Hospital outpatient versus physician office cost for physician administered cancer drugs

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Executive Summary

Trade associations and lobbying groups representing cancer physicians and some policymakers regularly state that oncology care costs more in the hospital outpatient department (HOPD) than in the physician office (PO). The assertion is a complex one yet rarely presented with data or specificity. One meaning could be that payment rates are different in the two settings. Another is that the efficiency of care is different between the settings. The assertion is rarely delineated by payer type either, even though commercial rates and government program rates from Medicare are quite different. In this report we review published analyses related to the cost of cancer care in the two settings and map those findings to the two alternative meanings of the assertion and delineate the evidence by payer type.

Principal findings:

- Analyses of reimbursement rates across the two settings demonstrate that reimbursement rates are generally higher in the HOPD than in the PO in commercial insurance.
- Analyses of reimbursement rates across the two settings do not find meaningful differentials in reimbursement within the Medicare program. This is true even though the payment system for both chemotherapy administration and for drug reimbursement in the HOPD differs from the PO. But normalizing these payments to standardize the frequency of specific drugs being given across settings and including the reimbursement of the chemotherapy itself demonstrated that Medicare costs for chemotherapy in the HOPD are 1% to 2% higher than in the PO.
- Analyses of the efficiency of care between the settings have mixed results. One study found higher per patient costs in the HOPD than the PO, but did not adjust for disease severity. Two studies with disease severity adjustment found no consistent differences in efficiency or utilization.

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Overview:

Over the past decade the care delivery infrastructure for physician administered drugs has shifted from one dominated by the doctor office to one where physician offices (POs) and hospital outpatient departments (HOPD) have approximately equal share. Physician trade organizations such as the Community Oncology Alliance and the American Society for Clinical Oncology have sounded the alarm, arguing for instance that the shift in care delivery structure implies that care is becoming less convenient for patients, and that it is becoming more expensive for public payers including Medicare (Table 1).

While the shift in site of care for patients is an indisputable trend, the claims pertaining to cost differentials deserve careful parsing so that policymakers can identify what changes, if any, should be considered. In this report we focus on the claim that care in the hospital outpatient setting is more costly than the physician office. We do not address the underlying causes of this shift, but in other reports have highlighted general market trends towards consolidation of providers, and the specific economic arbitrage created by the 340B drug discount that makes ownership of physician offices more profitable to 340B hospitals than they are under physician ownership.[2] We have also shown that the proposed Medicare Part B pilot would have decreased this arbitrage opportunity.[3]

A first step in understanding the assertion that oncology care costs more in the HOPD than the PO is defining what is meant by it. One interpretation is that reimbursement rates differ between the two settings for any particular unit of care. This interpretation would probably differ by payer. Another is that patterns of care differ between the two settings, such that for any given patient the treatment and therefore the costs would differ in systematic ways between the two settings. Each of these assertions have been addressed in several analyses, although some lack even basic risk adjustment for disease severity.

A third issue that is sometimes conflated with cost differences between care settings is the issue of margin differences. This comes up most often in critiques of the hospital based 340B program because under the program, drugs are discounted to the HOPD. This reduction in acquisition price widens HOPD margins relative to PO margins but does so without increasing reimbursement rates. So from a payer and patient perspective, the program does not have direct effects on costs. The 340B program and its impact on the consolidation of PO's into HOPD's has been covered extensively elsewhere.[4,5]

What is known about the costs of units of care in the hospital outpatient department compared to the physician's office

The majority of analyses pointing to increased costs in the HOPD setting have compared the costs of units of care, but vary in their definition of the unit: drug cost, drug administration, service performed, or episode of care.

A study published by Higgins et al. in the American Journal of Managed Care which focused on commercial insurance estimated price variation between settings of care for seven services chosen from the clinical categories of office visits, imaging services, and outpatient procedures (note, there was no clinical focus, such as oncology).[6] Using the Truven Health MarketScan Commercial Claims and Encounters Database

(2008-2013) to study patients covered by employer-sponsored health insurance, the authors calculated the average price for each service by site of care and by year. Payment included the portion paid by the insurer and the out-of-pocket payment. Charlson Comorbidity Index (CCI) scores were calculated to assess morbidity of patients by site of care, and a 2-sample t test was performed. Payments for office visits and imaging services were not risk-adjusted. The increased cost of the seven services due to the shift in site of care was calculated by multiplying the number of HOPD visits by the difference in average prices paid for each service, and summing.

The results of the analyses showed statistically significant higher costs under commercial insurance for each service in the HOPD setting versus the PO setting, around two to three-fold higher for imaging and procedures. The ratio of the price differential also seemed to increase from 2008-2013 for all services except imaging. When looking temporally at the proportion of visits occurring at each site of care, Higgins et. al found shifts in the volume of 40 minute office visits in favor of HOPD, in addition to all imaging services. From the patient perspective, the ratio in out-of-pocket costs ranged from 1.06x to 2.80x higher in the HOPD setting. For the seven services of interest, the price differential between HOPD and PO was found to be associated with $1.3 billion in increased costs in 2008, and $1.9 billion in 2013. The generalizability of these results to services, and other units of care, is limited to the seven that were studied and cannot be extrapolated to public insurance coverage such as Medicare.

