ONCOLOGY PRACTICE MANAGEMENT™

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OCTOBER 2015 www.OncPracticeManagement.com VOLUME 5 • NUMBER 7

Infusion Services Site-of-Service Reimbursement Differential

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As the trend of shifting the site of infusion services from the physician office to the hospital outpatient department continues, so does the conversation about the revenue differences in doing so. Clearly, there can be substantial differentials; however, it is interest-

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ing that the largest differences stem from payer contracts. To prove that point, the Oncology Management Consulting Group utilized its proprietary database to illustrate the Medicare differences.

From this brief analysis, we can see that CMS spends a bit more (9%) for outpatient infusion services provided in the hospital outpatient department than for those provided in the private practice setting.

DATA COLLECTION

Data from the 2014 National Hospital Oncology Benchmark Study (NHOBS; with data from 2013) was mined for the utilization of infusion services and the associated drugs. There were 40 infusion centers that participated in the study, but 4 centers were excluded from the analysis because of apparent billing anomalies (eg, J0442 was billed at 1 unit when it would more likely be billed at 300 or 480 units).

The final data set represents services provided to 18,535 hospital outpatients, with a total of 156,113 distinct infusion encounters. All of the data discussed below represent the aggregate data for the 36 centers.

Table 1 Data Set Demographics

Disease group	Patients, N	Encounters, N
Benign hematology	5274	31,154
Breast	2819	23,807
Malignant hematology/leukemia/lymphoma	2514	26,858
Lung	1915	17,801
Colorectal	1248	14,822
Gastrointestinal	1024	10,791
Gynecologic	918	8761
Other	694	5173
Head/neck	443	3520
Prostate	424	2594
Bone/joint	415	3846
Genitourinary	284	2434
Central nervous system	181	1602
Endocrine	106	656
Skin	105	759
Soft tissue	66	570
Male	62	618
Respiratory	22	255
Side effects	21	92
Total	18,535	156,113

Data from the NHOBS include a unique patient identifier, a date of service, the first 3 diagnosis codes associated with that date of service, and the billed codes and units of each code billed. The data do not include charges, collections, or payer mix.

Using the hospitals' billing data, each encounter was assigned to a disease group based on the reported *International Classification of Diseases, Ninth Revision* (*ICD-9*) codes. In some cases, a patient may be counted in more than 1 disease group (eg, on one service date the highest ranking *ICD-9* code was for breast cancer and, on a subsequent service date, the highest ranking *ICD-9* code was for a different disease site).

To calculate the Medicare revenue, we applied the 2013 Medicare payment rates from the Physician Fee Schedule, the 2013 Hospital Outpatient Prospective Payment System, and the 2013 average sales price (ASP) files available from the Centers for Medicare & Medicaid Services (CMS) to the total volume of services billed. Drug revenue is defined as any item billed and paid based on the ASP data.

