SPECIAL REPORT

Financing Hospital Disaster Preparedness

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Abbreviations:
AHA = American Hospital Association
DHHS = [US] Department of Health and Human Services
GAO = [US] Government Accountability Office
NDMS = [US] National Disaster Medical System

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Abstract
Disaster preparedness and response have gained increased attention in the United States as a result of terrorism and disaster threats. However, funding of hospital preparedness, especially surge capacity, has lagged behind other preparedness priorities. Only a small portion of the money allocated for national preparedness is directed toward health care, and hospitals receive very little of that. Under current policy, virtually the entire funding stream for hospital preparedness comes from general tax revenues. Medical payers (e.g., Medicare, Medicaid, and private insurance) directly fund little, if any, of the current bill. Funding options to improve preparedness include increasing the current federal grants allocated to hospitals, using payer fees or a tax to subsidize preparedness, and financing other forms of expansion capability, such as mobile hospitals. Alternatively, the *status quo* of marginal preparedness can be maintained. In any event, achieving higher levels of preparedness likely will take the combined commitment of the hospital industry, public and private payers, and federal, state, and local governments. Ultimately, the costs of preparedness will be borne by the public in the form of taxes, higher healthcare costs, or through the acceptance of greater risk.

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Introduction

Disaster preparedness and response have gained increased attention in the US, notably as a result of the terrorist attacks on 11 September 2001, Severe Acute Respiratory Syndrome (SARS) in Canada in 2003, and Hurricane Katrina in August 2005. Funding initiatives to improve preparedness, both at the federal and state level, have tended to focus on national infrastructure strengthening and fire and law enforcement responses.[1] However, funding for hospital preparedness has lagged behind these initiatives.[2,3] In particular, hospital surge capacity essentially is unfunded.[4,5] The problem persists despite attempts to draw attention to the issue.[6,7] This paper explores the financial implications of hospital preparedness and suggests possible options to improve surge capacity.

The Financial Landscape

Federal appropriations for terrorism and disaster preparedness were $50 billion in 2006 and have totaled $180 billion since 11 September 2001.[8] States and private corporations annually spend an additional $1–2 billion and $10 billion on preparedness, respectively.[9] Only a small portion of the money allocated for preparedness is directed toward health care in general. Smaller still is the amount spent on hospitals. Less than 2% of the US Department of Health and Human Services (DHHS) budget was allocated toward health preparedness of all types prior to 11 September 2001.[10] Funding for health preparedness has since increased, accounting for 10% of the DHHS budget in the 2003 fiscal year. However, most of the money was earmarked for vaccine development and public health, not for hospitals. In the 2006 fiscal year, only $350 million (out of a $3.8 billion overall avian flu preparedness fund)

was appropriated for state and local response upgrades. No funds were earmarked for hospitals.[11] For the 2007 fiscal year, approximately $1.3 billion in federal initiatives has been proposed to improve state and local public health and hospital preparedness, but this represents only a fraction of the funds experts believe are needed. Interestingly, $79 million is proposed in the 2007 fiscal year to continue funding a federal mass-casualty initiative to purchase mobile hospitals to be used in the event of a disaster. This is a $29 million increase over the $50 million appropriated in 2006.[13]

In 2001, the typical metropolitan hospital was estimated to require >$3 million in upgrades just to achieve baseline disaster preparedness. This amount includes: (1) $75,000 for communications equipment; (2) $750,000 for disease surveillance; (3) $600,000 for pharmaceuticals and supplies; (4) $75,000 for facility improvements; (5) $500,000 for decontamination capability; (6) $505,000 for personal protective equipment; (7) $22,000 for mental health treatment of staff; (8) and $500,000 for drills and training. This list does not include capacity expansion costs, such as professional staff, support personnel, and durable medical equipment. A non-metropolitan hospital would expect to require $1.4 million in upgrades under the same analysis.[14] A more recent analysis suggests that the average 164-bed hospital requires $1 million to provide minimal preparedness for pandemic influenza. This includes $200,000 for planning, $160,000 for training, $400,000 for equipment, and $160,000 for supplies.[15] In contrast, the average federal grant to hospitals is approximately $5,000–$10,000, hardly enough to outfit a single critical care bed.[7] Of significance, current policy dictates that the source of funding for hospital preparedness originates from general tax revenues. Medical payers (e.g., Medicare, Medicaid, and private insurance) directly fund little, if any, of the preparedness bill.

