



# PREPARED TO CARE

The 24/7 Role  
of America's  
Full-service Hospitals



American Hospital  
Association



# PREPARED TO CARE: EXECUTIVE SUMMARY

Full-service hospitals are vital to meeting the health care needs of the communities they serve. They provide a wide range of acute care and diagnostic services, support public health needs, and offer a myriad of other programs. While many of these roles also are performed by other health care providers, three are unique to hospitals:

- **24/7 Access to Care:** The provision of health care services 24-hours a day, seven days a week (24/7), 365 days a year;
- **The Safety Net Role:** Caring for all patients who seek emergency care regardless of ability to pay;
- **Disaster Readiness and Response:** Ensuring that staff and facilities are prepared to care

for victims of large-scale accidents, natural disasters, epidemics and terrorist actions.

These critical roles – which comprise the “standby” role for this report – while often taken for granted, represent an essential component of our nation’s health and public safety infrastructure.

Despite its importance, the standby role is not explicitly funded. Until a patient arrives with an emergency need, there is no payment for the staff and facility to be at the ready. The terrorist attacks of September 11, 2001 and the aftermath of Hurricane Katrina in 2005 have heightened awareness of the need for disaster readiness, but federal support is still limited for hospitals. Without explicit funding, the standby role is built into the cost structure of full-service hospitals and supported by revenues from direct patient care.

Hospitals today face increasing challenges in maintaining this role, such as increasing demand, staffing and space constraints, greater expectations for preparedness, the erosion of financial support from government payors, and the loss of patients to the growing number of limited-service health care providers – physician-owned limited-service hospitals, ambulatory surgery centers, and others – that do not fulfill the standby role.

This report explores the standby role and its critical importance to the health care system; analyzes the nature of demand and the basic and specialized resources required to meet it; outlines the capacity and financing pressures hospitals face in maintaining the standby role; and frames critical economic and policy questions that must be addressed to ensure future hospital standby capacity can meet the growing health and public safety challenges.

This study uses primary and secondary research to explore these roles, including a review of published reports and studies, analyses of publicly available datasets, over 30 interviews with health care professionals, and site visits to four hospitals representing a range of services and demographics. The hospitals visited include Beartooth Hospital in Red Lodge, MT, a 15-bed critical access hospital; King’s Daughter Medical Center in Brookhaven, MS, a 122-bed rural hospital; New Britain General Hospital, a 350-bed suburban hospital in CT; and Barnes-Jewish Hospital in St. Louis, MO, a 1,000-bed urban Level I trauma center. The authors wish to thank all the participants.

## TABLE OF CONTENTS

Executive Summary .....	2
Providing 24-Hour Access to Care.....	4
The Safety Net Role .....	10
Disaster Readiness and Response .....	12
Challenges to Maintaining the Standby Role .....	16
Policy Questions .....	19
End Notes .....	19

# KEY FINDINGS

## 24/7 Access to Care

### ■ Americans rely heavily on the 24-hour access to care provided by hospital emergency departments (ED), and this need is growing.

- ED visits have increased by nearly 25 percent over the last decade.
- In 2004 there were 112.6 million ED visits.
- One-third of hospital care begins in the ED.
- The majority of ED patients require immediate care.
- More than half of ED care occurs outside of normal business hours.

### ■ The many different and unpredictable needs of emergency care patients require hospitals to maintain an extensive array of resources.

- Patient visit volume can vary by well over 100 percent, hour to hour and day to day.
- Maintaining capacity to provide emergency care 24/7 requires staffing in multiple areas including the ED, laboratory, radiology, pharmacy, surgical services, general and intensive care units, labor and delivery, plus on-call physicians.
- A large urban hospital emergency department can expect to see – and must be prepared to treat – more than 1,500 *unique patient conditions*.
- Small and rural hospitals are equipped to treat many conditions, and when necessary, stabilize more severely ill and injured patients and transfer them to regional referral centers.

## The Safety Net Role

### ■ Often lacking a “medical home,” Medicaid beneficiaries and people without health care coverage – together, 103 million individuals – disproportionately look to the hospital ED as their access point for care.

- From 1998 to 2003, visits to the ED by Medicaid and uninsured patients grew by 22 percent, compared to just 10 percent among privately-insured patients.
- EDs care for more than twice the proportion of uninsured and Medicaid patients than physician offices.
- Medicaid now covers over 57 million people, including 28 million children.
- One in seven Americans lacks health care coverage. Eight of 10 uninsured individuals are in working families. Of the nearly 46 million uninsured, nine million are children.
- Hospitals provided \$26.9 billion in uncompensated care in 2004.

## Disaster Readiness and Response

### ■ September 11th, Hurricane Katrina, and the threat of pandemic flu have increased the national assessment of the

### likelihood of disaster and raised the bar for preparedness.

- In times of disaster, communities look to hospitals not only to mobilize the resources to care for the ill and injured but also to provide food and shelter, and coordinate relief and recovery efforts.
- To be at the ready hospitals need:
  - Comprehensive community disaster plans for a wide array of potential events each with diverse action requirements.
  - Back-up generators and communications systems, personal protective gear, decontamination units, stockpiled medical supplies, training, drills, and surveillance systems in addition to the surge capacity to meet the needs of large numbers of ill and injured patients.

## Challenges to Maintaining the Standby Role

### ■ While patient demand for standby services is increasing, capacity is constrained.

- As ED visits rise, the number of hospitals providing emergency care has declined.
- A 2006 AHA survey found half of EDs report operating “at” or “over” capacity.
- Hospitals also face a growing shortage of caregivers and clinical technicians. By 2020, the U.S. is expected to experience a shortage of 84,000 physicians and over 1 million registered nurses.

### ■ The standby role is not explicitly funded; instead it is built into the overall cost structure of full-service hospitals and supported by revenues received from providing direct patient care. However, the ability to generate sufficient funds from patient care to support this role is increasingly at risk.

- Full-service hospitals are losing favorably reimbursed elective diagnostic and surgical care patients necessary to fund the standby role to providers such as physician-owned, limited-service hospitals and ambulatory surgery centers that provide little if any emergency or safety net care and do not act as first responders during disasters.
- Government payers do not cover the cost of care for Medicare and Medicaid beneficiaries. In 2004, the shortfall from these programs exceeded \$22 billion. Medicare and Medicaid enrollment is projected to grow from 98 million in 2004 to over 106 million in 2010.
- Hospital’s uncompensated care is expected to continue to rise as the number of uninsured is projected to reach nearly 48 million by 2010.

**The role of full-service hospitals is unique:** always there, for all populations, from the routine to the catastrophic. Rising demand, constrained capacity and the erosion of financing are putting this role at risk. This raises important questions for policy makers about how to ensure this critical part of our nation’s health care infrastructure can meet current and future challenges.



# PREPARED TO CARE: PROVIDING 24-HOUR ACCESS TO CARE

## SETTING: NEW BRITAIN GENERAL HOSPITAL EMERGENCY DEPARTMENT

**9:30 a.m.** – In 28 of the 34 ED exam bays, patients are being evaluated and treated for a variety of urgent conditions (four of the 34 beds are fast-track beds which do not open until 10 a.m.). Of the 28 patients, five are awaiting an in-patient bed for admission; two additional patients are awaiting admission to psychiatric beds; and six other crisis patients are awaiting evaluation, medical stability and disposition. Fifteen patients are in the waiting room with varied non-urgent and urgent symptoms. Other patients in the ED include four alcohol intoxication patients “sleeping it off” until their blood levels drop to a safe level. For the ED physicians and staff, it appears to be an average day.

**9:35 a.m.** – The local school nurse calls saying “I had two kids collide playing basketball in gym class. One is light headed and seeing double. The other child’s nose is bleeding – it might be broken. They are on the way over.”

**9:40 a.m.** – Three patients walk-in simultaneously. A female in her late 50s is complaining of acute abdominal pain. The second is a male in his 40s suffering from severe and debilitating migraines. The third, an elderly male in his 60s complaining of severe nausea, has been vomiting for several hours.

**9:45 a.m.** – Ambulance C-Med calls to notify that there was a three-car accident on Interstate 84. Initial assessment is that there are five adults and one young child who will require immediate emergency medical care.

**9:50 a.m.** – Three more patients need to be admitted, bringing the total to eight patients who need admission plus two more seeking psychiatric beds.

**9:55 a.m.** – A middle-aged man in his early 40s arrives in the ED complaining of flu-like symptoms. He is vomiting, suffering from nausea, and running a fever. A 60-year old female patient arrives by car complaining of severe crushing chest pain.

**10:00 a.m.** – A woman in her late 30s arrives at the ED after slicing her finger open while cutting vegetables.

In 30 minutes, the emergency department patient load has increased by more than one-third. While the demand is unexpected, the hospital is not unprepared.

Source: New Britain General Hospital, New Britain, CT.

Health care needs are frequently unanticipated – from the child with a broken arm, to the elderly stroke patient, to the victims of a multi-car accident. Each day an average of 308,000 people seek medical care in the hospital ED – the only health care resource that is staffed 24/7 and equipped to respond immediately to patients with widely differing types and severity of medical conditions and injuries.

