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# Site of Service Cost Differences for Medicare Patients Receiving Chemotherapy

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**Prepared by:**

**Kate Fitch, RN, MEd**  
Principal and Healthcare Management Consultant

**Bruce Pyenson, FSA, MAAA**  
Principal and Consulting Actuary

**Milliman, Inc., NY**

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## EXECUTIVE SUMMARY

National spending on cancer care in 2010 is estimated at \$125 billion.<sup>1</sup> About 8 million of the almost 14 million Americans living with cancer are over age 65,<sup>2</sup> and approximately half of cancer care spending is associated with Medicare beneficiaries<sup>3</sup>. Approximately 12% of active cancer patients among Medicare beneficiaries receive chemotherapy in a given year, and the total healthcare costs for these beneficiaries is about three times the cost (Medicare allowed) of other cancer patients not receiving chemotherapy, as described later in this report. The authors have published similar findings for commercial patients.<sup>4</sup>

This paper examines differences in the cost of care for Medicare fee for service cancer patients depending on the site of chemotherapy service. In recent years, the site of service for chemotherapy has received attention as Medicare reimbursement policy continues to change.<sup>5</sup> Most chemotherapy is delivered in oncologist's offices, although another common site for chemotherapy is a hospital outpatient facility.

Cancer is an important cost issue for Medicare. Based on our analysis of the Medicare Limited Data Set for 2006-2009, about 10% of the Medicare fee-for-service population has one or more claims with a cancer diagnosis in a calendar year. During these years, a Medicare beneficiary receiving cancer chemotherapy in a given year incurred, on average, allowed Part A and Part B costs of approximately \$4,600 per month compared to about \$1,500 per month for a cancer patient not receiving chemotherapy.

Our analysis describes results for all cancers and has details on 10 common cancer types where chemotherapy is a key treatment modality. These 10 cancers account for 75% of cancer patients in a Medicare population, and 12% of the 10 cancer cohort population actively receives chemotherapy in a year. The members receiving chemotherapy and having one of the 10 cancers make up about 0.9% of Medicare members.

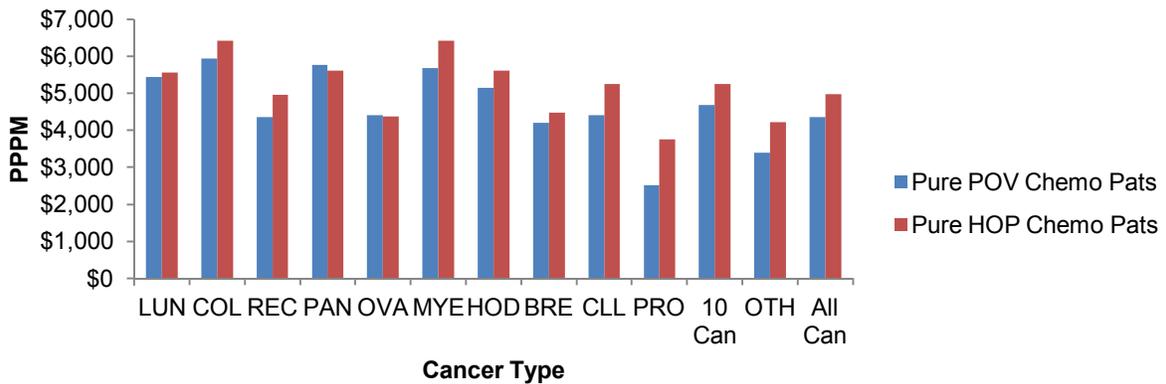
We used the Medicare Limited Data Set (LDS) for 2006-2009 (also known as the Medicare 5% Sample data) to examine the demographics of cancer patients, utilization of chemotherapy services, Medicare allowed costs, and patient cost sharing. The LDS contains all Medicare paid claims for a representative sample of Medicare beneficiaries. (We selected the fee-for-service population, as Medicare Advantage data may be incomplete in this source.) The results contained in this report represent the average of four calendar years' results – 2006 to 2009, which, in approximate terms, is the period centered on January 1<sup>st</sup>, 2007. The calendar year analysis is convenient for annual budget considerations, but it does not reflect cancer episodes.

As noted above, our analysis focuses on the cost and utilization differences for Medicare chemotherapy patients receiving their chemotherapy in physician offices versus hospital outpatient settings. For simplicity, we compared two cohorts—those who receive all of their chemotherapy in physician offices (POV) and those who receive all of their chemotherapy in a hospital outpatient (HOP) setting. These two cohorts make up the majority of patients receiving chemotherapy, with more patients in the “pure” physician office cohort. Relatively few chemotherapy patients receive chemotherapy in both settings in a year. In particular, of the 79,376 chemotherapy patients identified in the dataset, 53,087 patients (or 66.9%) were Pure POV; 19,161 patients (or 24.1%) were pure HOP; and 7,128 patients (or 9.0%) received chemotherapy in both settings.