The Moran Company performed a similar study that focused on Medicare patients receiving chemotherapy, with the units of care being 1) the cost of chemotherapy administration and 2) the cost of the infused drug.[7] The authors used the 5% Outpatient and Carrier SAFs sample (2009-2011). In one analysis the authors found that the spending per beneficiary, per day, and per line, on chemotherapy administration was approximately 50% higher in the HOPD setting (Moran Figure 2, Table 2), but this finding was presented without adjustment for possible disease severity differences between the settings.

To compensate for possible case-mix differences, components of care were disaggregated into the infusion reimbursement and drug reimbursement. The former is based on different payment systems, the latter in that inexpensive drugs are not reimbursed in the HOPD but are in the PO and until recently the profit margin on drugs was higher in the PO than the HOPD (Moran Table 4). From 2009-2011, 12 to 15 out of the 21 codes payable in both settings were reimbursed at a higher rate in the HOPD vs. the physician office setting.

In an analysis of the weighted average of a common set of treatments (based on utilization data from one study year), the net impact of the different administration codes in 2009-2011 showed higher reimbursement in the HOPD than the PO of 19%, 38% and 28% respectively. Incorporating the drug reimbursement into the weighted calculation reduced the cost differential to 0.4%, 2% and again 2% higher in the HOPD respectively.

What is known about costs for 'episodes of care' in the hospital outpatient department versus the physician office

The claim that total payments per patient are greater in the HOPD than the PO requires analyzing episodes of care. A report from Milliman found that per-patient per-year costs of infused chemotherapy infusions delivered solely in the hospital outpatient setting had higher reimbursement than in the PO setting (Milliman Figure 8).[8] The analysis considered patients insured under Medicare or alternatively by Commercial insurance. The costs came from 2004-2014 Medicare 5% sample data and Truven MarketScan data for the same timeframe, and while Part D drugs were excluded from Medicare analyses, prescription drug and oral chemotherapy costs were included in the commercial analyses. There was no adjustment for case-mix differences. In this study, allowed costs included all reimbursement and member cost sharing. Following stratification by physician office and hospital outpatient settings for commercial (which was further divided into 340B and non-340B hospital outpatient facilities under Medicare), the major finding was that the average annual per patient cost was significantly higher in the hospital outpatient setting versus a physician office setting (the study excluded patients who had care delivered in both settings, 7% of the population). This held true across both Medicare and commercially covered patients, and every year from 2004 to 2014, with the difference falling in the range of 25-42% at each end. The Milliman group found that per patient costs did not differ significantly between 340B and non-340B hospitals

A primer on payment for chemotherapy in Medicare

While the commercial insurance payment system certainly lacks transparency, the system currently in place for Medicare may explain some of the discrepancies in payment by site-of-care.

Hospital Outpatient Department

As outlined in Avalere's 2016 study, payment in the HOPD setting is largely covered under the outpatient prospective payment system (OPPS).[1] Through the OPPS, services covered by the Center for Medicare and Medicaid Services (CMS) are classified by Healthcare Common Procedure Coding System (HCPCS) codes, and then grouped into ambulatory payment classifications (APCs). APCs with similar characteristics, both in terms of clinical and financial expenditures, are weighted as such. Reimbursement, then, is based on the weight of the APC multiplied by the annual OPPS conversion factor. Payment for drugs follows the same methodology, but it should be noted that drugs and supplies that cost less than ~$60 per day are bundled into visit/procedure-specific APCs. More expensive drugs are paid separately under unique APCs. [1]

Physician Office Setting

In contrast to the HOPD setting, payment for services in the physician office setting is based on relative value units (RVU) that are assigned to each HCPCS code. According to Avalere, the RVU is dependent on the quantity of work, practice expenditures, and malpractice/professional liability insurance. Services are not bundled as they are in the HOPD- instead, each service is reimbursed independently.

A second analysis performed by Milliman also focused on PPPY allowed costs for chemotherapy patients by site of service, but instead modeled the annual costs by the 2004 distribution of patients to their sites of care, in an aim to understand the impact of shifts in site of care on costs per patient (Milliman Figure 9). Using the same data, the authors modeled a 7.5% lower cost in PPPY costs for Medicare patients and 5.8% lower costs for commercially insured patients, had the distribution of patients to the hospital outpatient or

physician office setting remained the same as in 2004. The model showed an increased cost of $2B in Medicare spending due to the site of service shift (Milliman Table 4).