## INCREASINGLY HEAVY RELIANCE ON 24-HOUR ACCESS TO CARE

Communities rely heavily on access to emergency care capacity: roughly one-third of hospital care begins in the ED.<sup>1</sup> Furthermore, hospitals serve other patients with immediate needs including the 3.9 million unscheduled births that occur in community hospitals.<sup>2</sup> And physicians frequently refer patients with urgent diagnostic needs to hospital laboratory and radiology departments.

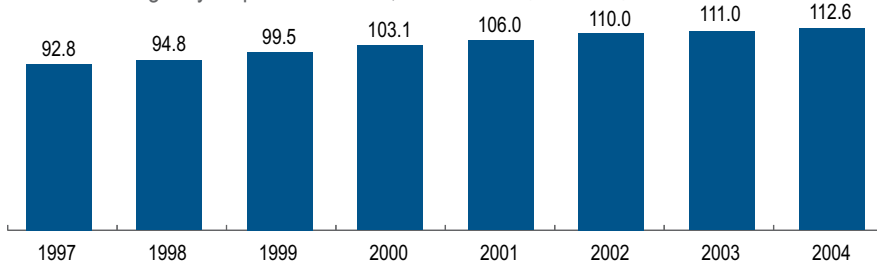
Over the past decade, the number of patients seeking ED care has increased by 25 percent (Chart 1),<sup>3</sup> driven by an increase in the number of Medicaid beneficiaries and uninsured patients, rising levels of chronic disease, and an aging U.S. population. By 2010, if ER visits continue to grow at 2.8 percent per year (as they did from 1997-2004), hospitals will be treating an additional 20

At New Britain General Hospital, half the ED visits are outside of normal business hours.<sup>4</sup>



## Demand for emergency access to care is rising.

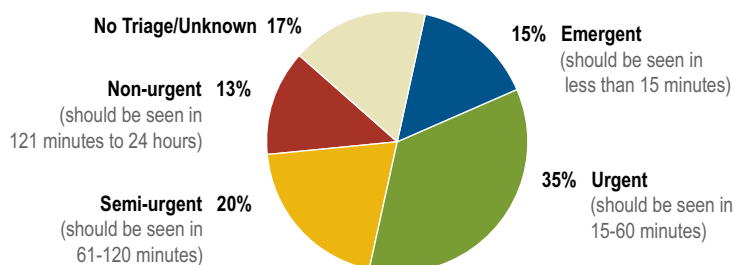
Chart 1: Emergency Department Visits, 1997–2004 (In Millions)



Source: AHA Annual Survey, data for community hospitals.

## Most emergency department patients have immediate health care needs.

Chart 2: Emergency Department Visits by Level of Urgency, 2003



Source: Centers for Disease Control and Prevention, National Ambulatory Medical Care Survey: 2003 Emergency Department Summary.

million patients – 18 percent more visits than seen in 2004.

While patients with no other health care options look to the ED for primary care, the majority of patients who present in an ED have urgent medical needs that must be met quickly – physician offices and other care venues often are not an option even during normal business hours (Chart 2).

With more patients seeking care in the ED, unscheduled admissions are also rising. From 1997 to 2003 the percent of inpatient admissions originating from the ED grew from 37 to 44 percent.<sup>5</sup> This growing need requires that hospitals keep greater numbers of inpatient unit beds open, staffed and ready, 24/7.

The unpredictable nature of emergency care demand makes providing it more challenging. The number of patients seeking ED care varies enormously hour by hour and day to day (Charts 3 and 4).

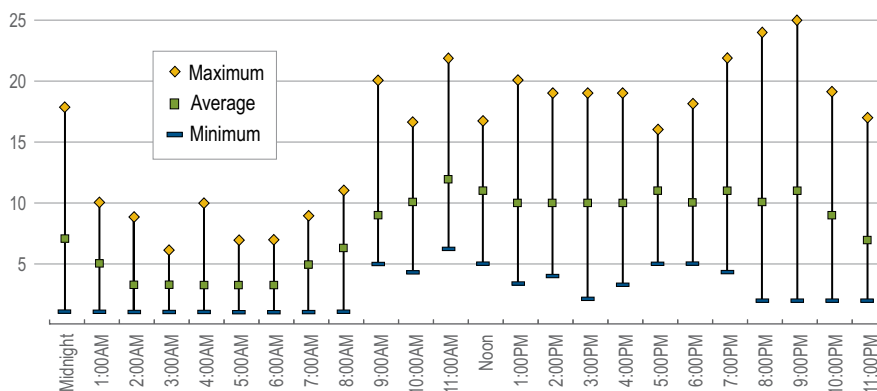
Medicare beneficiaries represent 14 percent of the population but account for 24 percent of ED visits.<sup>6</sup>

### WIDE RANGE OF CARE NEEDS REQUIRES EXTENSIVE RESOURCES

Patients' emergency needs vary greatly and require myriad hospital resources. While a child with an ear infection might be evaluated and discharged with a prescription, a broken arm requires an x-ray; stomach pain may require an ultrasound, laboratory work and medication; and trauma or a heart

## Emergency care demand is highly unpredictable and can vary greatly by time of day...

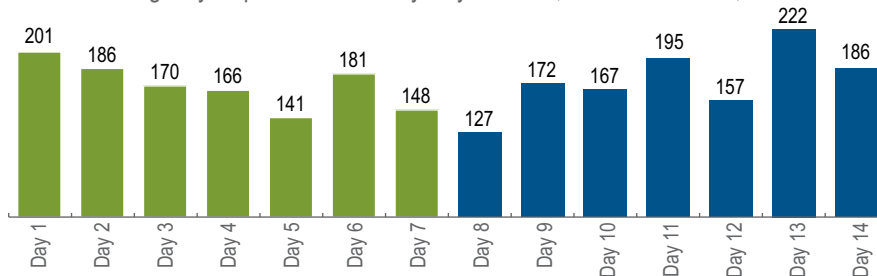
Chart 3: Emergency Department Visits by Hour of Day, October 1-31, 2004



Source: New Britain General Hospital, New Britain, CT.

## ...and day of week, raising management challenges for hospitals.

Chart 4: Emergency Department Visits by Day of Week, November 17-30, 2004



Source: New Britain General Hospital, New Britain, CT.

## Behaviorally Ill are Increasingly Reliant on Hospital EDs

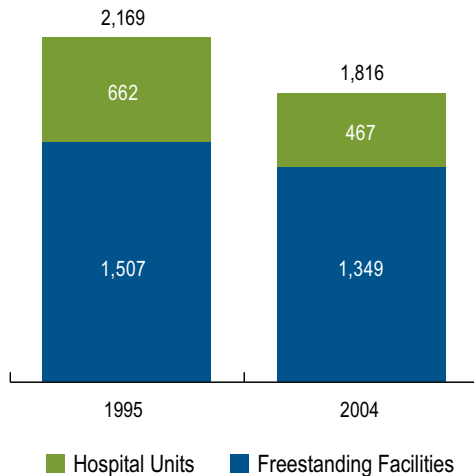
Declining reimbursements from payers and the erosion of public support have resulted in reductions and/or eliminations of inpatient psychiatric units and/or beds in hospitals as well as in private, free-standing and state behavioral health facilities. Many outpatient centers also have closed and some behavioral health specialists are limiting their practices to fee-for-service patients only. As a result, individuals suffering from mental health and substance abuse (MHSA) conditions increasingly turn to EDs for care (Figures A and B).

When they arrive at the ED, MHSA patients often are diag-

nosed with co-morbidities and/or may pose a physical danger to themselves or others. Many EDs are not equipped with “quiet rooms” and/or staff trained to care for MHSA patients. In some parts of the country, finding an inpatient psychiatric bed can take 12 or more hours and, in some cases, patients will remain in the ED for days until a bed can be found. In a recent survey, 45 percent of hospitals reported a moderate to significant increase in “boarding” by behaviorally ill patients in the past year.<sup>7</sup> Pediatric mental health patients present an even greater placement challenge.

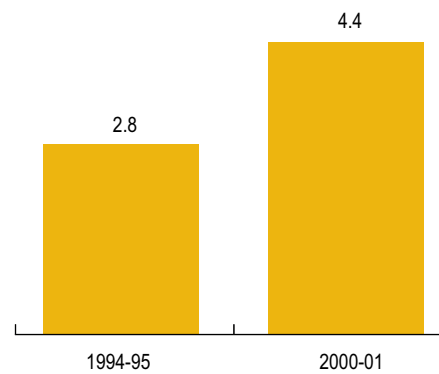
### Decreasing resources for behavioral health care have led more patients to turn to the ED for care.

Figure A:  
Inpatient Psychiatric Facilities,  
1995 – 2004



Source: AHA Annual Survey of Hospitals, 1995-2004.

Figure B:  
Behavioral Health-related Emergency  
Department Visits, 1994/95 – 2001/02  
(In Millions)



Source: Gregory Luke Larkin et al., Trends in U.S. Demand in U.S. Emergency Department Visits for Mental Health Conditions, 1992 to 2001; Psychiatric Services 56:671-677, June 2005.

**“The most acutely ill or injured patients require special resources for their care. These are patients that can be treated at only a few hospitals. Our Level I trauma status and our physicians enable us to care for these patients.”**

- Dr. Andrew Ziskind, CEO, Barnes–Jewish Hospital, Level I Trauma Center

attack may require immediate surgery (Chart 5).

