


JUNE 2014

WHITE PAPER



Impact on Medicare Payments of Shift in Site of Care for Chemotherapy Administration

BRG BERKELEY
RESEARCH
GROUP

Authored by Aaron Vandervelde, Dr.
Henry Miller, and JoAnna Younts

Copyright ©2014 by Berkeley Research Group, LLC. Except as may be expressly provided elsewhere in this publication, permission is hereby granted to produce and distribute copies of individual works from this publication for non-profit educational purposes, provided that the author, source, and copyright notice are included on each copy. This permission is in addition to rights of reproduction granted under Sections 107, 108, and other provisions of the U.S. Copyright Act and its amendments.

Disclaimer: The opinions expressed in the BRG White Paper are those of the individual authors and do not represent the opinions of BRG or its other employees and affiliates. The research and analyses performed in preparing this paper were sponsored by the Community Oncology Alliance. The information provided in the BRG White Paper is not intended to and does not render legal, accounting, tax, or other professional advice or services, and no client relationship is established with BRG by making any information available in this publication, or from you transmitting an email or other message to us. None of the information contained herein should be used as a substitute for consultation with competent advisors.

Executive Summary

Two independent trends, acting in combination, are currently resulting in increased Medicare fee-for-service (FFS) chemotherapy payments¹. The first trend is a shift in the site of care for cancer patients from physicians' offices to hospital outpatient departments. Several factors contribute to this shift; this study evaluates the effects of one of those factors—the acquisition of physician-based oncology practices by 340B hospitals. The second trend is higher Medicare reimbursement rates for and greater utilization of chemotherapy administration in hospital outpatient departments compared to physicians' offices. This trend is driven by Medicare rate setting policy and hospital utilization patterns and has been reported in studies performed over the last three years.²

Our analysis of Medicare hospital outpatient claims (which does not include any Medicare Advantage claims) and physician office claims indicates that there has been little change in the overall volume of chemotherapy claims between 2008 and 2012. However, during this same period, approximately 11.6 percent of the overall chemotherapy claims volume has shifted from physicians' offices to hospital outpatient departments. The acquisition of physician-based oncology practices by 340B hospitals is a significant contributor to this shift. Based on our analysis of data provided by the Community Oncology Alliance (“COA”) and the Office of Pharmacy Affairs (“OPA”), at least 120 340B hospitals acquired one or more physician-based oncology practices between 2009 and 2012. For 86 of these hospitals, the acquisition led to a measurable increase (>20 percent) in the volume of chemotherapy claims, exclusive of oral chemotherapy drugs, billed to Medicare for Medicare FFS beneficiaries. By 2012, the claims attributable to these acquisitions accounted for over 15.6 percent of the claims shifted from physicians' offices to hospital outpatient departments.

This study measures the additional Medicare payments to the 86 340B hospitals attributable to the chemotherapy claims, exclusive of oral chemotherapy drugs, shifted out of physicians' offices and into hospital outpatient departments due to an acquisition. Our analysis identifies \$196.55 million in additional payments by the Medicare program and Medicare beneficiaries to the 86 340B hospitals included in this study. These increased payments are a function of both the difference in Medicare reimbursement rates between the hospital outpatient departments and physicians' offices and the difference in utilization. Because average reimbursement rates are higher for chemotherapy administration performed in hospital outpatient departments, the same services would have been reimbursed at a lesser amount if they had remained in physicians' offices. By re-pricing³ the chemotherapy claims attributable to physician office acquisitions, we estimate that the Medicare program paid \$23.29 million more and Medicare beneficiaries paid \$4.05 million more than they otherwise would have had the services been performed in the physicians' offices. These differences are likely even greater today due to recent cuts in reimbursement for chemotherapy administration and chemotherapy drugs in physicians' offices.

Differences in utilization patterns between hospital outpatient departments and physicians' offices led to an estimated increase in Medicare and Medicare beneficiary payments of \$167.28 million for the chemotherapy claims attributable to the acquired physician-based oncology practices at the 86 340B hospitals. Over 93 percent

¹ The methodology used to identify chemotherapy claims is described in Appendix B.

² *Total Cost of Cancer Care by Site of Service: Physician Office vs. Outpatient Hospital*, Avalere Health (May 2012); *Site of Service Cost Differences for Medicare Patients Receiving Chemotherapy*, Milliman (October 2011); *Cost Differences in Cancer Care Across Settings*, The Moran Company (August 2013).

³ The re-pricing methodology is described in Appendix B.

of the increased payments are attributable to drug utilization (i.e., both chemotherapy drugs and other drugs typically used during chemotherapy administration). Differences in utilization may be attributable to the types of drugs and services used, the volume of drugs and services used, or inherent differences in the patients seen at the acquired practices. Additional investigation into these increased payments is recommended.

This study's key findings include:

- From 2008 to 2012, Medicare chemotherapy claims for services performed in the hospital outpatient departments increased from 1.20 million annually to 1.94 million annually and now account for 29.1 percent of total Medicare claims volume for chemotherapy.
- Between 2009 and 2012, 86 340B hospitals acquired at least one physician-based oncology practice that resulted in a measurable increase in Medicare oncology claims. Primarily through these acquisitions, these hospitals' share of the overall Medicare hospital outpatient chemotherapy claims volume increased from 5.1 percent in 2008 to 11.0 percent in 2012.
- By 2012 approximately 0.77 million claims had shifted into the hospital outpatient department setting on an annual basis. Chemotherapy claims attributable to 340B hospital acquisitions of physician-based oncology practices (0.12 million) account for at least 15.6 percent of the shift in the site of care from physicians' offices to hospital outpatient departments.
- Medicare and Medicare beneficiaries incurred additional costs (allowed amount) of \$196.55 million for chemotherapy claims attributable to the 86 340B hospitals' acquisitions of physician-based oncology practices. These additional costs represented 39.8 percent of the total allowed amount and were a function of increased utilization and higher reimbursement rates in hospital outpatient departments.
- Differences in utilization of chemotherapy drugs and services between hospital outpatient departments and physicians' offices resulted in an estimated increase in Medicare and Medicare beneficiary payments of \$167.28 million. Over 93 percent of the additional payments were related to chemotherapy and other chemotherapy-related drugs.
- Between 2009 and 2012, Medicare reimbursed the 86 340B hospitals \$23.29 million more and Medicare beneficiaries and other payers paid \$4.05 million more for the chemotherapy claims attributable to the physician-based oncology practice acquisitions than if the services had been billed as a physicians' office claim.