Nondrug revenue is defined as any

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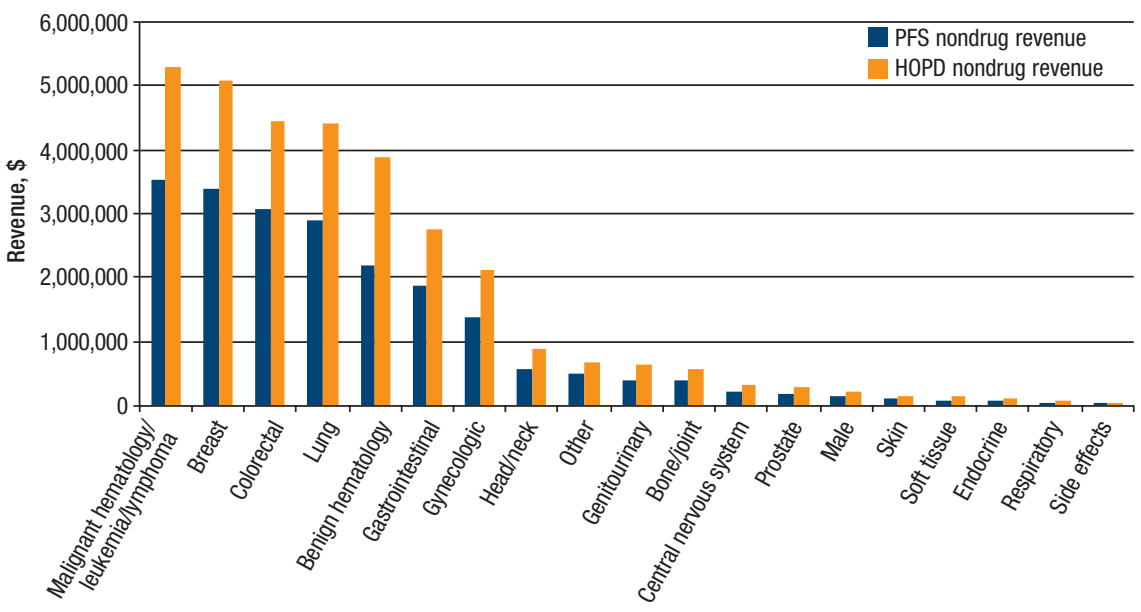
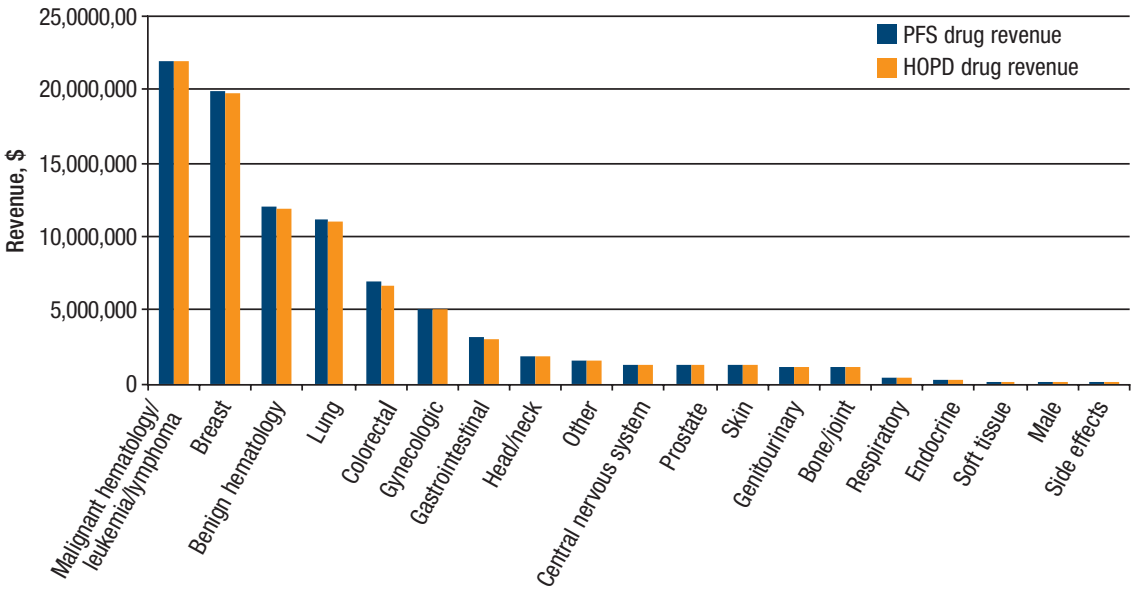
Figure 1 Nondrug Revenue for All Diseases



HOPD indicates hospital outpatient department; PFS, Physician Fee Schedule.

Figure 2 Drug Revenue for All Diseases



HOPD indicates hospital outpatient department; PFS, Physician Fee Schedule.