Some conditions are “common” and treated with high frequency. Others might be rare and seen no more than a few times a year. A typical urban hospital ED can expect to see – and must be prepared to treat – well over 1,500 unique conditions (Chart 6). As a nation, we expect that a wide range of clinical expertise, equipment and medical supplies will be available 24/7 for any one of those conditions.

Maintaining emergency department, radiology, laboratory, pharmacy, surgical services, general and intensive care units, and labor and delivery capacity, as well as access to the clinical expertise of physicians in many specialty areas, is essential

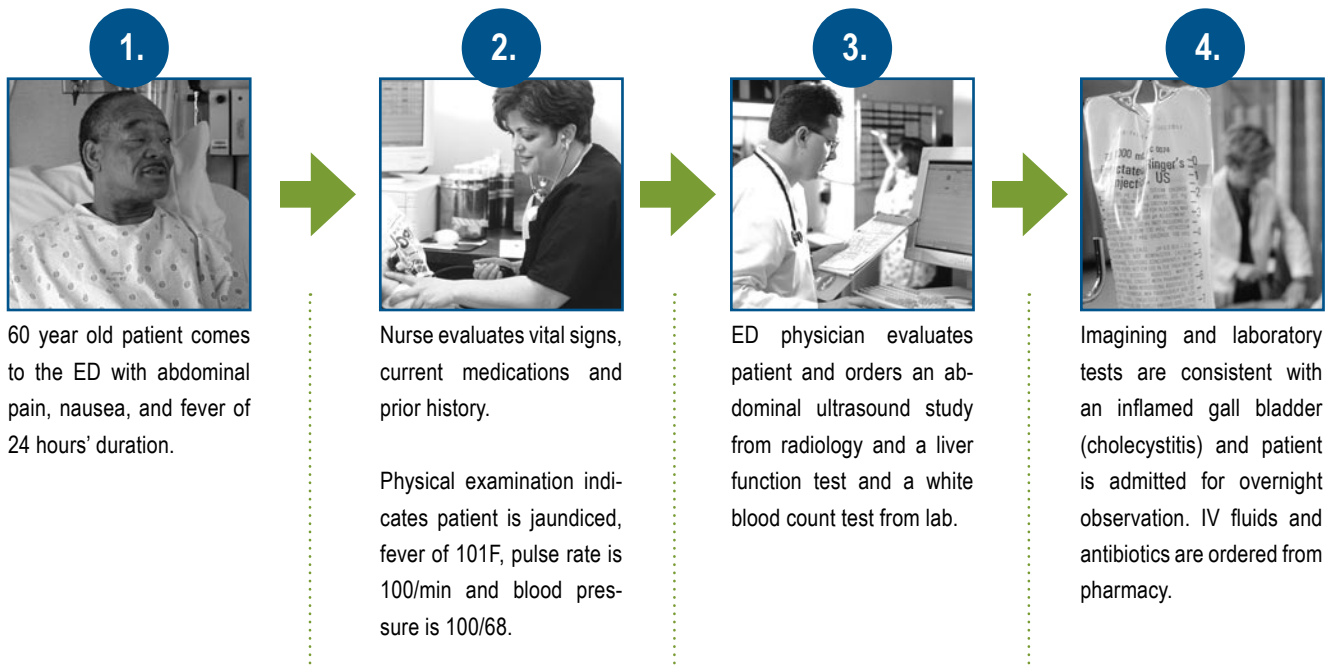
to meet a community’s 24/7 health care needs. Larger hospitals will maintain continuous access to a full array of resources – either on site or on-call – in the event an emergency patient arrives. This could include physicians in up to 20 specialties and sub-specialties as well as on-call cardiac catheterization teams, open heart surgical teams, and endoscopic teams. Smaller hospitals are able to meet the needs of the majority of patients, but also maintain the capacity to stabilize and transfer patients when necessary. The capabilities of a particular hospital will vary with the needs of the community and the health care resources it has available to it.

### Rebuilding Trauma Care in Tacoma, WA

In 1995, facing financial and physician coverage challenges, Tacoma General Hospital and St. Joseph Hospital closed their trauma programs. Patients with trauma needs were then sent to Harborview Medical Center in Seattle. In 2000, Pierce County officials approached Tacoma General Hospital and St. Joseph’s Medical Center and asked that one of them restart their trauma program. To share the high cost burden, they agreed to do it collaboratively. They set up a 501(c)3 not-for-profit trauma trust that employs six trauma surgeons and five physician assistants, and alternates call between the two hospitals every other night. The hospitals each subsidize the program with \$1 million annually.

## Common patient conditions require a wide variety of resources to be available 24/7.

Chart 5: Example of Resource Needs for a Common Condition



## The Challenges of Serving Rural America

Ensuring 24/7 access to care for the 59 million Americans who live in rural communities<sup>8</sup> represents a special challenge. For those living in sparsely populated rural areas, the nearest hospital can be miles away, often on narrow roads over mountainous terrain, and travel could be subject to seasonal weather. As a result, care must be organized differently (Figure C).

The more than 2,000 hospitals located in rural America maintain varying levels of resources depending on the community needs.<sup>9</sup> The smallest rural hospitals, the nation's 1,277 critical access hospitals, can handle many emergency conditions.<sup>10</sup> Many of these and other small rural hospitals are staffed with family practice physicians trained to diagnose and treat a wide array of conditions. Larger rural facilities maintain a more diverse complement of specialty physicians.

These services ensure that patients seeking emergency care for many conditions can be treated and discharged or admitted.

Patients who arrive at EDs with conditions requiring specialty consults, procedures, diagnostics or intensive care not available at these hospitals are evaluated, stabilized and subsequently transferred. Hospitals typically establish transfer relationships to ensure that the needs of the most acutely ill and injured patients are met. Relationships are particularly important for small rural hospitals which may not

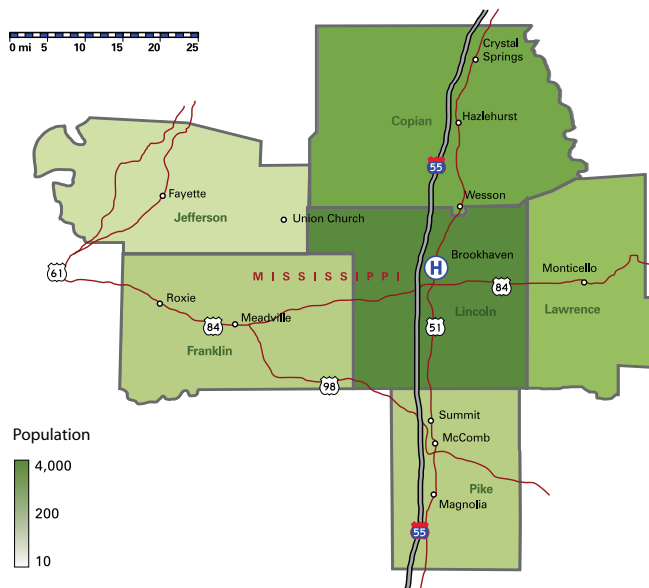
have the breadth of resources that can be supported in more densely populated areas. Depending on the patient's needs, the transfer could be to a larger rural hospital, a facility in a metropolitan area, or, for the most severe patients, by airlift to a Level I trauma center.

***“In rural areas, 24/7 service is essential. It is not easy, it is not cheap, but it is essential.”***

***- Kelley Evans, CEO, Beartooth Hospital, Red Lodge, MT***

### Rural hospitals often serve large geographic areas.

Figure C: Geographic Region Served by King's Daughter Medical Center, Brookhaven, MS



Source: King's Daughter Medical Center, Brookhaven, MS, FY05.



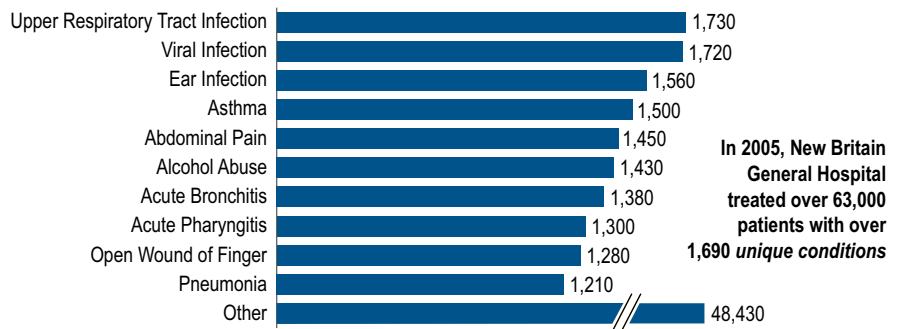
Those injured in car accidents, acts of violence and industrial accidents often need the highly specialized resources available at burn centers or Level I trauma centers (Charts 7 and 8). The U.S. has just 189 Level I trauma centers and 135 burn centers.<sup>11,12</sup> Level I trauma centers cover large geographic areas including not only neighboring counties but in some cases neighboring states. In communities without trauma and burn centers, hospitals focus on stabilizing patients and transferring them for specialized care when appropriate.

This type of emergency care “network” of standby capacity is viewed as a regional service and public good. For example, Oklahoma University Medical Center is the only Level I trauma center in the state making it as important to the health and welfare of Oklahoma’s 1.3 million rural residents as it is to the population of Oklahoma City.<sup>13</sup>

At Oklahoma University Medical Center, a Level I trauma center, helicopter transportation costs approximately \$2.4 million annually.

