Capitation Rates & Data™

VOLUME 12 • NUMBER 1 • JANUARY 2007 • PAGES 1–12

Payer uses risk-adjusted hospital data for utilization and cost comparisons that identify cost-efficient providers

As a leading payer in the important California risk-contracting market and a growing presence in five other states, Van Nuys, CA–based Health Net naturally looks for provider partners with efficient healthcare delivery systems.

Until recently, the challenge in attaining that goal was to employ an analytical model that would correctly gauge true measures of efficiency, while accounting for the acuity of a provider organization's member population, says **Alan W. Sterling, MHA,** Health Net's director of contracts and analysis.

"We were charged with identifying good groups, but we had no framework to make that kind of judgment call," Sterling says. "While our medical management department could look at patterns of care, it had no way to determine a normal utilization rate for services or to calculate the return on investment (ROI) when we could bring providers back to appropriate utilization."

Health Net partnered with Boston-based DxCG, Inc., to create an analytical model that would define the characteristics of an efficient provider and enable the health plan to examine the effect of contractual or medical practice modifications on the true cost of care. Working together, Health Net and DxCG developed an elegant profiling system using risk-adjusted institutional data that tracks adjusted units per 1,000 members and adjusted cost per unit in eight inpatient service categories.

continued on p. 2

Figure 1: Utilization quartile profile

Commercial						
Quartile—utilization	1	2	3	4		Weighted avg. of utilization
Utilization	Utilization	Utilization	Utilization	Utilization	1 quartile	
1 Inpatient acute/1,000	169.0	186.6	204.3	222.0	17.7	52.7%
2 Inpatient nonacute (skilled nursing)	7.1	14.7	22.3	29.9	7.6	0.8%
3 Outpatient surgery cases (OPS)/1,000	26.6	42.1	57.7	73.2	15.5	18.7%
4 Emergency room (ER)/1,000	78.2	108.9	139.5	170.1	30.6	12.6%
5 Ambulance	13.0	17.8	22.7	27.5	4.8	2.0%
6 Outpatient other (OPO)	76.9	109.8	142.7	175.6	32.9	10.8%
7 Home health/home infusion	11.9	13.9	15.9	17.9	2.0	1.5%
8 Out of area	29.4	40.3	51.2	62.1	10.9	0.8%
						100.0%
Product: Commercial HMO+POS PPG membership > 1,000						

Source: Alan Sterling, Health Net. Reprinted with permission.

Missouri HMO data ⟨ *6* • **Variations in hospital ED use** ⟨ *10*

Risk-adjusted data

continued from p. 1

Health Net is one of the largest MCOs in the United States. The company's HMO, POS, insured, PPO, and government contracts subsidiaries provide health benefits to some 6.6 million enrollees in 27 states and the District of Columbia through commercial, Medicare, Medicaid, TriCare, and Veterans Affairs plans.

More than two million of these members are located in California, where approximately one-third is enrolled in commercial or Medicare HMO or POS risk arrangements. Health Net's California market share encompasses some 10% of total HMO enrollment, according to the California *Health Care Market Report 2005*.[1]

Under the traditional model of profiling providers on utilization and cost measures, health plans have reviewed PMPM costs, medical care ratios, days per 1,000, and trending unit costs, Sterling points out. Health Net's new model uses adjusted units per 1,000 times adjusted cost per unit in eight service categories:

- Inpatient acute
- Skilled nursing facilities
- Outpatient surgery
- Emergency department
- Ambulance
- Outpatient other
- Home health and home infusion
- Out of area

Figure 1 offers illustrative data on utilization per 1,000 in those eight service categories and adds a column for weighted average utilization.

"The weighted average shows how many dollars go through a particular service line," Sterling explains. "The inpatient acute weighted average utilization in this example is 52.7%. For comparison purposes, consider that you're taking a course and you look at this number like a grade. If you're failing English and that class accounts for 52% of your grade, you know that you're not going to do well in school that year.

"So if 52% of these dollars are in the inpatient acute basket, that has to be our primary focus," he adds. "This method allows us to prioritize our efforts in looking at the spread in terms of utilization."

'Peeling back the onion' of costs

Figure 2 illustrates the expected top-tier costs for the same basket of eight services. In PMPM terms, these costs are adjusted to represent Health Net's core expected costs in each quartile by adjusting for catastrophic cases. Thus, 80% of the dollars that exceed $150,000 PMPY are excluded, Sterling explains.

The differences among these quartiles are dramatic, with total costs ranging from $22.55 PMPM–$38.25 PMPM for organizations in Utilization Quartile 1, $44.89 PMPM–$76.06 PMPM for Quartile 2, $67.22 PMPM–$113.87 PMPM for Quartile 3, and $89.56 PMPM–$151.58 PMPM for Quartile 4. In "peeling back the onion" of healthcare costs, this drill-down enables Health Net to score each of its prepaid provider groups (PPG) and determine a "grade point average," Sterling says.

"On top of this, we can also see where the groups are strong, where they are weak, and where we can go to identify those service categories that need improvement," Sterling says. If a group falls into a higher utilization quartile, Health Net tries to work with the organization from a contracting standpoint to help physicians steer members to more cost-effective providers and improve utilization patterns.

Health Net could have achieved a simple ranking with internal data, but adding a risk-adjustment factor from DxCG data, as illustrated in **Figure 3,** vastly improved the analysis, enabling the health plan to rank its providers from best to worst on a days per

Figure 2: Cost quartile

Commercial				
Quartile—cost platform	**1**	**2**	**3**	**4**
Utilization	**Cost**	**Cost**	**Cost**	**Cost**
1 Inpatient acute/1,000	$1,000	$2,000	$3,000	$4,000
2 Inpatient nonacute (skilled nursing)	$100	$200	$300	$400
3 Outpatient surgery cases/1,000	$1,000	$2,000	$3,000	$4,000
4 Emergency room/1,000	$500	$1,000	$1,500	$2,000
5 Ambulance	$500	$750	$1,000	$1,250
6 Outpatient other	$300	$600	$900	$1,200
7 Home health/home infusion	$350	$700	$1,050	$1,400
8 Out of area	$50	$125	$200	$275

Source: Alan Sterling, Health Net. Reprinted with permission.

