



Cost of Cancer Care by Setting of Therapy

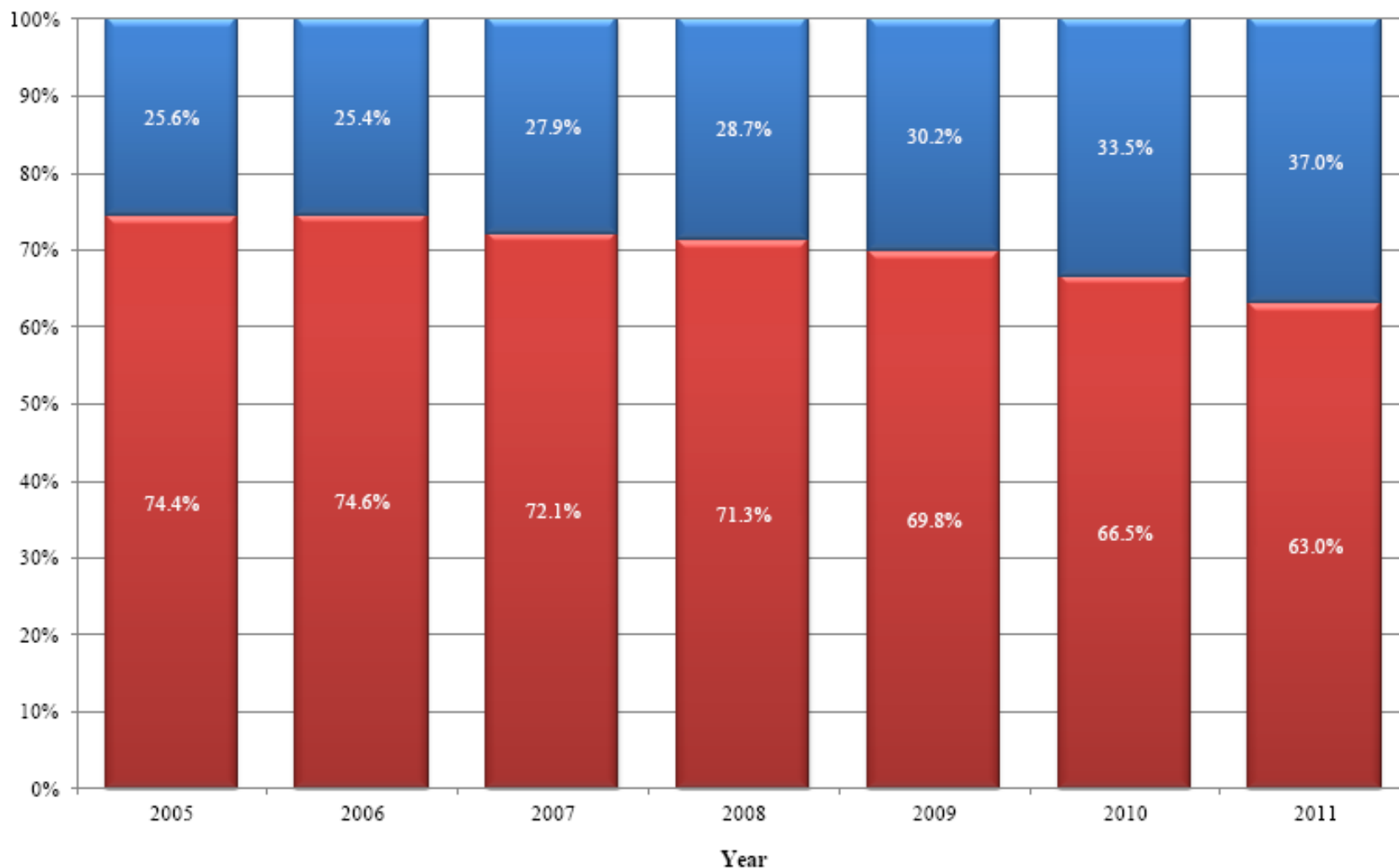
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Outpatient Chemotherapy Care Continues to Shift to Hospitals

- Over the past several years, the share of payments for chemotherapy has shifted to hospitals and away from office-based physicians
 - Part of the trend is due to hospitals acquiring physicians
 - Part of the trend may be due to efforts by hospitals to capture greater share
 - Part of the trend may be due to the increasing cost of chemotherapy drugs
- This shift has significant implications for payments by Medicare and commercial payers
 - Medicare reimburses hospitals and physicians the same fee for the same drug
 - Utilization differences between the settings results in total payment differences
 - Growing evidence suggests that hospitals receive higher reimbursement than physician offices from private payers for the same dose of the same drug
- These trends may complicate efforts by payers to both control spending as well as implement new payment models for oncologic care
 - As hospitals gain market share, their ability to command higher prices will put pressure on commercial premiums
 - New payment models will be built on existing fee structures, which could be skewed by other market factors

Medicare Payment for Chemotherapy Shifting to Hospitals

Proportion of Medicare Payments of Chemotherapy Drug Codes by Site of Service Among Medicare FFS Beneficiaries, 2005-2011



