# Special Topic: Public Health

## The Crisis in Emergency and Trauma Care in California and the United States

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ABSTRACT – A crisis affecting every geographic region and every socioeconomic segment of the United States is threatening the future viability of emergency and trauma care in America. As the financial and social burden of providing trauma care has fallen on individual states, hospitals and physicians, record numbers of emergency departments and trauma centers have been forced to close. The ultimate cost of these closures falls upon patients who will receive inadequate emergency and trauma care. In the fall of 2004 King Drew Medical Center Trauma Services, the second largest trauma center in Los Angeles County, closed. Continuing on this path may threaten the emergency and trauma care in the United States, touted as one of the finest in the world. This article provides a general overview of the trauma center crisis in California and reviews the history of the problem and its future implications in California as well as the United States.

### INTRODUCTION

Trauma care funding is in a state of crisis with record numbers of Emergency Departments (EDs) and trauma centers closing nationwide. Between 2002 and 2005, 52 trauma centers were closed: five level 1 trauma centers, 13 level 2 trauma centers, 19 level 3 trauma centers and 15 level 4 and 5 trauma centers.[1] California is no exception to this current national trend. In the fall of 2004, the closure of Los Angeles (LA) County's second largest trauma center, King Drew Medical Center, further added to the trauma care challenges in LA County. From 1990 through 2000, the number of licensed emergency departments in California decreased 10% while the population growth was continued at 15%.[2]

Almost 150,000 Americans die each year from injuries, making trauma the leading cause of death and disability among both children and adults. Trauma is not a problem isolated to inner-city and/or impoverished areas; it can happen to anyone at anytime. The demographics of the patients treated in trauma centers include 60% motor vehicle collisions (MVCs), 13% falls and 12% assaults.[3] Although both trauma centers and non-trauma centers provide care for trauma patients, the overall risk of death has been shown to be 25% lower when care was provided at a trauma center.[2] In 2003, 678,000 injury victims benefited from evaluation and treatment in regional trauma centers.[5]

The financial implications of treating trauma patients are substantial. The U.S. trauma center costs in 2003 were estimated at $10 billion, and total trauma center losses were estimated at $1 billion (10% of costs).[5] A central focus of the trauma center crisis is to keep trauma centers functioning with a healthy balance sheet. This can often be simplistically viewed as an issue limited to fair and adequate reimbursement; however, there are other exacerbating factors that should be considered to properly realize the scope and complexity of the trauma crisis issue. These factors include difficulty in recruiting and retaining physicians and nursing staff, lack of accurate data, paucity of useful trauma databases and linkages to other related data systems, and geographic challenges.[6]

The current trauma crisis is the result of decades of incomplete solutions and ineffective advocacy. Blame can be placed on many parties including patients, policy experts, lawmakers, hospitals, and physicians. A May 1989 editorial in Trustee, "The impact of trauma center closings," written by Hospitals Magazine Editor Howard Larkin, is haunting in its summation of what he foresaw as an impending crisis. Larkin wrote, "The collapse of trauma networks affects not only the relatively few designated trauma centers, but emergency services in all urban hospitals. As gaps in trauma networks widen, the burden of uncompensated trauma care increases in community hospital emergency departments."[7] Those predictions have become a realized crisis in Los Angeles with the closure of King

Drew Medical Center Trauma Services in 2004.

The signs of a national crisis became apparent 15 years ago (the summer before Larkin's editorial) when three hospitals in Los Angeles had threatened to close their emergency departments. And when one of the top hospitals in the nation, the University of Chicago, pulled out of its local trauma network, trauma admissions quadrupled at a nearby medical center even as its losses skyrocketed to $400,000 in the first three months.[7] Today that nearby hospital, formerly one of the best in the Midwest, sits mostly empty, cycling through potential bankruptcy and bailout. Substantial steps have been taken in the past to support the trauma system, one being the Federal Trauma Care Systems Planning and Development Act enacted in 1990. With this act came centralized organization and funding support from the newly created Division of Trauma and EMS (DTEMS).[8] However, due to budget deficits in 1995 the DTEMS was not reauthorized by Congress and the agency quietly disappeared.[8]

EXTENT OF THE PROBLEM

From 2002 through 2005, 52 trauma centers closed nationwide.[1] Three factors inherent to the trauma care crisis in California and nationwide are: (1) poor reimbursement rate and difficulty with funding strategies[5,9]; (2) increasing rates of medical malpractice insurance[10,11]; and (3) the lack of physician on-call support.