Group Publisher: Matt Cann Executive Editor: Christine Hannan Editor: Marie Powers

Capitation Rates & Data™ (ISSN 1090-1574) is published monthly by HCPro, Inc., 200 Hoods Lane, P.O. Box 1168, Marblehead, MA 01945. Subscription rate: $499/year • Postmaster: Send address changes to **Capitation Rates & Data**, P.O. Box 1168, Marblehead, MA 01945. •

Figure 3: Prepaid provider group (PPG) comparison

Utilization	PPG A	PPG B	PPG C	PPG D
Inpatient acute				
Days per 1,000	241.6	217.1	167.5	170.3
Utilization score	5.10	3.72	0.99	1.07
DxCG factor	**1.3235**	**0.7476**	**0.7954**	**0.9993**
Adjusted utilization score	3.86	4.98	2.19	1.08
	Teaching hospital	Hospital owned PPG	Independent IPA	Medical group
Cost	**PPG A**	**PPG B**	**PPG C**	**PPG D**
Inpatient acute				
Gross cost per unit	$2,285	$3,682	$3,863	$3,563
Cost score	2.29	3.68	3.86	3.56
Net cost per unit	$1,845	$2,504	$3,057	$3,103
Net cost per unit score	1.84	2.54	3.06	3.10
Stop loss value PMPM	$8.87	$21.30	$11.26	$6.52

Source: Alan Sterling, Health Net. Reprinted with permission.

1,000 raw score, an adjusted day score, gross cost per day, and net cost per day.

Health Net also can determine the total adjusted utilization score, total net cost per unit score, and total score for each PPG. This level of detail enables the health plan to conduct ROI analyses and develop provider reports that offer constructive feedback to practices.

In the report illustrated in **Figure 4,** for example, Health Net lists the top nine providers in each category, orders them according to costs for a given year, and shows what the company paid in claims, Sterling explains. "That gives us a base year—2005, in this example—with claims paid through 2006, so we can see that the groups are responding to the data," he says.

A tenth "other" provider in each category incorporates all other costs. The data in Figure 4, shown for illustrative purposes, displays only a partial listing of claims paid and percentages, so each category doesn't add up to 100%.

For most groups, the data shows that 80% of days or cases go to one or two hospitals, Sterling says. From there, Health Net can examine measures such as average cost per day, total bed days, and average LOS by service line, such as OB or cardiac care.

"We can look at the different functions that make up a given day and see [whether] there's some way to reduce those costs," he says. **Figure 5** shows a template the health plan uses to create a new utilization target.

The model also enables Health Net to evaluate the effectiveness of its own initiatives, such as its Decision Power program, which provides members with 24-hour access to health coaches who are trained to answer questions, assess health status, and suggest individual health goals.

"If we implement this program with a local medical group, we can track the results over time and see if it makes a difference in member costs and health status," Sterling says. "That enables us to report back to employer groups whether the tool is an effective intervention."

One of the pieces to the puzzle

To date, Sterling has conducted more than three dozen meetings with PPGs in California to review the risk-adjusted institutional data. Typically, these discussions involve several physicians from the group, as well as representatives from contracting, finance, and administration.

"We need broad representation during these meetings because we're usually talking about grading them on their selection of facilities and discussing what alternatives might be available, if any," Sterling says.

Detailed review that involves all of the appropriate parties—analysts who understand the data as well as medical directors—is essential to produce any behavior change on the part of medical groups, agrees **Stacey Hrountas,** vice president of managed care at Sharp HealthCare in San Diego.

"We're working on utilization in the hospital pools for a couple of our medical groups and trying to drill down to see if they're encountering adverse selection or utilization issues," Hrountas says. "Health Net's information is one of the pieces to the puzzle that we've utilized to try to analyze cause and effect."

Providers always worry that their population risk is more adverse from payer to payer, she adds. When Sharp examined its physician profiles and compared utilization by plan, variations were obvious, "yet there's nothing different that we do from one health plan to another in terms of instituting the same consistent medical management program," Hrountas says. "So why do these differences occur?"

The problems arise when one medical group's population differs considerably from others on a comparative basis but those differences aren't taken into account in a health plan's analysis. For example, one of Sharp's medical groups has few pediatric members. Because its population is almost entirely adults, its inpatient utilization in terms of bed days per 1,000 appears much higher than its peers without a risk-adjustment factor.

"Health plans often compare medical group by medical group without taking the age of the population into account," Hrountas says. "By using this model, Health Net is able to make those distinctions."

Incorporating the risk-adjustment factor makes all the difference, Sterling agrees.

continued on p. 4

Risk-adjusted data

continued from p. 3

"If a group is taking care of very sick people, we give it an adjustment just like a student would get extra points for taking an advanced placement class in school," he explains. "That's only fair in terms of identifying the providers who are efficient and economically accessible, and it's been a key factor in comparing groups. In fact, the groups are more interested in their risk-adjusted score than in their raw score. Any insurer or HMO that gets into this type of comparison needs to understand that providers want apples-to-apples data."

Figure 4: PPG example

PPG A	Product line: HMO and POS M Months 203,072 Experience between 1/1/2004 and 3/31/2006, paid through 6/30/2006					
Inpatient acute						
	2005					
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/days**
Hospital 1	$5,024,357	52.43%	52.43%	2,064	501	$2,434
Hospital 2	$2,431,529	25.37%	25.37%	1,428	379	$1,703
Hospital 3	$460,987	4.81%	4.81%	101	8	$4,564
Hospital 4	$346,446	3.62%	3.62%	110	25	$3,150
Hospital 5	$455,754	4.72%	4.72%	42	15	$10,851
	$9,582,828	100.00%	32.18%	4,077	1,007	$2,350
Inpatient nonacute (skilled nursing)						
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/days**
Provider 1	$32,760	28.51%	96.52%	3	10	$10,920
Provider 2	$29,903	26.02%	99.73%	61	10	$490
	$114,921	100.00%	86.67%	230	36	$500
Outpatient surgery						
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/claim**
Provider 1	$1,208,986	33.10%	38.07%	0	411	$2,942
Provider 2	$1,762,171	48.25%	56.02%	0	564	$3,124
Provider 3	$253,387	6.94%	75.01%	0	17	$14,905
Provider 4	$48,726	1.33%	54.01%	0	3	$16,242
	$3,652,098	100.00%	50.24%	0	1,132	$3,226
Emergency room						
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/claim**
	$1,456,580	100.00%	49.58%	0	2,162	$674
Outpatient other						
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/claim**
Provider 1	$177,664	4.64%	57.37%	0	58	$2,942
Provider 2	$368,209	9.61%	45.86%	0	435	$3,124
Provider 3	$88,220	2.30%	45.44%	0	18	$14,905
Provider 4	$340,306	8.88%	73.01%	0	309	$16,242
	$3,831,330	100.00%	60.09%	0	14,341	$267
Ambulance						
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/claim**
	$250,012	100.00%	97.09%	0	365	$685
Home health/home infusion						
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/claim**
	$253,909	100.00%	58.87%	0	933	$272
Out of area						
Name	**Paid**	**%Paid**	**Allowed/billed**	**Bed days**	**Claims**	**Cost/claim**
	$677,032	100.00%	41.62%	120	771	$878

Editor's note: Data is shown for illustrative purposes and includes only a partial listing of claims paid and percentages, so each category does not add to 100%.