Data Source: 5% Carrier and Outpatient SAF, 2001-2011

■ Office-Based ■ HOPD

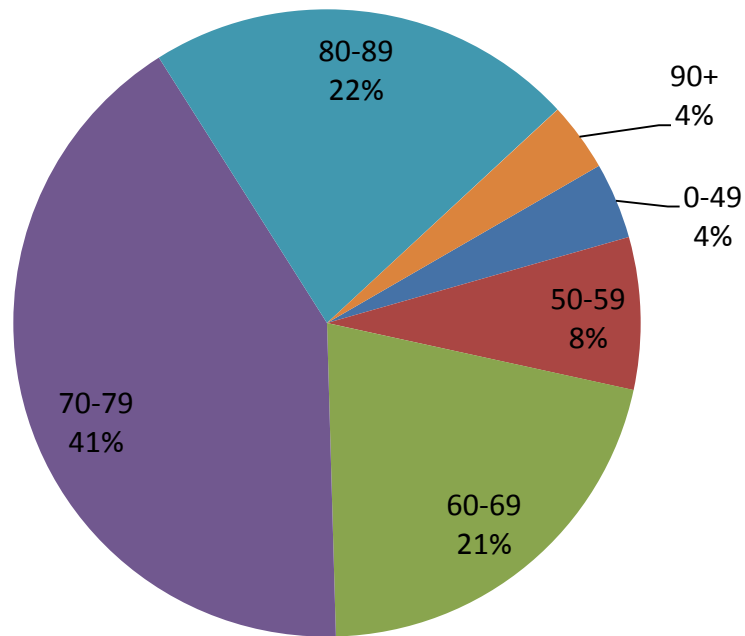
Source: Moran Company. "Cost Differences in Cancer Care Across Settings". August 2013. Available at http://www.communityoncology.org/UserFiles/Moran_Cost_Site_Differences_Study_P2.pdf.

Avalere Study on Costs of Cancer Care by Setting

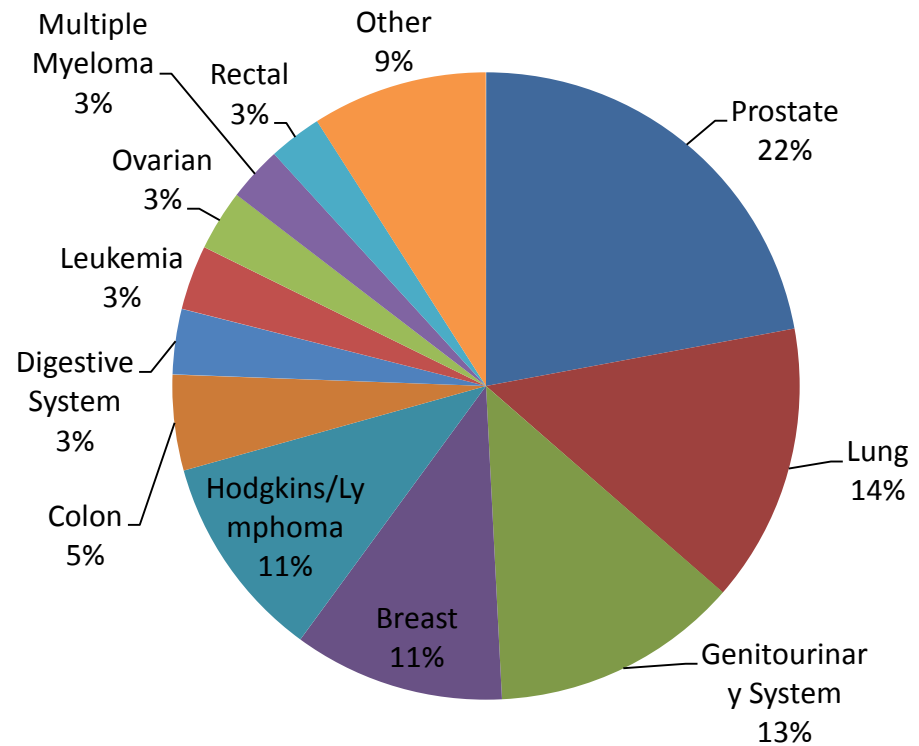
- Avalere Health analyzed data for the 2008-2010 period from four health plans for patients diagnosed with any form of cancer
- We estimated total costs of care for cancer patients managed primarily in the office setting versus a hospital outpatient department (HOPD)
 - We used the place of service codes from chemotherapy or radiation therapy claims to identify the setting of care
 - Patients needed to receive 60 percent or more of therapy in one setting to qualify for that setting
 - If an episode did not meet the 60 percent requirement, it was excluded
- The results compare the total per-patient per-month (PPPM) costs for each treatment episode from the initiation of chemotherapy
 - Costs include inpatient and outpatient hospital, office, and pharmacy claims
 - Costs include plan payments and patient liability (copays / co-insurance)
- For each patient, we created episodes based on service dates they received chemotherapy
 - In most cases, an episode was defined as treatment for a single cancer type
 - We defined the end of an episode as the lapse of treatment for at least 60 days
 - We required a minimum of two claims to define an episode
 - Chemotherapy was identified via a J-code or NDC for a chemotherapy drug or UB-04 revenue code for chemotherapy administration
- We tested the results for the influence of:
 - Type of cancer
 - Patient age and gender
 - Prior history of cancer

