An Update On Safety-Net Hospitals: Coping With The Late 1990s And Early 2000s

influences was a third factor: the establishmentof new federal grant programs through the Community Access Program,which evidence suggests strengthened local **safetynet**s, especially in communities that already had strong **safety-net** institutionsin place.[11]

A recent study examined market-level changes in the provisionof **safety-net** care and suggested that the **safetynet** did noterode in the late 1990s.[12] Our research complements this workby looking at individual hospitals to assess their changinginvolvement in the **safetynet** and the operational decisionsthey made to cope with their environments. We summarize theapproaches used by Zuckerman and colleagues to identify andclassify **safety-net** hospitals, which we applied to our morerecent data. We discuss the study's implications for thefuture of the hospital **safetynet** and related public policies.

Identifying Safety-Net Hospitals

An important first step to our analysis is the identificationand classification of hospitals by their **safety-net** status.Many researchers have used organizational descriptors, suchas public ownership or urban academic medical center (AMC),for purposes of identifying the **safetynet**.[13] This is problematic,because not all identified hospitals will provide substantialamounts of **safety-net** care.

To address this problem, Zuckerman and colleagues focused onthe actual amount of uncompensated care provided by a hospital—namely,the sum of its charity care and bad-debt costs, in the baseyear of their study (1990).[14] They identified hospitals providinga significant amount of uncompensated care, and constitutingpart of the **safetynet**, in two ways: (1) from the hospital'sperspective, if the institution is highly burdened by havinga large proportion of its costs go uncompensated; and (2) froma community's perspective, if the hospital provided alarge share of the uncompensated care provided there. For thelatter, Zuckerman and colleagues constructed each hospital'smarket share of uncompensated care costs in its metropolitanstatistical area (MSA) and multiplied it by the number of hospitalsin the MSA to adjust for varying hospital market sizes. Theythen established thresholds for high uncompensated care burdenand high adjusted uncompensated care market share based on thework of Linda Fishman and their own examination of the distributionsof these variables.[15]

We replicated these approaches using data from 1996 to identify**safety-net** hospitals. Specifically, we converted the sum ofcharity care and bad debt in 1996 to cost equivalents using institutional cost-to-charge ratios. We used the same methodsused by Zuckerman and colleagues to impute uncompensated carefor hospitals that did not report these data in 1996.[16] Each hospital's uncompensated care burden and adjusted marketshare were calculated; following the earlier study, we classifiedhospitals into one of four categories. Group 1 comprised hospitalsthat had both high adjusted market share and high uncompensatedcare burden. Group 2 included hospitals that only had high adjusteduncompensated care market share. Group 3 comprised hospitalswith high uncompensated care burden only. Groups 1–3 wereconsidered **safety-net** hospitals. Group 4 included all remaininghospitals and was deemed "non-**safety-net** hospitals" becauseof the relatively low uncompensated care burden and market shareamong those hospitals. This approach has advantages over theuse of organizational labels, in that actual provision of uncompensatedcare is used to identify **safety-net** hospitals; it also has limitations, in that hospital uncompensated care may vary from year to year.The high levels of uncompensated care provided by Groups 1–3hospitals in 1996, however, imply that they were major providersin their communities in that year.

Study Data And Methods

Data for our analysis came from the American Hospital Association(AHA) Annual Survey for the years 1996–2002; the AHA surveycollects information annually on many aspects of hospital

organization,operation, and finances. We used the 1996 data to classify hospitalsinto the four groups described above and also to assess differencesin key organizational characteristics across the groups. Multipleyears of the AHA data were examined to identify whether study hospitals experienced major organizational changes (such asclosures and mergers) between 1996 and 2002. For hospitals thatdid not, we assessed changes in service offerings, bed size, staffing, volume of services, payer mix, uncompensated care,and financial condition. Uncompensated care and financial datafor 2002 were deflated to 1996 dollars using the general medical/surgicalhospital Producer Price Index. Overall, 2,268 urban generalacute care hospitals were identified and classified into thefour groups for 1996.