## Full-service hospitals are equipped to respond to over 1000 unique conditions.

Chart 6: Emergency Visits and Conditions Treated  
Example: New Britain General Hospital, FY 2005

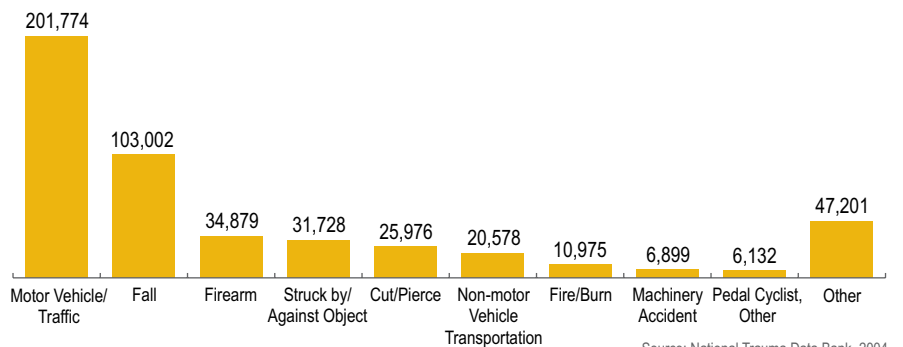


Source: New Britain General Hospital, New Britain, CT.

In 2005, New Britain General Hospital treated over 63,000 patients with over 1,690 unique conditions

## Victims of accidents or violent crimes often are transported to Level I trauma centers...

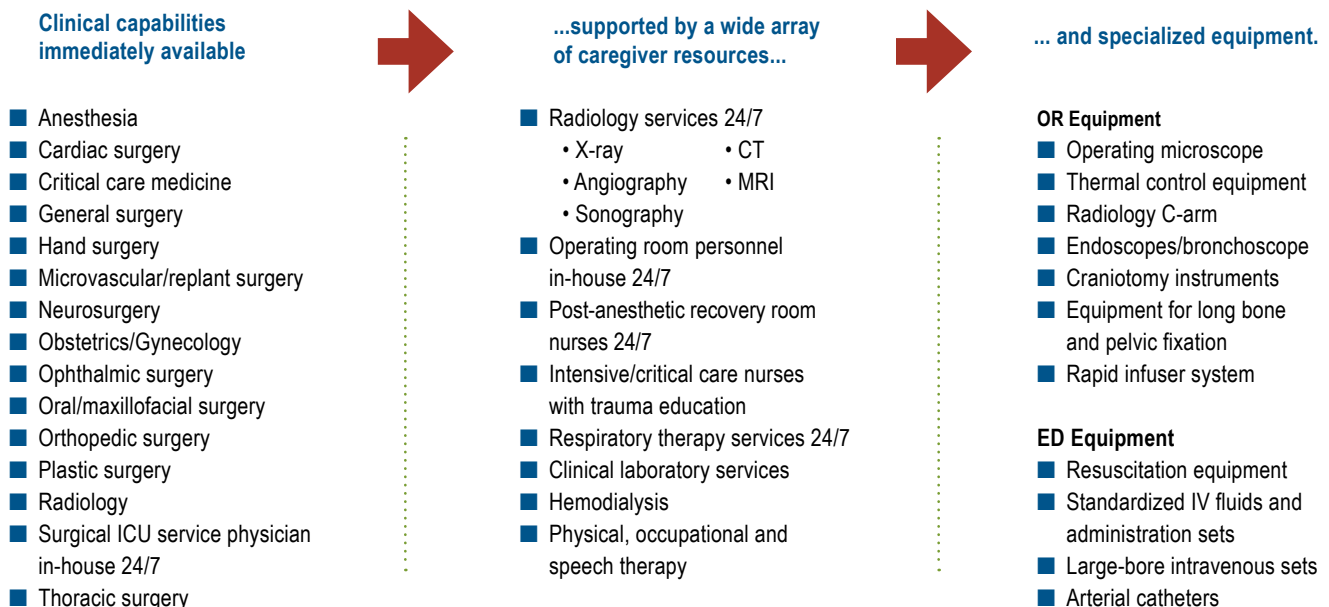
Chart 7: Accidents Cared for at Level I Trauma Centers, 2001 - 2004



Source: National Trauma Data Bank, 2004.

## ...where extensive and highly specialized resources are available 24/7.

Chart 8: Selected Resource Requirements for Level I Trauma Centers



Source: American College of Surgeons: Resources for Optimal Care of the Injured Patient, 1999.



# PREPARED TO CARE: THE SAFETY NET ROLE

The area served by King's Daughter Medical Center in Brookhaven, MS has a high poverty rate. Over 55 percent of the hospital's ED visits are by uninsured individuals or Medicaid recipients. Lacking a "medical home," many of these patients seek care several times a year for the same chronic condition. Recognizing that there were ways to both improve care and lower costs, King's Daughter set up a clinic staffed with three nurse practitioners and one family practitioner. When a Medicaid or uninsured patient arrives in the ED, the hospital works with the patient to ensure they get appropriate follow-up care in their clinic. These patients also are encouraged to use the clinic for preventive care, which hopefully will lead to fewer acute episodes that require ED care.

Source: Staff interviews, King's Daughter Medical Center, Brookhaven, MS.

## GROWING NEED FOR SAFETY NET SERVICES

Nearly 46 million Americans have no health insurance coverage, including more than nine million children. Medicaid covers 57 million individuals including 28 million children and nearly 9 million disabled people. Many of these individuals lack a regular source of health care and look to community hospitals as their medical safety net.

As part of their mission and by federal law under the Emergency Medical Treatment and Labor Act (EMTALA), hospital EDs must screen and stabilize all patients entering the ED regardless of an individual's ability to pay. This requirement is unique to the nation's hospitals with EDs and thus, for many of America's uninsured and other low income vulnerable people, the hospital ED has

become the primary point of access for health care services.

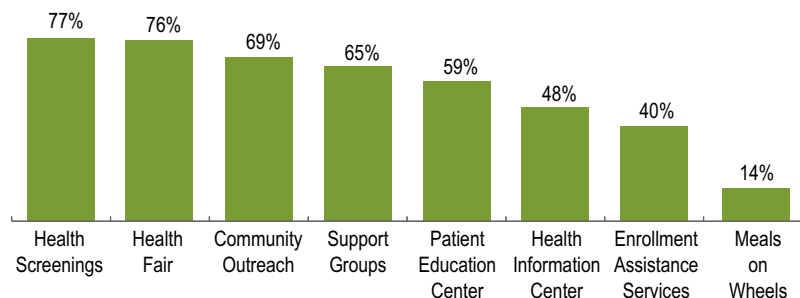
Hospital services for low income individuals go beyond the ED as well. Hospitals provide a range of community services including health screenings, health fairs, community outreach, wellness and preventive care (Chart 9).

These programs provide significant benefits. At Parkland Hospital in Dallas, a program to provide prenatal care to low income women reduced the rate of admissions to the neonatal intensive care unit per delivery by 40 percent.<sup>14</sup>

In 2004, 1 in 7 Americans was uninsured; 8 in 10 uninsured were in working families.

## Hospitals provide many community services for low-income populations and the community at large.

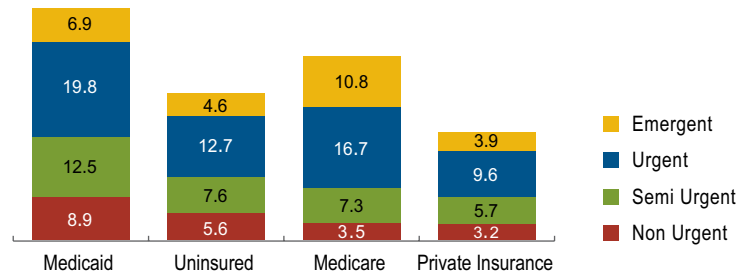
Chart 9: Percentage of Community Hospitals Offering Selected Community Services, 2004



Source: Health Forum, Hospital Statistics, 2006.

## Medicaid beneficiaries use more ED care than other populations.

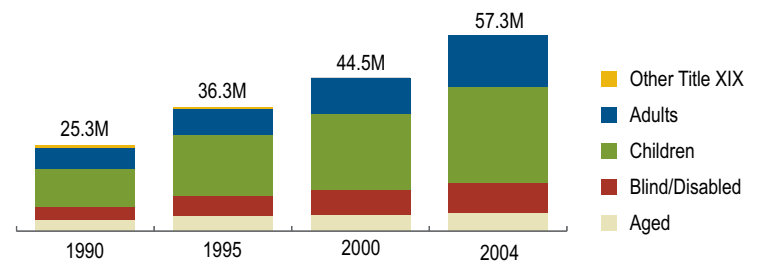
Chart 10: Emergency Department Visits per 100 Population by Immediacy of Patient Condition, 2003



Source: Chartis Group Analysis of National Hospital Ambulatory Medical Care Survey, 2003.