Episode Demographics

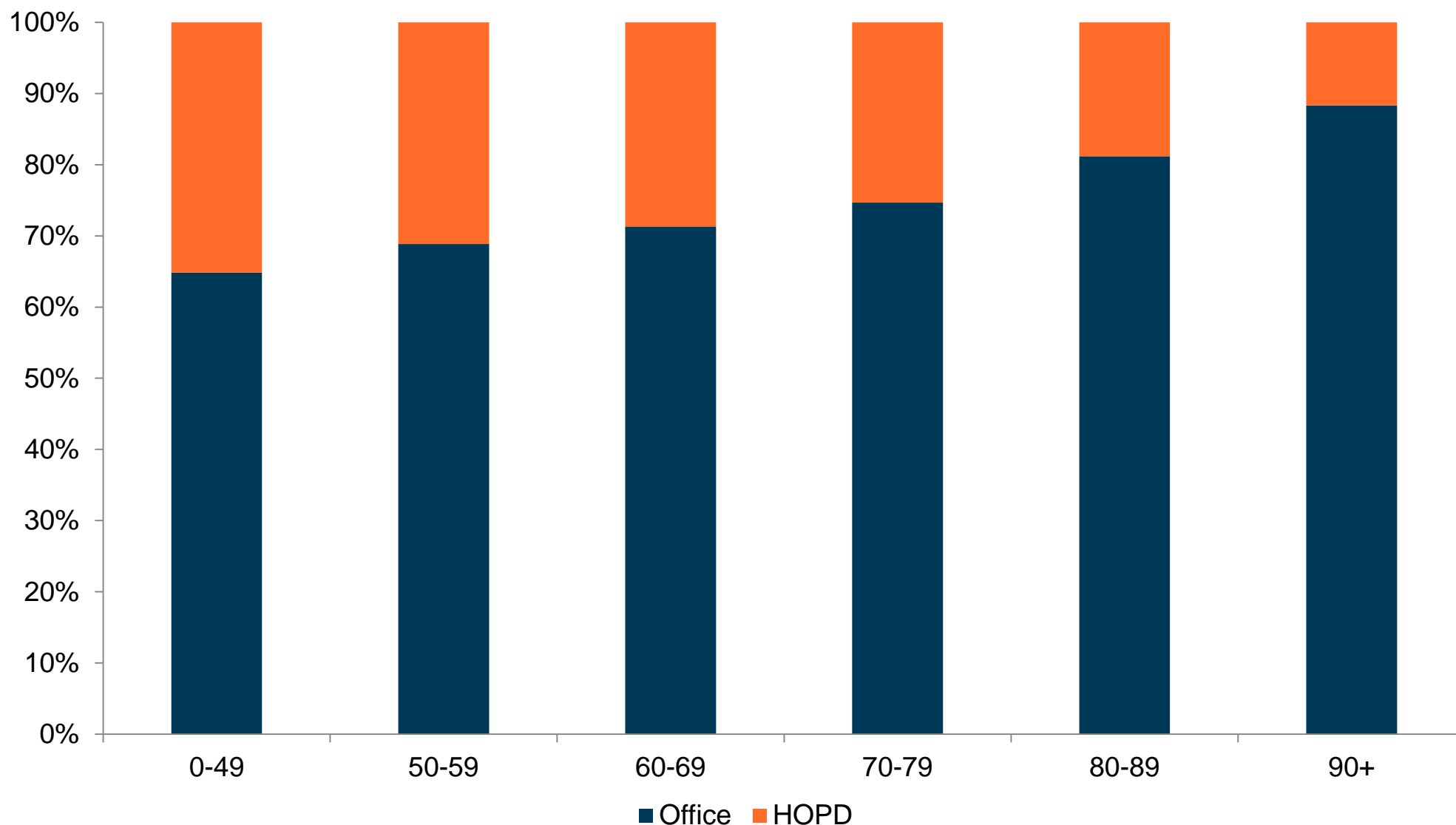
Age Distribution



Cancer Distribution

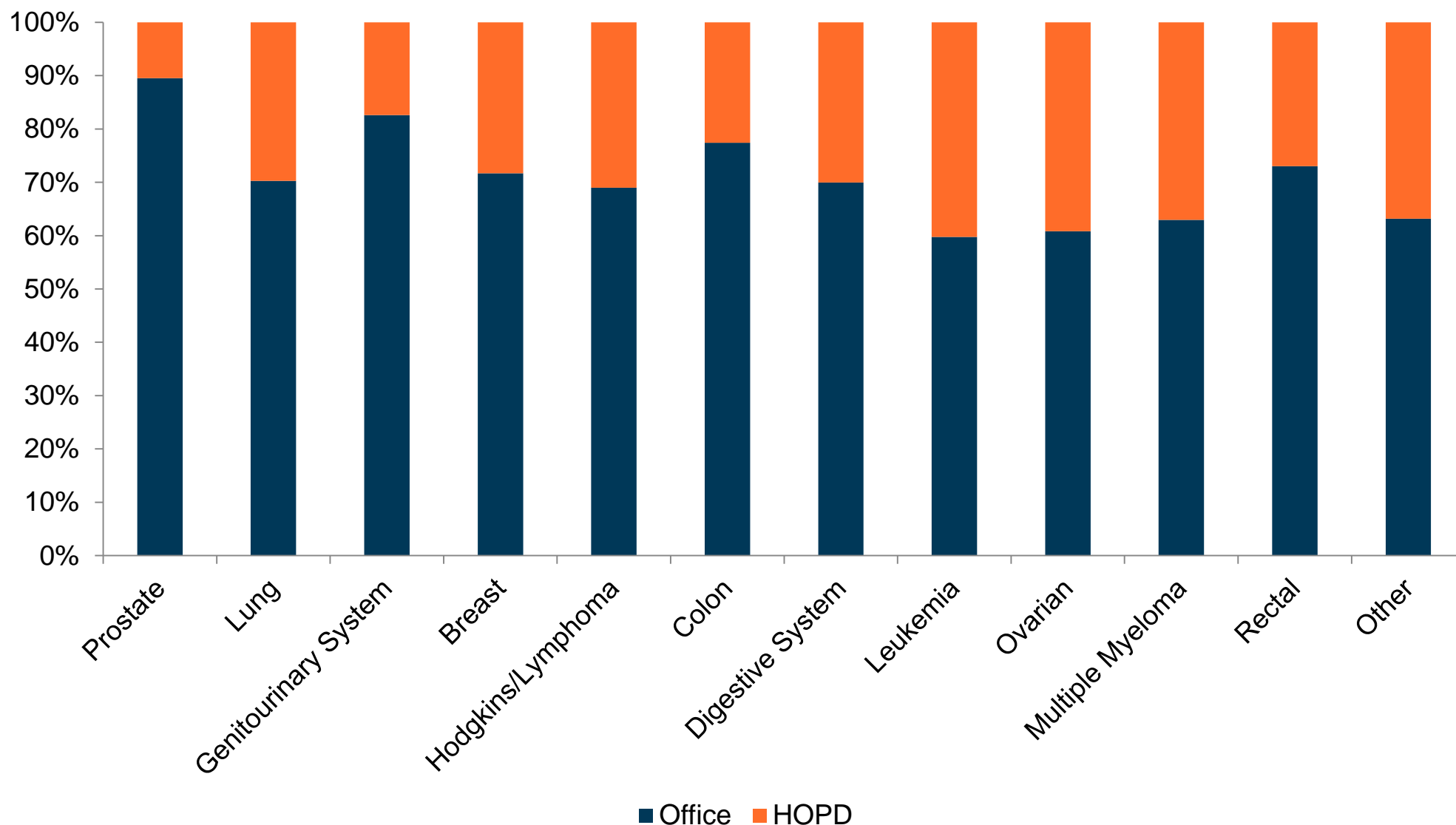


Setting of Care by Patient Age



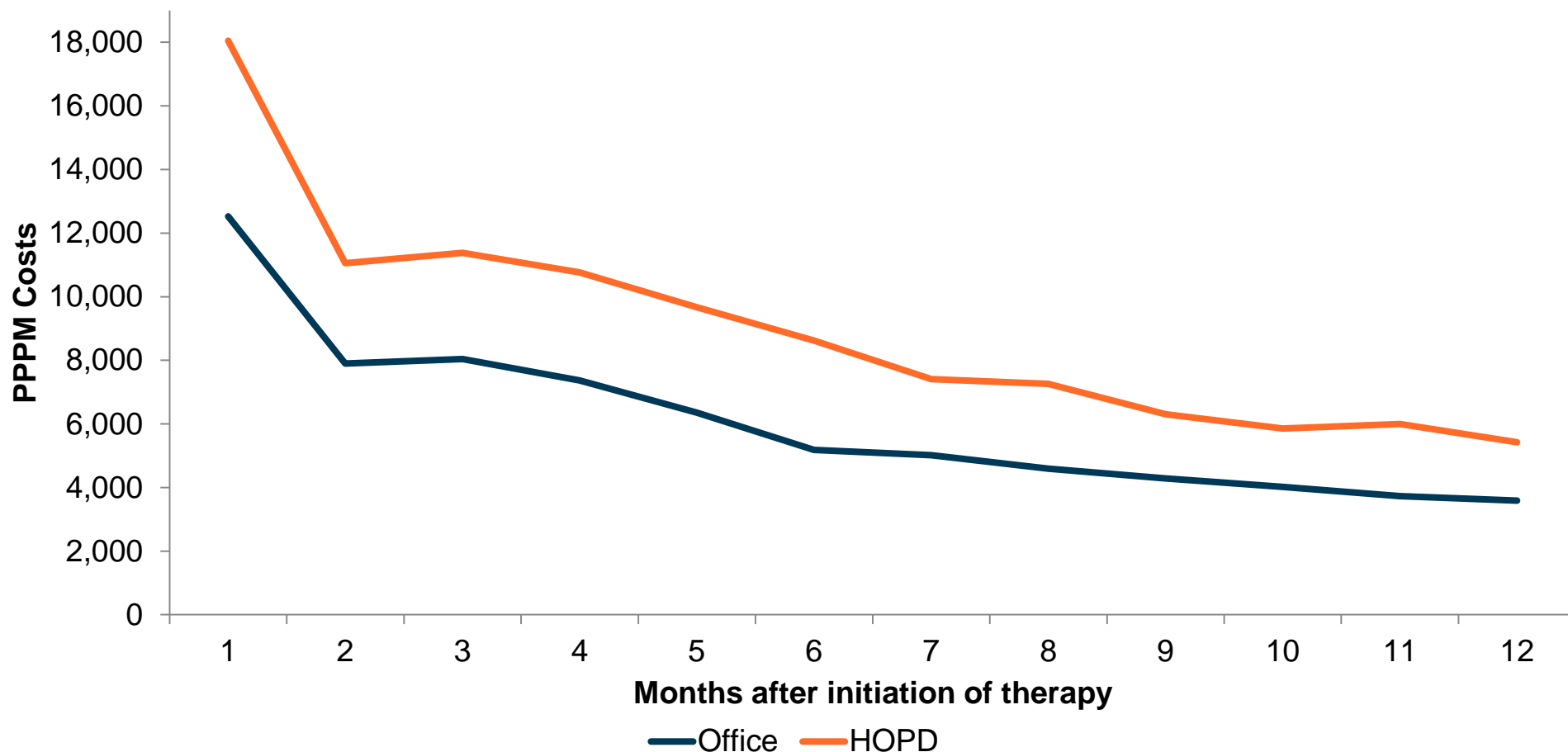
Source: Avalere Health "Costs of Care for Cancer Patients Receiving Chemotherapy and Radiation Therapy". March 2012.
Available at <http://www.communityoncology.org/pdfs/avalere-cost-of-cancer-care-study.pdf>.
HOPD = Hospital Outpatient Department