Source: Alan Sterling, Health Net. Reprinted with permission.

Incentives needed to change behavior

The analytical model has been well received by groups because it offers credible data that provide a new perspective on utilization. In fact, providers respond to some of the feedback "the minute we leave the meeting," Sterling says. Other changes may take weeks or months to make because they require consensus-building with physicians or contracting changes with facilities—a step that usually requires credentialing.

The report is designed for HMO products that require members to choose a PCP. Thus, the tool is widely used in California but not in Health Net's other markets.

"This model works well in California because most of our members are enrolled in an HMO or POS, so they choose a physician group or doctor," Sterling says. "Once members have chosen a group, we can capture that data and look at their institutional utilization through that group. With a PPO product line, members don't choose a primary care provider so it's hard to make that correlation."

From a medical group perspective, Sharp has worked most closely with Health Net in tweaking a hospital-incentive program that is tied to the professional agreement for one of its medical groups.

"If there's a hospital risk pool or incentive dollars for utilizing an outpatient surgery center versus inpatient hospitalization, for example, you have opportunities to try to align the incentives," Hrountas says. "So if there's a medical group, and there are true dollars available, you may see a change in behavior.

"We also accept a large portion of capitation risk on the hospital side so, obviously, moving business outside our system is not going to help us at all," she adds. "If we're at risk for a service, we're going to try to keep it in our system."

To keep the data fresh, Sterling's staff generate a new report every 90 days, using a trailing 12-month basis to account for seasonality and other factors.

"In terms of the delegated healthcare model that's in place in California, we've taken the position that we can better serve our groups by providing them with better data," Sterling says. "We can cut the data into slices by product line—HMO, POS, Medicare, and Medi-Cal—and show them where they're actually sending their patients, including services such as labs and outpatient dialysis. Then we can look at the data together on a global basis and decide if we need a better contract for labs or for dialysis."

Some of Health Net's physician groups were not aware, for example, that outpatient surgery might cost 200% more than an inpatient day. Providing this type of feedback has generated constructive dialogue with the groups and enhanced their awareness of cost-effective options in practice management.

"The model pointed out some of the rather extraordinary costs that are associated with certain outpatient procedures," says **Mark Finch, MD,** senior medical director of Brown & Toland Medical Group in San Francisco. "Outpatient surgery was an eye-opening revelation, because the cost differences were sometimes extreme."

From the Health Net perspective, "it was enlightening to get into the data and start seeing the true average as well as the shades of gray," Sterling adds. "We can define, objectively, a good provider group. When we get into the detail, we can also examine the top 25% of our groups and see what they do differently from others so we can share that information with other groups and raise the standard of excellence."

Practical applications still sought

For Health Net, the model provides an opportunity to reduce costs and, in turn, employer group premiums.

"We're going to do our best to make the data even more timely so we can give [them] to providers sooner and better so they can react even more quickly," Sterling says. "And our contracting and medical management staff now have a baseline score that they can track."

For medical groups and IPAs, the data offers instructive—sometimes downright astonishing—insights into local healthcare costs that can help them to improve their contractual relationships in a healthcare environment where transparency is increasingly important. In fact, Health Net is one of just two plans that provides Sharp with risk-adjusted data at the level of detail the integrated delivery system has requested.

But the model hasn't yielded perfect results—at least not yet.

"We're still going through the process of validation with Health Net in terms of overall improvement in the hospital capitation as well as shared risk services," says Hrountas. "We also need some suggestions on specific tactical improvement opportunities. Providing the data is just the first step. Providing the tactical initiatives to get to the desired endpoints—high-quality, cost-effective care—is an additional step that our utilization management meetings with Health Net are designed to do."

"It was instructive to understand how much some of the differences in unit costs varied for certain services in our network," Finch says. "But so far, the model hasn't translated into any practical effect because medical groups like ours don't control those contracts. They are controlled by the health plan.

"And although the health plan will counter by saying that we control the flow of patients so we should be able to control which facilities they use in our area, that's not true either," he adds. "Our area is dominated by one hospital system that controls all of the outpatient surgery centers and tertiary centers, and those contracts are signed by the health plan."

In cases where PPGs practice in one-hospital towns, "there may be no institutional alternatives," Sterling concedes, "but we're still able to show them the true costs of care."

When the model doesn't suggest practical, cost-saving opportunities for providers due to contractual limitations, it could be used to identify procedures that could be moved out of an outpatient surgery center into a physician's operating or endoscopy suite, Finch suggests.

"Perhaps some of those institutional savings could occur, and some of the savings also could be shared with the physicians who are willing to do these procedures in their offices and surgical suites," he says. "This hasn't happened with us yet, but the data could be used to drive more efficient office procedures."

As beneficial as data from the Health Net model

continued on p. 6

Figure 5: Valuing quartile movement

Create new target for utilization (adjust service lines down 1 level if appropriate, calculate expected PMPM)

Value of PPG's new utilization level		**1**		**# of levels**			
	Current utilization score	**Goal score**	**Old utilization**	**New utilization target**	**Adjusted net unit cost**	**Expected cost**	**Expected claims PMPM**
1 Inpatient acute	4.53	3.53	231.3	213.6	$3,310	$7,166,976	$58.91
2 Inpatient nonacute (skilled nursing)	1.84	1.00	13.5	7.1	$314	$22,601	$0.19
3 Outpatient surgery	3.29	2.29	62.1	46.6	$1,771	$836,323	$6.87
4 Emergency room	2.22	1.22	115.6	85.0	$1,058	$911,085	$7.49
5 Ambulance	2.70	1.70	21.2	16.3	$771	$127,701	$1.05
6 Outpatient other	7.23	6.23	281.5	248.7	$751	$1,892,625	$15.56
7 Home health/home infusion	2.45	1.45	14.8	12.8	$262	$34,050	$0.28
8 Out of area	3.59	2.59	57.6	46.7	$317	$149,815	$1.23
Utilization score =	4.20	3.20				**PMPM**	$91.58

Source: Alan Sterling, Health Net. Reprinted with permission.