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Table 2 Packaged Drugs

Code	Description	Code	Description
90670	Pneumococcal vaccine, 13 valent intramuscular	J1720	Hydrocortisone sodium succinate injection
90732	Pneumococcal vaccine	J1756	Iron sucrose injection
A9577	Injection MultiHance	J1815	Insulin injection
A9579	Gad-base MR contrast NOS, 1 mL	J1817	Insulin for insulin pump use
A9585	Gadobutrol injection	J1885	Ketorolac tromethamine injection
J0133	Acyclovir injection	J1940	Furosemide injection
J0150	Injection adenosine 6 mg	J1953	Levetiracetam injection
J0171	Adrenalin epinephrine injection	J1956	Levofloxacin injection
J0290	Ampicillin 500-mg injection	J2001	Lidocaine injection
J0295	Ampicillin sodium per 1.5 g	J2060	Lorazepam injection
J0360	Hydralazine HCl injection	J2150	Mannitol injection
J0456	Azithromycin	J2175	Meperidine HCl per 100 mg
J0461	Atropine sulfate injection	J2185	Meropenem
J0561	Penicillin G benzathine injection	J2250	Injection midazolam HCl
J0592	Buprenorphine HCl	J2270	Morphine sulfate injection
J0610	Calcium gluconate injection	J2271	Morphine sulfate injection 100 mg
J0640	Leucovorin calcium injection	J2275	Morphine sulfate injection
J0690	Cefazolin sodium injection	J2280	Injection, moxifloxacin 100 mg
J0692	Cefepime HCl for injection	J2300	Injection nalbuphine HCl
J0694	Cefoxitin sodium injection	J2310	Injection naloxone HCl
J0696	Ceftriaxone sodium injection	J2354	Octreotide injection, nondepot
J0702	Betamethasone acetate & sodium phosphate	J2370	Phenylephrine HCl injection
J0713	Injection ceftazidime per 500 mg	J2405	Ondansetron HCl injection
J0744	Ciprofloxacin IV	J2430	Pamidronate disodium/30 mg
J0780	Prochlorperazine injection	J2543	Piperacillin/tazobactam
J0882	Darbepoetin alfa, ESRD use	J2550	Promethazine HCl injection
J0886	Epoetin alfa 1000 units, ESRD use	J2590	Oxytocin injection
J1040	Methylprednisolone 80-mg injection	J2690	Procainamide HCl injection
J1050	Medroxyprogesterone acetate	J2720	Injection protamine sulfate/10 mg
J1070	Testosterone cypionate 100 mg	J2765	Metoclopramide HCl injection
J1080	Testosterone cypionate 200 mg	J2780	Ranitidine HCl injection
J1100	Dexamethasone sodium phosphate	J2795	Ropivacaine HCl injection
J1160	Digoxin injection	J2805	Sincalide injection
J1165	Phenytoin sodium injection	J2916	Sodium ferric gluconate complex
J1170	Hydromorphone injection	J2920	Methylprednisolone injection
J1200	Diphenhydramine HCl injection	J2930	Methylprednisolone injection
J1250	Injection dobutamine HCl/250 mg	J3010	Fentanyl citrate injection
J1265	Dopamine injection	J3130	Testosterone enanthate injection
J1335	Ertapenem injection	J3230	Chlorpromazine HCl injection
J1450	Fluconazole	J3250	Trimethobenzamide HCl injection
J1580	Garamycin gentamicin injection	J3260	Tobramycin sulfate injection
J1626	Granisetron HCl injection	J3301	Triamcinolone acetonide injection NOS
J1630	Haloperidol injection	J3360	Diazepam injection
J1642	Injection heparin sodium per 10 units	J3370	Vancomycin HCl injection
J1644	Injection heparin sodium per 1000 units	J3410	Hydroxyzine HCl injection
J1645	Dalteparin sodium	J3411	Thiamine HCl 100 mg
J1650	Injection enoxaparin sodium	J3420	Vitamin B_{12} injection
J1652	Fondaparinux sodium	J3430	Vitamin K phytonadione injection

Table 2 Packaged Drugs (continued)