Defined Terms

In this study, we use a number of terms that are specific to the study design and results presented throughout the report. These terms are defined below:

- **Chemotherapy claims:** Includes any Medicare FFS claim with both a chemotherapy administration code and a cancer diagnosis code contained in either the Medicare Hospital Outpatient claims data or the Medicare Physician Part B claims data. Due to data availability, this analysis does not include oral oncology products reimbursed under Medicare Part D or chemotherapy claims for Medicare Advantage beneficiaries.

- **Acquiring 340B hospitals:** Refers to the 86 hospitals enrolled in the 340B program that were identified as having acquired a physician-based oncology practice between 2009 and 2012 that resulted in a measurable increase in chemotherapy claims billed by the hospital.
- **Acquired practices:** Refers to the physician-based oncology practices that were acquired by the acquiring 340B hospitals.
- **Hospital outpatient department:** Refers to the collection of facilities or clinics that bill Medicare under a hospital's Medicare Provider Number and is reimbursed according to hospital outpatient billing regulations.
- **Physicians' offices:** Refers to the collection of physician-based oncology practice that bill Medicare using their unique provider number and is reimbursed according to the Medicare Physician Fee Schedule.
- **Shift in site of care:** In the context of this study, the site of care refers to the method in which a chemotherapy claim is billed to Medicare, as opposed to a physical location. For example, when a 340B hospital acquires a physician-based oncology practice, the physical location of the practice may not change. But, if claims originating in the acquired practice are billed as a hospital outpatient claim using the acquiring hospital's Medicare Provider Number, then there is a shift in the site of care for purposes of this study.

Macro-level Trends in Site-of-Care Shift

Over the last five years, there has been a considerable shift in the site of oncology care from physicians' offices to hospital outpatient departments. A recent study conducted by the Moran Company demonstrated that office-based chemotherapy administration dropped from 86.5 percent to 67 percent of all chemotherapy claim lines between 2005 and 2011.⁴ Similarly, the *New England Journal of Medicine* reported that there has been a 75 percent increase in hospital employment of physicians from 2000 to 2010.⁵

To further understand this trend, we analyzed hospital outpatient chemotherapy claims and physician office chemotherapy claims billed to the Medicare FFS program (Medicare Part B) from 2008 through 2012. We limited our analysis to claims that included chemotherapy administration for patients with a cancer diagnosis.⁶ Using these chemotherapy claims, we calculated a 61.2 percent increase in hospital outpatient chemotherapy claims between 2008 and 2012. Over the same time period, we observed a 16.7 percent decrease in physician office chemotherapy claims (Figure 1). Taking into account both settings, total chemotherapy claims are relatively constant, with an average decrease of less than 1 percent a year between 2008 and 2012. This analysis demonstrates a clear shift in the site of care that has been steadily increasing over the last five years.

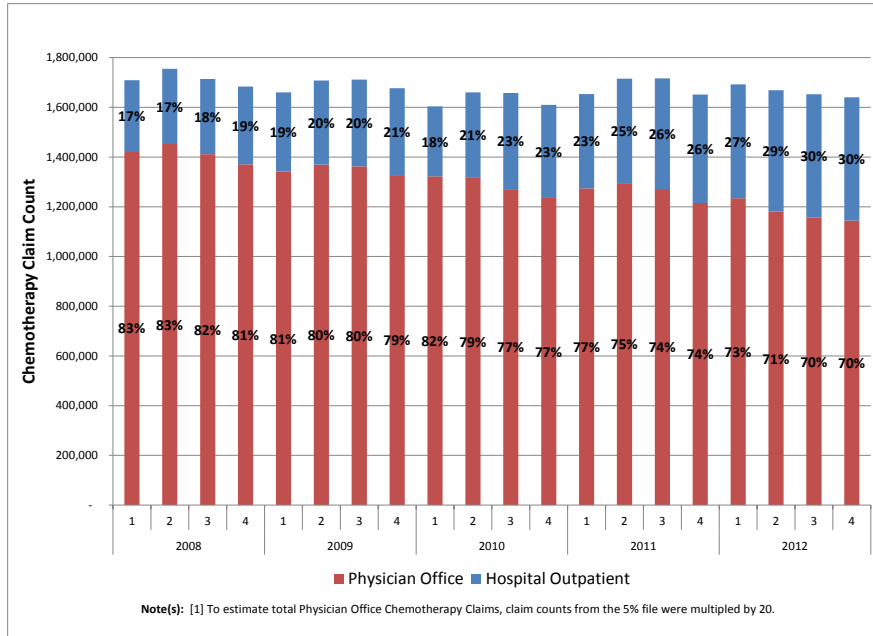
⁴ "Results of Analyses for Chemotherapy Administration Utilization and Chemotherapy Drug Utilization, 2005–2011 for Medicare Fee-for-Service Beneficiaries," Moran Company memorandum to The U.S. Oncology Network et al. (May 29, 2013).

⁵ Hospitals' Race to Employ Physicians—The Logic behind a Money-Losing Proposition," *The New England Journal of Medicine* (May 12, 2011), accessed at: <http://www.nejm.org/doi/full/10.1056/NEJMp1101959>

⁶ See Appendix B for additional detail on the methodology utilized to identify oncology claims.

Figure 1

Distribution of Chemotherapy Claims between Physicians' Offices and Hospital Outpatient Departments



In 2008, physicians’ offices accounted for 82.5 percent of all chemotherapy claims. Absent any shift in site of care between 2008 and 2012, the physicians’ offices would have accounted for 82.5 percent of the chemotherapy claims billed in 2012; 5.49 million in total. However, by 2012 the physicians’ offices only accounted for 4.72 million claims. This implies a 0.77 million claim shift in chemotherapy claims from physicians’ offices to hospital outpatient departments.

Cost Differences in Site of Care

Differences in costs of cancer care provided in hospital outpatient departments and physicians’ offices have been studied over the past several years. Three studies in particular, conducted by three independent entities, all found that the costs of cancer care services borne by payers (Medicare and commercial plans) and patients were higher in hospital outpatient departments than in physicians’ offices. Although our analysis is not designed to specifically address these differences in the cost of care, the premise that a difference in costs exists between the two sites of care is fundamental to our study design. In light of this, the following section discusses briefly the findings of these three studies and highlights some of the differences in our methodology.