## The number of Medicaid beneficiaries has more than doubled since 1990.

Chart 11: Medicaid Enrollees,<sup>(1)</sup> 1990 - 2004 (In Millions)



Source: Centers for Medicare & Medicaid Services; 2004 data, CBO March 2005 Baseline.  
<sup>(1)</sup> Does not include SCHIP Enrollees

Medicaid beneficiaries and the uninsured are more likely than privately insured patients to seek ED care, and their numbers are growing (Chart 10). Since 1990, the number of uninsured has grown by 10 million and the Medicaid population has more than doubled (Chart 11).<sup>15,16</sup>

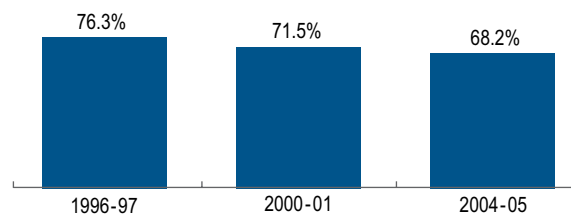
Declining reimbursement from Medicare, rising professional liability and other costs, have limited the ability of many physician practices to provide charity care (Chart 12). As a result low income populations have fewer places to turn for basic care. Without access to ongoing primary care for chronic conditions such as asthma, hypertension, or diabetes, many among these populations delay care until their clinical state has progressed to a health crisis requiring emergency care. Hospital EDs serve proportionally more Medicaid and uninsured patients than physician's offices (Chart 13).

As a result of both the growth in these populations and the reduced access to other care venues, hospital EDs are seeing greater numbers of low-income and Medicaid patients for all levels of care. From 1998 to 2003, Medicaid and uninsured ED visits together grew by 22 percent compared to 10 percent growth for the privately-insured population.<sup>17</sup> Overall service to Medicaid and self-pay patients – ED and other care – accounts for 20 percent of the patient care provided by hospitals.<sup>18</sup>

These trends are expected to continue. By 2010, the number of Medicaid beneficiaries is expected to grow from 57 to 61 million<sup>19</sup> and the number of uninsured from 46 to 48 million.<sup>20</sup>

## The proportion of physicians providing office/clinic-based charity care is declining.

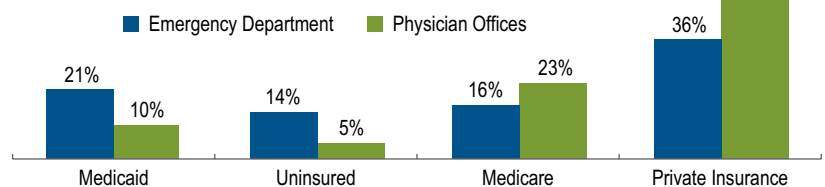
Chart 12: The Percent of Physicians Providing Office/Clinic Based Charity Care, 1996/97 – 2004/05



Source: Center for Studying Health System Change, A Growing Hole in the Safety Net: Physician Charity Care Declines Again, Tracking Report No. 13, March 2006.

## EDs serve proportionally more Medicaid and uninsured patients than physician offices.

Chart 13: Percent of Total Visits by Expected Source of Payment, 2003 Emergency Departments vs. Physician Offices



Source: Centers for Disease Control and Prevention, National Ambulatory Medical Care Survey; National Hospital Ambulatory Medical Care Survey, 2003.



# PREPARED TO CARE: DISASTER READINESS AND RESPONSE

In rural Montana, members of the U.S. Marines who had recently returned from Iraq were celebrating with their families at a mountain resort. A guest began feeling very ill and then another. Upon arrival, the paramedics found the number of people reporting symptoms of illness increasing by the moment. The fire department arrived and immediately detected unusually high carbon monoxide levels. Beartooth Hospital, a 15-bed critical access hospital in Red Lodge, MT, was called and told to expect eight to 10 patients. Ultimately, they cared for many more.

Beartooth Hospital immediately went into disaster response mode. Coincidentally, Beartooth Hospital had simulated a sarin gas outbreak earlier in the year that prepared them for this very situation. Beartooth initiated its emergency call lists and coordinated with other critical access hospitals and facilities in the region to obtain ambulance support, oxygen and IVs. Beartooth physicians consulted with specialists at Billings Clinic, one of the region's main tertiary hospitals about 60 miles away. In five hours, 40 people were treated and six who required further care (three of whom were pregnant) were transferred to the Billings Clinic. Beartooth's disaster response planning proved critical in responding to the demands of the ill patients. Without Beartooth and their focused preparedness and response, the soldiers and their families could have experienced a far worse outcome.

Source: Staff interviews, Beartooth Hospital, Red Lodge, MT.

Full-service hospitals are first responders to disasters. From providing and coordinating care, to offering shelter and food, hospitals are pivotal to disaster response activities whether they are rural critical access hospitals or Level I trauma centers.

While hospitals have always had disaster plans in place, the terrorist acts of September 11th, Hurricane Katrina, and the threat of pandemic flu have increased our assessment of the likelihood of disaster and raised the bar for preparedness.

## PREPAREDNESS: AN IMPERATIVE FOR ALL HOSPITALS

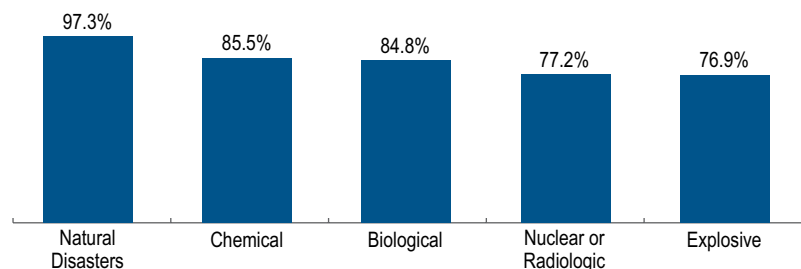
The often unpredictable nature and timing of disasters require all full-service hospitals to be capable of responding to a variety of potential events at any time (Chart 14). Hospitals spend a great

deal of time and resources on preparation activities including developing, testing, and refining disaster response logistics and clinical plans for various simulated events (Chart 15). These processes and protocols enable hospitals to quickly organize manpower, call in support, organize patient treatment plans and locations, procure and organize needed equipment and supplies, and coordinate with other facilities.

86 percent of hospitals reported having participated in a community-wide disaster drill with local police and fire departments, social service agencies, and other health care providers within the last year.<sup>21</sup>

## Hospitals plan for multiple types of disasters.

Chart 14: Percent of Hospitals with Response Plans by Type of Incident, 2003



Source: Centers for Disease Control and Prevention, Bioterrorism and Mass Casualty Preparedness in Hospitals: United States, 2003.

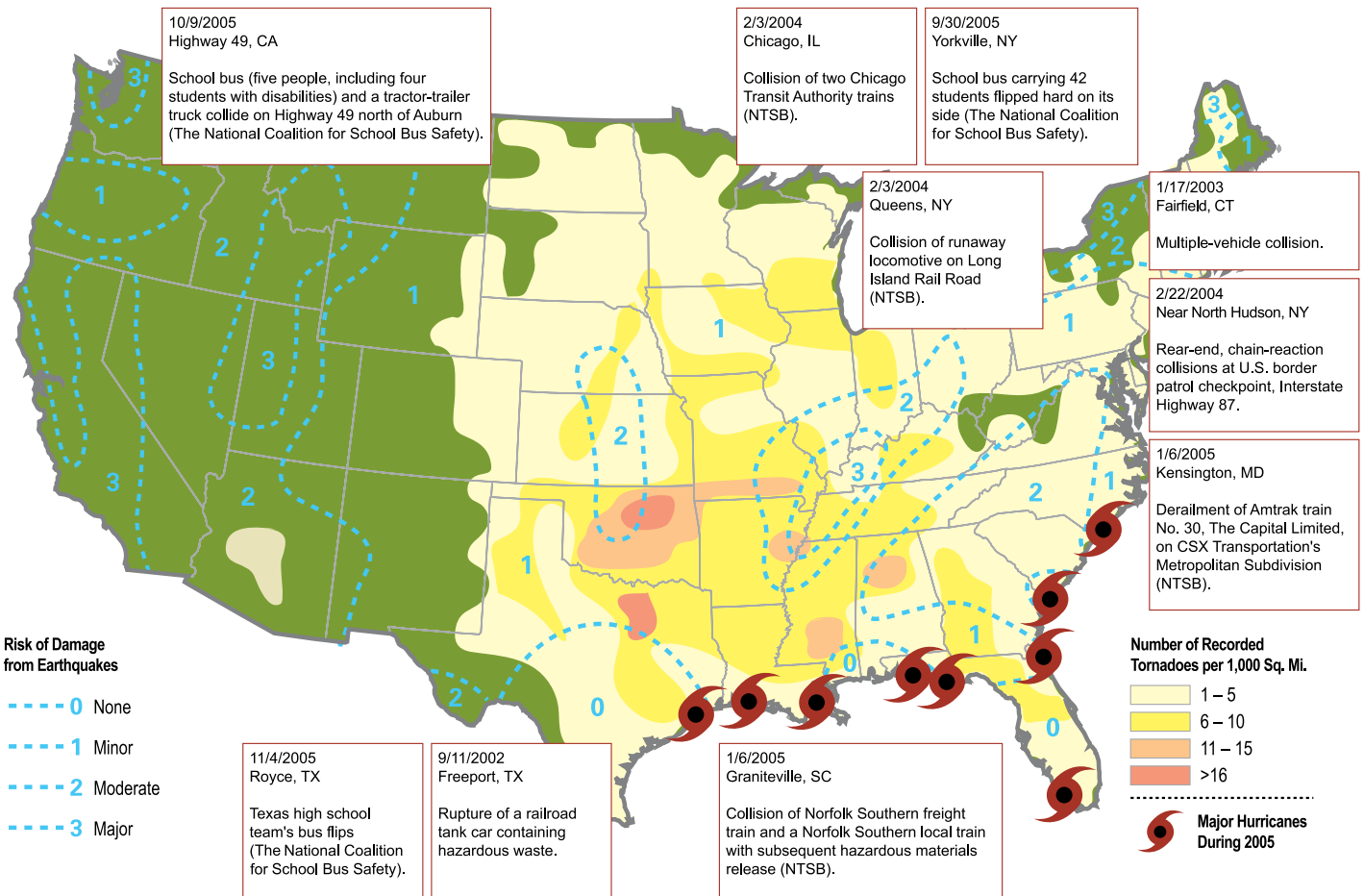


*“We are here for those disasters — we are here for those bad things that happen.”*

