pools.

[B] Compliance expenditures are equal to cost of uncompensated care in states with pools [P4] times the estimated share attributable to pools. This share is calculated as (1 - 1/(1+[P1])) where [P1] equals the estimated percent increase in uncompensated care in states with pools. These expenditures represent a transfer of free services to patients; however, the value of these services to the recipient patients is unlikely to match the cost of providing them; therefore this value is estimated from figures from the RAND Health Insurance Experiment. Benefits are calculated as cost x (1 minus waste as a percent of free care [P27]).

[C] Transfer costs are calculated in two steps: the additional number of uninsured persons attributable to the uncompensated care pools is calculated for each level of poverty, taking into account the estimated number of uninsured in each group (adjusted downward to reflect Medicaid undercounting) and the estimated increase in uninsured risk that results from the existence of uncompensated care pools, i.e., (poor=[P7]^[P10]^[P13]); low-income=[P8]^[P11]^[P14]); middle-income=[P9]^[P12]^[P15]). These values are summed and multiplied by the share of the total population that lives in the eleven states with uncompensated care pools [P16]. This estimated increase in uninsured persons is then multiplied the average external (subsidized) cost of being uninsured [P17] that is not associated with EMTALA (IP17]^[P18]^[1.5][P8]) since EMTALA costs are calculated separately in a different paper.

[D] Increases in mortality are measured as follows: the excess deaths per million uninsured [P23] is multiplied by the WTP value of life [P24] to yield the cost of lost lives. This is then multiplied by the product of the number of uninsured due to the uncompensated care pools for each level of poverty considered (poor=[P7]^[P13], low income=[P8]^[P14], and middle-income=[P9]^[P15]) and the share of ER visits not attributable to EMTALA, 1-[P5][P6]. This monetized value of mortality is then adjusted for the eleven states that the data represents [P16].

[E] All losses borne by health industry are presumed to be roughly equivalent to excise taxes, i.e., raising prices and reducing demand/output. The marginal excess burden (MEB) is intended to measure the deadweight loss associated with such reduced output. Therefore, the figure shown is calculated by summing all health industry losses and multiplying times MEB [P26].

June 2006
Draft: Do Not Circulate without Author Permission
<table>
<thead>
<tr>
<th>Parameters:</th>
<th>Expected</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>[P1] Assumed pool impact on uncompensated care total</td>
<td>7.8%</td>
<td>0.0%</td>
<td>15.6%</td>
<td>[a]</td>
</tr>
<tr>
<td>[P2] Uncompensated care as percent of hospital spending</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CT</td>
<td>4.0%</td>
<td>3.6%</td>
<td>4.4%</td>
<td>[b]</td>
</tr>
<tr>
<td>FL</td>
<td>6.5%</td>
<td>5.9%</td>
<td>7.2%</td>
<td>[c]</td>
</tr>
<tr>
<td>IN</td>
<td>5.1%</td>
<td>4.6%</td>
<td>5.6%</td>
<td></td>
</tr>
<tr>
<td>ME</td>
<td>5.0%</td>
<td>4.5%</td>
<td>5.5%</td>
<td></td>
</tr>
<tr>
<td>MA</td>
<td>5.3%</td>
<td>4.8%</td>
<td>5.8%</td>
<td></td>
</tr>
<tr>
<td>NJ</td>
<td>6.7%</td>
<td>6.0%</td>
<td>7.4%</td>
<td></td>
</tr>
<tr>
<td>NY</td>
<td>5.6%</td>
<td>5.0%</td>
<td>6.2%</td>
<td></td>
</tr>
<tr>
<td>OH</td>
<td>5.2%</td>
<td>4.7%</td>
<td>5.7%</td>
<td></td>
</tr>
<tr>
<td>RI</td>
<td>3.9%</td>
<td>3.5%</td>
<td>4.3%</td>
<td></td>
</tr>
<tr>
<td>SC</td>
<td>6.3%</td>
<td>5.7%</td>
<td>6.9%</td>
<td></td>
</tr>
<tr>
<td>VA</td>
<td>7.0%</td>
<td>6.3%</td>
<td>7.7%</td>
<td></td>
</tr>
</tbody>
</table>

