Topics in Health Policy

An analysis of real price effects resulting from charge setting practices in the US hospital sector

Prepared for the Jayne Koskinas Ted Giovanis Foundation for Health and Policy

Richard L. Fuller, M.S.; Payment Design Consultant, Schnecksville, Pennsylvania

We gratefully acknowledge the thoughtful comments of Robert Murray, Kevin Quinn and Emily Walker in constructing this report. Errors and omissions are the author's responsibility alone.

Contents

Hospital Charges, Cost Containment and Personal Finances – Why Prices Charged by Hospitals Matter

Overview

In this issue paper we focus upon several topics sharing as a common theme the influence of hospital charging practices. We begin by providing a history of hospital charge increases and document their increasing separation from the underlying costs of production over time. While this separation is widely known and reported, it is not always immediately apparent that this separation has increased so rapidly over a short period of time and that this separation continues to increase almost unchecked.

Having provided a review of the current state of hospital charging we discuss in detail the many real effects that the separation of hospital charges from a recognizable price has on the ability of the hospital service market to function efficiently: in accordance with contract terms, without abuse of market position and allowing insurance markets to determine and allocate risk to individuals. We offer detailed discussion of the impact of charge inflation upon negotiated rates and the introduction of complexity to contract terms and their enforcement. In describing these interactions we discuss the effect of charges upon individual finances within the context of efforts that aim to deliver transparency and strategies aimed at encouraging patients to "choose wisely".

We close by proposing a cap on average hospital charges relative to their cost. This modest reform is intended to mitigate the negative effects of soaring hospital charges without directly establishing what should be paid for a given service to a given provider. Essentially this proposal is intended to define what is **not** acceptable rather than defining what charges ought to be.

History of Costs and Charges

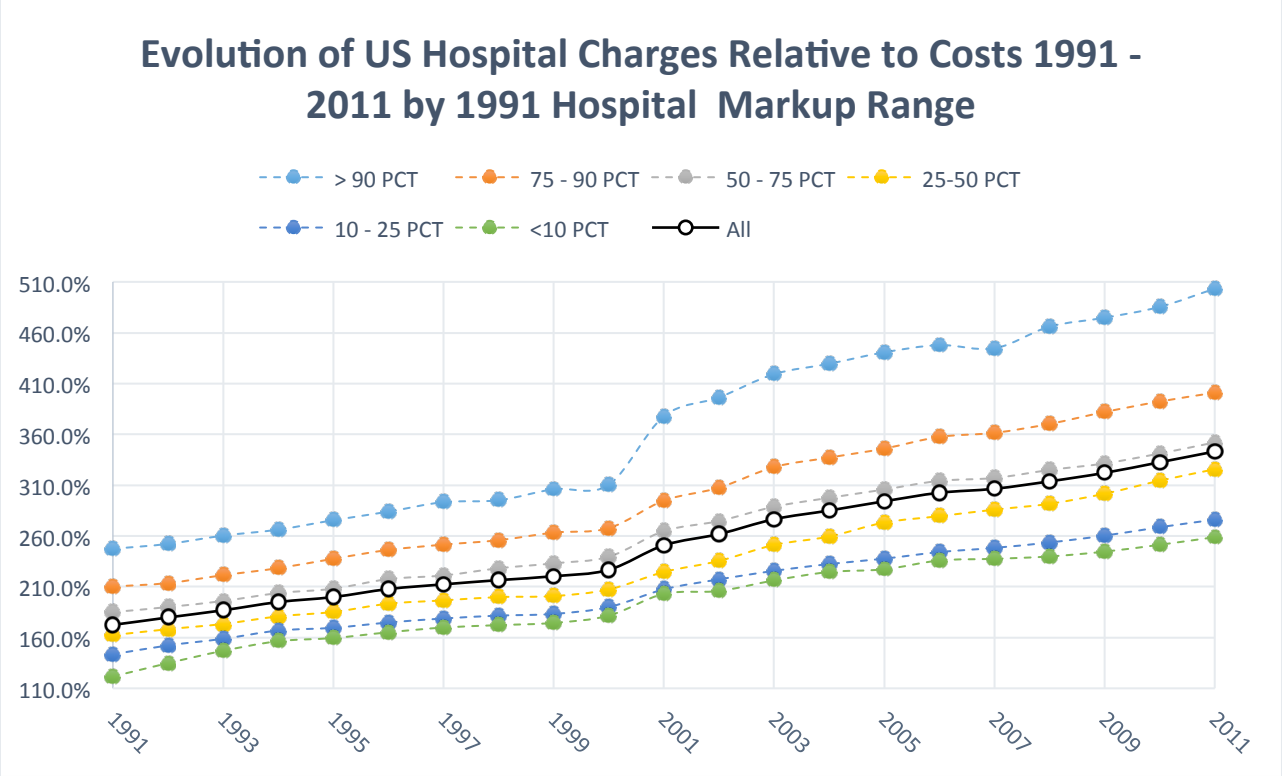
Each year the Centers for Medicare and Medicaid Services (CMS) update the Inpatient Prospective Payment System (IPPS), the principal mechanism through which payment for Medicare enrollees' inpatient hospitalizations is made. Within the annual update are accompanying provider impact files, at time of writing from Fiscal Year 1994 through Fiscal Year 2014 (Centers for Medicare & Medicaid Services, 2014). The provider impact files contain Medicare provider numbers, bed counts, and cost to charge ratios derived from cost report data self-submitted by hospitals and audited by fiscal intermediaries on behalf of the Medicare program. By using provider impact files we are able to track how hospitals reporting under the same identifier (provider number) have altered charge setting practice.

Using Medicare provider numbers we track hospital cost and charge reporting over the 21 available fiscal years. To calculate an aggregated trend of charging behavior we excluded providers with fewer than 18 entries reported in the 21 years of analysis. The provider impact files used as the source data for this analysis are based upon historic cost report data, typically three years prior to the prospective fiscal year denoted in the file title, hence when reporting years we have adjusted the fiscal year to reflect the typical cost reporting period rather than the given file title year.