Risk-adjusted data *continued from p. 5*

may be, "the unit cost in this regard is controlled by the health plans," Finch adds. "They write and they sign the contracts—not the medical groups. If they expect the groups to solve these utilization issues on their own, it's not going to happen. Trying to produce cost savings is a joint effort, not a one-way street."

Editor's note: Contact Alan W. Sterling at 818/676-6951, Mark Finch at 415/972-6080, and Stacey Hrountas at 858/499-5500.

[1] Baumgarten A. *California Health Care Market Report. 2005*. (Oakland, CA: California HealthCare Foundation, September 2005)

Missouri report reveals data on enrollment and PMPM cost trends for state's HMOs

Missouri doesn't have a great deal of risk-based contracting, even in its Medicaid program, yet the state produces an annual report that provides terrific financial and operational data on HMOs operating in the state. The *2005 Missouri HMO Report,* released in August 2006, offers insight into enrollment trends and PMPM costs by service line, product type, and HMO.

The Missouri Department of Insurance (MDI) has published the report since 1984 using data filed annually by each Missouri-licensed HMO, says **Molly White, MHA,** supervisor in the managed care section of Mis-souri's Division of Market Regulation. The MDI began releasing the report electronically in 2001, as most of the users—employers, providers, financial analysts, and journalists—are external to the state government.

All of the data in the 2005 report come from HMO annual financial statements and supplemental data filed by HMOs that operated in the state at the end of the year. Medicare activity reflects Medicare Advantage (MA) products sold only by HMOs in Missouri. The report also features information comparing the size of the HMO market to the market for non-HMO comprehensive medical benefit plans (i.e., PPOs and high-deductible health plans), including five years of historical data.

As in other states, overall HMO membership in Missouri has steadily declined in recent years, from 1.6 million total members in 2001 to fewer than one million members in 2005, with the steepest decline of 15.7% coming in the 2004–2005 period. In 2005, commercial membership was approximately 500,000 enrollees—fewer than half of the total in 2001—whereas 101,667 were enrolled in MA plans and 391,749 in Medicaid plans. The average age of commercial enrollees was 32.3 years old and 48.8% were female. The average age of Medicare enrollees was 74.1 years old and 59% were female, whereas the average age of Medicaid enrollees was 13.5 years old and 57.1% were female.

Fewer than two dozen HMOs operate in Missouri compared to 400 life and health insurance companies, most of which offer PPO products and networks that they've assembled, according to White. In fact, all of the HMOs active in the state also have insurance company affiliates. Given the proportion of insurers to HMOs, it's not surprising that fewer than 10% of health plan costs in the state are reported as capitated expenses, she says.

"My sense is that the Medicaid plans have a little more than the commercial plans but probably not a statistically significant difference," White says. "We do hear about plans starting to carve out a service that they hadn't carved out in the past or plans that previously carved out a service bringing it in-house, so we still see a lot of capitation in the carve-out scenario." In fact, many of the state's mental health services are delivered on a capitated basis by mental and behavioral health carve-outs, she says.

Commercial premiums up 46% in five years

The most popular information in the report includes the cost of services by product type and comparisons of PMPM costs to average premiums PMPM. **Figure 1** illustrates the total costs of services by commercial, Medicare, and Medicaid HMO, and **Figure 2** displays average PMPM costs by product type. **Figures 3–8** on pp. 8–9 contain commercial, Medicare, and Medicaid total costs of capitation services and PMPM costs by HMO.

These tables contain high-level information about how dollars are spent on different categories of healthcare. For example, the data show that commercial HMOs in the state spent proportionately more on pharmacy and outpatient care and proportionately less on inpatient hospital care compared to Medicare and Medicaid HMOs, helping to moderate hospital costs over time for commercial enrollees.

On a PMPM basis, inpatient services represented an average cost of $39.02 PMPM for the commercial book of business across all HMOs in Missouri, compared with an average of $179.99 PMPM for Medicare inpatient costs and $42.34 PMPM for Medicaid.

Outpatient physician costs averaged $58.59 PMPM, and inpatient physician costs averaged $12.72 PMPM for commercial members. For Medicare, outpatient physician costs averaged $109.89 PMPM, and inpatient physician costs averaged $32.35 PMPM. Outpatient physician costs averaged $20.13 PMPM and inpatient physician costs averaged $8.98 PMPM for Medicaid.

continued on p. 8

Figure 1: Costs of services by product type

Commercial	2002	2003	% change 2002–2003	2004	% change 2003–2004	2005	% change 2004–2005
^ Hospital costs	$738,369,469	$655,587,650	-11.2%	$560,960,191	-14.4%	$506,378,563	-9.7%
Physician costs	$521,146,632	$449,623,017	-13.7%	$365,703,511	-18.7%	$315,438,850	-13.7%
Prescription drugs	$317,743,007	$283,277,423	-10.8%	$243,529,434	-14.0%	$230,908,467	-5.2%
Diagnostic, x-ray, lab	$112,687,420	$137,525,076	22.0%	$105,132,004	-23.6%	$106,450,564	1.3%
Medicare*	**2002**	**2003**	**% change 2002–2003**	**2004**	**% change 2003–2004**	**2005**	**% change 2004–2005**
^ Hospital costs	$329,878,110	$299,195,973	-9.3%	$307,842,386	2.9%	$316,903,319	2.9%
Physician costs	$183,181,283	$155,059,713	-15.4%	$172,803,381	11.4%	$176,066,876	1.9%
Prescription drugs	$37,155,093	$31,887,499	-14.2%	$36,479,475	14.4%	$43,917,932	20.4%
Diagnostic, x-ray, lab	$31,593,281	$23,286,057	-26.3%	$16,957,007	-27.2%	$21,835,715	28.8%
Medicare*	**2002**	**2003**	**% change 2002–2003**	**2004**	**% change 2003–2004**	**2005**	**% change 2004–2005**
^ Hospital costs	$279,686,508	$326,096,288	16.6%	$374,828,300	14.9%	$393,643,399	5.0%
Physician costs	$119,422,078	$127,805,126	7.0%	$138,838,492	8.6%	$141,593,784	2.0%
Prescription drugs	$100,538,749	$114,097,405	13.5%	$130,652,467	14.5%	$133,413,695	2.1%
Diagnostic, x-ray, lab	$23,936,622	$27,524,011	15.0%	$30,047,959	9.2%	$36,071,974	20.0%

^ Hospital costs include inpatient hospital, outpatient hospital, and emergency room.
* Medicare activity reflects Medicare Advantage products sold by HMOs in Missouri, but does not include any activity reflecting Medicare Advantage products sold by insurance companies.