| [P3] Hospital spending, 2004 (millions) | | | | |
| CT | 6,771 | 6,771 | 6,771 |
| FL | 31,509 | 31,509 | 31,509 |
| IN | 12,524 | 12,524 | 12,524 |
| ME | 2,864 | 2,864 | 2,864 |
| MA | 18,090 | 18,090 | 18,090 |
| NJ | 16,282 | 16,282 | 16,282 |
| NY | 46,334 | 46,334 | 46,334 |
| OH | 24,622 | 24,622 | 24,622 |
| RI | 2,613 | 2,613 | 2,613 |
| SC | 8,215 | 8,215 | 8,215 |
| VA | 13,001 | 13,001 | 13,001 |

| [P4] Gross uncompensated care total, 2004 (millions) | 10,555 | 9,500 | 11,611 | [d] |

| [P6] ER share of total uncompensated care | 12.5% | 5.0% | 20% | [f] |
| [P7] EMTALA share of ER total | 6.0% | 2.0% | 10% | [g] |

| Percent increase in uninsured rate due to uncompensated care pools | | | | |
| Poor <100% | 38.9% | 1.9% | # | 38.9% | [h] |
| Low income 100-200% | 43.1% | 30.1% | # | 43.1% | [h] |
| Middle income 200-400% | 37.9% | 18.9% | # | 37.9% | [h] |

| Ratio of actual uninsured to counted uninsured in CPS | | | | |
| Poor <100% | 74.4% | 63.0% | # | 74.4% | [i] |
| Low income 100-200% | 91.3% | 63.0% | # | 91.3% | [i] |
| Middle income 200-299% | 96.3% | 90.0% | # | 96.3% | [i] |

| Nonelderly uninsured total, March 2004 (millions) | | | | |
| Poor <100% | 11.5 | 11.3 | 11.7 | [l] |
| Low income 100-200% | 12.9 | 12.6 | 13.2 | [l] |
| Middle income 200-299% | 8.7 | 8.5 | 8.9 | [l] |

| Share of population living in 11 states with pools | 29.7% | 29.7% | 30% | [k] |

| Average external cost of being uninsured, 2004 | $665 | $358 | $955 | [l] |

| Excess mortality related to lack of coverage | | | | |
| Excess deaths per million uninsured | 444 | - | 551 | [p] |
| WTP value of life (millions) | 3.1 | 1.1 | 4.4 | [q] |
| Marginal tax overhead costs | 52% | 31% | 185% | [r] |
| Marginal excess burden | 21% | 15% | 28% | [s] |
| Waste as a percent of free care | 31% | 15% | 15% | [t] |
| Costs to states with pools of regulatory costs | 50,000 | 25,000 | 100,000 | [u] |
Parameter Notes:

[a] The maximum bound is determined from [S1]. These figures are adjusted figures from [S5] in Table B-12 and are based on figures in [S8] p. 12.

[b] Uncompensated care as percent of hospital spending numbers are reported in [S5]; upper and lower bounds calculated as +/- 10% of these reported figures.

c] Data from Georgia [S5] were used as a proxy for missing data on Florida.

d] Data for 2004 reported in [S1A].

[e] Calculated by multiplying each state’s uncompensated share [P2] times hospital spending [P3] and summing results.

[f] Absent hard data, we estimated the ER share of total hospital uncompensated care as 12.5% as the expected value with upper and lower bounds of 20% and 5% respectively.

g] Absent hard data, we estimated the portion of ER-related hospital uncompensated care induced by EMTALA was at least 2% but no greater than 10%, with the midpoint as the expected value.

[h] All figures are calculated from results reported in Table 6 of [S6] by dividing the estimated percentage point change in uninsured rate in states with and without uncompensated care funds by the baseline uninsured rate for individuals in each poverty category in states without such funds. Reported results include estimates for 1989 and 1992, so the lowest reported value was used as minimum figure regardless of which year of data was used to estimate it. Expected value is the midpoint of the values shown.