Average cost to charge ratios were calculated as the operating cost to charge ratio of individual hospitals weighted by their annual bed count. Individual hospital markups (the direct inverse of the cost to charge

ratio) as measured in 1991 were used to attribute hospitals to six groups constructed at the 10th, 25th, 50th, 75thand 90th percentile intervals. The change in average hospital markup in total and for each interval is reported in Figure 1.

Figure 1: Changes in US Acute IPPS Hospital Charge to Cost Ratios Fiscal Years 1991 to 2011



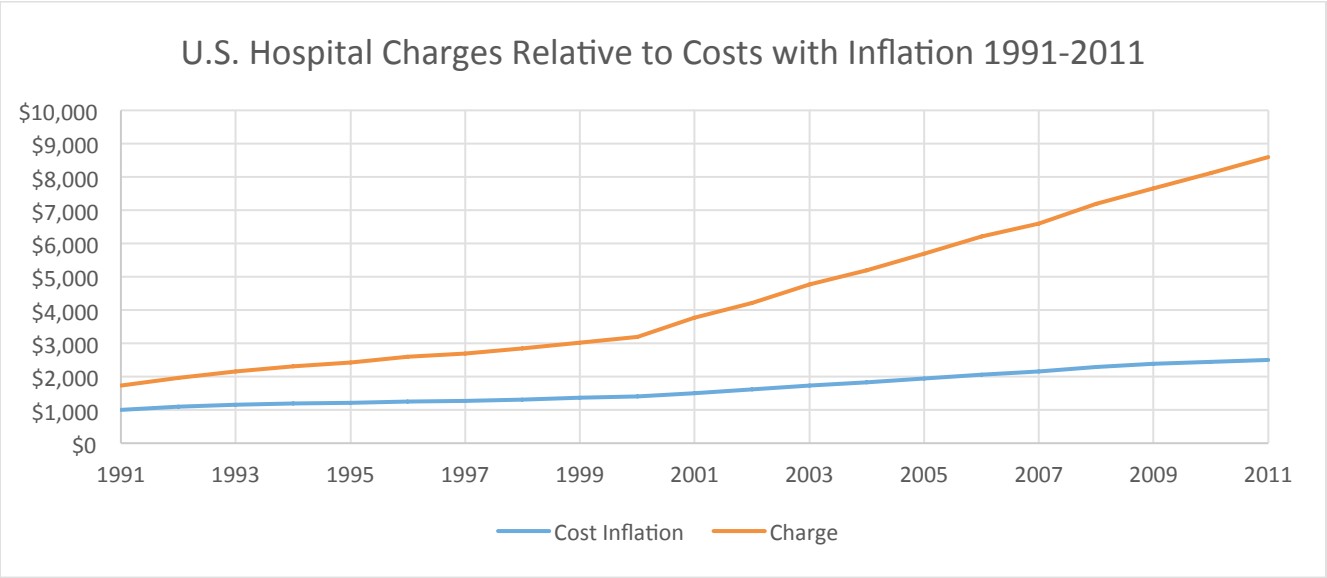
Source: Medicare provider impact files

Figure 1 displays the average charge markup for 2,856 hospitals between 1991 and 2011. The average markup (ALL) reports that $1,000 of cost in 1991 was typically charged at $1,720 ($720 margin) while in 2011, $1,000 was typically charged at $3,430 ($2,430 margin). For the hospitals with the largest markup in 1991 (> 90PCT), while $2,470 was charged for the same $1,000 in 1991, $5,030 was charged in 2011. As can be seen in Figure 1, hospitals having the largest markups in 1991 not only continued to have the largest markups in 2011 but the gap widened. Figure 1 also reveals a particularly large increase in the period between 2000 and 2001 to which we shall return.

During the same period hospital costs also increased rapidly meaning that the margin between what was charged for a service and its cost increased to a greater extent than that described using markup inflation alone. In Figure 2 we approximate hospital cost inflation for the period 1991 – 2011 by introducing survey data reported by the American Hospital Association for non-federal short term and other hospital expenses per capita (American Hospital Association, 2013). While differences are to be expected in the growth, mix and costs of outpatient services relative to the inpatient services that are used to generate cost to charge ratios, it is assumed that the pattern of cost inflation experienced by

inpatient hospital services is sufficiently similar to outpatient, (since there are a considerable array of overlapping services billed through the hospital charge master), to provide a comparison of general trends.

Figure 2: Changes in US Acute IPPS Hospital Charges Relative to Inflated Costs Fiscal Years 1991 to 2011



Source: Medicare provider impact files; AHA Statistics 1991-2013

In Figure 2 we restate Figure 1 by adding a trend line for cost beginning in 1991 at $1,000 which at the prevailing markup of 72 percent was, on average, charged at $1,720. Estimated hospital cost inflation of 150 percent over cost across the intervening period means that costs of $1,000 in 1991 rise to $2,500 in 2011, conforming to a general rule that charges are increasing at twice the rate of costs. With an average charge markup of 343 percent in 2011, and inflation of 150 percent over cost, the margin of $720 for $1,000 of 1991 cost has transformed into a margin of $6,075, approximately an 8-fold increase.

In general, we may expect a period of rapid cost inflation to lower percentage markups over cost as "sticker shock" sets in. This should occur if charges served as a strong measure of transaction price, the amount of money expected to be paid for a service. However, demand for hospital services has been generally insulated from their nominal asking price (charge level) permitting an explosion in charges. In fact, according to AHA statistics for 2013[1], 61 percent of amounts charged by hospitals are not paid, principally due to hospitals entering into alternative contract arrangements that differ substantially from billed charges.

Figures 1 and 2 review charge setting behavior at the national level but reporting in this way conceals extreme variation between both individual facilities and states. In Table 1 we decompose the national picture into component States within which we include D.C. and Puerto Rico.

