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For Uninsured Cancer Patients, Outpatient Charges Can Be Costly, Putting Treatments Out Of Reach

Stacie B. Dusetzina, PhD,

Assistant professor in the Eshelman School of Pharmacy and the Gillings School of Global Public Health, both at the University of North Carolina at Chapel Hill, and is a member of the Lineberger Comprehensive Cancer Center

Ethan Basch, MD, and

Director of the Cancer Outcomes Research Program of the Lineberger Comprehensive Cancer Center and an associate professor in the School of Medicine and Gillings School of Global Public Health, both at the University of North Carolina at Chapel Hill

Nancy L. Keating, PhD, MPH

Professor of health care policy at Harvard Medical School and an associate physician in the Division of General Internal Medicine at Brigham and Women's Hospital, both in Boston, Massachusetts

Abstract

Reimbursement information for public and private payers has long been available. However, information about charges—the amounts that providers request before payments are negotiated—has been scarce, particularly for outpatient care. Using the new Medicare Provider Utilization and Payment Data Public Use File and other sources, we evaluated physician charges, reimbursements by Medicare and large private health plans, and expected patient cost sharing for outpatient oncology care. In 2012 the average Medicare reimbursement for chemotherapy was 39.6 percent of charges; for private insurance, the share was 55.7 percent. Uninsured patients faced potential prices for chemotherapy that were 2–43 times as much as the total Medicare allowed amount and 2–5 times as much as the private insurance allowed amount. Charges for outpatient chemotherapy and office visits were substantially higher than insurer-reimbursed amounts, which is consistent with previous evidence about hospital charges. The charges for outpatient services underscore the pressure that the current system places on people who are least able to pay. Encouraging rational pricing for health care services will be an important step toward ensuring access to care for everyone.

In April 2014 the Centers for Medicare and Medicaid Services (CMS) released the Medicare Provider Utilization and Payment Data Public Use File as part of a national effort to increase transparency in the health care system.[1,2] These publicly available data provide a

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Corresponding Author and Reprint Requests: Stacie B. Dusetzina, PhD, Division of General Medicine and Clinical Epidemiology, University of North Carolina at Chapel Hill, 5034 Old Clinic Building, CB# 7110, Chapel Hill, NC 27599, Dusetzina@unc.edu, Phone: 919-966-2276 x249, Fax: 919-966-2274.

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comprehensive look at charges and reimbursements for physician services delivered to Medicare beneficiaries.

Some physicians have expressed concerns about the potential misuse or misinterpretation of these data.[3–5] However, little has been said about their value for increasing our understanding about the fee-for-service health system more broadly. Although reimbursement information about public and private payers has long been available, information about charges—particularly for outpatient care—has been scarce.[6–8]

Physician and hospital charges—the full amounts requested before payment discounts are applied—can be considered a proxy for the market price of health care for patients without the power to negotiate reductions. Reimbursed amounts, in contrast, tend to represent discounted rates obtained as a result of negotiations between insurers and providers, including individual providers, provider groups, and health care systems. As a result, health economists generally consider reimbursed amounts to represent the actual price of health care.

Medicare reimbursement rates are fixed. However, aside from regional adjustments, private insurance reimbursements may vary based on providers' negotiating power.[9] For people with insurance, charges are simply prices shown on explanation of benefits statements. Charges appear unrelated to what the insurer or beneficiary pays, and they often vary dramatically across hospitals or practices.[6,10] Unfortunately, charges may also represent the potential price of health care services for uninsured patients who are unable to negotiate better rates.[11–13]

The new CMS public use data are being used primarily to understand the cost and use of health services among Medicare beneficiaries. However, the data can also be used to understand the fee-for-services reimbursement system more broadly. This includes determining the upper limits on what uninsured patients are charged for their care.

The number of uninsured patients is declining due to provisions in the Affordable Care Act (ACA). Nonetheless, many low-income people remain uninsured in states that have not expanded Medicaid eligibility to nondisabled adults with incomes at or below 138% of poverty. In these states low-income individuals will likely remain uninsured because they earn too much to be eligible for Medicaid and too little to be eligible for premium subsidies in the health insurance exchanges.[14] Others may not be able to afford the cost of coverage, even if they are eligible for subsidies.