A study conducted by Milliman in October 2011 for McKesson Specialty Health compared the Per Patient Per Month (PPPM) costs for Medicare patients receiving chemotherapy exclusively in the physicians’ offices and exclusively in hospital outpatient setting. Milliman found that PPPM costs were \$620 higher in hospital outpatient departments than in physicians’ office (\$4,361 PPPM in physicians’ offices versus \$4,981 PPPM in hospital

outpatient departments). Costs were defined as the total amount allowed by Medicare. These cost differences were observed in both genders, across all age groups and across different types of cancer. The study analyzed data from the Medicare Limited Data Set 5% File for 2006 to 2009.

A March 2012 study by Avalere Health found that among commercially insured patients, chemotherapy costs in hospital outpatient departments were 24 percent higher than chemotherapy costs in physicians' offices. Although the study found that the average length of a chemotherapy episode managed in a physician office was 3.8 months versus 3.4 for an hospital outpatient department, the physicians' office setting was still less expensive. For example, for chemotherapy episodes lasting one month, costs were 28 percent higher in hospital outpatient departments, and for chemotherapy episodes lasting twelve months, costs were 53 percent higher. The study used data provided by four large commercial managed care plans that are members of the National Association of Managed Care Physicians Medical Directors Institute for the period 2008 to 2010.

Finally, in an August 2013 study by the Moran Group, Medicare payments for chemotherapy under the Hospital Outpatient Prospective Payment system (OPPS) were found to be greater than payments under the Medicare Physician Fee Schedule for the same set of patients. Researchers found that chemotherapy payments per Medicare beneficiary were 25 to 47 percent higher in the hospital outpatient departments than the physicians' offices between 2009 and 2011. Researchers concluded that higher costs were due to patients receiving more chemotherapy services on average for a longer period of time when treated in a hospital outpatient department compared to a physicians' office.

Our study design differs from the studies noted above in three important ways. First, we studied Medicare FFS claims data from 2008 through 2012. Second, because our study is focused on the shift in claims to hospital outpatient departments from physicians' offices, we measure per claim costs rather than per patient costs. Finally, when re-pricing claims, we use actual Medicare reimbursement for chemotherapy claims in physicians' offices rather than relying on published Medicare fee schedules and estimates of Medicare beneficiary payment amounts. Given that the Medicare Physician's Part B data is a national sample, we believe our approach is valid for accounting for variances in final Medicare reimbursement across providers.

Role of 340B Hospitals in Site-of-Care Shift

Many factors may contribute to the shift in chemotherapy claims from physicians' offices to hospital outpatient departments. Recent studies have cited physician preference towards hospital employment⁷ and the waning financial viability of physician practices.⁸ The acquisition of physician-based oncology practices is another primary contributor. Hospitals participating in the 340B program are able to acquire drugs used in the outpatient setting at a significantly reduced price. This price is typically 25 to 50 percent less than other commercially available prices⁹ and provides substantially improved margins on hospital outpatient procedures that use expensive drugs for chemotherapy administration. By acquiring physician-based oncology practices, 340B

⁷ "Hospitals' Race to Employ Physicians—The Logic behind a Money-Losing Proposition," *The New England Journal of Medicine* (May 12, 2011), accessed at: <http://www.nejm.org/doi/full/10.1056/NEJMp1101959>

⁸ "Oncologist-Hospital Alignment Models Built to Compensate Oncologists Fairly," *Journal of Oncology Practice* (July 2011), accessed at: <http://jop.ascopubs.org/content/7/4/263.full.pdf+html>

⁹ Health Resources and Services Administration Information Session presentation, accessed June 6, 2014, at: <http://www.hhs.gov/opa/pdfs/340b-prime-vendor-programs-slides.pdf>

hospitals are able to increase the volume of oncology claims that use chemotherapy drugs and thereby increase the margins realized on the reimbursement of those drugs. An example of this pricing differential is depicted below:

	340B Hospital	Non-340B Hospital
Drug A Reimbursement	\$2,000	\$2,000
Drug A GPO Purchase Amount		(\$1,900)
Drug A 340B Purchase Amount	(\$1,200)	
Product Margin for Drug A	\$800	\$100

It is worth noting that during the study period, physicians' offices were reimbursed at 106% of ASP for administered outpatient drugs while hospital outpatient departments were reimbursed at 104% of ASP in 2009 and 2010, 105% of ASP in 2011, 104% of ASP in 2012 and 106% of ASP in 2013 and 2014. CMS has revised its reimbursement policy and now reimburses hospital outpatient departments and physicians' offices at the same rate. For purposes of this study, this would have the effect of increasing the additional payments made by Medicare and Medicare beneficiaries for chemotherapy claims attributable to the acquired oncology practices.

Using data provided by the Community Oncology Alliance ("COA") and Office of Pharmacy Affairs ("OPA") database of 340B Covered Entities, we identified 120 distinct hospitals that acquired a physician-based oncology practice at some point between 2009 and 2012. Of these 120 340B hospitals, 86 displayed a clear increase (>20 percent) in chemotherapy claim volume in the quarter following the acquisition (Figure 2). These 86 340B hospitals represent only those hospitals we were able to definitively correlate with an increase in chemotherapy claims. There may be other 340B hospitals that acquired physician-based oncology practices but that were not included in our data sets or for which we were unable to properly correlate with an increase in chemotherapy claims. Furthermore, there were at least 45 340B hospitals with a known acquisition of a physician-based oncology practice that fell outside of the 2009 – 2012 study period (e.g. 2013). The impact of these acquisitions on Medicare payments is not included in this study but is likely similar to the acquisitions included in our analysis.

On average, these acquiring 340B hospitals had 186 chemotherapy claims per quarter prior to the acquisition and 408 following the acquisition—an increase of 119.3 percent. Over the duration of the study period, this growth more than doubled the overall chemotherapy claims for the acquiring 340B hospitals, such that in 2012, these 86 hospitals accounted for 11.0 percent of the total Medicare oncology claims in hospital outpatient departments, up from 5.1 percent in 2008.