Code	Description	Code	Description
J3475	Injection magnesium sulfate	J9040	Bleomycin sulfate injection
J3480	Injection potassium chloride	J9045	Carboplatin injection
J7030	Normal saline solution infusion	J9060	Cisplatin 10-mg injection
J7040	Normal saline solution infusion	J9100	Cytarabine HCl 100-mg injection
J7042	5% dextrose/normal saline	J9130	Dacarbazine 100-mg injection
J7050	Normal saline solution infusion	J9181	Etoposide injection
J7060	5% dextrose/water	J9190	Fluorouracil injection
J7070	D5w infusion	J9206	Irinotecan injection
J7120	Ringer's lactate infusion	J9209	Mesna injection
J7502	Cyclosporine oral 100 mg	J9250	Methotrexate sodium injection
J7506	Prednisone oral	J9260	Methotrexate sodium injection
J7509	Methylprednisolone oral	J9265	Paclitaxel injection
J7515	Cyclosporine oral 25 mg	J9360	Vinblastine sulfate-injection
J7517	Mycophenolate mofetil oral	J9370	Vincristine sulfate 1-mg injection
J7611	Albuterol noncompounded concentrated	J9390	Vinorelbine tartrate injection
J7612	Levalbuterol noncompounded concentrated	Q0139	Ferumoxytol, ESRD use
J7613	Albuterol noncompounded unit	Q0162	Ondansetron oral
J7614	Levalbuterol noncompounded unit	Q0163	Diphenhydramine HCl 50 mg
J7620	Albuterol ipratropium, noncompounded	Q0164	Prochlorperazine maleate 5 mg
J7644	Ipratropium bromide noncompounded	Q0166	Granisetron HCl oral 1 mg
J8540	Oral dexamethasone	Q2009	Fosphenytoin injection phenytoin equivalent
J8610	Methotrexate oral 2.5 mg	Q9967	LOCM 300-399 mg/mL iodine, 1 mL
J9000	Doxorubicin HCl injection		

ESRD indicates end-stage renal disease; HCl, hydrochloride; IV, intravenous; LOCM, low osmolar contrast material; MR, magnetic resonance; NOS, not otherwise specified.

billed service that is not paid based on the ASP data, including hydration, therapeutic injections and infusions, chemotherapy injections and infusions, and procedures such as port or pump services, transfusions, and bone marrow procedures.

We did not include volumes for blood draws, blood products, or therapeutic phlebotomies. To calculate the cost, we reduced the ASP data, which is reported at ASP plus 6%, to ASP plus 0%, and applied those figures to the total volume of drugs billed.

RESULTS

In terms of patient volumes, the top 5 diagnosis groups were benign hematology followed by breast cancer, malignant hematology/leukemia/lymphoma, lung cancer, and colorectal cancer (**Table 1**).

The same 5 groups represent the greatest number of treatment encounters in almost the same order.

The nondrug revenue shows the same 5 groups at the top, although it is not surprising that benign hematology is the lowest of the 5, given the treatments for these patients (**Figure 1**). For all of the diseases, the nondrug revenue is $32,065,207 to the hospitals, which is 52.6% higher than the $21,009,010 in revenue for physician practices (Figure 1).

In the past, CMS has commented on this disparity, stating their awareness that it is more expensive to operate a hospital outpatient department than to operate a private practice.

The drug revenue reverses the advantage, with hospitals receiving 1.05% less in reimbursements than the practices, at $89,753,744 versus $90,701,621 (**Figure 2**).

The reason for this is that CMS "packages" certain drugs into the administration service under the

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KEY POINTS

- All payers spend substantially more for hospital outpatient department care than for private office care
- Based on data from 36 infusion centers, the nondrug revenue for hospitals is 52.6% higher than the revenue for physician practices
- The current efforts at payment reform should focus on new models with nonfederal payers

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Table 3 Combined Revenue and Drug Margin

Disease group	Total PFS revenue, $	Total HOPD revenue, $	PFS drug margin, $	HOPD drug margin, $
Malignant hematology/leukemia/ lymphoma	25,463,577	27,127,010	10,780,480	10,673,237
Breast	23,252,297	24,860,964	18,804,797	18,692,538
Benign hematology	14,178,227	15,716,153	–6,665,491	–6,825,169
Lung	13,977,756	15,360,460	9,854,815	9,723,277
Colorectal	9,984,295	11,179,011	6,875,370	6,691,974
Gynecologic	6,509,187	7,162,759	4,914,118	4,830,167
Gastrointestinal	5,046,282	5,866,876	257,778	175,776
Head/neck	2,469,199	2,752,287	–4,465,262	–4,487,670
Other	2,124,844	2,298,880	526,127	510,832
Genitourinary	1,586,774	1,804,960	–3,428,389	–3,436,404
Bone/joint	1,553,721	1,708,598	1,230,916	1,226,414
Central nervous system	1,539,327	1,653,964	52,252	48,698
Prostate	1,473,782	1,571,550	–568,568	–577,900
Skin	1,346,788	1,385,244	–19,444,137	–19,451,107
Respiratory	412,994	432,356	–1,156,427	–1,157,730
Endocrine	305,413	342,567	–126,729	–129,590
Soft tissue	220,657	262,659	–10,214,240	–10,218,832
Male	211,662	271,695	–1,121,201	–1,129,533
Side effects	53,848	60,957	–77,931	–78,577
Total	111,710,631	121,818,951	6,028,277	5,080,401

HOPD indicates hospital outpatient department; PFS, Physician Fee Schedule.