[i] All figures are based on March 2004 Current Population Survey tabulations reported in Table 6 of [S1C]. Minimum and maximum values are approximated by authors from 90% confidence interval reported for the uninsured rate for the lowest category of family income (<$25,000), i.e., +/-0.5/24.2 as reported by U.S. Census Bureau [S1B: 15], since this category roughly approximates in size each of the poverty groups shown.

[j] Ratios are calculated based on the estimated number of uninsured after adjusting for Medicaid undercounting. Lower bound figures are based on estimates reported for those below 200% of poverty and above this threshold [S2A: 12]. Upper bound figures calculated by author based on figures reported for below 100% FPL, 100<200% and 200<300% [S2B]. The midpoint of these estimates is the expected value.


[l] All figures calculated from figures on per capita uninsured estimates of total uncompensated care reported in [S1D]. Minimum figure is for part-year uninsured; maximum is for full-year uninsured; expected is for all uninsured.

[p] Figures calculated from Medical Expenditure Panel Survey data and reported in [S2]. Minimum figure is for part-year uninsured; maximum is for full-year uninsured; expected is for all uninsured.

[q] The expected value of a life is estimated based on a review of various estimates and meta-analyses reported in [S3].

[r] Marginal cost of tax collections is the sum of administrative, compliance and marginal excess burden (deadweight loss): it represents the total amount of resources lost to society per dollar of revenue collected.

[s] Marginal excess burden is the efficiency loss associated with a small increase in income taxes. It represents the share of the revenues collected that are lost due to reduced output as measured by general equilibrium models. The figures shown are weighted averages for personal and corporate income taxes using the best available estimates from the literature for each.

[t] Expected value is the estimated percent of care provided in the free care plan that represented waste (i.e., estimated value of care minus its cost) in the RAND Health Insurance Experiment [S4]. Minimum value is assumed to be double this amount and maximum value is assumed to be half this value (a higher value is used for the minimum since this minimizes the estimated value of uncompensated care provided through EMTALA, thereby making the Benefits lower).

[u] Assumed.
Sources:


Appendix B. Search Strategies

Database: Ovid MEDLINE(R) <1966 to July Week 2 2004>

Search Strategy #1ab: Costs

1 EMTALA.mp. (138)
2 Patient Transfer/ (2775)
3 (prohibition or limit or regulation).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (357235)
4 2 and 3 (17)
5 "emergency medical treatment and active labor act".mp. (33)
6 1 or 4 or 5 (164)
7 (costs or burden or impact).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (205964)
8 6 and 7 (14)
9 limit 8 to (english language and yr=1975 - 2004) (14)
10 from 9 keep 1-4,6-14 (13)

Database: Ovid MEDLINE(R) <1966 to July Week 2 2004>

Search Strategy #1c: Uncompensated Care

1 EMTALA.mp. or "Emergency Medical Treatment and Active Labor Act"/ (138)
2 patient transfer.mp. or Transfer, Discharge/ (2939)
3 (prohibition or limit or regulation).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (357235)
4 2 and 3 (21)
5 1 or 4 (157)
6 Uncompensated Care/ (614)
7 Medical Indigency/ (3286)
8 6 or 7 (3851)
9 5 and 8 (3)
10 from 9 keep 1-3 (3)

Database: Ovid MEDLINE(R) <1966 to July Week 2 2004>

Search Strategy #1d: Uninsured

1 EMTALA.mp. or "Emergency Medical Treatment and Active Labor Act"/ (138)
2 patient transfer.mp. or Transfer, Discharge/ (2939)
3 (prohibition or limit or regulation).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (357235)
4 2 and 3 (21)
5 1 or 4 (157)
6 Medically Uninsured/ (2746)
7 limit 6 to (english language and yr=1975 - 2004) (5)
8 from 7 keep 6-7 (5)

Database: Ovid MEDLINE(R) <1966 to July Week 2 2004>

Search Strategy #1e: Non-emergency

1 EMTALA.mp. or "Emergency Medical Treatment and Active Labor Act"/ (138)
2 patient transfer.mp. or Transfer, Discharge/ (2939)
3 (prohibition or limit or regulation).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (357235)
4 2 and 3 (21)
Database: Ovid MEDLINE(R) <1966 to July Week 2 2004>
Search Strategy #1: On-Call