- Paul Miranda, MD, Biloxi Regional Medical Center, MS

## Hospitals in all regions must be prepared for a range of natural and man made disasters.

Chart 15: Selected Recent U.S. Disasters



## Common Disaster Response Equipment

- Generators
- Communication Systems
- Personal Protective Equipment
- Decontamination Facilities
- Medical Supplies and Pharmaceuticals
- Disease Surveillance Systems

### RESOURCES AT THE READY

Hospitals annually invest significantly to develop and test disaster response plans, train clinical and support staff, maintain and replace disaster response equipment and supplies, enhance communication and surveillance capabilities, and enable better patient transport and care.

Equipment purchases, training, plan development and testing costs are funded through a hospital's operating budget. In preparation for one hurricane, Baptist Hospital in Pensacola, FL can spend about \$500,000.

The dedicated men and women of America's hospitals are critically important resources in

responding to a disaster. Following a disaster, the resulting health care needs often can push the limit of a community's health care system. Natural disasters cut power, destroy homes, and often make bridges and roads impassable. But it is during these times that the hospitals and their employees truly show their unique value. For example, after Hurricane Katrina, trees and power lines were down throughout the Gulf Coast region. Employees of King's Daughter Medical Center, some of whom lived 20-30 miles away, threw chainsaws in the back of their cars to cut away fallen trees they might encounter en route. For many, these routinely half-hour trips took the better part of a day.

***“They swam out of their homes and came to the only place that had lights — and that was the hospital”***

*- Diane Gallagher, Memorial Hospital at Gulfport, MS*

## Hurricane Response in Florida's Panhandle (Figure D)

Certain geographic areas are more prone to particular disasters. In Pensacola, FL, the community and its hospitals are accustomed to the almost annual occurrence of a hurricane. Pensacola's Baptist Hospital plays a pivotal role in organizing the community's response.

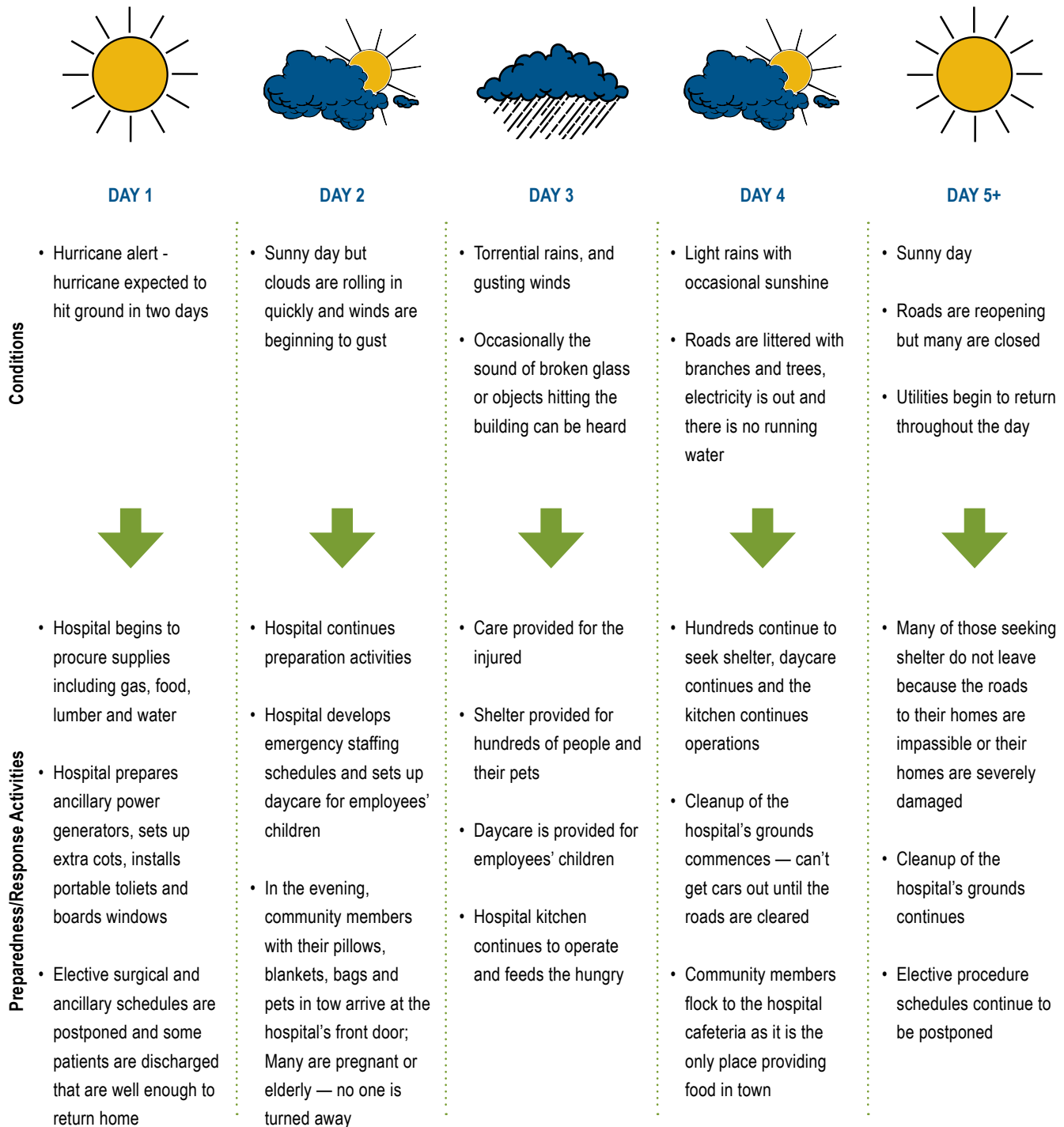
As soon as a hurricane is identified and expected to make landfall, Baptist goes into emergency planning mode. It spends significant dollars procuring essentials such as gas, food, lumber and water. Baptist prepares ancillary power generators, sets up extra cots, installs portable toilets and boards up windows. In addition, it creates additional patient care capacity by postponing elective surgeries and ancillary procedures and discharging patients who are well enough to return home. In preparation for one hurricane, Baptist Hospital can spend about \$500,000.

Because hospitals are seen as “safe havens,” community members often arrive at Baptist the night before the hurricane hits with their pillows, blankets, bags and pets in tow. Many of those arriving are pregnant, elderly or on respirators. No one is turned away, and everyone is provided a safe corner to wait out the storm. When a hurricane hits, Baptist provides care for the injured, shelter for hundreds of people and their pets, daycare for its employees' children, and food for the hungry.

After the hurricane, Baptist's role in responding continues. It cares for persons injured in the hurricane and shelters people for several days as they wait for roads to clear and electricity and running water to return. People might continue to seek shelter for several days as they wait for a semblance of normalcy to return.

## Disaster response in hurricane zones can last for days and require hospitals to play many different roles.

Figure D: An Illustration of Hurricane Response, Baptist Hospital, Pensacola, FL



# PREPARED TO CARE: CHALLENGES TO MAINTAINING THE STANDBY ROLE

The increased demand for the standby role – for all populations from routine emergencies to community-wide disasters – raises critical resource challenges for full-service hospitals. Hospitals not only face shortages of staff and space, but also financial challenges including shortfalls from government payers and a loss of patients and revenues to other types of providers who do not perform this essential role.

## CAPACITY CONSTRAINTS IN THE FACE OF RISING DEMAND

A sufficient supply of hospital caregivers and other staff is essential to maintaining access to high quality care, effective response times, and necessary service availability. Over the past decade, the supply of caregivers has not kept pace with increasing demand. Hospitals are experiencing workforce shortages across many key areas (Chart 16). As of December 2005, U.S. hospitals reported an estimated 118,000 vacant RN positions.<sup>22</sup> The American Society of Radiologic Technologists estimates

that there are currently over 30,000 radiology technologist vacancies nationwide. These shortages decrease staff satisfaction, make recruitment and retention more difficult, and affect access to care in many ways.