The challenges facing hospitals have not gone unrecognized. Reports of "unfunded mandates" in hospital preparedness occurred prior to 11 September 2001.[16] More recently, testimony to the US Congress has highlighted the shortfall. The Government Accountability Office (GAO) notes that the lack of sufficient hospital and workforce capacity remains a challenge.[17] The American Hospital Association (AHA) notes that only $2.1 billion (over five years) of a needed $11.3 billion has been appropriated to achieve even basic preparedness.[14,18] A 2003 GAO study noted that while 81% of hospitals reported having a comprehensive disaster plan, most were woefully under-prepared in terms of execution because of severe equipment and capacity problems.[19] In May 2006, the federal government unveiled the national strategy for pandemic influenza.[20] Notable is the emphasis on local self-reliance and the absence of a major funding initiative for medical care.[21] In fact, it now is apparent that responsibility for hospital surge capacity has been formally shifted from the homeland security apparatus to the medical community.[22] However, a simultaneous assumption of responsibility by payers of health care has not occurred, leaving hospitals with few financial options. Faced with thin operating margins, personnel shortages, and now the unfunded task of preparing for mass casualties, hospitals have begun to realize the inevitable degradation of quality and rationing of care in the face of any significant disaster.[5,15,23–25]

Resource Approaches

Despite the challenges, opportunities exist to create new initiatives or maximize existing funding. Several are explored in brief.

Grants from General Revenue

Perhaps the simplest approach to funding hospital preparedness is to increase the government grants currently funded from general revenue taxes. As a start, the AHA suggests that $11 billion is needed to achieve basic hospital preparedness.[17] Importantly, the AHA recommends the money be directed toward acute-care hospitals and not be shared with competing entities such as public health agencies. California responded in this fashion by allocating about $400 million for its hospitals.[26] However, few other states have followed suit, and given the current federal priorities and competing fiscal demands, including the wars in Iraq and Afghanistan and the ballooning national deficit, an increase in funding is not assured.

Subsidies from Payers

Hospitals already have a public service mission (through licensure and accreditation) to prepare for disasters. Thus, a portion of their operating revenue (e.g., the payer stream) theoretically should be allocated for preparedness.[27,28] However, tight operating margins severely limit what hospitals can do with their current cash flow.[3,29] Additionally, payers are unwilling to pay costs beyond those of actual patient care. The result is that hospital funding priorities focus on the real needs of today's patients rather than a potential, and hopefully unlikely, disaster.[2,30] To overcome these limitations, hospitals must receive a steady stream of funds, either in the form of a pay increase from payers or as a payer subsidy. The funding must cover baseline preparedness as well as surge capacity, and it must be internally immutable or "fenced" to protect it from other uses.[30] The amount each hospital receives could be expressed as a formula that accounts for such variables as size, community risk assessment, and preparedness mission.

The advantage of this approach is that the most likely payers of robust hospital preparedness—the elderly and chronically ill—also are the most likely to need medical care in the face of disaster. This is true especially for a flu pandemic or similar disaster. The biggest drawback of this approach is that it will add to an already worrisome healthcare-budget crisis. There is little tolerance in today's political and economic climate for a tax or user fee on health care, even for homeland defense.

Status Quo

The default option, maintaining the *status quo*, may seem unacceptable, but it is far from "doing nothing". Under current policy, hospitals maintain an obligation to have preparedness plans and drills and rely on limited funding supplemented by military and other national or regional resources to mitigate a crisis. While such an approach will not provide optimal response to a large-scale crisis, it might cope with

modestly sized local or regional events. An element of risk, of course, is assumed with this option.

Additional Alternatives

Other possible options are available in lieu of surging existing hospital capacity. The military is exploring the development of deployable hospitals specifically designed to cope with disaster response.[31] The recent national pandemic influenza plan has the Medical Reserve Corps and the Commissioned Corps of the Public Health Service augmenting the staffing for hospitals.[20] However, the AHA believes this effort would be inadequate to meet the need faced by hospitals simultaneously in many locations.[11] The National Disaster Medical System (NDMS) is a partnership of several federal agencies and hospitals that provides a network to distribute casualties in the face of a national crisis, such as war.[32] It quickly can respond because it relies on military airlift to distribute a relatively small number of casualties (e.g., a few hundred to a few thousand) to locations throughout the US. As such, NDMS depends on existing excess capacity in the national network, which likely is insufficient to cope with a large disaster such as pandemic influenza. A subsection of the NDMS is the Disaster Medical Assistance Teams (DMATs), which essentially are mobile hospitals. Disaster Medical Assistance Teams, along with their military counterparts (e.g., combat support hospitals), successfully have been deployed for disasters such as Hurricane Katrina, and thus, represent a potential means of expanding a region's capacity. A key limitation of the former is the reliance on distant volunteers with variable response capabilities, while the latter have unyielding commitments to national defense. To overcome these limitations, regions and states have explored setting up their own mobile or portable systems.[33] Critics argue that although successful in drills, issues of staffing, facility licensing, and upkeep may hinder broad use.[34] An interesting concept is the "ER One" demonstration project at Washington (DC) Hospital Center.[35] It has a building design to facilitate surge coupled with staff training and equipment, since it is built as a scaleable emergency care facility.[11]

Summary

Financing hospital surge capacity remains a major challenge to the US healthcare system. Achieving higher levels of preparedness likely will take the combined commitment of the hospital industry and the federal, state, and local governments. Ultimately, the costs of preparedness will be borne by the public in the form of taxes, higher healthcare costs, or through the acceptance of greater risk.

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