For an uninsured patient, charges for medical services matter greatly, particularly when the patient is diagnosed with a serious illness. Not only are many uninsured patients living on low incomes, they are also ineligible to benefit from the ACA's limits on out-of-pocket spending ($6,350 for an individual or $12,700 for a family in 2014).

Our objective was to summarize physician charges, reimbursements from Medicare and large private health plans, and expected patient cost sharing for oncology care delivered in outpatient physician office settings. We evaluated oncology care, including office visits and chemotherapy, because cancer is prevalent (more than 1.6 million Americans are expected to

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be diagnosed in 2015 [15]) and most oncology care is delivered in outpatient physician office settings. Furthermore, chemotherapy reimbursements for Medicare patients are standardized (at the average sales price plus 6 percent). Thus, regional variations in reimbursements are less problematic for chemotherapy than [for other outpatient health services].

Study Data And Methods

Data Sources

We used two data sources. The first—the Medicare Physician and Other Supplier Public Use File—contains Medicare Part B noninstitutional claims for outpatient services and procedures delivered in community settings by physician and nonphysician practitioners with a valid National Provider Identification number. The database includes submitted charges and payments to providers, organized by the identification number, Healthcare Common Procedure Coding System (HCPCS) code, and place of service. To protect Medicare beneficiaries' privacy, CMS excluded any aggregated records with ten or fewer beneficiaries.

The second—the Truven Health MarketScan Commercial Claims and Encounters database—contains deidentified, patient-level health data including enrollment, inpatient and outpatient medical claims, and prescription drug claims. These data cover more than twenty million people annually who are enrolled in private insurance plans provided by approximately a hundred large or medium-size employers.

Sample Selection

To make comparable estimates from each data source, we selected claims for infused chemotherapies (HCPCS codes J9XXX) and office visits (HCPCS codes 99203–05 and 99213–15). To ensure that we were identifying oncology use, we required that claims be submitted by providers classified as oncologists, hematologists, or urologists. We excluded claims from regions outside of the contiguous United States.

We restricted private insurance claims to people ages 50–64 years because chemotherapy billing is based on unit charges that are related to patient size, which is unavailable in administrative claims. We assumed that patients ages 50–64 would receive doses that were more similar to doses for patients ages 65 and older than to doses for younger patients.

Physician Charges And Payments By Medicare And Private Insurers

Cost-related data for 2012 were extracted from each data source. In the Physician and Other Supplier Public Use File, data are aggregated at the physician–procedure code level. Each physician–procedure code combination includes average physician charges per unit of chemotherapy or office visit; total Medicare allowed amounts, which were the total amounts paid by Medicare plus those for which the patient was liable; and the total amounts paid by Medicare.

We calculated the average chemotherapy charge per patient visit by multiplying the unit charge by the average number of units billed at each visit. This value represented the price

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for the average dose of chemotherapy received across all beneficiary visits. To check the validity of these calculations, we also calculated doses assuming that the patient was an adult male of average height and weight (with a body surface area of 1.9 meters squared). This allowed us to verify that the doses we originally calculated as billed to Medicare were within the expected range for use in cancer treatment. Only one agent (fluorouracil) was outside of the expected range, with a dose approximately twice that of the average recommended dose.

For private insurance claims, chemotherapy reimbursements and out-of-pocket costs are provided as a total amount reimbursed instead of a per unit cost. The data include total reimbursed amounts (representing patient and health plan contributions) and amounts reimbursed by the health plan alone. The total minus the health plan reimbursement represents the amount that the patient is liable for.

Although physician submitted charges were available only within the Physician and Other Supplier Public Use File, we assumed that these charges represented prices set for services, regardless of payer.[16] We summarized private insurance claims at the patient-visit level for a single use of chemotherapy.