[1] See ratio of deductions from revenue to total gross revenue

Table 1: Statewide Hospital Markups for 50 states, D.C and Puerto Rico 1991 to 2011

	1991				2011			
State [1]	Rank[2]	Min	Max	WTD AVG	Rank	Min	Max	WTD AVG
Florida	1	160%	300%	213%	2	212%	1124%	508%
Nevada	2	122%	277%	210%	3	117%	806%	499%
Alabama	3	108%	296%	205%	10	103%	1020%	388%
California	4	83%	299%	203%	4	93%	1000%	474%
Pennsylvania	5	123%	317%	194%	8	103%	1099%	398%
New Mexico	6	139%	229%	192%	27	105%	508%	312%
Arizona	7	136%	238%	187%	6	249%	820%	439%
Louisiana	8	113%	287%	187%	19	101%	787%	346%
Missouri	9	135%	248%	186%	20	125%	758%	343%
South Carolina	10	113%	254%	186%	9	141%	909%	395%
District of Columbia	11	128%	258%	185%	18	236%	488%	348%
Delaware	12	168%	223%	185%	36	200%	372%	280%
Arkansas	13	118%	299%	185%	17	184%	901%	350%
Illinois	14	91%	279%	182%	12	130%	962%	361%
Texas	15	87%	301%	182%	5	94%	952%	441%
Oklahoma	16	127%	295%	181%	13	122%	870%	360%
Puerto Rico	17	80%	246%	179%	50	94%	435%	193%
Tennessee	18	117%	258%	179%	11	138%	847%	381%
Mississippi	19	131%	242%	179%	15	117%	847%	356%
West Virginia	20	129%	276%	178%	45	113%	415%	249%
Georgia	21	81%	272%	177%	16	164%	730%	351%
Colorado	22	125%	259%	176%	7	90%	599%	401%
Michigan	23	80%	272%	174%	34	151%	398%	283%
Virginia	24	91%	271%	173%	23	85%	813%	332%
Kansas	25	90%	232%	172%	14	112%	735%	360%
Nebraska	26	134%	228%	172%	24	162%	645%	319%
Kentucky	27	120%	301%	172%	26	166%	1053%	316%
Idaho	28	142%	211%	167%	49	157%	356%	215%
North Carolina	29	127%	246%	167%	28	198%	556%	307%
Connecticut	30	125%	192%	166%	31	174%	415%	290%
Iowa	31	129%	199%	164%	30	145%	391%	304%
Hawaii	32	86%	224%	164%	40	221%	314%	270%
Utah	33	118%	216%	163%	35	130%	422%	281%
Oregon	34	125%	195%	163%	44	163%	402%	250%
Montana	35	103%	200%	163%	43	209%	293%	253%
Minnesota	36	100%	237%	162%	41	133%	424%	267%
New Hampshire	37	140%	185%	159%	42	202%	370%	259%
South Dakota	38	128%	192%	159%	21	220%	407%	340%

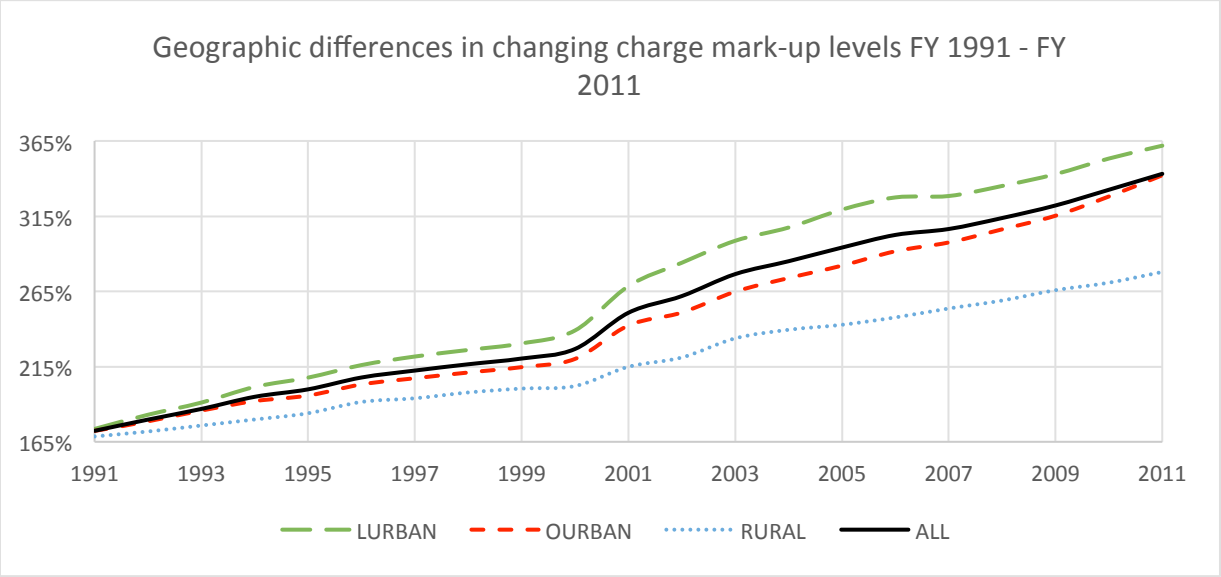
Ohio	39	112%	226%	158%	22	147%	909%	338%
Vermont	40	153%	164%	158%	51	144%	201%	190%
North Dakota	41	142%	182%	157%	37	196%	313%	277%
Alaska	42	104%	245%	157%	33	137%	439%	285%
New York	43	107%	224%	154%	32	88%	541%	288%
Indiana	44	106%	218%	153%	25	192%	613%	318%
Rhode Island	45	131%	194%	153%	38	182%	326%	277%
Maine	46	128%	240%	149%	47	170%	307%	242%
Massachusetts	47	108%	218%	148%	48	138%	377%	221%
Washington	48	115%	182%	144%	29	151%	476%	305%
Wyoming	49	107%	186%	143%	46	183%	405%	244%
Wisconsin	50	115%	175%	141%	39	166%	369%	275%
Maryland	51	106%	156%	131%	52	114%	177%	142%
New Jersey	52	100%	169%	128%	1	330%	1282%	623%