Figure 2

**Percentage of 340B Hospitals with Measurable Increase in Chemotherapy Claims
Following Acquisition of a Physician-based Oncology Practice**

Category	2009	2010	2011	2012	Total
340B Hospitals with at Least one Acquired Practice	27	21	30	42	120
340B Hospitals with a Measureable Increase in Chemotherapy Claims	16	19	23	28	86
Percent Resulting in a Measurable Increase in Chemotherapy Claims	59%	90%	77%	67%	72%

To isolate acquired practice chemotherapy claims, we compared the average chemotherapy claim volume in the four quarters prior to the acquisition with the quarterly claims volume following the acquisition. We increased the quarterly average prior to the acquisition based on a benchmark quarterly growth rate from 340B hospitals that did not make an acquisition in the study period and assumed that all claims volume in excess of the expected chemotherapy claims was attributable to the acquired practices. Figure 3 provides an example of this process.

Figure 3

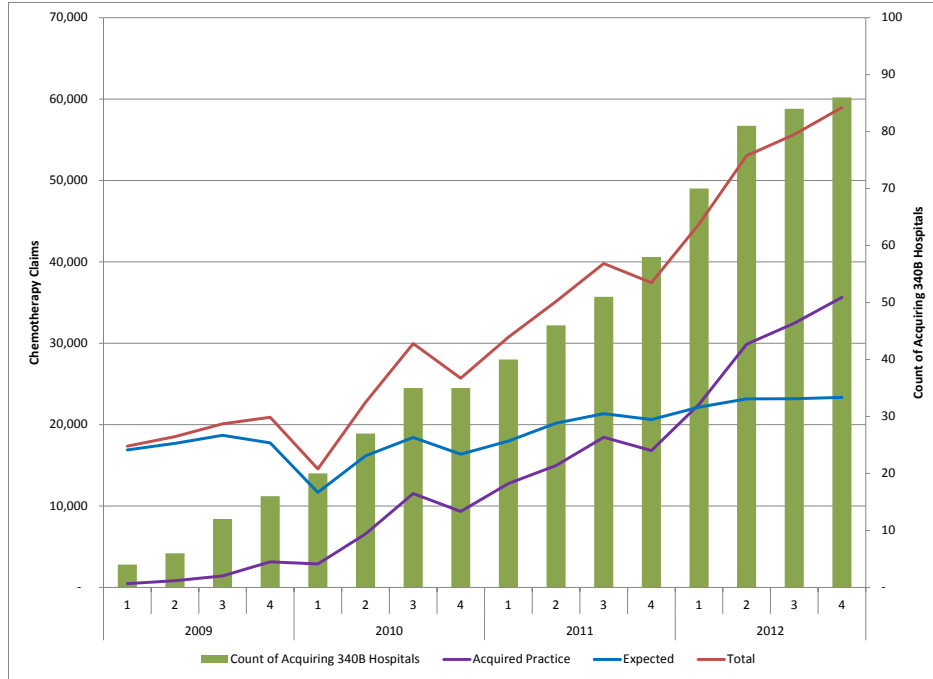
Process to Identify Acquired Practice Chemotherapy Claims

	Before Acquisition				Acq. Quarter	After Acquisition							
	2009					2010				2011			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Growth Rate	1.0%	2.5%	-0.5%	2.0%	2.0%	3.5%	1.5%	-0.5%	2.0%	1.0%	2.0%	4.0%	
Actual Claims	1,000	1,020	1,036	1,044	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	
Expected Chemotherapy Claims					1,066	1,104	1,120	1,115	1,137	1,148	1,171	1,218	
Acquired Practice Chemotherapy Claims					1,434	1,496	1,580	1,685	1,763	1,852	1,929	1,982	

Using the methodology described above, we estimated the acquired practice chemotherapy claims on a quarterly basis from 2009 through 2012. Because the acquiring 340B hospitals made acquisitions at different points in time, there is a compounding effect that occurs over time, such that the percentage of acquired practice chemotherapy claims in 2012 are much greater than in 2009. By the fourth quarter of 2012, the acquired practice chemotherapy claims account for 60.4 percent of the total chemotherapy claims for the acquiring 340B hospitals (Figure 4).

Figure 4

**Distribution of Expected vs. Acquired Practice
Chemotherapy Claims for Acquiring 340B Hospitals**



Although the 86 acquiring 340B hospitals account for only 2.6 percent of the 3,304 hospitals that billed Medicare for a chemotherapy claim in 2012, they account for almost 11 percent of the total chemotherapy claims billed in hospital outpatient departments. As noted above, the majority of these chemotherapy claims are attributable to the acquired practices, which demonstrates the significant role that acquired practices are playing in shifting oncology care from physicians’ offices to hospital outpatient departments. These results also indicate that the acquired practices are significant operations that have, on average, greater Medicare chemotherapy claims volume than the acquiring 340B hospital and would require significant financial resources on the part of the acquiring 340B hospital to execute the transaction.

Financial Impact to Medicare and Medicare Beneficiaries Attributable to Shift in Site of Care

One of the key findings of this study is that when chemotherapy claims for acquired sites are billed by the acquiring 340B hospitals, Medicare payments and Medicare beneficiary payments increase. For the 86 340B hospitals included in this study, we identified \$196.55 million additional payments attributable to chemotherapy claims at the acquired practices. The increases in claims costs are driven by four factors:

1. Increases in utilization when a hospital (340B or non-340B) purchases a physician-based oncology practice, as found in prior studies that were previously discussed and confirmed in this study.

2. Higher reimbursement levels under the Medicare Hospital Outpatient Prospective Payment System (OPPS) than the Medicare Physician Fee Schedule for the same services, particularly chemotherapy administration.
3. Payment systems or payment mechanisms.¹⁰
4. Differences in the way Medicare beneficiary cost-sharing is applied. Even though chemotherapy services fall under Medicare Part B, beneficiaries who receive chemotherapy in a hospital outpatient setting pay a fixed copayment per service. In physician office settings, beneficiaries must meet their Part B deductible plus pay 20 percent coinsurance on the entire claim.

In this study, we provide estimates for the additional Medicare payments due to differences in reimbursement separately from additional Medicare payments attributable to differences in utilization. To do this, we re-priced the chemotherapy claims attributable to the acquired practices using the amounts that *would have been paid* if the services had been billed in physicians' offices (i.e., as if the practice had not been acquired by a 340B hospital) and then compared the re-priced paid amounts to the actual paid amounts. We then compared the average claim cost of the re-priced claims with the average claim cost in physicians' offices to estimate the additional Medicare payments attributable to utilization. Because this study focuses on specific claims attributable to acquired practices, we believe the differences in cost attributable to patient acuity are minimal because most of the same patients were being treated in physicians' offices prior to the acquisition.