Analysis

We described charges, insurance payments, and patient payments for chemotherapy and office visits for Medicare patients and privately insured patients. We calculated the patient liability for Medicare patients, privately insured patients, and uninsured patients by subtracting the reimbursed amount from the charged amount and assuming that the reimbursed amount was $0 for uninsured patients. We used this strategy to estimate the upper bound on the price for uninsured patients, assuming that they did not negotiate with the provider about the set charge amount.

We calculated the percentage of charges reimbursed by each payer by dividing the total reimbursed for the service by the submitted charges. We also evaluated the relative generosity of reimbursements across payers by dividing the privately insured reimbursed amount by the Medicare reimbursed amount. Finally, to evaluate patient out-of-pocket liability, we compared the proportion of the reimbursement owed by the patient for each service and payer to the submitted charges.

Limitations

The currently available data represent charges and reimbursements only for 2012. It is unclear how charges might vary over time; understanding longitudinal patterns could provide greater insight. Further, charges are only available on the Medicare Physician and Other Supplier Public Use File and not within the private health insurance claims; we assume that charges submitted by the provider do not vary by payer type but are unable to test this assumption in our data.

In addition, our estimates do not account for premium payments made by insured patients, an ever-increasing portion of health care spending for individuals. Understanding this portion of the patient’s financial liability would make the costs of care for patients more

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transparent. This is particularly important for people enrolled in high-deductible health plans.

Study Results

Charges And Insurance Reimbursements For Oncology Services

Mean physician charges for chemotherapy ranged from $59 per infusion (for 500 mg of fluorouracil) to $9,225 per infusion (for 10 mg of bevacizumab), with wide variability across providers (Exhibit 1). (The complete list of chemotherapy charges can be found in online Appendix Table 1.)[17] For example, the average charge for a single infusion of trastuzumab was $5,344, but the charge varied across providers (interquartile range: $3,889–$6,675; data not shown).

The average Medicare reimbursement for chemotherapy was 39.6 percent of charges (range across drugs: 2.4–54.0 percent). In contrast, the average private insurance reimbursement was 55.7 percent of charges (range: 20.0–61.1 percent). In many cases there were only modest differences in reimbursements between Medicare and private payers, with Medicare to private payer payment ratios ranging from 1.0 to 1.2 for nearly 60 percent of infusions. However, approximately one-third of the chemotherapy agents examined were reimbursed at much higher rates by private insurance than by Medicare (payment ratios: 2.5–11.7).

The mean charge for an oncology outpatient office visit of low complexity for a new patient was $198; the charge for a visit of high complexity was $391 (Exhibit 2). However, the charges varied across physicians. On average, Medicare-reimbursed physicians received 48.0–51.1 percent of charges for office visits for new and established patients, and private insurer–reimbursed physicians received 60.7–64.7 percent of charges (data not shown).

Patient Out-of-Pocket Liability

The average out-of-pocket liability for Medicare patients across all chemotherapy agents (assuming no supplemental coverage) was $238 and across all office visit types was $29 (Exhibit 3). The average for privately insured patients was $85 and $36, respectively. For uninsured patients, however, the potential maximum out-of-pocket liability was approximately $2,872 for chemotherapy and $230 for office visits, assuming the patient's bill reflected physician charges without discounts. Uninsured patients faced billed amounts for chemotherapy that were 2–43 times as much as the Medicare allowed amount and 2–5 times as much as the private insurance allowed amount.

If uninsured patients were liable for the full charged amount, they would pay 9–200 times as much as Medicare-insured patients would pay out of pocket and 13–128 times as much as privately insured patients, depending on the chemotherapy agent used (Exhibit 3 and Appendix Table 2).[17] Similarly, for office visits, uninsured patients would be liable for 4–9 times as much as insured patients, depending on the insurance type used for comparison. Privately insured patients tended to have lower out-of-pocket liability for chemotherapy and higher out-of-pocket liability for office visits, compared to Medicare beneficiaries.