1 EMTALA.mp. or "Emergency Medical Treatment and Active Labor Act"/ (138)
2 patient.transfer.mp. or Transfer, Discharge/ (2939)
3 (prohibition or limit or regulation).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (357235)
4 2 and 3 (21)
5 1 or 4 (157)
6 emergency service, hospital/ or emergency medical services/ or emergency services, psychiatric/ or "transportation of patients"/ or ambulances/ (43420)
7 health services misuse/ or unnecessary procedures/ (3527)
8 UNNECESSARY PROCEDURES/ or unnecessary.mp. (17140)
9 "non-emergency use".mp. (199)
10 7 or 8 or 9 (19716)
11 6 and 10 (718)
12 social control, formal/ or government regulation/ or law enforcement/ (15645)
13 2 and 12 (30)
14 1 or 13 (165)
15 dumping.mp. (1678)
16 2 or 15 (4453)
17 3 and 16 (45)
18 1 or 17 (181)
19 avoidable.mp. (2429)
20 10 and 19 (94)
21 10 or 19 (22051)
22 6 and 21 (762)
23 18 and 22 (0)

24 from 22 keep 1 (1)
25 EMTALA.mp. or "Emergency Medical Treatment and Active Labor Act"/ (138)
26 patient.transfer.mp. or Transfer, Discharge/ (2939)
27 (prohibition or limit or regulation).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (357235)
28 26 and 27 (21)
29 25 or 28 (157)
30 on-call.mp. (14607)
31 29 and 30 (14)
32 limit 31 to (english language and yr=1975 - 2004) (14)
33 from 32 keep 1-10 (10)
Search Strategy #2a: Value

1. EMTALA.mp. or "Emergency Medical Treatment and Active Labor Act"/ (138)
2. patient transfer.mp. or Transfer, Discharge/ (2939)
3. (prohibition or limit or regulation).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (357235)
4. 2 and 3 (21)
5. 1 or 4 (157)
6. "avoidable deaths" or "avoidable mortality".mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (205)
7. "preventable deaths" or "preventable mortality".mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (253)
8. 6 or 7 (453)
9. 5 and 8 (0)
10. delay$.mp. (184880)
11. (delay$ or defer$).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (199364)
12. cost$.mp. (195641)
13. 11 and 12 (3535)
14. (avoidable or unnecessary or excess$).mp. [mp=title, original title, abstract, name of substance, mesh subject heading] (124637)
15. 13 and 14 (205)
16. emergency service, hospital/ or outpatient clinics, hospital/ (29922)
17. 15 and 16 (3)
18. limit 17 to (english language and yr=1975 - 2004) (3)
19. from 18 keep 1-3 (3)

Database: ISI Web of Science <1978 to July 21, 2004>

Search Strategy #1ab: Costs (from the results below, 39 records were selected as EMTALA-related; hence no further searching was done in this database).

<table>
<thead>
<tr>
<th>Results</th>
<th>Delete Sets</th>
</tr>
</thead>
<tbody>
<tr>
<td>#14</td>
<td>#13 OR #12 DocType=All document types; Language=All languages; Databases=SCI-EXPANDED, SSCI, A&amp;HCI; Timespan=1978-2004</td>
</tr>
<tr>
<td>#13</td>
<td>2 TS=(antidumping AND health) DocType=All document types; Language=All languages; Databases=SCI-EXPANDED, SSCI, A&amp;HCI; Timespan=1978-2004</td>
</tr>
<tr>
<td>#12</td>
<td>80 #11 OR #1 DocType=All document types; Language=All languages; Databases=SCI-EXPANDED, SSCI, A&amp;HCI; Timespan=1978-2004</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>#11</td>
<td>#10</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>Count</td>
</tr>
<tr>
<td>----</td>
<td>-------</td>
</tr>
<tr>
<td>#3</td>
<td>5,452</td>
</tr>
<tr>
<td>#2</td>
<td>&gt;100,000</td>
</tr>
<tr>
<td>#1</td>
<td>43</td>
</tr>
</tbody>
</table>