Table 4 Top 15 Drugs for the Top 5 Disease Groups, Revenue and Margin

Code	Description	PFS revenue, $	HOPD revenue, $	Total cost, $	PFS margin, $	HOPD margin, $
J2505	Pegfilgrastim	14,315,601	14,315,601	13,505,284.41	810,317.06	810,317.06
J9310	Rituximab	11,132,070	11,132,070	10,501,953.02	630,117.18	630,117.18
J9355	Trastuzumab	9,520,712	9,520,712	8,981,803.47	538,908.21	538,908.21
J9035	Bevacizumab	4,498,854	4,498,854	4,244,202.26	254,652.14	254,652.14
J1300	Eculizumab	3,186,900	3,186,900	3,006,509.42	180,390.57	180,390.57
J9305	Pemetrexed	3,049,117	3,049,117	2,876,525.40	172,591.52	172,591.52
J9041	Bortezomib	2,467,958	2,467,958	2,328,262.13	139,695.73	139,695.73
J2796	Romiplostim	1,808,468	1,808,468	1,706,102.21	102,366.13	102,366.13
J9055	Cetuximab	1,728,587	1,728,587	1,630,741.99	97,844.52	97,844.52
J9033	Bendamustine	1,595,274	1,595,274	1,504,975.42	90,298.52	90,298.52
J0885	Epoetin alfa	1,326,710	1,326,710	1,251,612.95	75,096.78	75,096.78
J0897	Denosumab	1,286,593	1,286,593	1,213,766.62	72,826.00	72,826.00
J9025	Azacitidine	1,182,150	1,182,150	1,115,235.53	66,914.13	66,914.13
J2469	Palonosetron	1,061,196	1,061,196	1,001,128.74	60,067.72	60,067.72
J9264	Paclitaxel	935,544	935,544	882,589.05	52,955.34	52,955.34
All other drugs		12,733,506	12,039,272	12,012,737	720,768	26,534
Total		71,829,240	71,135,006	67,763,430	4,065,810	3,371,576

HOPD indicates hospital outpatient department; PFS, Physician Fee Schedule.

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2013 Hospital Outpatient Prospective Payment System (**Table 2**). In other words, those packaged drugs are not paid separately.

In the NHOBS data set, there were 250 different drug codes billed; 144 of those are packaged. In 2013, as in 2015, nonpackaged drugs are paid at ASP plus 6% to the hospital and to the practice. Thus, drug revenue for those drugs is identical.

Combining nondrug and drug revenue (**Table 3**), we find that the hospital outpatient department receives $121,818,951 compared with the practice, which receives $111,710,631, a 9% advantage. Still the hospitals' drug margin for all disease groups is 84% of the practices' ($5,080,401 and $6,028,277, respectively).

Finally, we delved more deeply into specific drugs for the top 5 disease groups (**Table 4**). We found that 15 drugs account for approximately 83% of all revenue for these disease sites, with a margin of 6%, because, as discussed above, all of these drugs are paid at ASP plus 6% in both settings. When the remaining drugs are included, we find that the hospital's drug margin is 5%.

IMPLICATIONS FOR ONCOLOGY PRACTICES

From this brief analysis, we can see that CMS spends a bit more (9%) for outpatient infusion services provided in the hospital outpatient department than for those provided in the private practice setting. Of course, the larger question is what precisely is that differential for nonfederal payers? There have been analyses to answer that question, and they have all concluded that, in aggregate, all payers spend substantially more for hospital outpatient department care than for private office care. By isolating the CMS figures, the current efforts at payment reform should best focus on new models with those nonfederal payers, because they have proportionately more to gain. ■