[1] State includes Puerto Rico and the District of Columbia; [2]Ranking ranges from highest markup (1) to lowest (52)

Table 1 shows large variation in statewide charge setting practices between 1991 and 2011. To assist in reading the table we assign a rank of 1 to the state (plus D.C. and Puerto Rico) with the highest markup in 1991 and a rank of 52 to that with the lowest before repeating for 2011. The ranking, weighted average, minimum and maximum markup for the state is shown for 1991 with the corresponding value in 2011. The national doubling of hospital markups can be seen to be distributed differently across states. Maryland, a state retaining its rate setting authority through a statutory waiver, has seen comparatively little change in average hospital markup, 31 percent above cost in 1991 and 42 percent above cost in 2011 which is consistent with a rate of increase rate constraint. New Jersey, having eliminated state rate setting in 1992, has seen the most dramatic shift in statewide markup moving from the lowest average markup in 1991 (28 percent above cost) to the highest (523 percent above cost) in 2011. The Statewide markups contain remarkable differences within states, for example in Alabama, California and Pennsylvania hospitals report average charges ranging from cost (100%) to ten times cost (1,000%).

In Figure 3 we compare distinctions in markup behavior across geographic areas described by Medicare classifications of Large Urban (LURBAN), Other Urban (OURBAN) and Rural (RURAL). Little difference is observed between markups across the three regional classifications in 1991 but by 2011 large variation in aggregate markups emerge. Large Urban hospitals have an average markup of 262 percent in 2011 (compared to 74 percent in 1991) while Rural hospitals have an average markup of 178 percent in 2011 (69 percent in 1991). Other Urban hospitals display slower growth in markups relative to Large Urban hospitals but both heavily outpace markup growth in rural areas.

Figure 3: Changes in US Acute IPPS Hospital Charge Markups Fiscal Years 1991 to 2011 by Area



Source : Medicare provider impact files

Hospital Charge Levels Have Real Effects

Figures 1, 2 and 3 identify rapid markup inflation around the year 2000. This is a period of time when the Medicare program, ostensibly paying under a Diagnosis Related Group (DRG) per case payment mechanism (and therefore theoretically desensitized to charge levels), was identified as having a flawed provision for extraordinarily costly cases (outliers). This flaw enabled individual hospitals and hospital groups to take advantage of the time lag between the calculation of cost to charge ratios and claim payment to obtain additional monies through inflating charges. While the Department of Justice has taken on perpetrators of "turbocharging" (12 Civ 1510, 2012) the immediate impact was dramatic enough to shift the projected outlier cost threshold, the average charge converted to cost through cost to charge ratios used to determine extraordinary/high cost status, from $9,700 in 1997 to $33,560 in 2003. Hospitals that did not "turbocharge" received fewer outlier dollars as a result of the actions of those that did. To give context to the impact of this practice Tenet Healthcare alone paid $788 million dollars to settle charges related to these actions (US Department of Justice, 2006). In FY2004 CMS moved to close the loophole (Centers for Medicare & Medicaid Services, 2003), however the compounding effect of charge inflation was never removed from the system and CMS still struggles to project an accurate outlier threshold principally due to rapid charge inflation.

Hospitals setting charges to maximize their revenue has been a feature of hospital pricing since before the inception of the Medicare program (Davis, 1973). Following the switch to DRG pricing by Medicare and the subsequent growth of Health Maintenance Organizations (HMO) and Preferred Provider Organizations (PPO) using a mix of per diems and Diagnosis Related Groups (DRG) where possible, costs, charges and payment have increasingly lost touch with one another as payer attention understandably fixes on the transaction price rather than charge levels. Hospital based outpatient services provided to Medicare enrollees has also been the subject of considerable charge inflation. Prior to the introduction of the Medicare outpatient prospective payment system (OPPS) in August 2000, payments to hospitals

were split between Medicare program payments based upon hospital costs and patient coinsurance based upon 20 percent of a hospital's charge. Charge growth was such that the coinsurance fraction had reached 50 percent of total payment. This shift towards patient liability created significant financial hardship for Medicare enrollees, a situation recognized in the Balanced Budget Act of 1997 when reforms to rebalance the increasing coinsurance burden from falling so heavily upon individuals were enacted. Without BBA intervention coinsurance shares would be much higher now since charges have inflated further relative to costs (Medicare Payment Advisory Commission, 2001).

While the BBA helped protect those who access hospitals subject to the OPPS from charge inflation, those requiring services from critical access hospitals are not so fortunate and continue to pay 20 percent of billed charges. According to MedPAC contractor reports, individual coinsurance for Part B services subject to coinsurance was 47 percent of cost at critical access hospitals in 2009 and rising, with some imaging services (CAT scans , MRIs) fully paid by coinsurance in at least four States (RTI, 2011). Physician billing had also been found to be highly inflationary prior to the implementation of the physician fee schedule (PFS) in 1992. The introduction of the PFS recognized this tendency and in response allocated coinsurance based upon allowed amounts (the lower of charges or the fee schedule) while simultaneously limiting out of network providers to a Medicare limiting charge of 115 percent of comparable fee schedule rates. Since non-participating providers are paid 95 percent of the fee schedule rate, covered charges for out of network physician services are limited to 9.25 percent above those paid at the regular fee schedule rate.

That hospital charge setting disproportionately impacts the uninsured and those receiving care out of network, situations in which the full charge level may be expected as payment, is not disputed but is generally downplayed as atypical. Others highlight safeguards within the Patient Protection and Affordable Care Act (PPACA) requiring codification of financial assistance policies from non-profit hospitals (*Patient Protection and Affordable Care Act, 42 U.S.C. § 18001*, 2010).