Additional Allowed Amounts Attributable to Differences in Utilization

During a typical chemotherapy administration encounter, providers will typically perform services that fall into one of four general categories:

- Chemotherapy administration
- Chemotherapy drugs
- Other drugs (non-chemotherapy drugs, but including supporting agents)
- Other services

Due to differences in how claims are billed in hospital outpatient departments compared to physicians' offices, we limited our utilization analysis to services captured in the first three categories. After re-pricing the chemotherapy claims attributable to the acquired practices, we compared the allowed amounts with the average allowed amounts per chemotherapy claim in physicians' offices (excluding other services) to identify additional Medicare and Medicare beneficiary payments attributable to differences in utilization. The results of this analysis are presented in Figure 5.

¹⁰ Under the MFS, individual HCPCS codes are billed by physician offices and the Medicare program pays a pre-determined fee for each code. Although there are variations in payment levels based on geographic location (wage adjustments) and other factors, and there are modifiers that signal other adjustments to the payments, each HCPCS code is generally paid a separately established fee. Under the OPPS, hospitals are paid according to Ambulatory Payment Classifications (APCs) in which the HCPCS codes are grouped into categories of service. In some cases, a single APC is assigned to a single HCPCS code and paid an established fee for that APC, but in some cases the HCPCS code is considered to be "incident-to" or included in another APC and is therefore "packaged" into the rate for that APC and not paid a separate fee. Therefore, when the actual claims costs for Hospital Outpatient Claims are compared to Re-priced claims costs, there is not always a one-to-one relationship between the HCPCS codes that are paid separately under the OPPS and the codes that are paid separately under the MFS.

Figure 5

**Additional Medicare Payments for Acquired Practice Chemotherapy Claims
Attributable to Differences in Utilization**

Year	Difference in Allowed Amounts			
	Chemo Admin	Chemo Drugs	Other Drugs	Total Difference
2009	279,304	2,091,438	412,706	2,783,448
2010	1,254,273	12,236,701	5,244,366	18,735,339
2011	2,700,024	22,088,438	8,274,751	33,063,213
2012	6,386,027	73,300,278	33,012,708	112,699,013
Total	\$ 10,619,628	\$ 109,716,855	\$ 46,944,530	\$ 167,281,013

There are two important limitations to note in this analysis. First, we were unable to assess whether Medicare patients treated at the acquired practices received similar services, on average, with other Medicare patients included in the Medicare 5% Carrier File *prior to the acquisition*. To the extent these patients were already receiving more costly services prior to the acquisition, this analysis may overestimate the additional costs to Medicare attributable to utilization. Second, we cannot be certain that the chemotherapy claims in physicians' offices comprehensively capture all services provided to the patient in a manner that is similar to chemotherapy claims in hospital outpatient departments. We have attempted to control for this potential difference by excluding the 'other services' category, but other differences may still exist. Additional investigation is necessary to better understand whether the extent to which differences in utilization are attributable to types of services provided, the volume of services provided or one of the limitations noted above.

Additional Medicare Payments Attributable to Differences in Reimbursement Rates

As noted above, Medicare reimburses for chemotherapy claims at a higher rate in hospital outpatient departments than in physicians' offices. Our analysis determined that chemotherapy claim costs (allowed amount) for claims attributable to the acquired practices were 5.9 percent higher than the claims cost for hospital outpatient chemotherapy claims re-priced at physicians' office reimbursement levels for the entire study period (Figure 6). This difference is attributable only to differences in reimbursement rates, payments systems and cost sharing applications as described previously. It does not consider differences in utilization between the two settings. In other words, the acquiring 340B hospitals that billed for the services provided by the acquired practices were paid more for the same services than the acquired practices would have been paid had they not been acquired and were instead billing Medicare independently. Medicare payments were 5.9 percent higher, while Medicare beneficiary payments (including payments made by secondary payers) were 4.0 percent higher.

Figure 6

Difference in Medicare and Medicare Beneficiary Payments Attributable to Higher Reimbursement Rates in the Hospital Outpatient Setting

	Actual Outpatient	Re-Priced Outpatient	Difference	% Difference
Difference in Medicare Payments	\$ 392,436,519	\$ 369,149,200	\$ 23,287,319	5.9%
Difference in Beneficiary Payments	101,314,435	97,260,275	4,054,161	4.0%
Difference in Total Allowed	493,750,955	464,477,557	29,273,398	5.9%

Note: Payments do not add to total allowed due to slight differences in line item amounts for some claims.

Total additional Medicare payments for chemotherapy claims attributable to acquired practices increases almost 3,000 percent between 2009 and 2012 due in part to the cumulative effect of acquisitions made in earlier years and in part to the size of the acquired practices in later years. The average difference in the total allowed amount per claim was \$133 across the entire study period.

Figure 7

**Claims Cost Difference for Acquired Practice Chemotherapy Claims
Re-priced Claims at Line Item Level by Year**

Year	2009	2010	2011	2012	All Years
Acquisition Claim Count	5,821	30,301	62,980	120,468	219,570
Difference in Medicare Payments	\$ 450,621	\$ 3,160,029	\$ 6,479,541	\$ 13,197,128	\$ 23,287,319
Difference in Beneficiary Payments	\$ (37,798)	\$ 171,122	\$ 1,078,697	\$ 2,842,140	\$ 4,054,161
Difference in Total Allowed	\$ 505,340	\$ 3,693,645	\$ 8,207,004	\$ 16,867,408	\$ 29,273,398
AVERAGE DIFFERENCE IN TOTAL ALLOWED PER CLAIM	\$ 86.81	\$ 121.90	\$ 130.31	\$ 140.02	\$ 133.32

Claims Cost Differences by Service Category

The re-pricing analysis shows that chemotherapy claims attributable to acquired practices resulted in additional Medicare payments. These additional payments are driven by the differences in reimbursement rates between the two settings, the payment systems used to reimburse providers in the two settings, and differences in cost-sharing between the two settings. In this section, we present findings on how these additional Medicare payments are distributed by type of service. We use the same four categories of services as noted above: chemotherapy administration, chemotherapy drugs, other drugs (non-chemotherapy drugs, but including supporting agents), and other services.