**Database: Lexis-Nexis <1975 to July Week 2 2004>**

Search Strategy #1c: Uncompensated

1. EMTALA AND Active Labor Act (166)
2. Search within results: uncompensated AND cost* (34)
3. Of these, 7 selected for detailed review

Search Strategy #1d: Uninsured

1. EMTALA AND Active Labor Act (166)
2. Search within results: uninsured AND impact (30)
3. Of these, 3 selected for detailed review

Search Strategy #1e: Non-emergency

1. EMTALA AND Active Labor Act (166)
2. Search within results: non-emergency (26)
3. Of these, 3 selected for detailed review

Search Strategy #1f: On-call

1. EMTALA AND Active Labor Act (166)
2. Search within results: “on-call” (1)
3. Of these, 0 selected for detailed review

Search Strategy #2a: Value of Uncompensated Care

1. EMTALA AND Active Labor Act (166)
2. Search within results: avoidable deaths OR avoidable mortality OR preventable deaths OR preventable mortality (1)
3. Of these, 0 selected for detailed review

**Database: PAIS <1975 to July Week 2 2004>**
Search Strategy #1a: EMTALA

1. Limit set to English, Years-1975-2004
2. EMTALA AND Active Labor Act (3)
3. patient dumping or patient transfer (7)
4. 2 and 3 (8)

Database: Dissertation Abstracts <1975 to July Week 2 2004>
Search Strategy #1a: EMTALA

1. kw: EMTALA or (kw: active w labor w act) or ((kw: patient and kw: transfer)) or ((kw: patient and kw: dumping)) and yr: 1975-2004 and yr: 1975-2004 (279)
2. Of these, 8 selected for detailed review

Database: Books in Print <1975 to July Week 2 2004>
Search Strategy #1a: EMTALA

1. kw: EMTALA or (kw: active w labor w act) or ((kw: patient and kw: transfer)) or ((kw: patient and kw: dumping)) and yr: 1975-2004 and yr: 1975-2004 (36)
2. Of these, 10 selected for detailed review

Database: Health Affairs <1981 to July Week 2 2004>
Search Strategy #1a: ALL

Full article text searched for EMTALA (10)
Appendix C. Web Sites Used in F-1 Literature Search

Health Law/Regulation Web Sites
We began searching at Web sites known to specialize in health law and regulation generally or specific topics included in this review:

- American Health Lawyers Association
  http://www.healthlawyers.org/Ecommerce/ProductDisplay.cfm?ProductID=16717
- Findlaw.com—health law
  http://www.findlaw.com/01topics/19health/index.html (no documents found)
- Health Care Compliance Association
  http://www.hcca-info.org/ (no documents found)
- HealthHippo
  http://hippo.findlaw.com/hippohome.html (no documents found)

Health Industry Trade Organizations
Health Facilities Regulation
For health facilities regulation, we searched the following industry and state agency trade organization Web sites:

General
- Association of Health Facility Survey Agencies
  http://www.ahfsa.org/ (no documents found)
- Healthcare Financial Management Association (HFMA)
  http://www.hfma.org/ (no documents found)
- Joint Commission on Accreditation of Healthcare Organizations (JACHO)
  http://www.jcaho.org/ (no documents found)

Inpatient Hospital Facilities
- American Hospital Association (AHA)
  http://www.ahapolicyforum.org/ahapolicyforum/resources/content/EDDivisionSurvey040421.ppt
- Federation of American Healthcare Systems (FAHS)
  http://www.fahs.com/ (no documents found)
- National Association of Public Hospitals and Health Systems (NAPH)
- National Association of Children's Hospitals & Related Institutions (NACHRI)
  http://www.nachri.org/nachri/ (no documents found)
- National Association for State Mental Health Program Directors (NASMHPD)
National Association of State Alcohol and Drug Abuse Directors (NASADAD)
http://www.nasadad.org/ (no documents found)