Data source: HMO Annual Supplement Reports *for each year.*

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Figure 2: PMPM by product type

Commercial	2002	2003	% change 2002–2003	2004	% change 2003–2004	2005	% change 2004–2005
^ Hospital costs	$64.28	$69.75	8.5%	$70.19	0.6%	$73.64	4.9%
Physician costs	$45.63	$51.48	12.8%	$51.37	-0.2%	$51.50	0.2%
Prescription drugs	$30.62	$29.56	-3.5%	$34.44	16.5%	$34.57	0.4%
Diagnostic, x-ray, lab	$16.52	$19.84	20.1%	$22.02	11.0%	$23.06	4.7%
Medicare*	**2002**	**2003**	**% change 2002–2003**	**2004**	**% change 2003–2004**	**2005**	**% change 2004–2005**
^ Hospital costs	$242.98	$246.67	1.5%	$231.55	-6.1%	$257.02	11.0%
Physician costs	$129.16	$117.22	-9.2%	$133.99	14.3%	$142.24	6.2%
Prescription drugs	$25.82	$27.22	5.4%	$34.09	25.2%	$40.94	20.1%
Diagnostic, x-ray, lab	$26.15	$18.50	-29.3%	$15.23	-17.7%	$19.00	24.8%
Medicare*	**2002**	**2003**	**% change 2002–2003**	**2004**	**% change 2003–2004**	**2005**	**% change 2004–2005**
^ Hospital costs	$57.24	$65.47	14.4%	$71.40	9.1%	$78.52	10.0%
Physician costs	$23.76	$25.12	5.7%	$26.34	4.9%	$29.10	10.5%
Prescription drugs	$20.30	$22.85	12.6%	$25.69	12.4%	$27.11	5.5%
Diagnostic, x-ray, lab	$5.34	$6.48	21.3%	$6.44	-0.6%	$8.40	30.4%

^ Hospital costs include inpatient hospital, outpatient hospital, and emergency room.
* Medicare activity reflects Medicare Advantage products sold by HMOs in Missouri, but does not include any activity reflecting Medicare Advantage products sold by insurance companies.

Data source: HMO Annual Supplement Reports *for each year.*

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Missouri report

continued from p. 7

By comparison, commercial premiums for all HMOs in Missouri averaged $256.40 PMPM in 2005, up 5.2% from $243.82 PMPM the previous year. For all HMOs collecting premiums in Missouri from 2001–2005, commercial premiums grew by 46% during this period from $175.65 PMPM in 2001.

"We don't currently collect much more than an aggregate, companywide average or state average premium PMPM," White explains. "We do get a breakout on an annual basis of large employers and small employers, and one thing I've noticed is that some companies don't necessarily account for the difference in the premiums and cost between large and small employers. They simply allocate [the difference], so you end up with a medical loss ratio that's consistent across large groups, small groups, and individuals, which you know is not really true."

For example, both CIGNA Healthcare of Ohio, Inc., and CIGNA Healthcare of St. Louis, Inc., operate in Missouri. Both report their medical loss ratios to the state as the difference between premiums paid and costs, "which winds up being the same across all employer categories," White says. "That obviously has more to do with where they're allocating their premiums and their losses than the different markets in which their losses actually occur.

"For whatever reason, these companies don't find any business reason to track those costs as opposed to allocating those costs, and we don't have a law that compels them to do otherwise," she says.

Performance data also featured in the report show that the average medical loss ratio for all HMOs licensed and active in Missouri during 2005 was 83.4%, compared with an average medical loss ratio of 84.5% for the 20 HMOs with more than 80% of business in the state. Total premium-related and FFS revenues across all books of business for active HMOs averaged $273.56 PMPM ($256.29 PMPM for the 20 largest), whereas medical and hospital expense averaged $228.64 PMPM ($216.23 PMPM for the 20 largest).

Missouri has few laws governing the interaction between payers and providers other than regulations requiring prompt payment and fair claims settlement, so it's difficult for state regulators to precisely track capitation enrollment and cost trends, White concedes.

"The main reason [why] we hear from the provider community is when health plan contractors are millions of dollars in arrears on payments," she says.

"Occasionally, we hear about contract disputes related to the calculation of payments. Overall, when we can track cost trends on a PMPM basis and they remain fairly stable over time, the information usually indicates a capitated vendor," White says.

Editor's note: The 2005 Missouri HMO Report *is available on the state's Web site at* http://insurance.mo.gov/reports/hmo/index.htm. *Contact Molly White at 573/522-8767.*

Figure 3: 2005 Missouri costs of services for commercial business

HMO name	Total medical costs	Total capitation costs
Aetna Health, Inc.	$50,147,308	$1,348,920
BlueCross & BlueShield of Kansas City	$82,525,499	$6,329,577
CIGNA Healthcare of Ohio, Inc. dba CIGNA Healthcare of Kansas/Missouri	$7,584,733	$358,860
CIGNA Healthcare of St. Louis, Inc.	$11,337,686	$409,285
Community Health Plan	$52,348,930	$711,375
Coventry Health Care of Kansas, Inc.	$134,030,011	$3,910,029
Cox Heath Systems HMO, Inc.	$11,031,943	$8,059
Good Health HMO, Inc. dba Blue-Care, Inc.	$124,095,157	$7,626,659
Great-West Healthcare of Kansas/Missouri, Inc.	$0	$0
Group Health Plan, Inc.	$259,245,006	$6,886,887
HealthLink HMO, Inc. dba HealthLink HMO	$133,121	$17,222
HMO Missouri, Inc. dba Blue Choice	$266,255,396	$15,946,647
Humana Health Plan, Inc.	$54,716,506	$2,602,661
Mercy Health Plan of Missouri, Inc. dba Premier Health Plans	$135,230,242	$830,351
United Healthcare of the Midwest, Inc.	$51,872,503	$1,638,402
Totals	$1,240,554,042	$48,624,934

Data source: 2005 HMO Annual Supplement Report.