A 2012 study from Avalere considered the costs of cancer care (specifically chemotherapy and radiation) for commercially-covered patients in 30-day increments after initiation of each episode, including both amount paid by the plan and by the patient.[9] In the first analysis, authors considered the costs of all care provided to patients who were administered chemotherapy, including costs which may be unrelated. After adjusting for gender, age, and prior cancer history (Avalere Appendix III), the average cost of an episode in the physician's office was $28,200 while an episode in the hospital setting cost approximately $35,000, indicating a 24% increase from the former. Hospitalization rate was also examined, with 14% of episodes in the HOPD setting having at least one hospitalization during the episode, compared to 11% of episodes in the physician's office. The authors noted that some of the increased costs in the HOPD setting may have been due to the increased rate of hospitalization. When studying the cost of all care for patients who received radiation therapy, the results stood in contrast to those for chemotherapy patients- after adjustment, the cost of a HOPD-managed episode was six percent less than that in the physician's office ($23,800 vs. $25,100).

A study by Fisher et al. examined all-cause and cancer-related health care utilization and costs for pharmacy, healthcare services, and visits over the span of twelve months following the initiation of chemotherapy for a large population of commercially-covered patients.[10] After adjusting for age, sex, geographic region, health plan, tumor types, comorbidity index scores, comorbidities, and baseline overall health care costs, there was significantly lower spending (both all-cause and cancer-related) in the PO than in the HOPD setting but this was due purely to differences in commercial reimbursement rates. There were no differences in overall adjusted utilization although they noted increased use of some drugs in the PO versus the HOPD. The mean difference in all-cause costs ranged from $8,799 to $19,715 for the year-long follow up period, depending on cancer type. In our editorial accompanying the Fisher et al. piece in the Journal of Oncology Practice, we further discuss the importance of understanding how healthcare costs are defined, whether by unit of care or by quantity, and the equally crucial distinction between payment by Medicare or commercial insurance. [11]

The Moran Company examined the utilization of chemotherapy administration codes for Medicare beneficiaries, with the frequency utilization equating to the volume of care.[7] Results showed a similar number of chemotherapy administration lines per day found in Medicare claims, but a greater number of chemotherapy administration days per beneficiary, and thus, a greater number of chemotherapy administration lines per beneficiary. Authors found that the HOPD population of patients received approximately one more day of treatment per year and a 10-13% higher frequency of drug administration in HOPD relative to the physician office setting. The clinical implications of this difference were not explored.

Table 1: Statements on cost differentials between hospital outpatient department and physician office settings

Quote	Setting	Reference
"This circumstance will lead to either patients not receiving highly effective drugs or patients being redirected to receive care elsewhere, usually to higher-cost treatment facilities. Ironically, such an outcome will increase Medicare costs by approximately 30 percent."	Oped from Daniel F. Hayes, MD (President of ASCO) AND Clifford A. Hudis, MD (CEO of ASCO) in The Hill, a publication focused on Washington Policymakers	http://thehill.com/blogs/congress-blog/healthcare/297474-we-can-do-better-than-medicare-part-b-demo
"Hospital systems … charge more for the same service, especially the 50 percent of hospitals with 340B discounts with upwards of 100 percent profit margins on cancer drugs."**	Debra Patt, MD: Submitted testimony on The Obama Administration's Medicare Drug Experiment*: The Patient and Doctor Perspectiv*e, Energy and Commerce Health Subcommittee Hearing	http://www.asco.org/sites/new-www.asco.org/files/content-files/2016-Patt-Testimony.pdf
"How often [would] physicians have to refer beneficiaries to the … more costly hospital outpatient setting."	Congressman Orrin G. Hatch, United States Senate Committee on Finance Full Committee Hearing, *Examining the Proposed Medicare Part B Drug Demonstration*	http://www.finance.senate.gov/imo/media/doc/62816%20Hatch%20Statement%20at%20Finance%20Hearing%20on%20on%20Proposed%20Medicare%20Part%20B%20Demo.pdf
It's extremely important that the project not result in patients being told that they have to go get treatment at the hospital, where treatment is typically more costly."	Congressman Ron Wyden, United States Senate Committee on Finance Full Committee Hearing, *Examining the Proposed Medicare Part B Drug Demonstration*	http://www.finance.senate.gov/imo/media/doc/062816%20Wyden%20Statement%20at%20Finance%20Committee%20Hearing%20on%20Medicare%20Part%20B%20Drug%20Demonstration%20Project.pdf
"Consolidation on our nation's cancer system into hospitals – especially those with 340B discounts – is what is really costing Medicare, seniors, and taxpayers more for cancer care."**	Letter from Community Oncology Alliance to the Center for Medicare and Medicaid Services	http://blog2.communityoncology.org/userfiles/76/COA_CMS_ASPExperimentLetter_3-9-16_FINALR.pdf
"Let me ask another question. What's a larger expense to the individual patient? Twenty percent of a doctor office oncology service rendered or…rendered in a hospital setting?"-Congressman Shimkus "Typically, the hospital settings can be more expensive than physicians."- Mr. Baker "Typically, like, if you find one that's not, please let us know."-Congressman Shimkus	Question from Congressman John Shimkus to Mr. Joe Baker, President of the Medicare Rights Center	http://docs.house.gov/meetings/IF/IF14/20160517/104931/HHRG-114-IF14-Transcript-20160517.pdf

*** Conflates margin differences with reimbursement rate differences*

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