Characteristics Of Safety-Net Hospitals

Our findings on key organizational characteristics that distinguisheach hospital group—namely, ownership, teaching status,and bed size—were very similar to those of Zuckerman and colleagues (Exhibit 1). This suggests that the types of hospitalspopulating each category have been stable over time.

A large proportion of hospitals in Group 1 were public hospitals(65.7 percent), whereas Group 2 was dominated by nonprofit voluntaryhospitals (80.4 percent). Hospitals in Groups 1 and 2 also hadgreater numbers of staffed and set-up hospital beds—morethan twice as many—than in hospitals in Groups 3 or 4.Groups 1 and 2 hospitals were also heavily involved in residency training activities, either being members of the Associationof American Medical Colleges (AAMC) Council of Teaching Hospitals(COTH) or having resident physician training programs generally. **Safety-net** hospitals with high uncompensated care burden only(that is, Group 3) were predominantly public or nonprofit voluntaryhospitals. Only 3 percent of Group 3 hospitals were COTH members,and fewer than one in four had resident physician training programs.

Payer mix as reported in Exhibit 1 also differed greatly acrossthe hospital groups. Group 1 hospitals had very low Medicareshares of patient days (27.5 percent) and high Medicaid patient shares (31.5 percent) in 1996. Compared with Group 4, Groups2 and 3 both had significantly lower Medicare share and significantlyhigher Medicaid share. The Medicaid difference was especiallypronounced when Groups 1 (31.5 percent) and 3 (23.6 percent)are compared with Group 4 (14.5 percent).

Uncompensated care provision in 1996. As one would expect, in 1996 Group 1 provided the greatest amountof uncompensated care per hospital, averaging $47.7 millionin hospital costs (Exhibit 1). Group 1 hospitals also had thehighest uncompensated care burden, representing 22.5 percentof their hospital expenses, and provided about 39 percent ofthe uncompensated care in their markets. Group 2 provided lessthan half that amount of uncompensated care, but this value($14.2 million) was second-highest among the four hospital groups.Although Group 3 provided about two-thirds the annual amountof un-compensated care as Group 2 ($8.9 million versus $14.1million, respectively), this translated into a much higher perbed amount of uncompensated care provision given Group 3's smaller bed size. Finally, Group 4 provided the lowest levelsof 1996 uncompensated care as measured per hospital ($3.0 million)or per hospital bed ($13,436), on average.

Public health and specialty services. Prior research has identified a set of hospital services thatare frequently used by uninsured and poor patients.[17] Exhibit1 reports these as public health and specialty services. Generally, the data on services indicate that Groups 1 and 2 **safety-net**hospitals were significantly more likely to provide these servicesin 1996 relative to non-**safety-net** hospitals (Group 4), withthe exception of emergency departments (EDs) and inpatient substanceabuse services for Group 1. Comparing Groups 3 and 4, we findthat the 1996 provision of public health and specialty serviceswas quite similar across the two groups, with the exception of childbirth services, which Group 3 hospitals were less likelyto offer, and AIDS services, which Group 3 hospitals were morelikely to offer.

Changes In Operational Status

As financial pressures mount for hospitals, they may undertakemajor organizational changes that affect their core operations,including closure, merger, or conversion to alternative servicelines. Exhibit 2 reports these types of changes between 1996and 2002 for the four hospital groups. Generally, these dataindicate that the vast majority of hospitals in each group continuedoperation without major changes. Around 87–93 percentof hospitals in each group continued to operate as acute carehospitals through the study period. Group 2 had a relativelyhigh rate of merger, and Group 3 had higher rates of closureand other service conversions, compared with Group 4. However,the percentages of hospitals falling into these categories wereall in single digits, which implies that few institutions ineach hospital group were affected.