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Discussion

We used data from the Medicare Physician and Other Supplier Public Use File and large employer-sponsored private health plans to estimate charges, reimbursements, and patient liability for chemotherapy and office visits delivered in outpatient office settings. Charges for outpatient chemotherapy and office visits were substantially higher than the amounts reimbursed by insurers, which is consistent with previous evidence about hospital charges.[6,10–12,18]

In general, private insurers' reimbursement to physicians was more generous than Medicare's reimbursement, which is not surprising. We also found that the out-of-pocket liability for Medicare-insured beneficiaries was generally higher than that for privately insured beneficiaries.

These differences may be partially explained by privately insured patients (or their employers) paying higher premium payments (which we are unable to measure in our data) in exchange for lower out-of-pocket costs. It is also important to note that although Medicare beneficiaries are responsible for paying approximately 20 percent of the allowed amounts in copayments, many Medicare beneficiaries purchase supplemental coverage to assist with these out-of-pocket costs.

Importantly, patients who lack insurance and seek outpatient care may be financially liable for the charged amounts.[12,13,19] These patients face billed amounts for chemotherapy that are much higher than the amounts billed to either Medicare or private insurance.

Most previous data on differences between charges and negotiated rates paid by large insurers have focused on hospital pricing, where it has been suggested that charges are not connected to underlying costs or market prices.[18] Whether this is true for outpatient services is unknown.

It is also unclear whether or to what extent patients negotiate to reduce their prices for outpatient care or if uninsured patients are initially offered lower prices, compared to insured patients. Some limited evidence suggests that uninsured patients are not initially offered lower prices. For example, in one study the median price quoted for a hypothetical new patient visit for uninsured patients was $154 (inflation-adjusted to 2012 dollars).[20] This is similar to charges of $162 in the Medicare Provider Utilization and Payment Data Public Use File for new patient visits of low complexity delivered by internal medicine or family medicine practitioners (data not shown).

In one of the few studies that documented prices charged to uninsured and privately insured patients in the outpatient setting, researchers found that 87 percent of uninsured patients were billed more than insured patients using the same services, and that 23 percent were billed 200 percent more than their insured counterparts.[19] The researchers also found that the average price paid by uninsured patients reflected a mix of patients who paid nothing and patients who overpaid (relative to private insurance). In that study, almost 10 percent of uninsured patients ultimately paid twice the amount paid by insured patients who received

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the same services. A large proportion of patients who did not pay had their bills sent to collection agencies.[19]

In the hospital setting, a separate study found that uninsured hospitalized patients were charged two and a half times more than patients covered by major insurance companies and three times more than patients covered by Medicare or Medicaid.[12] Our analysis of the newly released CMS public use data found consistent results. But [the gap between uninsured and insured patients] is more extreme if we assume that charges represent uninsured patient prices for those people who do not negotiate with their providers.

It is unclear what steps physicians take to limit costs for uninsured patients who access the health care system. One survey suggested that 65 percent of primary care doctors reported reducing their fees, charging nothing, or setting up payment plans for patients who had difficulty paying.[21] Additionally, some outpatient service providers offer “volunteer” or charity care services to ensure access to [health care services] for patients who cannot afford treatment.[22]

However, declining insurance reimbursements and rising operating costs have been previously cited as contributing to a decline in the supply of such services.[23] Many oncologists reported either that their patients had difficulty paying for their medications or that they considered costs in their treatment decisions, but most reported referring patients to a third party for billing-related issues.[24] Even if the price for health services are ultimately moderated or negotiated, this is an uncertainty for many patients and may create financial hardships and barriers to care for uninsured or underinsured individuals.

In addition to the concerns related to price discrimination according to the insurance status of those receiving care, some evidence from ambulatory care settings suggests that uninsured patients may even have difficulty scheduling appointments if they indicate their interest in payment plans or reduced payments.[20,25] In one study in which research assistants called randomly selected ambulatory clinics posing as new patients who had been seen in an emergency department and who were in need of urgent follow-up appointments, 60 percent of callers claiming to be uninsured who initially obtained appointments had their appointments canceled if they requested an opportunity to pay $20 in cash and arrange for future payment of the balance.[25] Notably, in these studies appointment rates were similar for insured and uninsured callers if the uninsured callers noted their intention to pay cash for the full visit price at the time of service.

