

Medicare Reimbursement to Ophthalmologists: A Comparison of Hawai'i to Other States

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Abstract

When Medicare publically released data on payments made to specific physicians in April of 2014, it quickly became apparent that a large portion of 2012 Medicare reimbursements went to ophthalmologists. Part of the reason for this unusually high level of reimbursement was thought to be the cost of injectable drugs such as ranibizumab (brand name Lucentis). This study was designed to compare Hawai'i ophthalmologists' Medicare reimbursements with those of other states. In 2012, Medicare payment to ophthalmologists in Hawai'i was \$18.2 million. Hawai'i ranked third in the nation in terms of percentage of total reimbursement going to ophthalmologists at 11.1% and 34th (8.2%) in percentage of ophthalmologist reimbursements going to injectable biological products. Hence, the high percentage of reimbursement going to ophthalmologists in Hawai'i is unlikely due to high use of injectable medications. Further research, based on a more detailed analysis of clinical data, is needed to determine how to slow the growth of health care costs while promoting high-value, effective care, not only for ophthalmic services but in other high-cost areas as well.

Introduction

In April of 2014, the Centers for Medicare & Medicaid Services (CMS) publically released Medicare data on payments made to specific physicians for the first time. Medicare paid physicians \$64 billion in 2012. According to the associated press, 2% of physicians received 25% of all reimbursement. A total of 151 of the 344 doctors who billed \$3 million or more to Medicare were ophthalmologists, making ophthalmology the highest reimbursed specialty group.¹ In fact, a South Florida ophthalmologist topped the list as the highest paid physician at \$21 million, according to the data that were released. One of the most heavily reimbursed procedures, costing a total of \$1 billion for 143,000 patients, is for a single treatment for age-related macular degeneration, an eye disorder.

Part of the justification for releasing the CMS reimbursement data to the public was to deter improper payments; however, physician groups have said that there is a danger the data will be misinterpreted. "The AMA is concerned that CMS's broad approach to releasing physician payment data will mislead the public into making inappropriate and potentially harmful treatment decisions, and will result in unwarranted bias against physicians that can destroy careers," said Ardis Dee Hoven, president of the American Medical Association (AMA).²

In some cases, physicians in a group may all bill tests under a single physician's name so a given physician may appear to be reimbursed more than he or she is actually receiving.³ Moreover, total reimbursement to a physician reflects both the number of Medicare patients treated as well as the reimbursement per patient so a physician whose practice mix is heavily weighted toward Medicare patients will receive higher total reimburse-

ment than another physician with a different mix of patients. This may also be related to specialty, in that some specialists are more likely to treat older patients. Total reimbursement may also be higher for physicians who specialize in procedures that require costly overhead. Overhead for ophthalmologists might include expensive microscopes, photographic equipment, and lasers. In these cases, a large portion of the reimbursement may cover overhead for medical devices so most of the reimbursement may actually be going to the suppliers of equipment rather than to the physicians as income. A study in Ontario, Canada found that public payment to ophthalmologists ranked 2nd of all specialties when unadjusted, but 8th after adjustment for overhead expenses.⁴

For ophthalmologists, a large portion of reimbursement may also go to buying expensive injectable medications. In December 2000, Congress amended the Medicare statute to provide for coverage of self-injectable drugs under Medicare Part B when they are administered under a doctor's care and "are not usually self-administered by the patient."⁵ This provision was a limited exception to Medicare's lack of coverage of outpatient prescription drugs prior to the passage of Medicare Part D legislation. Physicians purchase physician-administered drugs for their offices through manufacturers, wholesalers, Group Purchasing Organizations (GPOs), and local pharmacies.⁶ For ophthalmologists, these injectable drugs include ranibizumab (brand name Lucentis), an injectable drug used to treat macular degeneration, a retinal disease that causes blindness and aflibercept (brand name Eylea) used in the treatment of visual impairment due to Diabetic Macular Edema (DME). Under Medicare's policies, physicians are paid separately for the cost of the drug and its administration. Medicare bases its payments for the cost of most injectable drugs on the average sales price (ASP), which is calculated from manufacturers' reports to CMS.⁷ For most injectable drugs, CMS payment to physicians is set at 106 percent of ASP. Hence, when we see a physician getting reimbursed a large amount for a single treatment of an injectable drug, much of that payment may be covering the cost of acquiring that medication.

Despite difficulty in determining what conclusions to draw from the Medicare reimbursement information, analysis of these data can provide insight into geographical variation. The purpose of this manuscript is to examine the CMS payments that go to ophthalmologists as a percentage of all physician payments, and to determine what percentage of these payments for ophthalmologists were going to cover injectable drugs in Hawai'i relative to other states.