Changes In Service Offerings

A major strategy that hospitals can use to alter their **safety-net**involvement is to change the array of services they offer. Exhibit3 reports on changes in public health and specialty servicesfor each of the four hospital groups—specifically, percentageincreases and decreases between 1996 and 2002 for the set of services initially reported in Exhibit 1 . Two sets of analysesare reported. The first assessed whether differences in therates of change between each **safety-net** group and the non-**safety-net**Group 4 were significant, and the second examined whether thechange experienced by any one group of hospitals was meaningfulin that it was significantly different from zero. Focusing onthe latter, one observes very few significant changes in provisionof the individual services for the **safety-net** groups but manysignificant changes for the non-**safety-net** group. Most notably, Group 4 experienced significant declines in the percentage ofhospitals offering maternity care, ED services, AIDS services,and inpatient and outpatient substance abuse services. Group4 hospitals experienced significant increases in only two areas:neonatal intensive care units and trauma centers.

Comparing the **safety-net** groups with Group 4, we find that changesin service provision were generally not significantly differentfrom zero or were more limited in magnitude for the former.For Group 1, ED provision, AIDS services, and outpatient substanceabuse services did not experience significant change, whereasthese all declined significantly for Group 4. Group 2 maintainedmaternity care, AIDS services, and outpatient substance abuseservices, whereas the percentage of hospitals offering thesedeclined for Group 4. Group 3 had few significant changes inservice provision with the exception of sharp increases in traumacenter involvement by 2002 and reductions in AIDS services provision,which were of similar magnitude to Group 4.

Operational And Financial Changes

Beginning with Group 1, these hospitals experienced slower growthin many types of hospital use relative to Group 4 hospitals(Exhibit 4). Specifically, Group 1 had significantly smallerincreases in inpatient admissions and ED visits relative toGroup 4. Group 1 also did not experience an increase in births,as Group 4 did.[18] The only area of comparability between Groups1 and 4 was outpatient visits, which increased at similar rates.The smaller increases in many areas of hospital use for Group1 relative to Group 4 likely explain the slower growth in hospitalstaffing in Group 1. The percentage of inpatient days coveredthrough Medicare increased significantly for Group 1

hospitals,which implies that their increased inpatient admissions, outpatientvisits, and ED visits might have come from Medicare patients.

Generally, uncompensated care for Group 1 relative to Group4 grew more slowly over the period (annual rates of growth:0.7 percent versus 4.2 percent), but the much higher base of uncompensated care in Group 1 translates into much larger absoluteincreases in uncompensated care each year—namely, abouta $300,000 increase per year for Group 1 versus $125,000 for Group 4. However, limited growth in Group 1 uncompensated carecosts relative to the group's growth in total expensesover the period led to a significant decline in the percentageof hospital expenses that were uncompensated (that is, the uncompensatedcare burden). Expense and patient revenue growth were similarin Groups 1 and 4. Total margins for Group 1 declined an averageof two percentage points, but this decline was not significantlydifferent from zero. Given the relatively large magnitude ofthis average, its insignificance implies that substantial variationsin financial outcomes were present for Group 1 hospitals.

Patterns of change in staffing and hospital use were comparablebetween Groups 2 and 4. Group 2 had growth in the number ofbirths, inpatient admissions and days, outpatient visits, andED visits, and the magnitudes of these increases were similarto Group 4. Group 2 hospitals maintained the number of bedsinstead of experiencing the slight reductions of Group 4, andboth Groups 2 and 4 increased staffing at comparable rates.Uncompensated care grew significantly for Group 2, but at alower rate than experienced by Group 4. Comparable to Group1, though, Group 2 began at a higher base amount of uncompensatedcare in 1996, so the absolute annual increase is higher forGroup 2 than Group 4. However, Group 2 hospitals, like thosein Group 1, experienced a decline in uncompensated care burden,as the annual increase in the amount of uncompensated care washalf the annual increase in total expenses. Group 2 experienced financial outcomes similar to those of Group 4, with annualexpense increases of similar magnitude to annual revenue increases.The average total margin change for Group 2 was negative, butthis was not significantly different from zero or from Group4's reported change.