**Hospitals currently have an estimated 118,000 vacant RN positions.**

Future workforce projections indicate that the problem will only worsen. By 2020 there is expected to be a shortage of 1 million registered nurses and 84,000 specialist and generalist physicians (Charts 17 and 18).<sup>23,24</sup> The physician supply imbalance already is being felt. In a recent survey, 42 percent of hospitals reported gaps in specialty ED on-call coverage and one-third of community hospitals now pay for coverage in some specialty areas.<sup>25</sup>

Staff shortages combined with physical capacity constraints make it increasingly difficult for hospitals to meet the rising demand for emergency care. Since 1991 the number of ED visits has grown

by 24 million, but there are 500 fewer hospitals with emergency departments (Chart 19).

Currently more than half of hospitals report that their EDs are “at” or “over” capacity and nearly two-thirds of urban hospitals reported time on ambulance diversion in the past year. The most common reasons cited are lack of critical care beds and ED overcrowding.<sup>26</sup>

## DECLINING FINANCIAL SUPPORT

The standby role of the hospital is not explicitly funded. Unlike fire and police departments, hospitals receive no payments to keep staff and space at the ready. Instead the standby role is built into the cost structure of full-service hospitals and supported by revenues from direct patient care. Although quantifying the costs is difficult, they are real and spread across every service – emergent or elective – that the hospital provides. However, generating sufficient funds from patient care to fund this role is becoming more difficult.

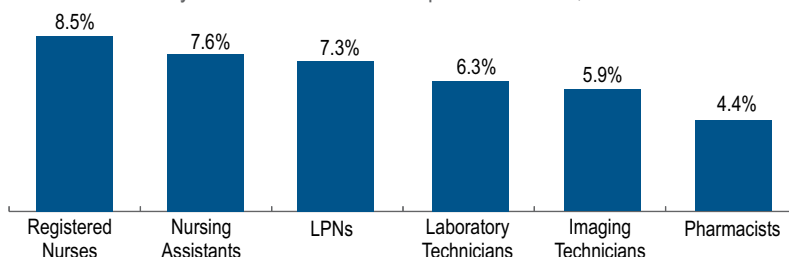
Full-service hospitals face declining financial support for the standby role because of growing shortfalls in public payment and the migration of care – and revenues – away from full-service hospitals.

## GROWING SHORTFALLS IN PUBLIC PAYMENT RELATIVE TO COSTS

The erosion of public funding for patient care makes it harder for hospitals to support the standby role. Currently Medicare and Medicaid in aggregate do not cover the full cost of care for program beneficiaries but their beneficiaries account

### Hospitals currently face workforce shortages in key care-giving professions.

Chart 16: Vacancy Rates for Selected Hospital Personnel, December 2005



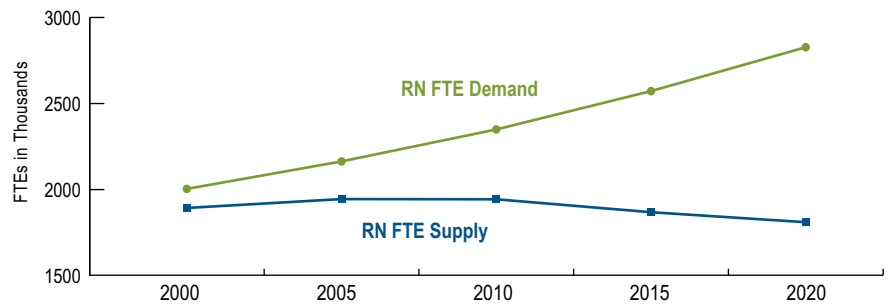
Source: AHA Survey of Hospital Leaders, 2006.





## By 2020, demand will outstrip supply by 1 million for registered nurses...

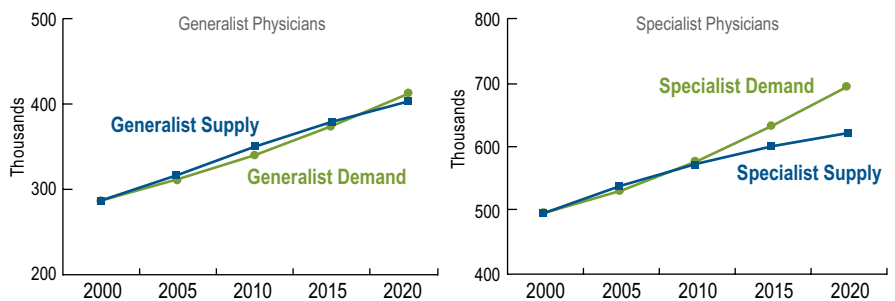
Chart 17: Registered Nurse FTEs: Supply and Demand, 2000–2020



Source: National Center For Health Workforce Analysis, Bureau of Health Professions, Health Resources and Services Administration, 2004.

## ...and 84,000 physicians.

Chart 18: Physician Supply and Demand, 2000 – 2020



Source: College of Graduate Medical Education, Physician Workforce Policy Guidelines for the United States, 2000-2020.

for about half the care provided by hospitals. In 2004, the aggregate shortfall of government funding for Medicare and Medicaid beneficiaries was estimated at \$22 billion dollars (Chart 20).<sup>27</sup>

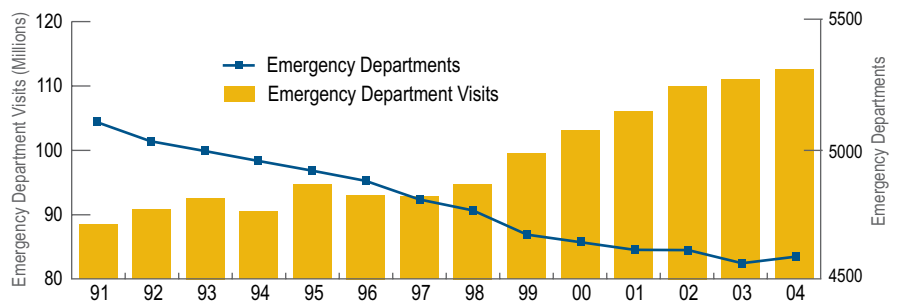
The rising number of uninsured patients contributes to financial challenges. Between 1998 and 2004, the cost of uncompensated care grew by 45 percent, from \$18.5 to \$26.9 billion.<sup>28</sup> Federal and state governments traditionally provide funding to help hospitals that have an unusually large share of low income populations through disproportionate share (DSH) adjustments to Medicare and Medicaid payments, direct appropriations, provider taxes, and other mechanisms to fund safety net services. But the overall under-funding of Medicare and Medicaid means that payments from private payers must offset both public funding shortfalls and the cost of uncompensated care.

Hospitals receive little explicit financial support for disaster preparedness. Prior to September 11th, the federal Domestic Preparedness Program had no funding for hospitals. Since then, the federal government's Public Health Security and Bioterrorism Preparedness Act of 2002 created the National Bioterrorism Hospital Preparedness Program, which has distributed approximately \$2 billion to hospitals and other health care providers over five years. This amount, when spread over all hospitals, barely covers the annual salary of an additional nurse.<sup>29</sup> While helpful, this level of funding is insufficient to cover the ongoing cost of disaster preparedness.

Additionally, reimbursement for disaster relief and recovery seldom matches the expenditure. After having filed a claim of \$4 million with Federal Emergency Management Agency for Hurricane

## As the number of patients seeking ED care has risen, the number of EDs has declined.

Chart 19: Emergency Department Visits and Emergency Departments<sup>(1)</sup> in Community Hospitals, 1991 - 2004



Source: The Lewin Group analysis of American Hospital Association Annual Survey data, 1991 – 2004, for community hospitals.  
<sup>(1)</sup>Defined as hospitals reporting ED visits.

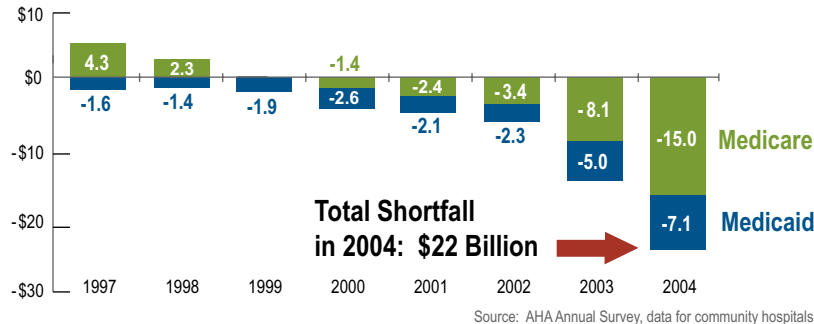
Ivan-related expenditures in 2004, Pensacola's Baptist Hospital has received only \$500,000 to date. Federal disaster assistance funding is more attuned to providing funds for property damage than for the added costs, or lost revenues, accompanying a hospital's response to a disaster. In addition, investor-owned hospitals are not eligible for

federal disaster assistance funding at all.

As the demand for emergency access to care increases, the number of Medicare and Medicaid beneficiaries grows, more people become uninsured, and disaster response preparedness requirements grow, alignment of government funding with public service expectations will be critical.

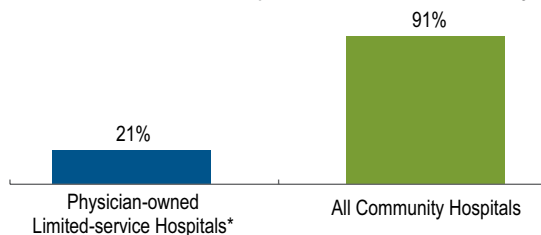
## Hospitals face a growing payment shortfall from Medicare and Medicaid.