Setting by Type of Cancer



Source: Avalere Health "Costs of Care for Cancer Patients Receiving Chemotherapy and Radiation Therapy". March 2012.
Available at <http://www.communityoncology.org/pdfs/avalere-cost-of-cancer-care-study.pdf>.
HOPD = Hospital Outpatient Department

Overall Results Showed Higher Episode Costs in the Hospital Outpatient Setting



After risk adjustment, PPPM costs are higher for episodes of chemotherapy delivered in the HOPD setting

Source: Avalere Health "Costs of Care for Cancer Patients Receiving Chemotherapy and Radiation Therapy". March 2012.

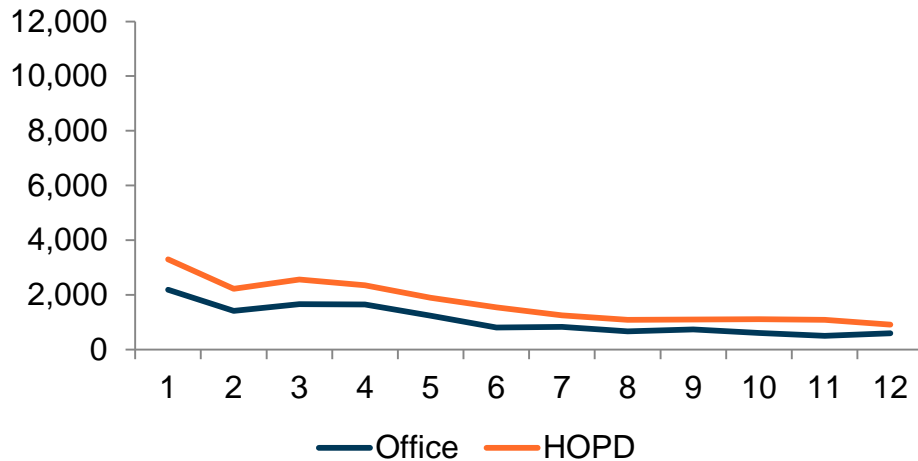
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HOPD = Hospital Outpatient Department

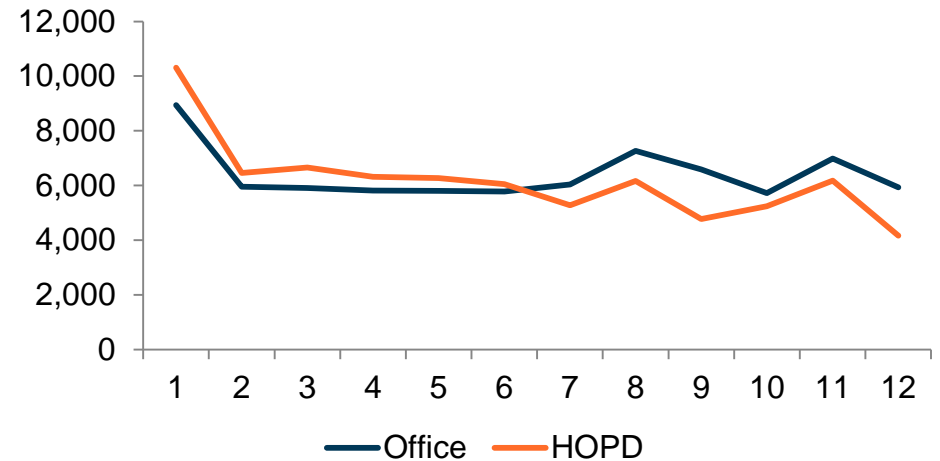
Results are adjusted for age, gender, and prior history of cancer