Methodology

We conducted a descriptive study using the Medicare Fee-For-Service (FFS) Provider Utilization & Payment Data Physician and Other Supplier Public Use File for the year 2012, publicly released by CMS in April of 2014.⁸ We excluded people living outside of the United States, in the District of Columbia, and in the US territories because we were focused on state disparities. Ophthalmologists were identified using the provider type “Ophthalmology” which is distinct from optometrists in this data set. Medications with Q or J codes were considered injectable drugs for our analyses. J-codes relate to permanent codes used to report injectable drugs that ordinarily cannot be self-administered, including chemotherapy, immunosuppressive drugs, and inhalation solutions as well as some orally administered drugs. Q-codes are temporary codes assigned to services. When medications are subsequently assigned J-codes, the Q codes are deleted.

For this study, injectables included ranibizumab injection (J2778), aflibercept injection (Q2046), bevacizumab injections (J9035), and unclassified biologics (J3590), as these were the only J or Q codes used by ophthalmologists in Hawai‘i. Providers submit claims for J3590 when a specific code for the drug is not available. For ophthalmologists, the unclassified biologics code is often used for off-label ophthalmic use of the drugs, such as bevacizumab or aflibercept, for administration in the office setting (rather than facility-based injections).⁹ For instance, bevacizumab is not currently packaged and prepared by the manufacturer in doses (approximately 1.25 mg) for intravitreal injection. Therefore, physicians obtain single doses prepared by qualified compounding pharmacies to minimize risk of contamination of the injected drug (unless their offices meet necessary processing requirements). When bevacizumab is acquired from compounding pharmacies or outsourcing facilities (and not from pharmaceutical companies) for use in a physician’s office, it is considered an “unclassified biologic” (J3590).

For this descriptive study, we calculated the percent of total Medicare payments that went to ophthalmologists, ranking them by state. Our primary outcome variable was paid amount, defined as average amount that Medicare paid after deductible and coinsurance amounts have been deducted for the line item service. Similarly, we examined the percent of payment of ophthalmologist services that were paid for services involving injectable drugs with J or Q codes and ranked them by state. To determine whether there was an association between the two previous rankings (ie, percent of total reimbursement to ophthalmologists and percent of ophthalmologist payment that went to biologics), we used the Wilcoxon matched-pairs signed-ranks test.¹⁰ The null hypothesis was that both distributions were the same. Finally, we ranked the services performed by ophthalmologists according to total Medicare reimbursement in Hawai‘i using the Health Care Common Procedure Coding System (HCPCS). For some of these codes, the cost included preparatory services and post-surgery services. For instance, payment with the 66984 code for cataract removal includes all services performed in a 90-day global period.

We did not seek IRB approval as it is the IRB policy that research that only involves secondary analysis of pre-approved public data files does not require IRB approval, as it does not constitute human subject research as defined in 45 CFR 46.102. All analyses were conducted in Stata V.11 (College Station, TX) and Microsoft Excel.

Results

In Hawai‘i in 2012, \$18.2 million was spent on ophthalmology services, accounting for 11.1% of total Medicare spending in Hawai‘i (Table 1). This ranked Hawai‘i 45th in total Medicare spending, but 3rd in terms of percentage of total Medicare spending paid to ophthalmologists among the 50 states. The percentages ranged from a low of 4.4% in Wyoming to a high of 12.9% in North Dakota. On an individual physician level, six of the top ten highest reimbursed physicians in Hawai‘i were ophthalmologists, with two of them receiving over \$1 million in Medicare reimbursement.

Table 2 displays the percent of Medicare FFS ophthalmologist reimbursement paid for injectable drugs identified using J and Q codes for the top 20 states. The percent of ophthalmologists’ reimbursement used to pay for injectable medications ranged from 0% in three states—Wyoming, Delaware, and South Dakota—to over 50% in Louisiana. Hawai‘i ranked 34th with 8.2% of ophthalmologist reimbursement, or \$1.5 million, going toward injectable medications.

Because the Wilcoxon matched pairs signed-rank test was not statistically significant ($P = .69$), we cannot reject the null hypothesis that both distributions (ie, the percent of Medicare reimbursement going to ophthalmologists [Table 1] and the percent of ophthalmologist reimbursement going to biologics [Table 2]) are the same.

Breaking down reimbursement of ophthalmologists by procedure codes in Hawai‘i, we found that the highest reimbursed treatments were cataract surgery, eye exams, injectable biologics, and office visits (Table 3). The total cost of ranibizumab injections ranked fourth at \$238,273 for only 29 Medicare beneficiaries, while the total cost of bevacizumab injections, an alternative to ranibizumab, was only \$2,388 for 18 patients.