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Figure 4: 2005 Missouri PMPM costs for commercial business

HMO name	Total medical costs	Total capitation costs
Aetna Health, Inc.	$235.38	$6.33
BlueCross & BlueShield of Kansas City	$240.45	$18.44
CIGNA Healthcare of Ohio, Inc. dba CIGNA Healthcare of Kansas/Missouri	$245.25	$11.60
CIGNA Healthcare of St. Louis, Inc.	$246.96	$8.92
Community Health Plan	$259.19	$3.52
Coventry Health Care of Kansas, Inc.	$183.62	$5.36
Cox Heath Systems HMO, Inc.	$219.02	$0.16
Good Health HMO, Inc. dba Blue-Care, Inc.	$270.27	$16.61
Great-West Healthcare of Kansas/Missouri, Inc.	$0	$0
Group Health Plan, Inc.	$204.26	$5.43
HealthLink HMO, Inc. dba HealthLink HMO	$114.37	$14.80
HMO Missouri, Inc. dba Blue Choice	$189.75	$11.36
Humana Health Plan, Inc.	$243.62	$11.59
Mercy Health Plan of Missouri, Inc. dba Premier Health Plans	$226.91	$1.39
United Healthcare of the Midwest, Inc.	$108.45	$3.43
Averages	$199.17	$7.93

Data source: 2005 HMO Annual Supplement Report.

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Figure 5: 2005 Missouri costs of services for Medicare business

HMO name	Total medical costs	Total capitation costs
Coventry Health Care of Kansas, Inc.	$63,332,980	$393,959
Essence, Inc.	$8,873,267	$1,223,061
Group Health Plan, Inc.	$94,760,419	$4,301,322
Humana Health Plan, Inc.	$68,710,521	$5,543,058
Mercy Health Plan of Missouri, Inc. dba Premier Health Plans	$141,741,609	$223,609
United Healthcare of the Midwest, Inc.	$211,980,003	$33,073,834
Totals*	$589,398,799	$44,758,843

* Medicare activity reflects Medicare Advantage products sold by HMOs in Missouri, but does not include any activity reflecting Medicare Advantage products sold by insurance companies.

Data source: 2005 HMO Annual Supplement Report.

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Figure 6: 2005 Missouri PMPM costs for Medicare business

HMO name	Total medical costs	Total capitation costs
Coventry Health Care of Kansas, Inc.	$491.00	$3.05
Essence, Inc.	$418.21	$57.65
Group Health Plan, Inc.	$568.56	$25.81
Humana Health Plan, Inc.	$456.49	$36.83
Mercy Health Plan of Missouri, Inc. dba Premier Health Plans	$570.68	$0.90
United Healthcare of the Midwest, Inc.	$429.22	$66.97
Totals*	$489.03	$31.87

* Medicare activity reflects Medicare Advantage products sold by HMOs in Missouri, but does not include any activity reflecting Medicare Advantage products sold by insurance companies.

Data source: 2005 HMO Annual Supplement Report.

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Figure 7: 2005 Missouri costs of services for Medicaid business

HMO name	Total medical costs	Total capitation costs
Alliance for Community Health, LLC dba Community Care Plus	$71,919,580	$8,586,317
Blue-Advantage Plus of Kansas City, Inc. dba Blue Advantage Plus	$62,615,684	$6,362,534
Children's Mercy Family Health Partners, Inc.	$94,253,013	$7,782,135
FirstGuard Health Plan, Inc.	$80,600,656	$5,207,345
Healthcare USA of Missouri, LLC	$295,205,946	$19,939,145
Mercy MC + Inc.	$97,498,115	$2,280,768
Missouri Care, LC	$68,723,823	$2,336,640
Totals	$770,816,818	$52,494,885

Data source: 2005 HMO Annual Supplement Report.

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Figure 8: 2005 Missouri PMPM costs for Medicaid business

HMO name	Total medical costs	Total capitation costs
Alliance for Community Health, LLC dba Community Care Plus	$134.85	$16.10
Blue-Advantage Plus of Kansas City, Inc. dba Blue Advantage Plus	$161.32	$16.39
Children's Mercy Family Health Partners, Inc.	$162.62	$13.43
FirstGuard Health Plan, Inc.	$172.43	$11.14
Healthcare USA of Missouri, LLC	$140.92	$9.52
Mercy MC + Inc.	$172.70	$4.04
Missouri Care, LC	$168.27	$5.72
Averages	$159.02	$10.91

Data source: 2005 HMO Annual Supplement Report.

Source: Division of Market Regulation, Missouri Department of Insurance. Adapted with permission.

Hospital ED use still varies widely; system factors suspected

Experts remain troubled about the wide variation in hospital ED use, and a recent finding that ED utilization rates were generally lower in communities with high levels of uninsured, Hispanic, or immigrant residents than in other communities raises even more perplexing questions. It's essential for providers in full- and shared-risk contracts to monitor these trends, because more than half of the admissions to U.S. hospitals for conditions other than pregnancy, childbirth, and neonatal care begin in the hospital ED.

A study by **Peter J. Cunningham, PhD,** senior fellow at the Center for Studying Health System Change (HSC) in Washington, DC, published in 2006 in *Health Affairs'* Web edition,[1] suggests that high ED use in some communities might be linked more to provider practice patterns and health system factors than to local demographics or even insurance coverage.

Although visits to hospital EDs increased 26% between 1993 and 2003 to about 114 million visits annually, one-third of these could have been provided in other settings, Cunningham pointed out.

What accounts for the increase?

"Numerous explanations have been offered," Cunningham wrote. "These include changes in the population that have increased demand for EDs and health system changes that have constrained capacity to other outpatient care. Increases in the number of uninsured people who lack access to other types of outpatient care are often cited."