Chart 20: Hospital Payment Shortfall Relative to Costs For Medicare and Medicaid Patients in Billions of Dollars, 1997-2004



## The majority of physician-owned limited-service hospitals do not provide the 24/7 standby role...

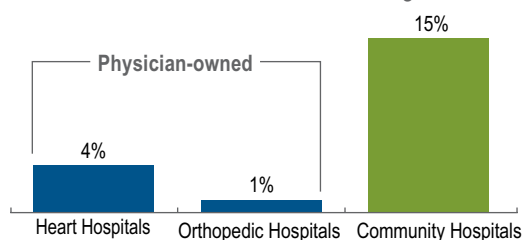
Chart 21: Percent of Hospitals with an Emergency Department\* Physician-owned Limited-service Hospitals versus All Community Hospitals, 2003



Source: Centers for Medicare & Medicaid Services, Study of Physician-owned Specialty Hospitals Required in Section 507(c)(2) of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, 2005. AHA Annual Survey, 2003. \*Hospitals treating more than 5% of cases in emergency department.

## ...and provide relatively less care to low income populations.

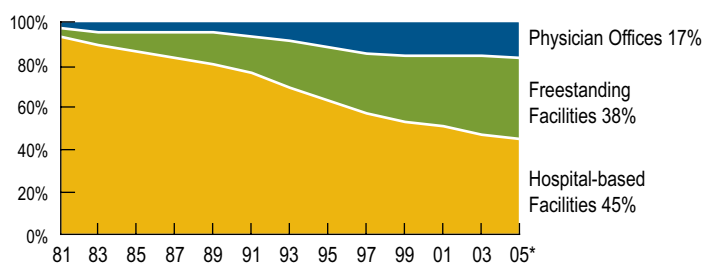
Chart 22: Medicaid as a Percent of All Patient Discharges, 2002



Source: Medicare Payment Advisory Commission, Physician-owned Specialty Hospitals, March 2005.

## Outpatient surgical care is shifting from hospitals to other settings.

Chart 23: Percent of Outpatient Surgeries by Facility Type, 1981-2005



Source: Verispan's Diagnostic Imaging Center Profiling Solution, 2004. \*2005 values are estimated based upon current trends.

## THE MIGRATION OF CARE AWAY FROM FULL-SERVICE HOSPITALS

Hospitals attempt to finance under-funded services, government shortfalls and the standby role through surplus revenues generated from favorably reimbursed individuals and services. This patchwork of cross-subsidies is at risk as hospitals are increasingly losing healthier, well-insured patients and well-paid services to care venues outside of full-service hospitals.

Physician-owned, limited-service hospitals are one such place – these facilities focus on cardiac, orthopedic and surgical care. The majority of these facilities do not have emergency departments and, instead, primarily offer elective care (Chart 21). Additionally, unlike most other care settings, physician-owners can self-refer patients. As a result of these combined factors, many physician-owned, limited-service hospitals are able to operate with significant control over the flow of patients and achieve a more favorably reimbursed mix of services and patients while providing a smaller proportion of services to low income populations than competing full-service hospitals (Chart 22).<sup>30</sup> These selection practices take advantage of systemic cross-subsidies built into the health care financing system while simultaneously siphoning the necessary dollars full-service hospitals depend upon to finance the standby role they alone provide.

Full-service hospitals also face a loss of patients as outpatient surgical and diagnostic procedures migrate to other care settings including ambulatory surgical centers (ASCs) and physician offices. On a service-by-service basis, these settings can be less expensive because they don't have the added costs of standby capacity. In some cases these lower costs are appropriately reflected in reimbursement systems (e.g. ASCs are paid less than hospital outpatient departments for most surgical procedures, reflecting both the different role that hospitals play and the higher acuity level of patients served in the hospital setting). While these venues are attractive to payers looking to pay the least amount possible for each service, the loss of patients and associated revenues erodes the ability of full-service hospitals to subsidize the standby role. Today, 55 percent of outpatient surgery is provided in physicians' offices and ambulatory surgery centers (Chart 23). Ironically, these other care settings rely on the hospital for emergency back-up in the event of patient complications.

# POLICY QUESTIONS

The standby role of full-service hospitals is often taken for granted, but represents an essential component of our nation's health and public safety infrastructure. Rising demand, a shortage of resources and funding, and the continued migration of care out of the full-service hospital setting pose credible threats to the hospital's ability to maintain this role and raise critical questions for policy-makers, including:

- How will current financing mechanisms need to be refined in order to support the standby role in the future?
- What is the appropriate role of government in supporting hospital-based disaster preparedness and relief?
- Should all health care facilities be required to support the community's standby capacity and care needs?
- How can the health care field as well as local, state and federal governments promote greater numbers of individuals to enter health care professions?

- What additional support will be needed to ensure rural hospitals can maintain critical standby services for communities outside major urban centers?
- What steps can be taken to promote greater access to and utilization of primary care among low income vulnerable populations to improve their health status and reduce the need for ED care?
- What is the most cost effective way to organize and coordinate a community's health care resources to support standby capacity?
- What can be done to ensure appropriate care options for the behaviorally ill?

The challenges facing hospitals in maintaining the standby role are symptoms of broader issues facing the health care system in the context of growing need and constrained resources. How the system addresses these issues, the success of these efforts, and the lessons learned will have a profound effect on the health care system as a whole.

# END NOTES

<sup>1</sup> The Chartis Group analysis based on estimates of spending on emergency department care and associated hospital admissions. Data sources include: Agency for Healthcare Research and Quality, Medical Expenditure Panel Survey, Statistical Brief #111, January 2006; Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Statistical Brief #1, February 2006; CMS Office of the Actuary, National Health Accounts, 2004.

<sup>2</sup> Health Forum, AHA Statistics, 2006. 2004 data for community hospitals.

<sup>3</sup> American Hospital Association, *TrendWatch Chartbook*, 2006.

<sup>4</sup> The Chartis Group Analysis of New Britain General Hospital Emergency Room Data.

<sup>5</sup> Agency for Healthcare Research and Quality, Healthcare Cost and Utilization Project, Statistical Brief #2, Reasons for Being Admitted to the Hospital Through the Emergency Department, 2003. February, 2006.

<sup>6</sup> Centers for Disease Control and Prevention, National Ambulatory Medicare Care Survey: 2003 Emergency Department Summary; Centers for Medicare and Medicaid Services; U.S. Census Bureau.

<sup>7</sup> American Hospital Association, *The State of America's Hospitals: Taking the Pulse*, 2006.

<sup>8</sup> U.S. Census Bureau (<http://factfinder.census.gov>); Rural inhabitants are defined individuals not living in urbanized areas (over 50,000 population) and urban clusters (2,500 to 49,999 popula-

tion) as defined by the Bureau of the Census.

<sup>9</sup> AHA Annual Survey, 2004 data for community hospitals.

<sup>10</sup> Centers for Medicare & Medicaid Services, as of March 2006.

<sup>11</sup> National Trauma Data Bank, 2005.

<sup>12</sup> American Burn Association.

<sup>13</sup> U.S. Department of Agriculture, Economic Research Service, State Health Fact Sheets: Oklahoma; <http://www.ers.usda.gov/StateFacts/OK.htm>.

<sup>14</sup> Interview with Ron Anderson, MD, CEO, Parkland Hospital, Dallas, TX.

<sup>15</sup> Centers for Medicare & Medicaid Services; 2002 Baseline; 2002 data, CBO March 2003 Baseline; 2003 data, CBO March 2004 Baseline; 2004 data, CBO March 2005 Baseline. Does not include S-CHIP enrollees.

<sup>16</sup> Kaiser Family Foundation, *The Uninsured and Their Access to Healthcare*, November, 2004

<sup>17</sup> Centers for Disease Control and Prevention, National Ambulatory Medicare Care Survey: 2003 Emergency Department Summary.

<sup>18</sup> American Hospital Association Annual Survey, 2004 data for community hospitals based on gross revenue.

<sup>19</sup> Congressional Budget Office, March 2005.

<sup>20</sup> Robert Wood Johnson Foundation, *Health and Healthcare: The Forecast, the Challenge*, January, 2005.

<sup>21</sup> American Hospital Association, *The State of America's Hospitals: Taking the Pulse*, 2006.

<sup>22</sup> American Hospital Association, *The State of America's Hospitals: Taking the Pulse*, 2006.

<sup>23</sup> National Center for Health Workforce Analysis, Bureau of Health Professions, Health Resources and Services Administration, 2004.

<sup>24</sup> Council of Graduate Medical Education, *Physician Workforce Policy Guidelines for the United States, 2000-2020*.

<sup>25</sup> American Hospital Association, *The State of America's Hospitals: Taking the Pulse*, 2006.

<sup>26</sup> American Hospital Association, *The State of America's Hospitals: Taking the Pulse*, 2006.

<sup>27</sup> AHA Annual Survey, data is for community hospitals.

<sup>28</sup> American Hospital Association Annual Survey, 2004 data for community hospitals.

<sup>29</sup> American Hospital Association, Testimony of Dr. Dan Hanfling before the Senate Health Education, Labor and Pensions Committee, March 16, 2006.

<sup>30</sup> Medicare Payment Advisory Commission, *Physician-owned Specialty Hospitals*, March 2005.



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