Limitations of Transparency

That charges can have real effects is often dismissed by analysts who prefer to focus upon "price" transparency (transaction prices) downplaying or ignoring effects of what are considered meaningless charges. The theory of transparency is that engaged consumers armed with meaningful transaction price information will select cost effective care rolling back health cost inflation. Industry stakeholders highlight the information necessary to make rational decisions to be an amalgam of direct insurer payments and personal liabilities for out-of-pocket costs for those that are insured and prospective estimates of care costs for the uninsured and those out of network (HFMA Price Transparency Task Force, 2014). Another data point to be added to this mix is contextual information for both outcomes quality with allowances made for variation in mission related externality costs (for example higher costs at teaching hospitals). Charges are seen as at best a distraction and more typically as misleading information.

Price transparency has been shown to have the potential to impact provider behavior, less in assisting consumer choice at point of service (for which evidence is scant), but through the rebalancing of negotiating power between plans and providers. Specifically the confluence of price transparency, media attention, and plan benefit design can help create a contracting environment where providers are less able to utilize their market power (Tu & Gourevitch, 2014). Plan benefit design is increasingly structured towards individuals incurring larger percentages of the cost of their care at the point of

service, incurring variable personal liability, rather than the traditional risk pooling within premiums. Surveys conducted by the National Business Group on Health highlight large employers as revising health coverage offered to employees towards high deductible plans or (slowly) to health insurance exchange products. Both of these options increase the out-of pocket costs to individuals that utilize health care services rather than the broad base of those that are insured.

While transparency should be highly useful for individuals seeking to choose between alternative provider networks (particularly "narrow networks") when seeking coverage, those that have already enrolled and require care out of network (due to access limitations for specialty services) or emergency service provision, selection of alternative service providers is not a real option. Moreover, the unevenness of charges and contract terms across services and hospitals, the complexity of service types and adjustments made to reflect provider mission may be highly misleading on an individual case basis, while individuals are shouldering increasing risk.

Out of network charges for specialty and emergency services

Even the most ardent advocate of the power of consumer engagement understands that emergency hospital services are not amenable to selection. These services may be provided on an inpatient or outpatient basis since patients not admitted after visiting the emergency department still require rapid evaluation of a medical condition. Much bad debt held on hospital books follows on from the Emergency Medical Treatment & Labor Act (EMTALA) designed to afford patients access to medical treatment regardless of patients ability to pay. Markups are observed to vary widely across services with diagnostic imaging services, used extensively in outpatient emergency departments, tending to have far larger markups than other services (see Figure 4). While hospitals are busy accruing bad debt, in excess of 60% of personal bankruptcies in the US are associated with medical care costs and 1 in 3 Americans report difficulty in paying medical bills, numbers largely unchanged by the implementation of the PPACA (Himmelstein, Thorne, Warren, & Woolhandler, 2009; Pollitz, Cox, Lucia, & Keith, 2014).

For those that are both insured and in-network final payment to high charge hospitals is dependent upon the benefit design and individual contract terms with the hospital. Those insured but out of network risk having their personal finances held hostage to the outcome of provider and insurer wrangling since out of network care for typical commercial insurance coverage results in balance billing of that portion of unpaid charges incurred beyond the "usual and customary" payment made for the service by the insurer. Those that are uninsured are subject to the aforementioned financial assistance policies of the hospital. Inflated charges heavily penalize any individuals that self-pay and have assets. In addition to requiring emergency treatment there may be a variety of other reasons for straying out of network, the need to access specialty services not otherwise available in network or as a result of not recognizing an out of network physician or facility. Out of network activity is pervasive with an estimated 12% of claims being for out of network care in 2011 (America's Health Insurance Plans, 2013).

Hospitals providing niche specialty services within a region, those that have strong physician feeder networks or are more likely to receive emergency admissions are therefore also more likely to have "out of network" patients. Insurers recognize the likelihood of more out of network claims within a region, as typically do health benefit consultants paid to advise employer groups on network composition. The potential cost of out of network claims therefore serves to inflate hospital payments or to force the insurer to consider exiting the market.

Table 3: Charge Markups Leverage Non-substitute Service Types in Rate Negotiations

Hospital Type	Emergency/Specialty $ (Cost)	Emergency/Specialty charges*	Other Services $ (Cost)	All Services charges*	Payment Level
Regional Referral Center	$2,000,000	$8,000,000	$18,000,000	$80,000,000	130.0%
Community Hospital	$100,000	$400,000	$1,900,000	$8,000,000	115.0%

*Markup presented at 400 percent for all services and hospitals

In Table 3 we present a hypothetical example to demonstrate the effect of threatened out of network charges upon negotiated rates. One simplification made by this example is that hospitals produce services at equivalent cost and that the insurer is only required to pay that cost for those services that can be directed elsewhere. In the example, the regional referral center serves as a Level 1 trauma center and provides many high-end specialty services (such as Neonatal ICU) thereby having a larger percentage of services that cannot be redirected (Emergency/Specialty cost). Both hospitals apply a markup over cost of 300 percent.

Total payment for services if the Regional Referral Center (RRC) were not contracted within the network would equal the cost of services that can be redirected ($18,000,000) plus the charges associated with services that cannot be redirected ($8,000,000). Thus the insurer would anticipate that by not signing a contract $26,000,000 would be paid, $6,000,000 over cost a payment level of 130 percent. By comparison, the community hospital with a greater proportion of services that can be redirected would have a payment level of 115 percent. The insurer would therefore be willing to pay a premium of 15 percent to the regional referral center above that to the community hospital simply to offset the markup on services that cannot be redirected.