In addition, the rising number of Medicare and Medicaid beneficiaries, who tend to have the highest levels of overall healthcare use, could be driving increases in ED use as rising demand for medical care strains many office-based physician practices.

Figure 1: Variation in hospital ED visits in 12 U.S. communities, large metropolitan statistical areas, and the United States total, 2003

Case-study site/ metro area	Number of ED visits per 100 people	Percent of population uninsured	Percent of population low income	Percent of population black	Percent of population Hispanic	Percent of population noncitizen
Cleveland, OH	39.8**	7.8**	18.4	15.8**	3.2**	3.0**
Boston, MA	36.4	5.7**	16.3**	5.1**	6.4**	9.8
Greenville, SC	35.0	12.9	19.2**	17.5**	2.7**	2.4**
Little Rock, AR	33.1	13.6	18.3	20.6**	3.3**	1.1**
Syracuse, NY	31.9	7.3**	18.8	5.8**	3.0**	11.7**
Indianapolis, IN	31.3	10.7**	17.8	13.1	3.7**	5.7**
Tenafly, NJ	30.2	7.8**	15.8**	4.2**	5.3**	9.8
Lansing, MI	30.1	7.2**	18.3**	5.7	4.7**	3.8**
Northern NJ	26.2**	12.2	14.1**	19.0**	12.9	9.3
Miami, FL	25.0**	20.1**	17.2**	18.9**	57.7**	28.2**
Phoenix, AZ	24.1**	17.8	15.8**	5.0**	23.8	11.8
Orange County, CA	21.0**	18.0**	17.3	3.6**	30.7**	15.6**
Large MSAs	31.8	15.6	16.5	11.5	17.0	9.0
Total U.S.	31.8	15.3	16.6	11.9	13.9	9.9

Data source: Community Tracking Study household survey, 2003. *Editor's note: Statistical significance denotes difference with large metropolitan statistical areas.*

Cunningham examined variations in ED use across communities, using data from the 2003 *Community Tracking Study* (CTS) household survey, which HSC conducted to produce representative estimates of health insurance coverage, access to care, and use of services for the U.S. civilian, noninstitutionalized population and 60 randomly selected communities. The overall sample for the survey included approximately 46,000 people.

Survey respondents reported the number of visits to hospital EDs in the previous 12 months. They also distinguished between ED visits that resulted in an inpatient stay and those that did not. Cunningham limited his analysis to ED visits that resulted in an inpatient stay, because they were the least likely to be discretionary and affected by patient preferences or health system factors.

Health system factors have greater impact

The study examined the extent of variation in ED use across 12 case-study communities and all 60 CTS communities. Cunningham computed ED visits as averages for people in individual communities or groups of communities and multiplied the result by 100 to reflect visits per 100 people. The 60 sites were grouped into four quartile groups based on their level of ED use, and the groups were weighted to account for differences in the size of communities within quartiles.

Cunningham found considerable variation in ED use across the 12 CTS case-study sites. As illustrated in **Figure 1,** the average for 2003 was approximately 32 ED visits per 100 people for both the United States and large metropolitan areas, but utilization ranged from almost 40 visits per 100 in Cleveland to approximately 21 visits per 100 in Orange County, CA.

"Despite popular perceptions, communities with the highest levels of ED use did not necessarily have the highest numbers of uninsured, low-income, racial/ethnic minority, or immigrant residents," Cunningham wrote. "For example, Cleveland and Boston had the highest ED use levels among the 12 CTS sites and some of the lowest uninsurance rates, while Phoenix and Orange County had both low ED use and higher-than-average uninsurance rates in 2003."

Overall, communities with the lowest ED use tended to have a higher percentage of Hispanics and noncitizens than communities with high ED use, he added.

Figure 2 expands the analysis of community variation to include all 60 CTS communities, grouped into quartiles based on their levels of ED use. Consistent

with the earlier data, the results show that in 2003, communities with the highest levels of ED use did not typically have population characteristics that are commonly associated with high levels of ED use. In fact, Cunningham tells **Capitation Rates & Data,** there was little variation across the four groups of communities on measures of poverty or health insurance coverage.

In terms of race and ethnicity, communities with high ED use had a higher percentage of African Americans than communities with low ED use, but communities with low ED use had much higher levels of Hispanics and noncitizens than those with high ED use. In the only finding that was consistent with expectations, communities with low ED use tended to have somewhat higher numbers of children—who typically use less healthcare than adults—and fewer people with multiple chronic conditions.

"Some physicians who are busy might try to deal with the overflow by sending patients to the ED under marginal circumstances."

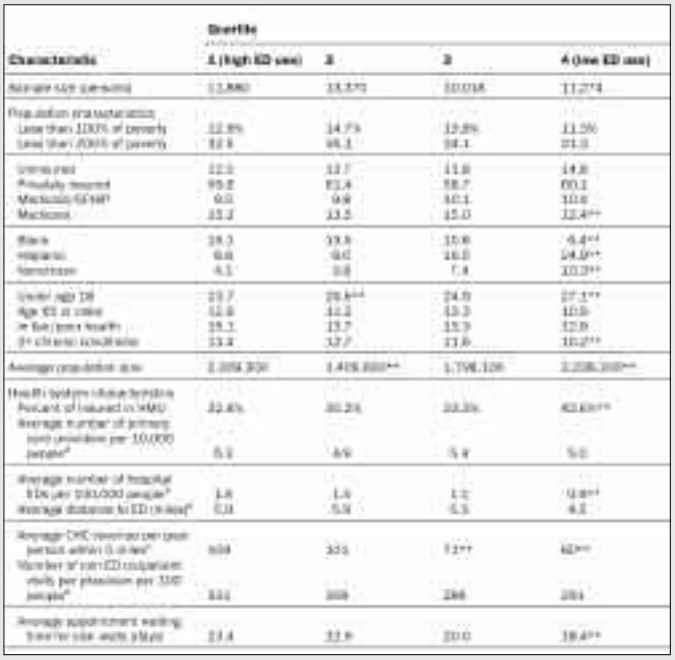
—Peter Cunningham

The data also showed that certain health system characteristics tend to be correlated with ED use.

"For example, in 2003, communities with high ED use tended to have greater outpatient capacity constraints than communities with lower ED use, as indicated by significantly longer average appointment waiting times," Cunningham wrote. "While high-ED-use communities also contained more hospital EDs relative to the population than low-ED-use communities, there were no statistically significant differences in the average distance to the ED."