Chemotherapy Administration

Figure 8

Difference in Acquired Practice Chemotherapy Claims Costs*
Chemotherapy Administration

COMPONENTS OF CLAIMS COSTS	DIFFERENCE IN CLAIMS COSTS				TOTAL DIFF IN CLAIMS COSTS (2009-2012)
	2009	2010	2011	2012	
MEDICARE PAYMENT	\$ 173,077	\$ 1,604,568	\$ 2,656,242	\$ 6,052,443	\$ 10,486,331
BENEFICIARY PAYMENT	45,523	500,611	913,996	3,153,907	4,614,037
TOTAL ALLOWED	225,144	2,144,429	3,627,983	9,358,457	15,356,012

*Claims Costs = Total Allowed

Actual hospital outpatient claim costs for chemotherapy administration codes were \$15.36 million higher than re-priced hospital outpatient chemotherapy claim costs. On an annual basis, the difference in claims cost increased from \$225,144 in 2009 to over \$9 million in 2012 as the number of acquisitions and acquired practice chemotherapy claims attributable to those acquisitions increased. There are substantial payment rate differences for some chemotherapy administration codes between the OPPS and the MFS, as illustrated by the difference in the claims cost for 96413 (Chemotherapy administration, intravenous infusion technique, up to one hour, single or initial substance), which is the highest volume chemotherapy administration code across all hospital outpatient chemotherapy claims. Over \$8 million more was reimbursed for this code on actual hospital outpatient chemotherapy claims than re-priced claims. This code is paid \$207.77 under OPPS¹¹ compared to \$120.41 to \$156.90 under the MFS¹². CPT codes 96375 and 96365 also had relatively large payment differentials (\$2.59 million and \$1.79 million, respectively) due to payment rate differences in the two payment systems. In a similar way, a small number of codes are paid less or not at all (due to Ambulatory Payment Classifications (APC) packaging) under the OPPS compared to the Medicare Fee Schedule but these amounts are not enough to offset the overall increase in claims costs due to acquisitions.

Chemotherapy Drugs

Figure 9

Difference in Acquired Practice Chemotherapy Claims Costs*
Chemotherapy Drugs

COMPONENTS OF CLAIMS COSTS	DIFFERENCE IN CLAIMS COSTS				TOTAL DIFF IN CLAIMS COSTS (2009-2012)
	2009	2010	2011	2012	
MEDICARE PAYMENT	\$ 61,947	\$ 132,786	\$ 1,251,993	\$ 2,161,215	\$ 3,607,941
BENEFICIARY PAYMENT	(140,446)	(490,528)	(287,916)	(1,825,343)	(2,744,234)
TOTAL ALLOWED	(37,794)	(249,259)	1,124,543	673,651	1,511,142

*Claims Costs = Total Allowed

¹¹Addendum B: Final OPPS Payment by HCPCS (2012).

¹²Medicare Fee Schedule 2012 (range of wage adjusted rates).

The total claims cost differential for chemotherapy drugs is smaller (\$1.51 million) than the differential for chemotherapy administration codes because payment rates for drugs are similar under the OPPS and MFS, and very few chemotherapy drugs are packaged under APCs. However, Medicare Payments were \$3.61 million higher for the actual hospital outpatient chemotherapy claims, while Medicare Beneficiary Payments were almost \$2.74 million lower for the entire study period. This finding may be due to the differences in the beneficiary copayments and coinsurance policies under Part B for hospital outpatient services versus physician office services. When Part B services are provided in a physician office setting, the beneficiary must pay the Part B deductible plus 20 percent coinsurance. By contrast, Part B services provided in hospital outpatient departments require a fixed copayment for each service and this copayment cannot exceed the Part A deductible (which was \$1,156 in 2012). As a result, it is possible that beneficiaries could pay more out of pocket for certain high-priced drugs when provided in physicians' offices, as the re-pricing exercise demonstrates, even though some drugs are packaged under the OPPS on the hospital outpatient side and not reimbursed separately. For example, the average allowed amount for J9228 (Ipilimumab) was \$29,608 during the study period. The copayment for this drug under OPPS would have been capped at \$1,156 in 2012, while 20 percent coinsurance in physicians' offices would have been \$2,312. This copayment cap does not affect chemotherapy administration because the cost of this service is not great enough for the copayment to exceed the Part A deductible. It is also important to note that this cap does not take into account potential increased costs to Medicare beneficiaries attributable to differences in utilization as each service is evaluated individually.

Other Drugs

Figure 10

Difference in Acquired Practice Chemotherapy Claims Costs* Other Drugs

COMPONENTS OF CLAIMS COSTS	DIFFERENCE IN CLAIMS COSTS				TOTAL DIFF IN CLAIMS COSTS (2009-2012)
	2009	2010	2011	2012	
MEDICARE PAYMENT	\$ (19,334)	\$ (73,182)	\$ 73,573	\$ (647,808)	\$ (666,752)
BENEFICIARY PAYMENT	(266)	(116,532)	4,746	(163,265)	(275,317)
TOTAL ALLOWED	(10,701)	(132,401)	199,855	(564,279)	(507,525)

*Claims Costs = Total Allowed

When the claims are re-priced for other drugs, the re-priced hospital outpatient claims payments are slightly lower than the actual hospital outpatient payments. Similar to chemotherapy drugs, beneficiary payments are lower for re-priced claims. For these drugs, Medicare payments are also shown to be slightly lower for the re-priced claims.

Other Services

Figure 11

Difference in Acquired Practice Chemotherapy Claims Costs*
Other Services

COMPONENTS OF CLAIMS COSTS	DIFFERENCE IN CLAIMS COSTS				TOTAL DIFF IN CLAIMS COSTS (2009-2012)
	2009	2010	2011	2012	
MEDICARE PAYMENT	\$ 234,930	\$ 1,495,857	\$ 2,497,733	\$ 5,631,279	\$ 9,859,800
BENEFICIARY PAYMENT	57,393	277,570	447,870	1,676,842	2,459,674
TOTAL ALLOWED	328,692	1,930,875	3,254,623	7,399,579	12,913,769

*Claims Costs = Total Allowed

Other services that were not chemotherapy administration, chemotherapy drugs, or other drugs were placed in a separate category. These included evaluation and management (E&M) codes, lab, radiology, and other items. In aggregate, there was a \$12.91 million difference in claims costs between the actual hospital outpatient chemotherapy claims and re-priced claims. There are considerable differences in the payment policies and rates between the OPPS and the MFS for the variety of services found in this category. For example, some services that are packaged under APCs are paid separately if billed by a physician office. Conversely, the OPPS permits the use of temporary codes for new drugs and devices that are either not reimbursed or are paid variable rates depending on local Medicare carrier determinations when billed by a physician office.