Discussion

In our analysis of 2012 Medicare FFS Reimbursement data, we found that the state of Hawai‘i ranked 3rd in percent of total reimbursement being paid to ophthalmologists. Of the ophthalmologist reimbursement in Hawai‘i, 8.2% went to injectable biologic medications, ranking it 34th in the nation. In Hawai‘i, high cost areas for ophthalmologists were cataract surgery, eye examinations, and office visits. The high cost of eye exams and office visits in Hawai‘i compared to other states may be due, in part, to the fact that Hawai‘i requires eye exams from either an optometrist or an ophthalmologist within a certain interval for patients to purchase prescription glasses or contacts. A comparison results from Table 1 and Table 2 suggest that states that have a high percentage spending on biologics do not necessarily have a higher percentage of Medicare reimbursement going to ophthalmic services. Hawai‘i is not an exception. Hence, while

	State	Total Medicare Reimbursement	Medicare Dollars Paid to Ophthalmologists	% Ophthalmology
1	North Dakota	\$ 136,658,136	\$ 17,618,811	12.9%
2	Iowa	\$ 615,326,968	\$ 75,525,495	12.3%
3	Hawai'i	\$ 163,803,535	\$ 18,219,827	11.1%
4	Nevada	\$ 416,058,166	\$ 43,583,769	10.5%
5	Maine	\$ 299,943,039	\$ 30,806,484	10.3%
6	Montana	\$ 162,857,858	\$ 16,023,157	9.8%
7	Utah	\$ 358,199,575	\$ 35,034,668	9.8%
8	Connecticut	\$ 1,027,614,147	\$ 100,107,982	9.7%
9	Oregon	\$ 508,573,804	\$ 49,160,626	9.7%
10	Kansas	\$ 732,918,063	\$ 66,959,702	9.1%
11	South Dakota	\$ 188,614,295	\$ 17,044,284	9.0%
12	Maryland	\$ 1,767,100,997	\$ 157,898,388	8.9%
13	Wisconsin	\$ 926,220,974	\$ 81,407,019	8.8%
14	Vermont	\$ 103,213,949	\$ 8,992,140	8.7%
15	Washington	\$ 1,250,775,990	\$ 108,415,630	8.7%
16	Pennsylvania	\$ 3,153,588,519	\$ 260,164,514	8.2%
17	Idaho	\$ 179,067,768	\$ 14,652,715	8.2%
18	Minnesota	\$ 633,594,332	\$ 50,184,172	7.9%
19	New Hampshire	\$ 276,581,213	\$ 21,398,058	7.7%
20	Florida	\$ 7,592,706,675	\$ 587,391,814	7.7%

		Medicare Reimbursements for Injectable Medications	% Injectable Medications
1	Louisiana	\$ 33,411,062	50.8%
2	Idaho	\$ 6,603,757	45.1%
3	New Hampshire	\$ 6,697,460	31.3%
4	Minnesota	\$ 13,718,558	27.3%
5	Utah	\$ 9,538,644	27.2%
6	Oregon	\$ 12,189,227	24.8%
7	Kansas	\$ 14,581,000	21.8%
8	Washington	\$ 22,314,368	20.6%
9	Wisconsin	\$ 16,372,163	20.1%
10	New Mexico	\$ 4,219,845	20.0%
11	Tennessee	\$ 25,373,752	19.8%
12	Pennsylvania	\$ 49,958,544	19.2%
13	North Carolina	\$ 34,188,905	19.0%
14	Colorado	\$ 10,187,643	17.4%
15	New York	\$ 64,495,684	15.7%
16	Michigan	\$ 32,289,645	15.4%
17	Ohio	\$ 22,540,437	14.7%
18	Connecticut	\$ 14,741,507	14.7%
19	Texas	\$ 54,781,531	14.7%
20	Virginia	\$ 20,090,648	13.3%

Note: Hawai'i was ranked 34th at 8.2%.