Communities with high ED use had greater community health center (CHC) capacity in 2003 compared with those with low ED use, whereas low-use communities tended to have a higher percentage of insured populations enrolled in HMOs—a finding with important relevance for capitated providers.

Figure 2: Variation in population and health system characteristics across 60 U.S. communities, by quartile of ED use, 2003



Data source: All data based entirely on the Community Tracking Study (CTS) household survey, 2003, *except where noted. Editor's note: Statistical significance denotes difference with first quartile. SCHIP is State Children's Health Insurance Program.*

[a] CTS physician survey 2001, [b] American Hospital Association annual survey, 2002, [c] Health Resources and Services Administration, 2002 Uniform Data System.

EDs service the overflow

Also contrary to expectations, in 2003, uninsured individuals had approximately 16 fewer visits per 100 people compared with Medicaid enrollees and roughly similar levels of visits compared with privately insured individuals, as indicated in **Figure 3.** Noncitizens also had much lower levels of ED use than citizens. More in line with expectations, ED use was higher for the poor, for individuals with fair or poor health, and for those with chronic medical conditions.

HMO enrollment had a varied effect on ED use, according to Cunningham.

"In 2003, enrollment in HMOs reduced ED use for poor people by about six visits per 100 people but apparently had little effect on other income groups," he wrote. "This may reflect in part the higher overall levels of ED use by poor people."

Poor people also were less able to pay ED costs out of pocket when an HMO denied authorization, according to Cunningham.

Health system access had a more consistent effect on ED use, with longer waiting times and a higher number of physician office visits relative to the number of physicians in a community both associated with higher ED use.

"To the extent that demand is increasing faster than supply, EDs service the overflow for people who can't get appointments with their physicians in a timely way," Cunningham says. "Some physicians who are busy might try to deal themselves with the overflow by

continued on p. 12

Hospital ED use

continued from p. 11

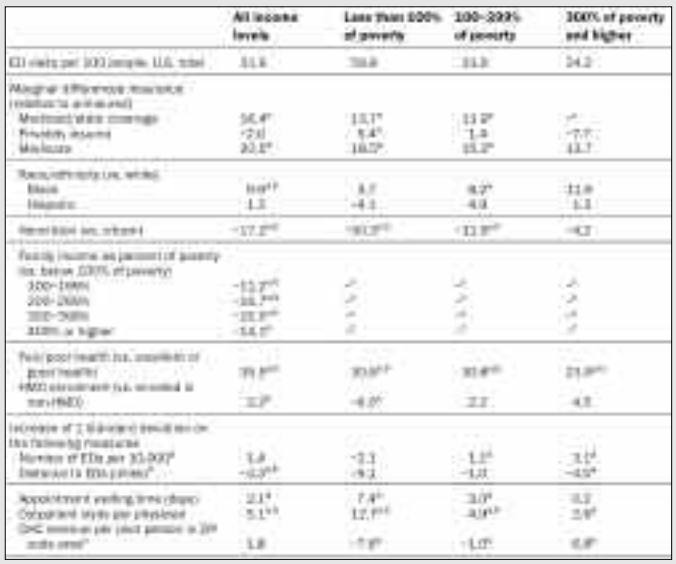
sending patients to the ED under marginal circumstances, where maybe care is urgent but not necessarily an emergency."

Simply increasing insurance coverage is not necessarily a solution to these problems, because "coverage rates are already slightly higher in high-use communities, and insured people have as much ED use as uninsured people, or more," he adds.

Increasing outpatient capacity and improving access could modestly reduce ED visits in communities with high use, Cunningham says, and expanding HMOs and CHCs could also help to reduce ED use, especially among low-income individuals.

> ***"Health plans can't simply deal with this through the different ways they pay physicians. They need to look at the underlying structural issues."***
>
> ***—Peter Cunningham***

Figure 3: Marginal differences in emergency department (ED) use, by selected population and health system characteristics, 2003



Data source: All data based entirely on the Community Tracking Study (CTS) household survey, 2003, *except where noted. Editor's notes: Estimates are based on a two-step linear regression analysis, with the first step estimating the probability of having an ED visit and the second step estimating the number of ED visits for those with any visit. The results from the two regressions were combined to reflect marginal differences in ED visits per 100 people.*

[a] Underlying coefficient in regression model for the probability of ED use is statistically significant [b] Underlying coefficient in regression model for the number of ED visits (for people with one or more) is statistically significant [c] Not applicable, [d] *American Hospital Association annual survey, 2002*, [e] Health Resources and Services Administration, 2002 Uniform Data System

Still, "it's hard to know exactly how the inner workings of managed care arrangements might affect ED use," he says. "I tend to attribute the findings more to the group staff model of HMO, where there might be greater restrictions on enrollee use of emergency rooms because the HMO may have urgent care facilities on site."

Expanding Medicaid HMOs that are organized around the case management concept also could help to stem the tide of ED use in low-income populations, according to Cunningham.

Whatever the strategy, HMOs and capitated providers need to think long and hard about alternatives that will reduce the cost and inefficiency often associated with ED use and the mechanisms that will encourage their member populations to choose those alternatives.

As a growing number of capitated providers seek to carve out any risk associated with the ED, reaching agreement on those alternatives could become increasingly contentious.

"Obviously, under capitation, there are incentives to try to restrict how often members visit the ED or use other types of healthcare services that might be less efficient or more costly than other alternatives," says Cunningham. "But if a low-income person can show up in the emergency room and the emergency room is obligated to provide at least stabilizing care, it's not clear if the incentives involved in capitation are always going to work.

"I tend to think of this more as a delivery system issue than a reimbursement issue," he adds. "Health plans can't simply deal with this through the different ways they pay physicians. They need to look at the underlying structural issues."

Editor's note: Contact Peter Cunningham at 202/484-4242.

[1]Cunningham, PJ. "What accounts for differences in the use of hospital emergency departments across U.S. communities?" *Health Affairs Web Exclusive* 2006; 25:w324-w336.

■ C O M I N G I N F U T U R E I S S U E S ■

Predicting the likelihood of hospitalization ■ Benchmark high-performing medical groups ■ Capitation and efforts to improve healthcare transparency ■ Healthcare utilization for individuals with HIV ■ Data mining for competitive advantage