Top Cancers Demonstrated Lower Office Payments

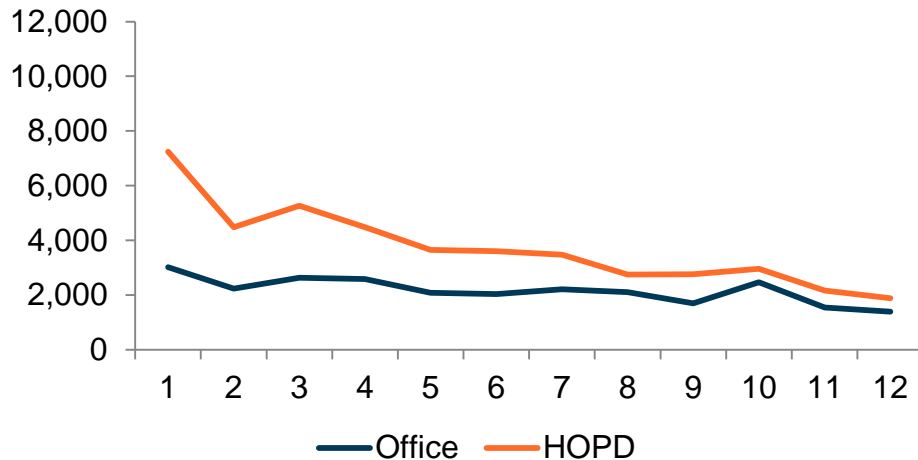
Prostate Cancer



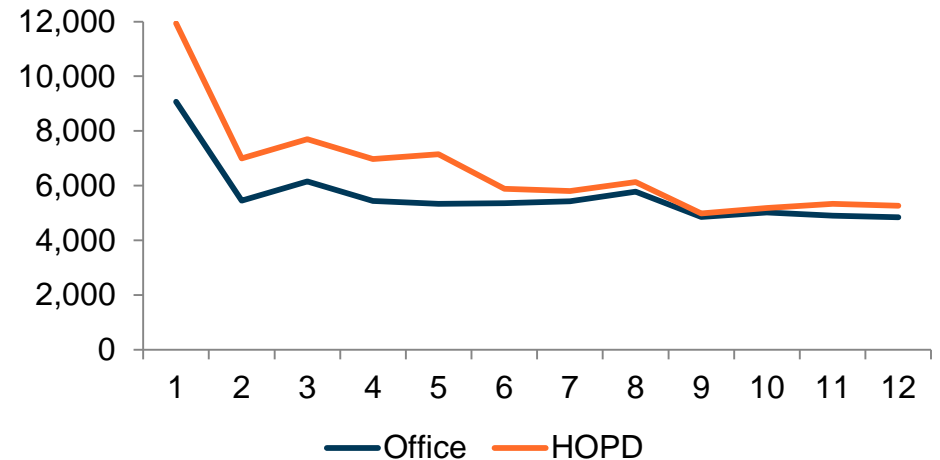
Lung Cancer



Genitourinary System Cancer



Breast Cancer



Source: Avalere Health "Costs of Care for Cancer Patients Receiving Chemotherapy and Radiation Therapy". March 2012.

Available at <http://www.communityoncology.org/pdfs/avalere-cost-of-cancer-care-study.pdf>.

Results are unadjusted for age, gender, and prior history of cancer

HOPD = Hospital Outpatient Department

Months after initiation of chemotherapy in each X-axis

PPPM costs in each Y-axis

Subsequent Milliman Study Showed Similar Results

Cancer Type		Average Allowed Cost per Episode			Average Allowed Cost for all Sessions in an Episode		
		POV	HOP	P value	POV	HOP	P value
Metastatic	NSCLC	\$82,849	\$122,909	<0.001	\$38,535	\$76,814	<0.001
	CRC	\$122,300	\$186,541	<0.001	\$83,905	\$140,838	<0.001
	Breast	\$115,308	\$158,727	<0.001	\$70,769	\$113,848	<0.001
Adjuvant	NSCLC	\$44,769	\$60,994	<0.001	\$21,570	\$35,275	<0.001
	CRC	\$79,058	\$101,060	<0.001	\$52,441	\$73,029	<0.001
	Breast	\$57,809	\$86,857	<0.001	\$31,353	\$55,671	<0.001

Source: Fitch, Kathryn et. al. "Comparing Episode of Cancer Care Costs in Different Settings: An Actuarial Analysis of Patients Receiving Chemotherapy". Aug. 20, 2013. Accessed at http://www.communityoncology.org/UserFiles/Milliman_SiteCostofCancerStudy_2013.pdf

Allowed costs include payer costs and member cost sharing.