Compared with similar insured patients, twice as many uninsured patients indicated that they had trouble paying their medical bills, and uninsured patients were three times more likely to report being unable to pay for basic necessities due to their medical bills.[26] Given the high costs of treating cancer,[27,28] it is no surprise that 25 percent of uninsured cancer patients said that costs affected their decisions about treatment.[29]

Prior to the implementation of the ACA, it was estimated that approximately 10–15 percent of cancer patients under the age of sixty-five were uninsured.[30,31] Although the number of uninsured Americans is expected to decline as a result of the ACA, estimates suggest that

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up to thirty million people may remain uninsured following full implementation of the act.[32]

As of January 2015, fifteen states have chosen to not expand Medicaid, and seven other states are debating the expansion.[33] Low-income people in states not expanding Medicaid may face substantial financial liability when they receive health services, including the 22 percent of currently uninsured cancer survivors who will fall into this coverage gap.[31]

Conclusion

The release of the Medicare Provider Utilization and Payment Data Public Use File represents a first step toward increasing the transparency of health care pricing in the United States. The data include Part B physician and supplier charges, with limited information on hospital outpatient and inpatient care. Given the recent market consolidation among many private practices into hospital systems, it will be important for CMS to increase the availability of information in the hospital outpatient and inpatient files beyond the minimum billing codes provided previously (for the hundred most common inpatient and thirty most common outpatient services).

Patients receiving care from hospital-affiliated clinics are likely to have even higher cost-sharing requirements because they must pay facility fees as well as physician fees. Indeed, this issue may become even more pressing as private insurance plans begin to rein in their reimbursements for care delivered in hospital outpatient settings.[34]

Now that data on physician-delivered outpatient charges are available, it will be important to understand how these charges are determined and whether they are related to costs and private insurer reimbursements. Physician charges for outpatient services underscore the pressure that the current system places on the people who are least able to pay. Encouraging rational and transparent pricing for health care services is an important step toward ensuring access to care for everyone.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

Notes

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Exhibit 1

Charges And Reimbursements For Select Chemotherapy Infusions Among Patients Using Medicare Or Private Insurance, 2012

	Physician charges				Medicare		Private insurance	
Chemotherapy infusion	**Mean**	**Median**	**25th Pct.**	**75th Pct.**	**Total allowed**	**Insurer's liability**	**Total allowed**	**Insurer's liability**
All	$2,872	$1,851	$407	$3,837	1,138	900	$1,600	$1,515
Bcg live intravesical	254	237	200	296	118	92	135	116
Bevacizumab	9,225	9,237	6,812	11,291	4,543	3,592	4,689	4,461
Carboplatin	1,124	962	183	1,806	26	21	309	294
Cyclophosphamide	406	358	252	523	209	165	219	207
Docetaxel	3,808	3,534	2,563	4,722	1,054	832	1,917	1,841
Fluorouracil	59	37	20	63	10	8	25	23
Gemcitabine	2,048	1,936	1,394	2,712	252	199	687	650
Leuprolide	2,666	2,423	1,610	3,469	885	697	1,040	912
Oxaliplatin	6,961	6,711	5,033	8,218	3,090	2,442	3,616	3,482
Paclitaxel	1,023	1,048	234	1,481	42	33	245	237
Rituximab	8,768	8,329	6,314	11,144	4,720	3,744	5,229	5,000

SOURCE Authors' analysis of 2012 data from: (1) CMS.gov. Medicare Provider Utilization and Payment Data: physician and other supplier (Note 2 in text). (2) Truven Health MarketScan Commercial Claims and Encounters Database. NOTES Physician charges and Medicare allowed and reimbursed amounts were calculated by multiplying the per unit value by the average number of units received at each patient visit. Charges were assumed not to vary by payer. Insurer's liability represents the amount paid by the insurer for the claim while the total allowed combines both payer and patient liability. The chemotherapies shown are those administered by at least 500 physicians during 2012. The category "all" represents averages across all infused chemotherapies; see Appendix Table 1 for the complete list of chemotherapies (see Note 16 in text). Pct. is percentile.

