

## Benefits of Oral Anti-Cancer Therapies

Studies show that oral anti-cancer therapies, when compared with those administered intravenously, not only help decrease overall health care costs, but they also improve quality of life and reduce patients work loss costs. Despite these benefits, health plans often require higher cost-sharing for oral therapies than they do for IV therapies. Legislation is needed to ensure that cost-sharing does not limit patient access to these life-saving therapies that save the health care system money.

### Background

The treatment of cancer is improving due in large part to new advancements in therapies. Patients are no longer limited to treatment via infusion as many anti-cancer therapies are now available in pill form. Oral anti-cancer therapies are becoming the treatment of choice for physicians and patients and are the only effective treatment option for some cancer patients. They are saving the health care system money, in addition to providing patients with a better quality of life. However, patients have difficulty accessing oral therapies because health plans often require higher cost-sharing for them than they do for IV chemotherapy.

Higher co-payments, co-insurance and deductibles result from insurance benefit design. Insurance companies' cost-sharing policies for cancer therapies have not adapted to the introduction of new, innovative oral medicines and continue to encourage the use of IV over oral therapies. To avoid intrusion on the physician/patient relationship and ensure patients receive the treatment deemed most appropriate by their doctor, health plans should not require different cost-sharing amounts for the oral and IV therapies that they cover.

### Comparative Analysis

Oral anti-cancer therapies have a number of unique benefits. They not only help reduce overall costs but also improve patient quality of life:

- **Direct Medical Costs:** Treatments associated with IV administration have high direct medical costs. Costs include IV supplies, such as needles, in addition to personnel costs, such as physicians and nurses. Other visit-related costs may include lab tests, facility overhead and chemotherapy assessments. It has been estimated that IV treatments cost \$47 more a day or \$17,000 more annually than oral treatments.<sup>9</sup>
- **Direct Non-Medical Costs:** IV drug administration requires patients and caregivers to travel to facilities, which may result in additional costs, such as parking and other travel related costs.
- **Work Loss and Time Related Costs:** Oral therapies allow patients to spend less time in care facilities. Time spent at care facilities may result in lost earnings for patients and their caregivers in addition to added expenses. Employers may also face costs associated with replacing workers and short term disability.
- **Clinical Outcomes:** While patients may experience adverse drug reactions for any therapy, whether it's IV or oral, patients taking IV therapies may experience infusion or injection-site reactions as well.
- **Patient Perspectives:** Cancer patients may suffer from a number of symptoms that impact everyday life, including pain, fatigue, appetite loss and nausea. Patients overwhelmingly prefer oral treatments over IV treatments as they minimize disruptions to daily living.<sup>10</sup>

### Cost of IV Therapies Per Administration

Direct Medical Costs Per Chemotherapy Administration							
Total Personnel & Supplies*	\$104-\$638 <sup>1</sup>						
IV Supplies	\$10-\$77 <sup>2</sup>						
Personnel Supplies	\$89-\$311 <sup>3</sup>						
Direct Non-Medical, Work Loss and Time Related Costs Per Chemotherapy Administration							
Travel Costs	\$10-\$14 <sup>4</sup>						
Patient Work Loss & Time Related Costs	<table style="margin-left: auto; margin-right: auto; border: none;"> <tr> <td style="padding-right: 10px;">Chemotherapy</td> <td style="text-align: right;">89-310 Minutes<sup>5</sup></td> </tr> <tr> <td style="padding-right: 10px;">Travel Time</td> <td style="text-align: right;">38-64 Minutes<sup>6</sup></td> </tr> <tr> <td style="padding-right: 10px;">Value</td> <td style="text-align: right;">\$33-\$98<sup>7</sup></td> </tr> </table>	Chemotherapy	89-310 Minutes <sup>5</sup>	Travel Time	38-64 Minutes <sup>6</sup>	Value	\$33-\$98 <sup>7</sup>
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Caregiver Time Related Costs	126-224 Minutes <sup>8</sup>						

\*Components do not sum to total, as former and latter were based on data from different studies