Episode includes all costs from first chemotherapy session to 30 days after last chemotherapy session unless more than a 3 month gap occurs after a chemotherapy session. Chemotherapy includes cytotoxic and biologic infusions. Session includes all costs on the day of a chemotherapy infusion

NSCLC = Non Small Cell Lung Cancer CRC = Colorectal Cancer HCPCS: Healthcare Common Procedure Coding System

POV = Physician Office Visit HOP = Hospital Outpatient



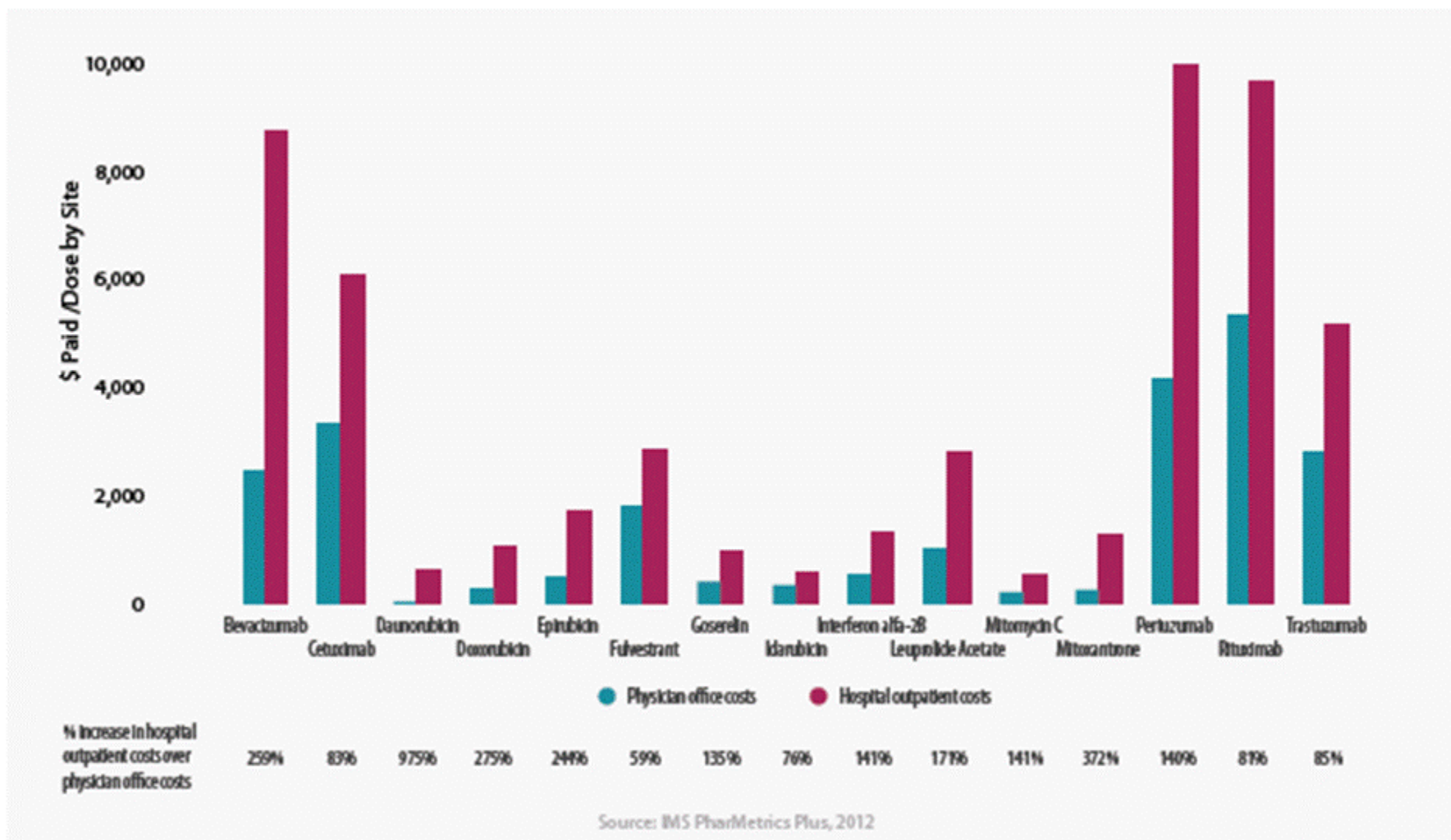
Milliman Analysis Found Significant Cost Differences in Drug Reimbursement

HCPCS	Description	Cancer	Allowed Cost per Claim for Same Drug and Dosage	
			POV	HOP
J9045	Carboplatin injection	NSCLC Metastatic	\$387	\$908
		Breast Metastatic	\$361	\$925
		Breast Adjuvant	\$590	\$831
J9055	Cetuximab injection	CRC Metastatic	\$3,338	\$7,363
J9171	Docetaxel injection	NSCLC Metastatic	\$1,571	\$4,955
		Breast Adjuvant	\$2,943	\$5,682
J9201	Gemcitabine hcl injection	NSCLC Metastatic	\$1,384	\$3,018
		Breast Metastatic	\$1,297	\$2,471
		Breast Adjuvant	\$1,235	\$3,521
J9265	Paclitaxel injection	NSCLC Metastatic	\$319	\$937
		NSCLC Adjuvant	\$271	\$474
		Breast Metastatic	\$334	\$998
		Breast Adjuvant	\$288	\$830
J9305	Pemetrexed injection	NSCLC Metastatic	\$5,083	\$9,750

Source: Fitch, Kathryn et. al. "Comparing Episode of Cancer Care Costs in Different Settings: An Actuarial Analysis of Patients Receiving Chemotherapy". Aug. 20, 2013. Accessed at http://www.communityoncology.org/UserFiles/Milliman_SiteCostofCancerStudy_2013.pdf
 NSCLC = Non Small Cell Lung Cancer CRC = Colorectal Cancer HCPCS: Healthcare Common Procedure Coding System
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Recent IMS Analysis Provides Further Evidence

Hospital outpatient costs compared to physician office costs



Source: IMS Institute for Healthcare Informatics. "Innovation in cancer care and implications for health systems: Global oncology trend report". May 2014. Available at <http://www.imshealth.com/portal/site/imshealth/menuitem.762a961826aad98f53c753c71ad8c22a/?vgnnextoid=f8d4df7a5e8b5410VgnVCM10000076192ca2RCRD>.