The elevated payment level derived within the example is the product of the proportion of services that are not amenable to redirection and the markup applied. In reality the cost of services at alternative hospitals within a region are themselves paid at different rates determined by multiple factors such as efficiency, market power and mission related expense. While the potential substitution of services across hospitals is a common area of regulatory assessment, particularly during mergers, the ability of hospitals to markup non-substitute services to command a premium during negotiation is often overlooked and will tend to force all prices up within a region as the alternative price to be paid for hospital services is the rate negotiated with other providers. Thus the dynamic effect of markups is to secure additional premium through threat of payment for out of network charges with that premium becoming a threat in negotiations with other hospitals.

Contract Terms and Payment Mechanisms

Hospitals that are viewed as essential to an insurer's network can extract not only inflated reimbursement but onerous contract terms such as non-inclusion of rivals (U.S. DoJ, 2011). Terms that are unacceptable within other industries are agreed to in the hospital sector, where price negotiations are repeated on a frequent cycle, since large commercial payers can fall back on most favored nations (MFN) clauses to (at least in theory) be treated no worse than a rival[2]. Whilst exclusion of rivals are extreme terms more common are contract terms that base payment upon some percentage of provider charges (PoC). Moody's Investor Services provides data indicating that over 50 percent of hospital revenue from commercial contracts is based upon PoC arrangements (Herman, 2013). In some ways this

[2] There is much disagreement in the net effects of MFN clauses with most commentators accepting that the true effect varies on a case by case basis

is to be expected since both hospitals and payers are concerned at increasing the immediate overhead cost of processing claims through complex arrangements (and thereby reducing the medical loss ratio – MLR which now has additional implications for plan compliance with the PPACA's 80% MLP requirement). Paying a percentage of charge eliminates complexity within the claims payment infrastructure. Moreover, insurance sales teams demonstrating network value to major clients find charge discounts appealing as they simplify the "value" being delivered where an inflated charge gives the perception of greater value since the discount is also greater.

Beneath the intuitively simple structure of a PoC contract lies the complexity of its enforcement. The first requirement is that the payer needs to be able to police the contract such that the hospital does not inflate charges, and thereby increase revenue, beyond contractually allowed levels. As previously demonstrated with Medicare cost report data, aggregate charge inflation runs at twice the rate of cost inflation and varies widely by hospital. A prerequisite for a POC contract is therefore a requirement to reconcile charging behavior with contract terms. Executing such a reconciliation is notoriously hard to achieve. Both hospital and payer have multiple contracts with differing terms. One contract may permit a fixed level of charge inflation while another permits charge increases subject to notification and adjustment by the payer. Even if terms were easily tracked with both parties acting in good faith, constraints on charge increases are subject to interpretation. This is shown in Table 4.

Table 4: Will the increase in charges please stand up?

				Insurer 1		Insurer 2	
Type of Service	**Total Costs**	**Charge markup***	**Total Charges**	**Costs**	**Charges**	**Costs**	**Charges**
Inpatient							
Bed Days	$ 50,200,000	199%	$ 100,000,000	$ 3,765,000	$ 7,500,000	$ 5,145,500	$ 10,250,000
Supplies	$ 5,860,000	341%	$ 20,000,000	$ 615,300	$ 2,100,000	$ 234,400	$ 800,000
Therapies	$ 1,775,000	282%	$ 5,000,000	$ 35,500	$ 100,000	$ 17,750	$ 50,000
Lab	$ 665,000	752%	$ 5,000,000	$ 6,650	$ 50,000	$ 13,300	$ 100,000
MRI	$ 3,185,000	1099%	$ 35,000,000	$ 318,500	$ 3,500,000	$ 350,350	$ 3,850,000
CT	$ 1,575,000	2222%	$ 35,000,000	$ 126,000	$ 2,800,000	$ 63,000	$ 1,400,000
Emergency Room	$ 5,175,000	483%	$ 25,000,000	$ 517,500	$ 2,500,000	$ 310,500	$ 1,500,000
Drugs	$ 3,860,000	518%	$ 20,000,000	$ 501,800	$ 2,600,000	$ 540,400	$ 2,800,000
Operating Room	$ 22,500,000	444%	$ 100,000,000	$ 1,575,000	$ 7,000,000	$ 1,350,000	$ 6,000,000
Outpatient							
Supplies	$ 2,930,000	341%	$ 10,000,000	$ 117,200	$ 400,000	$ 175,800	$ 600,000
Therapies	$ 1,775,000	282%	$ 5,000,000	$ 142,000	$ 400,000	$ 159,750	$ 450,000
Lab	$ 665,000	752%	$ 5,000,000	$ 26,600	$ 200,000	$ 6,875	$ 51,695
MRI	$ 2,730,000	1099%	$ 30,000,000	$ 409,500	$ 4,500,000	$ 436,800	$ 4,800,000
CT	$ 1,350,000	2222%	$ 30,000,000	$ 72,225	$ 1,605,000	$ 94,500	$ 2,100,000
Emergency Room	$ 5,175,000	483%	$ 25,000,000	$ 517,500	$ 2,500,000	$ 258,750	$ 1,250,000
Drugs	$ 1,930,000	518%	$ 10,000,000	$ 77,200	$ 400,000	$ 115,800	$ 600,000
Operating Room	$ 9,000,000	444%	$ 40,000,000	$ 1,350,000	$ 6,000,000	$ 900,000	$ 4,000,000
Total Dollars	$ 120,350,000		$ 500,000,000	$ 10,173,475	$ 44,155,000	$ 10,173,475	$ 40,601,695
MarkuP			415.45%		434.02%		399.09%

* Charge markups given by service line presented in Federal Register August 19 2013 P50518

Figure 4 describes a situation whereby a hospital provides multiple services with each incurring a cost marked up to charges at a different rate. That individual services are marked up at different rates is well known (The Lewin Group, 2005). The relative markups shown in Figure 4 are those calculated by CMS and reported in the Federal Register of August 2013. In the example two insurers experience a year of claims with a single hospital where each is associated with the same amount of hospital cost

($10,173,475). While each insurer's share of total cost is equal, due to differing levels of service charge markups, their share of charges is not. Since Insurer 1 faces, on average, higher markups they should in fact pay a lower PoC than Insurer 2 so as to more closely reflect costs incurred by their members. This example does not incorporate a measure of treatment efficiency hence the result is driven by differing patterns of patient need relative to their illness burden. This example is intended to demonstrate that without computing different PoC ratios, Insurer 1 and Insurer 2 will experience differences in payment relative to cost simply as a result of the mix of services their members receive at the hospital. By extension, without adjusting percent of charge ratios to control for changes in the relative mix of services utilized by the insurer's enrollees, the payment level for costs incurred will not meet the expectations laid out during the contract negotiation.