Conclusions

The results of our analysis, as presented in this report, lead to the following conclusions:

- Between 2008 and 2012, chemotherapy claims for services performed in hospital outpatient departments increased from 1.20 million to 1.94 million, while at the same time claims for services performed at physicians' offices decreased from 5.66 million to 4.72 million. During this period, total chemotherapy claims have remained relatively constant at approximately 6.7 million per year. There has clearly been a shift in the site of care from physicians' offices and into hospital outpatient departments.
- Although several factors contribute to this shift, acquired practices are a primary driver. Based on data we were able to obtain, 86 340B hospitals acquired at least one physician-based oncology practice that led to a significant increase (>20 percent) in chemotherapy claims. By the fourth quarter of 2012, chemotherapy claims attributable to these acquired practices accounted for 15.6 percent of the shift in site of care from physicians' offices to hospital outpatient departments.
- Differences in utilization between the 86 340B hospitals that acquired a physician-based oncology practice and the average utilization for chemotherapy claims billed in physicians' offices led to an estimated \$167.28 million in additional Medicare and Medicare beneficiary payments on chemotherapy claims attributable to the acquired practices between 2009 and 2012. The vast majority of the utilization differences are for chemotherapy and chemotherapy-related drugs. It is unclear whether this additional utilization is unique to 340B hospitals or exists for all hospitals. Further investigation into utilization differences is recommended.
- Medicare reimburses chemotherapy claims at a higher rate, on average, for services performed in hospital outpatient departments than in physicians' offices. By re-pricing the acquired practice chemotherapy

claims between 2009 and 2012 at the physician office reimbursement rate, we estimate that Medicare Payments were an additional \$23.29 million for the same services in hospital outpatient departments, and Medicare Beneficiary Payments paid an additional \$4.05 million.

- The combined effect of both differences in utilization and reimbursement rates results in additional payments of \$196.55 million to the 86 340B hospitals that acquired a physician-based oncology practice between 2009 and 2012. This represents 39.8 percent of total payments and the impact is likely greater today due to further reductions in reimbursement for chemotherapy administration in physicians' offices.

Appendix A: Data Sets Relied Upon

In order to conduct the analyses presented in this report, we used the following data sets:

Medicare Outpatient Research Identifiable Files (RIF) for 2008 to 2012: These data sets provide 100 percent of Medicare fee-for-service claims submitted by institutional outpatient providers. These data sets were used to:

- Identify total Medicare Hospital Outpatient chemotherapy claims over time
- Estimate the acquired practice chemotherapy claims
- Estimate the growth rate over time of 340B hospitals that did not acquire a physician-based oncology practice
- Calculate the Medicare payments and Medicare Beneficiary payments on chemotherapy claims provided in hospital outpatient departments at the claim and procedure levels

Medicare Carrier Limited Data Sets (LDS) for 2008 to 2012: These data sets are also known as the Medicare 5% Carrier Files or the Physician/Supplier Part B Claims Files. They contain a 5 percent sample of fee-for-service claims submitted on a CMS-1500 claim form, primarily by non-institutional providers. These data sets were used to:

- Identify total physician office chemotherapy claims over time
- Calculate the Medicare payments and Medicare Beneficiary payments on chemotherapy claims provided in physician offices at the claim and procedure levels

Community Oncology Alliance Oncology Acquisition List: This list contains detailed information on physician-based oncology practices that were acquired by or entered into a contractual arrangement with 340B hospitals. This list was integrated with the OPA database (see below) to:

- Identify the existence and timing of acquired practices by acquiring 340B hospitals

Office of Pharmacy Affairs Covered Entity Database (April 2013 Snapshot): This database contains detailed information on all hospitals that are enrolled in the 340B program as well as any off-site hospital clinic that is included in the hospital's cost report and purchases drugs through the 340B program. This database was integrated with the COA Oncology Acquisition List to:

- Identify the existence and timing of acquired practices by acquiring 340B hospitals

Appendix B: Methodology

This section describes in more detail the methodology used to conduct the analyses presented in this report. Specific topics include:

- Definition of chemotherapy claims
- Identification of acquired practice chemotherapy claims
- Calculation of chemotherapy claim costs
- Re-pricing of acquired practice chemotherapy claims

Definition of Chemotherapy Claims

For purposes of this study, we defined a chemotherapy claim in the Medicare Outpatient RIF as a claim with bill type 131 (interim and adjusted claims excluded) with a chemotherapy administration code and a diagnosis of cancer. Chemotherapy claims in the 5% Medicare Carrier File were also identified by the presence of a chemotherapy administration code and a diagnosis of cancer. Chemotherapy administration codes include therapeutic infusions of chemotherapy drugs as well as other IV hydration infusions in the CPT code range 96360-96549. A diagnosis of cancer includes both primary and secondary ICD-9 diagnosis codes in the following ranges:

Figure 12

Cancer Related Diagnoses Codes	
Description	ICD-9 Diagnosis Codes
Cancer	140-239
Thrombocytopenia	287.30, 287.31, 287.39, 287.49
Neutropenia	288.00, 288.02, 288.03, 288.09
Lymphadenitis	289.1, 289.2, 289.3, 289.53, 289.83, 289.89
Encounter for chemotherapy	V07.2, V07.39, V58.11, V58.12
Personal history of cancer	V10.00 - V10.91

Identification of Acquired Practice Chemotherapy Claims

To identify acquired practice chemotherapy claims, we evaluated the average chemotherapy claim volume at the specific 340B hospital in the four quarters prior to the acquisition date. We then grew this average volume by a quarterly benchmark growth rate calculated using 592 340B hospitals that had no acquired practices in the 2008–2012 timeframe to estimate the expected chemotherapy claim volume for the hospital. By subtracting the expected chemotherapy claim volume from the actual chemotherapy claim volume, we identified the acquired practice chemotherapy claims (Figure 13).