Commercial Payment Methodologies Partly Explains Differences

- Medicare and many commercial payers require providers to submit specific HCPCS codes to receive payment for infused or injectable drugs
- However, some payers allow hospitals to only submit Uniform Billing (UB-04) revenue codes for reimbursement
 - For example, a hospital may submit a bill with revenue code 0331 (chemotherapy-injected) and then receive a percentage of the charge included on the claim
 - Physicians in an office setting cannot submit a revenue code as their only means of payment, and therefore must use a HCPCS code for reimbursement

Setting of Care and Type of Payment Code	Percent of episodes	Average PPM for first month of chemotherapy episode
HOPD – revenue code	34%	\$11,500
HOPD – J-code	66%	\$9,700
Office – revenue code	<1%	\$4,400
Office – J-code	98%	\$7,100

Importantly, if a payer only receives a revenue code for reimbursement, it does not know the specific drug or dosage provided to the patient

HCPCS = Healthcare Common Procedure Coding System

HOPD = Hospital Outpatient Department

PPPM = Per-patient per-month

Note: Table excludes episodes identified via National Drug Codes (NDC)

Source: Avalere Health "Costs of Care for Cancer Patients Receiving Chemotherapy and Radiation Therapy". March 2012. Available at

<http://www.communityoncology.org/pdfs/avalere-cost-of-cancer-care-study.pdf>



Hospital Charges for Drugs Often Exceed ASP by 3-5x

- Hospitals and physicians submit a charge for every service provided, including drugs administered to patients in the outpatient setting
 - Charges often have little relationship to actual costs
- The mark-up of charges over costs can vary by a range of factors
 - Hospitals have suggested that the markup over the cost of the product reflects overhead and other under-reimbursed services provided by the hospital
- Reimbursement methodology can also play a role in the mark-up
 - Hospitals may receive a percentage of their submitted charges from commercial payers
 - Physicians often receive a fee schedule amount, especially for drugs

Median mark-up over ASP

	Darbepoetin (non-ESRD)	Gammagard	Infliximab	Pegfilgrastin	Bevacizumab	Oxaliplatin
Hospitals	4.9x	4.1x	3.5x	3.4x	3.4x	3.1x
Physicians	3.1x	2.4x	1.6x	2.0x	1.7x	2.1x

ASP: Average Sales Price

Source: Avalere analysis of 2011 Medicare Hospital Outpatient Claims Data & are National and State Healthcare Common Procedure Coding System (HCPCS) Aggregate Report, Calendar Year 2012

Patient Out-of-Pocket Adds Layers of Complexity

- Patient costs are often determined by plan benefit design, which may focus more on setting of care rather than type or cost of care
 - Some plans use a flat co-payment for any care received in a hospital or physician office
 - Co-pays or co-insurance often focused on “in-network” versus “out-of-network”, not cost of drug provided by provider
 - Out-of-pocket caps (in commercial insurance) or supplemental payers (e.g., Medigap plans for Medicare enrollees) also play a role in limiting patient’s costs
- While plan designs are changing, the lessened impact on patients’ costs reduces a plan’s ability to influence provider selection

Therapy	\$ difference / dose paid by payer	\$ difference / dose paid by patient
	HOP v MD Office	HOP v MD Office
Alemtuzumab	6,251	-10
Bevacizumab	6,298	312
Cetuximab	2,764	374
Epirubicin	1,231	-2
Fulvestrant	1,054	-9
Leuprolide Acetate	1,756	121
Mitoxantrone	991	116
Pertuzumab	5,792	0
Rituximab	4,330	398
Trastuzumab	2,354	35

Source: IMS Institute for Healthcare Informatics. “Innovation in cancer care and implications for health systems: Global oncology trend report”. May 2014. Available at <http://www.imshealth.com/portal/site/imshealth/menuitem.762a961826aad98f53c753c71ad8c22a/?vgnnextoid=f8d4df7a5e8b5410VgnVCM10000076192ca2RCRD>.

Points for Consideration

- Costs of care by setting vary based on a range of factors
 - Patient acuity no doubt plays a role, although difficult to demonstrate using claims data
 - Growing evidence demonstrates that hospitals receive higher payment from commercial payers for the same dose of the same drug
- Reimbursement process may play a role in the payment differences
 - If commercial plans are paying hospitals based solely on submission of a revenue code, it limits the ability of the plan to negotiate payments on specific drugs
 - Revenue codes also limit the ability of a plan to design and implement any form of oncology-focused payment reform such as pathways or bundles
- Patient costs may play less of a role
 - In Medicare, many patients will have supplemental coverage, shielding them from any differences in co-insurance costs
 - In traditional commercial (employer) plans, patient costs often dictated by network status and not total treatment costs
 - In the new Marketplace, total patient spending cap could limit patient costs