Although changes for Groups 1 and 2 bear similarities to thoseof Group 4, changes for Group 3 are different in several respects.Group 3 did not experience increases in the number of births, inpatient admissions, and inpatient days. Looking specificallyat uncompensated care, Group 3 experienced significant declinesin the annual amount of uncompensated care between 1996 and 2002 (3.2 percent annually), whereas the other hospital groupshad increases or little change. The declines for Group 3 ledto a lower percentage of hospital expenses that were uncompensated (reduction of 2.9) and lower marke25.80041 -1.1d atdr ofGrGr (e)4(n)4(s)-4(a)4(t)2(e)4(d)556]TJ -10.57217 -1.15202 T

terms of increased hospital service use, especiallyinpatient services, outpatient visits, and ED visits, relativeto Groups 1 and 3.

There were, however, a number of differences between our findingsand those of the earlier study. Most notable were changes inthe provision of public health and specialty services. For mostof these services, Zuckerman and colleagues found that at leastone **safety-net** hospital group experienced a larger decline inthe proportion offering a given service than did the non-**safety-net** group. However, in our analysis, **safety-net** hospitals generallymaintained their level of involvement in these services, whereasparticipation declined in the non-**safety-net** group.

Another important difference in our findings relates to thechanging profile of uncompensated care for different hospitalgroups. Zuckerman and colleagues commented about declining uncompensatedcare market share in Group 2 hospitals, which raised concerngiven the substantial role these hospitals played in meetingmarketwide indigent care needs in their communities. Our studyfound that the uncompensated care commitment of Group 2 didnot continue to deteriorate between 1996 and 2002 but that thecommitment of Group 3 hospitals had now become a concern.

Policy implications. Two of the hospital groups we examined represented major **safety-net**

which have about one of every three patients covered by Medicaid;and Group 3 hospitals, where the number is around one of four.Certainly, there will be much ongoing debate on the fiscal year 2006 federal budget that will yield many policy proposals. Theimplications of these various proposals for the future of thehospital **safetynet** need to be carefully explored.

Editor's Notes

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NOTES

1. In particular, P.J. Cunningham and H.T. Tu, "A Changing Picture of Uncompensated Care," *Health Affairs* 16, no. 4 (1997): 167–175, noted that there were three major components of the health care **safetynet**: general acute care hospitals, community health centers,

Thirteen States," *Health Affairs* 17, no. 3 (1998): 43–63[Abstract/Free Full Text]; and R. Hurley and S. Zuckerman, "Medicaid Managed Care: State Flexibility in Action," Discussion Paper no. 02-06 (Washington: Urban Institute, March 2002).

1. J.F. Hoadley, L.E. Felland, and A. Staiti, "Federal Aid Strengthens Health Care **SafetyNet**: The Strong Get Stronger," Issue Brief no. 80 (Washington: HSC, April 2004).

1. Marquis et al., "Recent Trends."

1. Baxter and Mechanic, "The Status of Local Health Care **SafetyNet**s"; L.E. Fishman and J.D. Bentley, "The Evolution of Support for **Safety-Net** Hospitals," *Health Affairs* 16, no. 4 (1997): 30–47[Abstract/Free Full Text]; B.H. Gray, "Hospital Ownership Form and Care of the Uninsured," in *The Future of the U.S. Healthcare System: Who Will Care for the Poor and Uninsured?* ed. S.H. Altman, U.E. Reinhart, and A.E. Shields (Chicago: Health Administration Press, 1998), 207–222; and J. Reuter and D.J. Gaskin, "The Role of Academic Health Centers and Teaching Hospitals in Providing Care for the Poor," in *The Future of the U.S. Healthcare System,* 387–404.

1. Many researchers have examined uncompensated rather than just charity care when examining hospital involvement in the **safetynet**. Largely, this is due to issues raised by T.G. Rundall, S. Sofaer, and W. Lambert, "Uncompensated Hospital Care in California," in *Advances in Health Economics and Health Services Research,* vol. 9, ed. R. Scheffler and L.F. Rossiter (Stamford, Conn.: JAI Press, 1988), 113–133. Rundall and colleagues noted that differences across hospitals in the definitions and accounting practices for

1. OMB, "FY 2006 Budget Priorities."