Ambulatory Care Facilities
- Medical Group Management Association (MGMA)
  http://www.mgma.com/press/emtalacommnet.cfm
- National Association of Community Health Centers (NACHC)
  http://www.nachc.com/ (no documents found)
- National Rural Health Association (NRHA)
  http://www.NRHA.rural.org/ (no documents found)
- Ambulatory Surgical Centers of American (ASCOA)
  http://www.ascoa.com/ (no documents found)
- National Association of Childbearing Centers (NACC)
  http://www.ascoa.com/ (no documents found)
- American Clinical Laboratories Association (ACLA)
  http://www.clinical-labs.org/ (no documents found)

State Agency Trade Organizations and Research Centers
For state agency trade organizations and health policy research centers specializing in state health policy issues not accounted for above, we searched the following Web sites:

Executive branch
- National Governors Association (NGA)
  http://www.nga.org/ (no documents found)
- National Association of State Budget Officers (NASBO)
  http://www.nasbo.org/ (no documents found)
- Association of State and Territorial Health Officers (ASTHO)
  http://www.astho.org/ (no documents found)
- National Association of Health Data Organizations (NAHDO)
  http://www.nahdo.org/ (no documents found)
- National Association of State Auditors, Comptrollers and Treasurers (NASACT)
  http://www.nasact.org/ (no documents found)

Legislative branch
- National Conference of State Legislatures (NCSL)
  http://www.ncsl.org/ (no documents found)
- Council of State Governments (CSG)
  http://www.csg.org/csg/default (no documents found)
- National Academy of Public Administration (NAPA)
  http://www.napawash.org/ (no documents found)

State Health Policy Research Centers
- National Academy of State Policy
  http://www.nashp.org/ (no documents found)
• Pew Center on the States
  http://www.stateline.org/index.do (no documents found)
• State Health Policy Web Portal Group
  http://www.hpolicy.duke.edu/cyberexchange/whats_what/state/states.htm
  Rather than search 50 individual sites, we queried by e-mail the directors of all
  centers included in this group for relevant reports/studies their centers had
  conducted or that had been conducted by agencies in their states

**Health Care/Health Policy Consulting Firms**
  For major health care/health policy consulting firms, we searched the following sites.
  Some of these specialize in human resource consulting, but were included in the event they
  had done industry-wide studies of regulatory costs:

  • Buck Consultants Inc.
    http://www.buckconsultants.com/ (no documents found)
  • Deloitte & Touche
    http://www.deloitte.com/vs/0%2C1616%2Csid%25253D2000%2C00.html  (no
    documents found)
  • Ernst & Young LLP
    http://www.ey.com/global/content.nsf/US/Home  (no documents found)
  • Hewitt Associates LLC
    http://was.hewitt.com/hewitt/ (no documents found)
  • Milliman USA Inc.
    http://www.milliman.com/ (no documents found)
  • PricewaterhouseCoopers LLP
    http://www.pwcglobal.com/ (no documents found)
  • Towers Perrin
    http://www.towers.com/towers/default.asp (no documents found)
  • Watson Wyatt Worldwide
    http://www.watsonwyatt.com/ (no documents found)

**Health Policy Research Organizations**
  For major health policy research organizations, including “think tanks” and some
  advocacy groups, we searched the following sites:

  • Abt Associates
    http://www.abtassoc.com/ (no documents found)
  • Alliance for Health Reform
    http://www.allhealth.org/ (no documents found)
  • AcademyHealth
    http://www.hcfo.net/pdf/findings0305.pdf
    http://www.academyhealth.org/connectingthedots/womenshealth.pdf
    http://www.academyhealth.org/connectingthedots/racialdisparities.pdf
  • The Advisory Board Company
    http://www.advisoryboardcompany.com/ (no documents found – member-only site)
Major Health Policy Foundations. For major health policy foundations, we searched the following sites:

- California Healthcare Foundation  
  http://www.californiahealthline.org/index.cfm?Action=dsptItem&itemID=89675
- Commonwealth Fund
  [http://www.cmwf.org/](http://www.cmwf.org/) (no documents found)
- Robert Wood Johnson Foundation
- Henry J. Kaiser Family Foundation
- United Hospital Fund
  [http://www.uhfnyc.org/](http://www.uhfnyc.org/) (no documents found)