Figure 13

Example of Process to Identify Acquired Practice Chemotherapy Claims

	Before Acquisition				Acq. Quarter	After Acquisition							
	2009					2010				2011			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
Growth Rate	1.0%	2.5%	-0.5%	2.0%	2.0%	3.5%	1.5%	-0.5%	2.0%	1.0%	2.0%	4.0%	
Actual Claims	1,000	1,020	1,036	1,044	2,500	2,600	2,700	2,800	2,900	3,000	3,100	3,200	
Expected Chemotherapy Claims					1,066	1,104	1,120	1,115	1,137	1,148	1,171	1,218	
Acquired Practice Chemotherapy Claims					1,434	1,496	1,580	1,685	1,763	1,852	1,929	1,982	

In order to re-price the acquired practice chemotherapy claims, we randomly selected claims from the total chemotherapy claims for all hospitals with an acquisition in a specific quarter. In the example above, we would randomly select 1,685 claims as acquired practice chemotherapy claims for the fourth quarter of 2010. For each quarter, we compared the randomly selected chemotherapy claims attributable to the acquired practice to the actual chemotherapy claims to ensure the two claim sets were similar.

Calculation of Chemotherapy Claim Costs

This study evaluates the cost of chemotherapy claims to two different payers: the Medicare program and Medicare beneficiaries (including payments by third-party payers; e.g., Medi-gap insurance). The cost to the Medicare program is the Medicare reimbursement amount on the claim. The cost to Medicare beneficiaries includes deductibles, coinsurance and copayments, and payments made by the Medicare beneficiary's third party insurance.

Re-pricing of Acquired Practice Chemotherapy Claims

To estimate the additional payments made by Medicare for acquired practice chemotherapy claims, we “re-priced” the hospital outpatient chemotherapy claim based on average payments in physicians’ offices for the same services. This process is designed to isolate the differences in reimbursement between hospital outpatient departments and physicians’ offices and does not consider potential additional costs that could be attributable to differences in utilization. The re-pricing process includes the following steps:

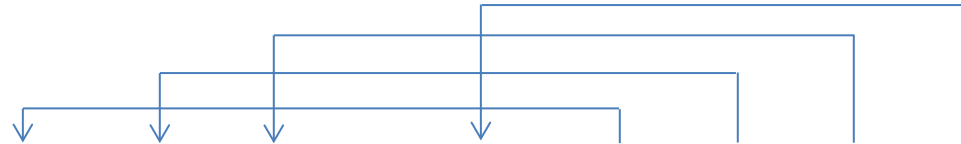
- Identify the HCPCS code present on each claim line for the acquired practice chemotherapy claims.
- Calculate the corresponding average allowed amount per unit for each HCPCS code in the 5% Carrier File for the appropriate time frame. In most cases, the allowed amount attributable to a certain time frame (for example, third quarter of 2011) on a hospital outpatient claim was also found for the same time frame in the 5% Carrier File. However, in 1.5 percent of HCPCS codes, allowed amounts for matching quarters could not be found, and an average allowed amount from another quarter within the 2008 to 2012 period was used. It should be noted that there is very little variation in the Medicare rates found in the 5% Carrier Files for individual codes during the study period.
- Multiply the per-unit allowed amount calculated in Step 2 by the units on the claim lines identified in Step 1.
- Calculate the difference in the actual reimbursement by Medicare and the Medicare beneficiary with the re-priced reimbursement amounts calculated in Step 3.

Figure 14 provides a visual description of this process.

Figure 14

Claims Re-Pricing Example

OPPS Original Claim Line Information	5% Physician Sample Average per Unit Amounts	Re-priced Claim Information
--------------------------------------	--	-----------------------------



Claim Line	HCPCS	APC	Rev Code	Line Allowed Amt	Medicare Pmt	Other Pmt 1	Other Pmt 2	Beneficiary Pmt	Avg Allow Amt	Avg Medicare Pmt	Avg Other Pmt	Avg Beneficiary Pmt	Re-priced Allowed Amt	Total priced Medicare Pmt	Re-priced Other Pmt	Re-priced Beneficiary Pmt
1	NULL	00000	0258	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2	96367	00437	0260	\$34.10	\$27.28	\$0.00	\$0.00	\$6.82	\$30.94	\$24.62	\$0.32	\$6.15	\$30.94	\$24.62	\$0.32	\$6.15
3	96368	00000	0260	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$17.81	\$14.09	\$0.39	\$3.52	\$17.81	\$14.09	\$0.39	\$3.52
4	NULL	00000	0270	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
5	96411	00438	0335	\$71.20	\$56.95	\$0.00	\$0.00	\$14.25	\$59.78	\$47.34	\$1.14	\$11.83	\$59.78	\$47.34	\$1.14	\$11.83
6	96413	00440	0335	\$203.50	\$162.80	\$0.00	\$0.00	\$40.70	\$133.08	\$105.73	\$1.76	\$26.47	\$133.08	\$105.73	\$1.76	\$26.47
7	96415	00437	0335	\$34.10	\$27.28	\$0.00	\$0.00	\$6.82	\$29.49	\$23.47	\$0.35	\$5.87	\$29.49	\$23.47	\$0.35	\$5.87
8	96416	00440	0335	\$203.50	\$162.80	\$0.00	\$0.00	\$40.70	\$130.39	\$102.48	\$4.95	\$25.71	\$130.39	\$102.48	\$4.95	\$25.71
9	J0640	00000	0636	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2.45	\$1.94	\$0.03	\$0.48	\$24.48	\$19.38	\$0.29	\$4.84
10	J1100	00000	0636	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.11	\$0.09	\$0.00	\$0.02	\$1.09	\$0.87	\$0.01	\$0.21
11	J2405	00000	0636	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.21	\$0.16	\$0.06	\$0.04	\$3.32	\$2.64	\$0.98	\$0.66
12	J9190	00000	0636	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$2.23	\$1.78	\$0.01	\$0.45	\$15.64	\$12.43	\$0.10	\$3.12
13	J9263	01738	0636	\$1,814.00	\$1,451.20	\$0.00	\$0.00	\$362.80	\$8.94	\$7.04	\$0.14	\$1.76	\$1,788.50	\$1,407.90	\$27.81	\$351.98
				\$2,360.40	\$1,888.31	\$0.00	\$0.00	\$472.09					\$2,234.51	\$1,760.95	\$38.10	\$440.35