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Exhibit 2

Charges, Medicare Reimbursement, And Private Health Plan Reimbursement For Office Visits To Oncologists, Hematologists, Or Urologists In 2012, By Visit Type

	Physician charges				Medicare		Private insurance	
Office visits	**Mean**	**Median**	**25th Pct.**	**75th Pct.**	**Total allowed**	**Insurer's liability**	**Total allowed**	**Insurer's liability**
All	$230	$201	$142	$292	$114	$85	$119	$83
New patient								
Low complexity	198	189	151	227	99	72	120	78
Medium complexity	300	285	225	349	153	115	179	128
High complexity	391	373	293	460	188	144	246	194
Established patient								
Low complexity	129	122	96	150	65	47	78	48
Medium complexity	191	180	142	224	96	71	119	85
High complexity	267	252	198	316	130	99	173	138

SOURCE Authors' analysis of 2012 data from: (1) CMS.gov. Medicare Provider Utilization and Payment Data: physician and other supplier (Note 2 in text). (2) Truven Health MarketScan Commercial Claims and Encounters Database. NOTES Physician charges and Medicare allowed and reimbursed amounts were calculated by multiplying the per unit value by the average number of units received at each patient visit. Charges were assumed not to vary by payer. Insurer's liability represents the amount paid by the insurer for the claim while the total allowed combines both payer and patient liability. Pct. is percentile.

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Exhibit 3

Patient Out-Of-Pocket Liability By Insurance Type And Service Received, 2012

	Liability by insurance type					
	Dollars			Patient Liability as a Percent of Charges		Ratio of Patient Liability by Payer
Service	**Uninsured**	**Medicare**	**Private insurance**	**Medicare**	**Private insurance**	**Private insurance vs. Medicare**
Chemotherapy infusion						
All	2,872	238	85	8.3	3.0	0.4
Bcg live intravesical	254	26	19	10.2	7.5	0.7
Bevacizumab	9,225	951	228	10.3	2.5	0.2
Carboplatin	1,124	6	15	0.5	1.3	2.7
Cyclophosphamide	406	44	$12	10.8	3.0	0.3
Docetaxel	3,808	222	76	5.8	2.0	0.3
Fluorouracil	59	2	2	3.4	3.4	1.0
Gemcitabine	2,048	53	37	2.6	1.8	0.7
Leuprolide	2,666	188	128	7.1	4.8	0.7
Oxaliplatin	6,961	648	134	9.3	1.9	0.2
Paclitaxel	1,023	9	8	0.9	0.8	0.9
Rituximab	8,768	976	229	11.1	2.6	0.2
Office visits						
All	230	29	36	12.6	15.7	1.2
New patient						
Low complexity	198	27	42	13.8	21.2	1.5
Medium complexity	300	39	51	12.9	17.0	1.3
High complexity	391	43	52	11.1	13.3	1.2
Established patient						
Low complexity	129	18	30	13.8	23.3	1.7
Medium complexity	191	25	34	13.2	17.8	1.3
High complexity	267	32	35	11.9	13.1	1.1

SOURCE Authors' analysis of 2012 data from: (1) CMS.gov. Medicare Provider Utilization and Payment Data: physician and other supplier (Note 2 in text). (2) Truven Health MarketScan Commercial Claims and Encounters Database. NOTES Physician charges and Medicare allowed and reimbursed amounts were calculated by multiplying the per unit value by the average number of units received at

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each patient visit. Uninsured patients were assumed to pay full charges. The chemotherapies shown are those administered by at least 500 physicians during 2012. The category “all” represents averages across all infused chemotherapies; see Appendix Table 1 for the complete list of chemotherapies (see Note 16 in text). Patient liability as a percent of charges represents the amount paid by the patient relative to the total amount paid for the claim. The Ratio of Patient Liability by Payer represents the differential out-of-pocket liability for patients on private insurance versus Medicare. Values less than 1.0 indicate that privately insured patients have lower out-of-pocket liability whereas values greater than 1.0 indicate that Medicare patients have lower out-of-pocket liability.