Table 3. Top 20 Health Care Common Procedure Coding System (HCPCS) Codes for Medicare FFS Reimbursement for Ophthalmologists in Hawai'i Based on Total Reimbursement, 2012.			
HCPCS code	HCPCS description	# Medicare beneficiaries	Total Reimbursement
66984	Cataract removal with insertion of intraocular lens prosthesis 1 stage	67	\$ 715,199
92014	Eye exam & treatment	262	\$ 699,888
92012	Eye exam established patient	100	\$ 278,472
J2778	Ranibizumab injection	29	\$ 238,273
66982	Cataract surgery complex	34	\$ 183,718
92083	Visual field examination(s)	54	\$ 136,724
92250	Eye exam with photos	197	\$ 124,801
99214	Office/outpatient visit established	30	\$ 122,831
66821	After cataract laser surgery	13	\$ 111,664
92004	Eye exam new patient	87	\$ 106,685
Q2046	Aflibercept injection	19	\$ 101,972
92134	Scanning computerized ophthalmic diagnostic imaging, retina	106	\$ 100,257
99213	Office/outpatient visit established	95	\$ 96,147
J3590	Unclassified biologics	48	\$ 83,256
92136	Ophthalmic biometry	96	\$ 78,135
99204	Office/outpatient visit new	180	\$ 58,831
67028	Injection eye drug	79	\$ 58,410
92133	Cmptr ophth img optic nerve	79	\$ 57,711
92235	Eye exam with photos	15	\$ 32,753
92025	Corneal topography	582	\$ 22,672

Note: Total reimbursement for bevacizumab injections, a potential alternative to ranibizumab injections, was only \$2,388 for 18 patients.

we cannot rule out the fact that biologics may contribute to high costs, our findings suggest that factors other than spending on biologics may drive higher than average reimbursement for ophthalmic services at the state level.

A prior study documented substantial geographic variation in use of biologics in the treatment of rheumatoid arthritis.¹¹ They found that 27% of rheumatologists prescribed biologic agents that were not indicated resulting in additional costs of \$2041 per patient per month. Another relevant regional variation study examined differences in performance of cataract surgery.¹² They found that, the variation in cataract surgery across large geographic areas was significant, but relatively low when compared with the geographic variation in provision of other surgical procedures. Further research is needed to examine regional variation in use of biologics by ophthalmologists and surgical procedures to determine if use is consistent with guidelines and if the most cost-effective treatments are being used.

The most common indication for biologic ophthalmic agents is macular degeneration. The American Academy of Ophthalmology does not indicate a preference between ranibizumab, bevacizumab, or pegaptanib for the treatment of this condition,¹³ despite the fact that several studies have found bevacizumab to be more cost-effective compared to ranibizumab. Ranibizumab and bevacizumab have been shown to have similar effects on visual acuity and rates of death or arteriothrombotic events.¹⁴⁻¹⁶

Given the similar outcomes and cost difference, private health plans often insist on use of bevacizumab prior to prescribing ranibizumab; however, Medicare does not place any such restrictions on the prescription of the costlier medication. A US General Accountability Office (GAO) study found that ranibizumab was the 3rd most costly Medicare Part B drug in 2010.⁷ In our study, a total of \$238,273 was spent on ranibizumab in Hawai'i in 2012, making it the fourth most costly of all treatments reimbursed to ophthalmologists.

One approach to lower the cost of injectable drugs has occurred in Britain and the Netherlands.¹⁷ European governments with national health care systems have exercised their monopsony power when negotiating with pharmaceutical companies to obtain lower prices and sometimes refuse to approve expensive injectable medications that are not deemed cost-effective relative to other alternatives. Hence, these countries often pay about half of what Americans pay for the same drugs.

Limitations

As mentioned in the introduction, we do not know what percentage of reimbursement went to physician income as opposed to covering the costs of expensive medication and overhead for medical devices. Second, Medicare data do not cover a physician's entire patient populations. Geographic variation may occur for other payers, including Medicaid. Moreover,

the file does not include data from Medicare Part C, which are Medicare managed care plans. Finally, this analysis focuses only on reimbursement to physicians. For other specialties, total reimbursement might be higher when you consider the total costs of episodes from all types of providers and facilities.

Conclusion

Our analysis of Medicare reimbursement to physicians revealed that ophthalmologists in Hawai'i were paid \$18.2 million in 2012 and that Hawai'i ranked third in the share of total Medicare reimbursement being paid to ophthalmologists. In contrast, Hawai'i ranked 34th in the nation in terms of total ophthalmologist reimbursement that went to injectable biological products. Our findings raise questions that require further data collection and analysis to explore, including whether ophthalmologists are using the most cost-effective treatments in Hawai'i and elsewhere and whether we are getting the best value for our Medicare spending not only in the area of ophthalmology but in all areas. Also, does the government have a role in attempting to control the costs of overhead and the high costs that ophthalmologists pay for certain medications? This type of research may lead to systematic reform that encourages more coordination, better quality, and greater use of the most cost-effective treatments.

Conflict of Interest

None of the authors identify any conflicts of interest.

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