Per-Patient-Per Month (PPPM) allowed costs are lower for the Pure POV group, and this holds for most of the “top 10” cancers. Specifically, the total PPPM allowed cost for the Pure POV group is \$4,361 while the PPPM costs for the Pure HOP group is \$4,981, a

difference of over \$600 per patient per month. On an annualized basis, taking into consideration the average number of member months that chemotherapy patients are covered by Medicare in a year, the total costs for a Pure POV patient and a Pure HOP patient are approximately \$47,500 and \$54,000, respectively. This produces an annual cost difference of approximately \$6,500. Patient pay amounts were about 10% higher for the Pure HOP patients, which totals over \$650 per patient per year. Please note that even within the types of cancer shown, there could be a fair amount of variability in diagnosis, stage and other factors. The costs cited in this report include all Medicare covered Part A and Part B services incurred by the patient, but our earlier work shows that chemotherapy-associated costs typically dominate care costs for these patients.<sup>6</sup>

### Allowed PPPM by Cancer Type

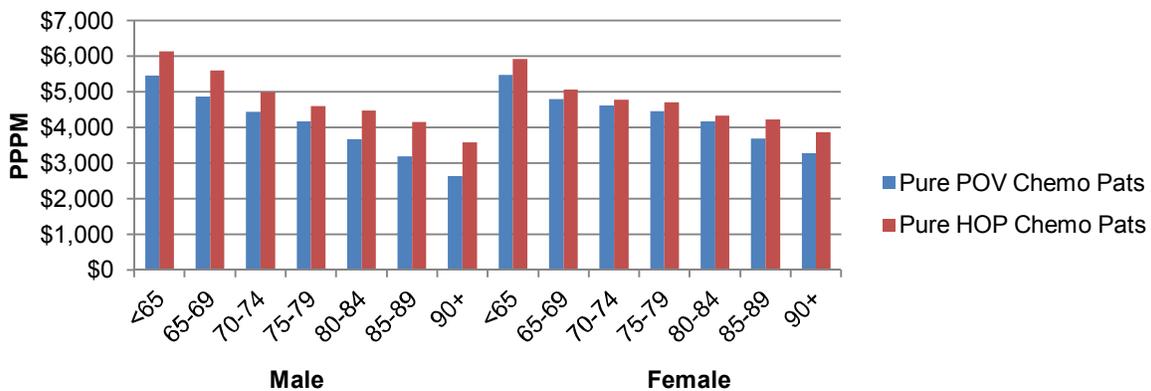


Source: Milliman analysis of Medicare 5% Sample, 2006-2009

The cost difference between Pure POV and Pure HOP persists even when we exclude inpatient hospital costs, as shown in the body of the report.

The lower PPPM cost for Pure POV chemotherapy patients persists across all age-sex categories as shown below. The wider difference for men is probably associated with the much lower cost for Prostate Cancer treated as Pure POV, and the relatively similar cost between Pure POV and Pure HOP for Breast Cancer, as seen above.

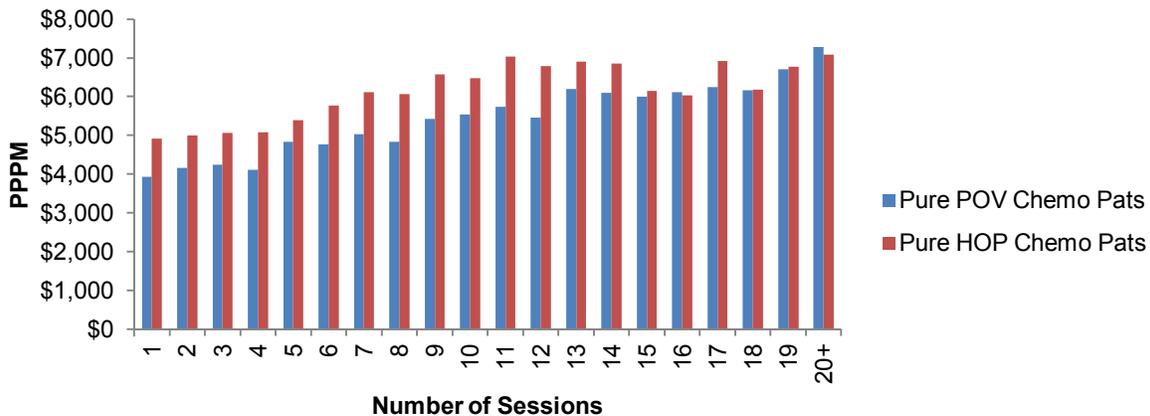
### Allowed PPPM by Demographics Group



Source: Milliman analysis of Medicare 5% Sample, 2006-2009

The number of chemotherapy sessions is an important determinant of treatment cost, and the following table compares the PPPM costs for patients receiving 1, 2, 3, etc. chemotherapy sessions in a year. Again, the same pattern of lower costs for Pure POV patients persists, especially for patients with fewer than 15 sessions. We note that relatively few patients have more than 15 sessions in a year.

**Allowed PPPM by Number of Chemo Sessions**



Source: Milliman analysis of Medicare 5% Sample, 2006-2009

An important limitation of our analysis is that claims data do not permit a complete assessment of patient severity. The choice of site for chemotherapy may depend on the availability of services, convenience, physician preference, patient preference, potential need for more intense services, or other characteristics, none of which we examined. The higher cost of patients receiving all chemotherapy in a hospital outpatient setting persists across the numerous variables we examined. However, other researchers using other methods may find different results. In particular, an examination of patient charts in the two settings could help determine whether claims-based analyses miss important factors that bias results. While our results are suggestive, they should be used cautiously; simple shifts in patient site of service may not generate cost savings equal to the difference in the historical costs. The authors welcome further research using other methods.

This paper was commissioned by McKesson Specialty Health, a division of McKesson Corporation, on behalf of The US Oncology Network, one of the nation’s largest networks of community-based oncology physicians. McKesson has businesses that include supplying drugs, including chemotherapy drugs, to various types of medical providers. This paper reflects the research of the authors. It should not be considered an endorsement of any policy or product by Milliman, Inc. Cancer therapy is a rapidly changing field, and readers should note that this paper may not reflect current therapeutic considerations. The figures presented here are, unless otherwise noted, national averages developed from historical databases. Because of the variability in healthcare and health benefits, these figures may not be appropriate for particular organizations or particular purposes. We urge the reader to examine the full report as it contains important information not contained in this Executive Summary.