Calculating a suitable adjustment factor to correct for changes in the level or composition of charges is dependent upon first defining the intent of the contract. We can establish a hypothetical expectation that the PoCs paid is adjusted to neutralize increases in markups while adjusting for service mix at a fixed profit margin. Thus increased payments delivered through the established PoC are intended to allow a predetermined sum equal to medical cost inflation. If charges are inflated at twice the rate of cost then adjustments to the PoC rate have to separate markup changes from mix changes.

The calculation necessary to control for charge inflation is therefore not straightforward and has multiple moving parts. In reality the units of service, both inpatient and outpatient, are subject to competing views by both parties. For example, differences in setting mix (e.g. emergency room, hospital clinic, and physician's office) may be interpreted as a service mix change by one party and a change in average markup by the other. These complexities mean that, without external auditing of the hospital (which itself assumes that the hospital has retained sufficient information for this to be a viable option), and clearly structured agreements developed when signing the PoC contract, the insurer is unable to determine how the hospital has adjusted their charges only how patient charges have affected their payments. Enforcement of PoC terms is both time consuming and, more often than not, frustrating for payers that incur large transaction costs before resigning themselves to trusting provider charge setting behavior, and the mutual interpretation of vague contract terms, without objective verification.

Although PoC contracts are commonplace fixtures in the payment landscape, it is also recognized that they do not provide efficiency incentives since they merely convert charges to payment in response to service mix and volume changes. A common alternative approach is the use of DRGs. Within the Medicare program the use of DRGs is accompanied by the (necessary) use of an outlier provision to serve as insurance against individual case costs falling far outside of the DRG average. In describing the precipitous charge inflation in the period 2000-2001 we highlighted the ongoing complexity for CMS in determining an appropriate outlier threshold and ongoing vulnerability to charge inflation that requires vigilance. These issues are more complicated for commercial insurers adopting DRG payment methods since they lack the power to demand and administer cost reporting. Typical DRG payment arrangements for commercial insurers therefore either pay on a scale comparable to what Medicare would have paid (carving out services that are unusual in Medicare, such as treatment of neonates or "inpatient only") and/or compute payments using a separately configured outlier threshold based upon charges[3]. The effect of charge levels and charge inflation is therefore a significant concern even when contracts use payment methods that are, in theory, based upon fixed rates.

Within the Medicare payment system, hospital charge levels continue to distort the allocation of payments across hospitals and service. While outlier payments have been extensively referenced as one

[3] These can be first dollar (when the threshold is reached the entire claim is paid at percent of charge) or second dollar (the outlier payment is added to the base DRG payment for charges over the threshold).

distortion, another results from the variation in charge markups within service lines (shown in Table 4). If charges for some services are marked up at a greater level than others then payments for those services increase relatively within a prospective payment system that identifies relative cost by the relationship to the charges observed. CMS has attempted to rebalance this disparity by reducing charges within service lines in direct proportion to the level of charge markup observed in cost reports. However, as we demonstrate in Figure 3, rural hospitals have lower charge markups than urban hospitals hence those cases that are more frequently treated in urban settings will receive a larger share of Medicare hospital dollars. While this bias is likely small it is present only as a result of variation in charge markups that reward those with higher charges.

Market Regulation, Transparency and a Path Forward

While changes in the insurance market are leaving individuals increasingly exposed to financial risk, increasing horizontal and vertical integration between hospitals and plans are generating additional risks from unfettered charge increases. Horizontal integration, whether through merger or affiliation, tends to limit alternatives for insurers when constructing regional hospital networks while at the same the cost of omitting hospitals from networks, the balance billing of charges, increases with charge levels. Vertical integration, where plans integrate with hospital systems and vice-versa, presents a different dynamic whereby high charges can be levied with the intention of deterring regional entrants rather than securing larger payments. Since plans and hospitals ultimately share revenue, oftentimes as non-profit entities, regulators find such arrangements complicated to police since elevated rates can be converted into costs and therefore appear as part of “doing business” in the region.

To summarize, charge levels and the rate at which they increase, impact personal finances for the uninsured, those obtaining services out of network, those with out of pocket costs, and through higher premiums as a result of hospitals extracting higher rates from payers. They complicate the contracting process, distort the allocation of system resources to hospitals and the communities they serve, complicate transparent pricing initiatives as well as relative quality assessment and can be used as barriers to limit competition, a charge constraint is therefore a meaningful option for consideration.

Charge constraint should not be confused with price regulation. Price regulation determines the price paid for a service and requires substantial policy development, legislative action and administrative overhead to determine ongoing levels of efficient cost that account for fair returns to the investment of capital, funding of mission related cost and permissions to cross subsidize payer reimbursement. Price regulation was the option taken by Maryland in their all-payer rate setting system (Atkinson, 2009). By contrast, charge constraint establishes an upper limit above which charges are considered an abuse of the special position afforded hospitals as both local monopoly and, in general, a beneficiary of non-profit status.