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- 1 Cassidy J, Douillard JY, Twelves C, et al. Pharmacoeconomic analysis of adjuvant oral capecitabine vs intravenous 5-FU/LV in Duke's C colon cancer: the X-ACT trial. *Br J Cancer* 2006;94:1122-1129.
- Kruse G, Amonkar M, Smith G, et al. Costs of administration of intravenous (IV) therapies in early versus late stage breast cancer in a US population. *J Clin Oncol*, 2007 ASCO Annual Meeting Proceedings Part I 2007;25(18).
- Skarin A, Duh M, Weiner J, et al. Costs associated with intravenous (IV) chemotherapy administration in patients with lung cancer. *J Clin Oncol*, 2007 ASCO Annual Meeting Proceedings Part I 2007;25(18).
- Lopatriello S, Amoroso D, Donati S, et al. The CAP-CR study: direct medical costs in Italian metastatic colorectal cancer patients on first-line infusional 5-fluorouracil or oral capecitabine. *Eur J Can* 2008;44:2615-2622.
- 2 Botteman M, Meijboom M, Foley I, et al. Cost-effectiveness of zoledronic acid in prevention of skeletal-related events in patients with bone metastases secondary to advanced renal cell carcinoma: application to France, Germany, and the United Kingdom. *Eur J Health Econ* 2011;12:575-588.
- Duh M, Weiner J, Lefebvre P, et al. Costs associated with intravenous chemotherapy administration in patients with small cell lung cancer: a retrospective claims database analysis. *Curr Med Res Opin* 2008;24(4):967-974
- Hillner B, Agarwala S, Middleton M. Post hoc economic analysis of temozolomide versus dacarbazine in the treatment of advanced metastatic melanoma. *J Clin Oncol* 2000;18:1474-1480.
- Kruse G, Amonkar M, Smith G, et al. Analysis of costs associated with administration of intravenous single-drug therapies in metastatic breast cancer in a US population. *J Manag Care Pharm* 2008;14(9):844-857.
- Lopatriello S, Amoroso D, Donati S, et al. The CAP-CR study: direct medical costs in Italian metastatic colorectal cancer patients on first-line infusional 5-fluorouracil or oral capecitabine. *Eur J Can* 2008;44:2615-2622.
- 3 Ibid.
- 4 Cassidy J, Douillard JY, Twelves C, et al. Pharmacoeconomic analysis of adjuvant oral capecitabine vs intravenous 5-FU/LV in Duke's C colon cancer: the X-ACT trial. *Br J Cancer* 2006;94:1122-1129.
- Coyte P, Dobrow M, Broadfield L. Incremental cost analysis of ambulatory clinic and home-based intravenous therapy for patients with multiple myeloma. *Pharmacoeconomics* 2001;19:845-854.
- 5 Cassidy J, Douillard JY, Twelves C, et al. Pharmacoeconomic analysis of adjuvant oral capecitabine vs intravenous 5-FU/LV in Duke's C colon cancer: the X-ACT trial. *Br J Cancer* 2006;94:1122-1129.
- Oglesby A, Sherif B, Odom D, et al. Time and costs associated with preparing and administering zoledronic acid in patients with breast or prostate cancer and metastatic bone disease. *Community Oncol* 2009;6(11):494-502
- Fortner B, Tauer K, Zhu L, et al. The impact of medical visits for chemotherapy induced anemia and neutropenia on the patient and caregiver. *Community Oncol* 2004;1:211-217.
- Houts A, Loh G, Fortner B, et al. Patient and caregiver time burden associated with anaemia treatment in different patient populations. *Support Care Cancer* 2006;14:1195-1204
- Conroy T, Hebbar M, Bennouna J, et al. Quality-of-life findings from a randomized phase-III study of XELOX vs FOLFOX-6 in metastatic colorectal cancer. *Br J Cancer* 2010;102:59-67
- Fortner B, Tauer K, Zhu L, et al. Medical visits for chemotherapy and chemotherapy-induced neutropenia: a survey of the impact of patient time and activities. *BMC Cancer* 2004; 4:22.
- Fasola G, Aprile G, Aita M. A model to estimate human resource needs for the treatment of outpatients with cancer. *J Oncol Pract* 2012;8(1):13-17.
- Kallen M, Terrell J, Lewis-Patterson P, et al. Improving wait time for chemotherapy in an outpatient clinic at a comprehensive cancer center. *Journal of Oncology Practice* 2012;8:e1-e7.
- Xie F, Hopkins R, Burke N, et al. Patient management, and time and health care resource utilization associated with the use of intravenous bisphosphonates for patients with metastatic bone disease: a Delphi study. *Hospital Practice* 2012;40:131-137
- Yarboff K, Davis W, Lamont E, et al. Patient time costs associated with cancer care. *J Natl Cancer Inst* 2007;99:14-23
- 6 Fortner B, Tauer K, Zhu L, et al. The impact of medical visits for chemotherapy induced anemia and neutropenia on the patient and caregiver. *Community Oncol* 2004;1:211-217.
- Houts A, Loh G, Fortner B, et al. Patient and caregiver time burden associated with anaemia treatment in different patient populations. *Support Care Cancer* 2006;14:1195-1204.
- Meehan K, Tchekmedyan S, et al. The burden of weekly epoetin alfa injections to patients and their caregivers. *Proc Am Soc Clin Oncol* 2003;(abstr 2186).
- Yazici Y, McMorris BJ, Darkow T, et al. Patient and physician perception of the biologic agents abatacept, infliximab, and rituximab for the treatment of rheumatoid arthritis. *Clin Exp Rheumatol* 2009;27:907-913.
- 7 Cassidy J, Douillard JY, Twelves C, et al. Pharmacoeconomic analysis of adjuvant oral capecitabine vs intravenous 5-FU/LV in Duke's C colon cancer: the X-ACT trial. *Br J Cancer* 2006;94:1122-1129
- Coyte P, Dobrow M, Broadfield L. Incremental cost analysis of ambulatory clinic and home-based intravenous therapy for patients with multiple myeloma. *Pharmacoeconomics* 2001;19:845-854.
- 8 Houts A, Loh G, Fortner B, et al. Patient and caregiver time burden associated with anaemia treatment in different patient populations. *Support Care Cancer* 2006;14:1195-1204.
- Conroy T, Hebbar M, Bennouna J, et al. Quality-of-life findings from a randomized phase-III study of XELOX vs FOLFOX-6 in metastatic colorectal cancer. *Br J Cancer* 2010;102:59-67
- Fortner B, Tauer K, Zhu L, et al. Medical visits for chemotherapy and chemotherapy-induced neutropenia: a survey of the impact of patient time and activities. *BMC Cancer* 2004; 4:22.
- 9 Durie BGM, Binder G, Pashos CL, Khan ZM, Hussein MA, Borrello I. Total cost comparison in relapsed/refractory multiple myeloma. *Journal of Medical Economics*. Epub 2012 Jan 3
- <sup>10</sup> Borner M, Scheithauer W, Twelves C, et al. Answering patients' needs: oral alternative to intravenous therapy. *The Oncologist* 2001;6:12-16.
- DiBonaventura M, Wagner J, Girman C, et al. Multinational internet-based survey of patient preference for newer oral or injectable Type 2 diabetes medication. *Patient Preference and Adherence* 2010;4:397-406.