A. Poor reimbursement rate and difficulty with funding strategies

A fundamental trauma center financial strategy is called "cost-shifting," which entails charging insured patients more to cover uncompensated costs of treating uninsured and underinsured patients as presented in Figure 1.[5]

This method of funding can no longer support the trauma system, as the number of unfunded and under-funded patients has been increasing.[5] From 1998 to 2001 ED visits increased 13.4%, whereas the population increased 5.6 percent.[12] Approximately 6.5 million Californians, 20% of the state's population, were uninsured, a number that is growing by 70,000 per month.[13,14] The underpayment to the trauma system in a three-year period included 30,000 unpaid claims to the Department of Health Services (DHS), $112 million annual loss from commercial HMOs, and a 23% payment rate by Medi-Cal HMO, leaving the system grossly underfunded.[13] Nationwide, about 18% of trauma patients in the United States are uninsured. With an average bill of $14,896, of which hospitals only recover 8% of the total cost, providing care for the uninsured leads to a national loss of $1 billion per year by trauma centers.[3]

A dramatic rise in ED visits coupled with unstable funding and poor reimbursement rates can lead to trauma center closures. This in turn forces many hospitals to go on diversion status, unable to take on new patients and diverting ambulances to other hospitals. Hospital diversion is affected by many factors, which include ED overcrowding, patients being held in the ED while waiting for floor and ICU beds, and nursing ratios. The ED overcrowding in turn would have patient consequences including lower quality of care offered, long waiting room times, prolonged pain and suffering, and violence in the ED.[13]

B. Increasing rates of medical malpractice insurance

Medical malpractice premiums have been an important issue for many years mainly due to the direct effect they have on physicians, but also for the indirect effects they have

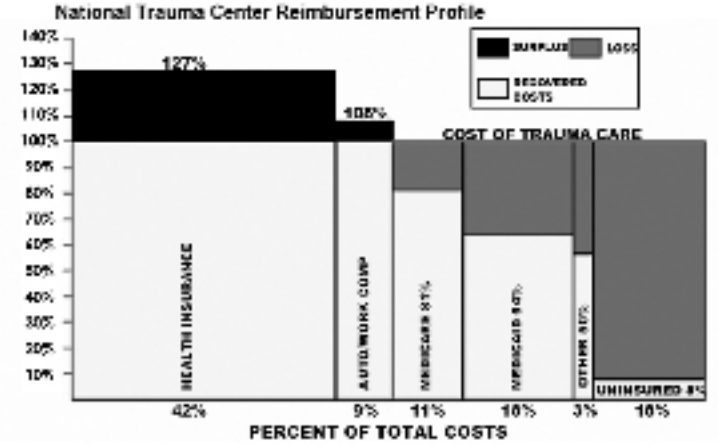


Figure 1. National Trauma Center Reimbursement, 2004. Profile printed with permission from the National Foundation for Trauma Care.[2]

on patients. Medical malpractice premiums can affect the diversity and availability of specialists in a given region. These premiums often differ by medical specialty and geography. In some specialties such premium rates increased about 15 % on average and over 100 % in some states from 1996 through 2002.[10] Subsequently, many physicians decided to retire early, close high-risk sections of their practices or leave certain states such as West Virginia, Mississippi, and Nevada.[15] Some reports indicate that rates of growth in malpractice premiums and claims payments have been slower in states that have enacted non-economic damage caps.[10] Since California has the most comprehensive and effective legislation regarding medical malpractice and tort reform according to the American Medical Association[11], this out-migrating doctor phenomenon might not impact to California to the same degree. However, the provider's reaction to the malpractice threat may limit the consumer's access to health care and may encourage physicians to practice "defensive medicine," which further increases total health care costs.[10]

C. Lack of physician on-call support

Per the 2006 Physician On-call Pay Survey Report, nearly one-quarter of trauma centers and 13% of non-trauma centers have closed due to a lack of physicians available to provide on-call service.[16,17] There are various reasons for the shortage of on-call specialists, including:

- Increase in uninsured patients:Trauma centers' share of uninsured patients is expanding along with the overall uninsured population. The increased number of uninsured patients creates more difficulty with reimbursement both to hospitals and physicians. Many specialists find that it is increasingly difficult to get paid for care provided to these uninsured patients.[18]
- Undesirable lifestyle: Many physicians have found that trauma and on-call services are quite disruptive to their family life as well as their daily private practice care of patients. [18]
- Higher insurance premiums: Many high-risk procedures are performed emergently in the ED without sufficient time for optimum results or opportunity to establish the best rapport between physicians and patients. Thus, the insurance premiums for doctors who serve as on-call specialists and for trauma physicians are higher and sometimes not available.[18,19]
- Underpayment: Downcoded on-call fee reimbursement from health plans, Medicare reimbursement cuts and billing codes that fail to reflect time and skill requirement for adequate trauma care, all make on-call services unfavorable for physicians. [19]

Interventions And Solutions:
California And Beyond

In late 2004, the National Foundation for Trauma Care (NFTC) Board surveyed selected hospital senior executives about the causes and potential resolutions for trauma center closures. The solutions identified by the executives included increases in DRG reimbursement through insurers, increased physician payments, adjustments for on-call payments, capping malpractice payments and assistance with underfunded care.[20] (See Figure 2).

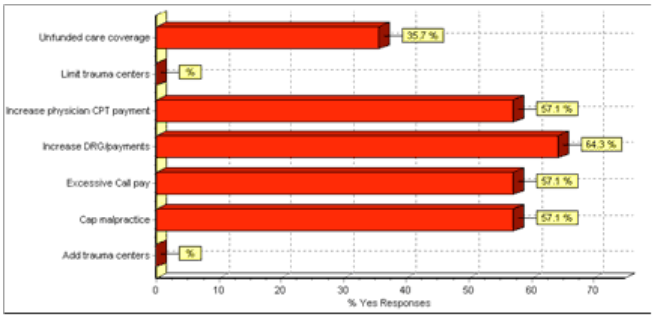


Figure 2. Potential solutions from Hospital Senior Executive Survey printed by permission from the National Foundation for Trauma Care.[1]

A. Difficulty with funding strategies

Maddy EMS fund— The Maddy Emergency Medical Services (EMS) Fund, created in 1987, allows each county to establish its own EMS Fund to be administered by the county itself or to have it administered by the California Department of Health Services (DHS).[21] Most large counties opt to administer their own fund, while smaller counties have their funds administered by the DHS. The EMS Fund is designed to allow each county to reimburse physicians and hospitals for losses when emergency care is provided to patients who are either unable to pay or fail to pay. The Maddy EMS Fund was originally funded by a $1 penalty charge on moving violations and this amount was increased to $2 in 1988. To further support the fund cigarette taxes were added in 1989.[21] The funding amount has remained at $24.8 million per year for the past 5 years.[22]

Emergency Medical Care Initiative— The Emergency Medical Care Initiative (EMCI), also known as Proposition 67, was a ballot initiative designed to restructure the emergency medical care funding in the state of California with a potential influx of over $500 million into the trauma system. EMCI would have been funded by a 3% surcharge on telephone usage, where residential users would have paid a maximum of 50 cents per month, and an average cell phone user would have paid about 90 cents per month. Senior citizens and people on basic phone rates would have been exempt from these taxes.[23] The EMCI would have restructured the current Maddy EMS Fund system to become a component of a new umbrella fund. The distribution of these funds was shown in Figure 3.[24,25] The November 2, 2004 ballot measure resulted in the defeat of the EMCI Proposition 67 with 71.6% voters opposed to the proposal.[26] Some opponents to Proposition 67 argued that the increase in phone taxes was excessive and that there were insufficient revenues earmarked to improve the 911 system.

[1]Tax on improvements on developed property— In 2002, Los Angeles County voters approved an annual tax of three cents per square foot of improvements on developed property to help fund trauma care providers. The measure was projected to

generate $174 million annually and demonstrated the public's willingness to tax themselves to maintain trauma services.[19]

Sales tax— In Alameda County, voters approved an additional half-cent sales tax to help their trauma care services. Estimated to generate $95 million annually, 75% of tax revenues are distributed to Alameda County Highland Hospital, and 25% may be used for other purposes, including uncompensated care.[16]

State budget allocations— The Legislature and Governor decided to fund trauma care an additional $27.5 million for fiscal year 2001-2002 and $20 million for 2002-2003. Due to California's critical budget shortfalls, trauma care funds were not included for the 2003-2004 state budgets. On July 19, 2005, $10 million in general fund money was approved in the Governor's budget for trauma care funding.[19]