Charge constraints would serve as an upper limit on what happens when a deal cannot be agreed rather than the price to be paid. Any limit would require sufficient margin such that hospitals with superior efficiency can apply a higher markup (and thereby gain greater profitability) for the same service as less efficient hospitals with a larger costs. Since these serve as upper bounds there is no need to adjust the upper limit to reflect differences in efficient hospital cost or mission only that enough room is left for efficient hospitals to secure additional margin from alternative payers. The setting of a precise limit is, of necessity, somewhat arbitrary. However, in 1991, before the worst of the markup inflation, the median weighted average markup was 172 percent. This also represented a period in time in which regional

markups were convergent (see Figure 3). Allowing leeway above this baseline, a limit of 200% might be reasonable. That this is a reasonable limit is reinforced by the fact that it is above the range of markups permitted for hospitals subject to regulation in Maryland (Table 1) of between 114% and 177%. These arguments would suggest that a suitable aggregate limit of 200% of cost could be employed to account for variation in efficiency such that the most efficient hospitals will not face an unintended payment cap. Charge caps can be introduced locally or at a national level and be based upon Medicare or Medicaid cost reports that contain all-patient data. By constraining aggregate cost to charge ratios to a maximum it is likely that service line distortions in cost allocations will be significantly reduced since maintaining high markups on some services, for example those predominantly focused in the emergency department, will necessitate reductions elsewhere to maintain the aggregate limit without charging below cost for other services.

As a precedent, insurers are regulated for both premium rates and MLRs while physicians have been limited for allowed charge levels in Medicare as a result of the perceived unfairness of their ability to impact individuals. Creating a charge constraint at a predetermined limit is technically simple to administer and can be staged through a managed transition. This type of constraint seems a reasonable approach particularly since we have not been able to identify a single benefit from permitting hospital charge levels to continue to grow unchecked.

References

12 Civ 1510. United States v. Beth Israel Medical Ctr (2012). Retrieved from http://www.justice.gov/usao/nys/pressreleases/March12/bimc/bethisraelmedicalcentercomplaint.pdf

America's Health Insurance Plans. (2013). Survey of Charges Billed by Out-of-Network Providers: A Hidden Threat to Affordability. Retrieved from https://www.ahip.org/Value-of-Provider-Networks-Report-2012/

American Hospital Association. (2013). *Hospital Statistics* (pp. 1992–2013; Table 3: Utilization and expenses).

Atkinson, G. (2009). *State Hospital Rate-Setting Revisited*. Retrieved from http://www.commonwealthfund.org/Publications/Issue-Briefs/2009/Oct/State-Hospital-Rate-Setting-Revisited.aspx

Centers for Medicare & Medicaid Services. Change in Methodology for Determining Payment for Extraordinarily High-Cost Cases (Cost Outliers) Under the Acute Care Hospital Inpatient and Long-Term Care Hospital Prospective Payment Systems (2003). Federal Register / Vol. 68, No. 110 / Monday, June 9,.

Centers for Medicare & Medicaid Services. (2014). Historical Impact Files for FY 1994 through Present. Retrieved from http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Historical-Impact-Files-for-FY-1994-through-Present.html

Daly, R. (2013). Cms data show wide variation in hospital billing. *Modern Healthcare*. Retrieved from http://www.modernhealthcare.com/article/20130508/NEWS/305089960

Davis, K. (1973). Hospital Costs and the Medicare Program. *Social Security Bulletin*, *36*(8). Retrieved from http://www.ssa.gov/policy/docs/ssb/v36n8/index.html

Herman, B. (2013, October). Moody's: 132 statistics on nonprofit hospital medians. *Becker's Hospital Review*. Retrieved from http://www.beckershospitalreview.com/racs-/-icd-9-/-icd-10/moody-s-132-statistics-on-nonprofit-hospital-medians-fiscal-year-2012.html

HFMA Price Transparency Task Force. (2014). *Price Transparency in Health Crae*. Retrieved from http://www.hfma.org/WorkArea/DownloadAsset.aspx?id=22279

Himmelstein, D. U., Thorne, D., Warren, E., & Woolhandler, S. (2009). Medical bankruptcy in the United States, 2007: results of a national study. *The American Journal of Medicine*, *122*(8), 741–6. doi:10.1016/j.amjmed.2009.04.012

Medicare Payment Advisory Commission. (2001). *Reducing beneficiary coinsurance under the hospital outpatient prospective payment system*. Retrieved from http://www.medpac.gov/documents/reports/Mar01_Entire_report.pdf?sfvrsn=0

Patient Protection and Affordable Care Act, 42 U.S.C. § 18001 (2010). Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-111hr3590enr/pdf/BILLS-111hr3590enr.pdf

Pollitz, K., Cox, C., Lucia, K., & Keith, K. (2014). *Medical Debt Among People with health Insurance*. Retrieved from http://kaiserfamilyfoundation.files.wordpress.com/2014/01/8537-medical-debt-among-people-with-health-insurance.pdf

RTI. (2011). *Medicare Copayments for Critical Access Hospital Outpatient Services—2009 Update*. Retrieved from http://www.medpac.gov/documents/contractor-reports/Dec11_Copayments_CriticalAccessHospitals_CONTRACTOR_JS.pdf?sfvrsn=0

The Lewin Group. (2005). *A study of hospital charge setting practices*. Retrieved from http://www.medpac.gov/documents/contractor-reports/Dec05_Charge_setting.pdf?sfvrsn=0

Tu, H., & Gourevitch, R. (2014). *Moving Markets : Lessons from New Hampshire's Health Care Price Transparency Experiment*. Retrieved from http://www.chcf.org/resources/download.aspx?id={2ABA388A-A6A5-405A-8FDD-F07B36049FEB}

U.S. DoJ. (2011). Justice Department Reaches Settlement with Texas Hospital Prohibiting Anticompetitive Contracts with Health Insurers. Retrieved from http://www.justice.gov/opa/pr/2011/February/11-at-249.html

US Department of Justice. (2006). TENET HEALTHCARE CORPORATION TO PAY U.S. MORE THAN $900 MILLION TO RESOLVE FALSE CLAIMS ACT ALLEGATIONS. *Press Release 06-088*. Retrieved from http://www.justice.gov/usao/cac/Pressroom/pr2006/088.html