Trauma care systems planning and development act— Senator Bill Frist from Tennessee along with Senators Hillary Rodham Clinton and Edward Kennedy sponsored legislation, S.239, to re-enact the Trauma Care Systems Planning and Development Act in January 2003, which as of last reading in February 2005 has not yet passed the Committee on Finance.[27,28] The bill would double the current funding from $6 million to $12 million for trauma systems development and includes a one-time $750,000 allocation to the Institute of Medicine for a study on the state of trauma care and research. The bill would also improve federal funding match requirements to assist states with their financing of trauma care. Currently the federal government does not require contribution of state funds for the first year, requires a matching payment of $1 for every federal dollar in the second year, and $3 for every $1 for every year thereafter. The new law would provide grants for the first two years without requiring states to contribute matching funds, the third year would be a $1 for $1 arrangement, and thereafter the federal government would provide $1 for every $2 contributed by the state.[27]

PROPOSITION 67
ESTIMATED DISTRIBUTION OF NEW REVENUE FROM SURCHARGE INCREASE

(in Millions)

| Account | Estimated Revenue |
|---|---|
| 911 Account | $ 4 |
| Emergency & Trauma 1st Responders Account | 19 |
| Community Clinics Urgent Care Account | 25 |
| Emergency & Trauma Physician Uninsured Acct | 153 |
| Emergency & Trauma Hospital Services Acct | 300 |
| ***TOTAL[a]*** | ***$ 500*** |

[a] Total may not sum to $500 million due to rounding

**Figure 3. Estimated distribution of new revenue**
Printed with permission from the Office of the Attorney General.[3]

B. Resolution of increasing rates of medical malpractice insurance: medical malpractice reform

Nationwide, considerations have included tort reform with caps on damages for pain and suffering. States with certain non-economic damage caps, California for example, had lower recent growth in malpractice premium rates and claim payments.[10] Moreover, patient-centered and safety-focused reforms also should be considered, since most medical errors resulted from system errors and unfavorable conditions. These reforms encourage physicians to improve communications and feel that they are allowed to apologize. Mandatory reporting systems will be applied so that "adverse events" and errors will be used to identify system weaknesses and to improve patient care. Another suggested avenue for improvement is to have insurance commissioners evaluate rates and trends and track comprehensive data on medical malpractice claims. [19]

C. Resolution of lack of physician on-call support

Increasing funds, improving reimbursement rates and correcting high medical malpractice insurance may resolve many portions of this problem. Some organizations have created measures to encourage physicians to provide on-call services, such as guaranteed level of payment for services provided, subsidy for malpractice, fee-for-service payments for uninsured patients, hourly rates while providing in hospital on-call patient care, and payments based on work Relative Value Unit.[17] However, all of these measures can make trauma care significantly more expensive, which has been one of the challenges for trauma systems all along.

Role of Injury Prevention

More than 29 millions patients who visited the ED in 2004 were injured from preventable trauma. Unintentional injuries were the fifth leading cause of death across all ages and and the leading cause in the 1-44 years old age group as reported by the CDC in

2003. Given the significant impact of such injuries on ED care, the role of injury prevention becomes more important in treating the overall burden of disease in the U.S.[29,30]

In 2000 about 50 million injuries occurred and cost approximately $406 billion, while many could have been prevented ($80.2 billion medical care costs and $326 billion in productivity losses).[31] In addition to finding new revenues, injury prevention should be utilized more effectively to address this national crisis. Injury prevention can provide significant realized cost saving as well as directly contribute to a decrease in mortality and morbidity.

## SUMMARY

Emergency departments and trauma centers have been in constant crisis for many years. Trauma care is under-funded by the populus at large, despite an expectation that every person in the U.S. is entitled to state-of-the-art emergency trauma care without discrimination on the basis of income, race, or geographical location. The EMS/ED/Trauma system has shown over the past 40 years that it saves lives and has been willing to adapt to market forces. Unfortunately, the economics of supply and demand along with an ever-changing health care system that leaves millions uninsured and underinsured have added to the current crisis. The interdependence of emergency departments and trauma care and the provision of comprehensive emergency medical services is both the touchstone of our nation's emergency care system and its Achilles heel. The solution lies in establishing the fairest system of shared funding responsibility for a system that is accessible to everyone, yet one that is not misused. As we improve emergency and trauma care by more effectively incorporating injury prevention, the solution to the trauma center crisis will likely become more manageable. This will entail a firm commitment to injury prevention coupled with a shared responsibility on the part of communities, physicians, and government to provide emergency and trauma care that is both safe and financially viable.

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