Actuarial Assessment of the Report of the Committee to Evaluate the Parity between Oral and Intravenous Chemotherapy

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Table of Contents

Executive Summary i

1. Introduction 1

2. Interpretation of the Mandate 1

2.1 Definition of anticancer medication 2

2.2 Parity in cost-sharing 2

2.3 Plans subject to the proposed mandate 3

2.4 Medical necessity 4

2.5 Existing laws affecting the cost of the mandate 4

3. Summary of the Efficacy and Social impact of Oral Chemotherapy 5

4. Methodology 8

4.1 Steps in the analysis 8

4.2 Data sources 9

5. Factors Affecting the Analysis 9

5.1 Ongoing evolution of chemotherapy agents 9

5.2 Oral chemotherapy agents included in the analysis 10

5.3 Current coverage 11

5.4 Cost arising from the administration of oral agents 11

6. Analysis 12

6.1 Insured membership affected by the mandate 12

6.2 Cost of patients currently using oral chemotherapy 13

6.3 Cost of members substituting or foregoing treatment 15

6.4 Trends the cost of oral chemotherapy 18

6.5 Estimated impact of the mandate 18

Appendix A: Oral Chemotherapy Agents 20

Appendix B: Codes Used to Identify IV Chemotherapy 26

Appendix C: Calculations Supporting the Analysis 29

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Executive Summary

The New Hampshire Joint Legislative Study Committee to evaluate the parity between oral and intravenous chemotherapy[1] (the Committee), asked, in its final report, the New Hampshire Insurance Department[2] (the Department) to determine the implications of establishing such parity. The Department engaged Compass Health Analytics, Inc. to provide an actuarial estimate of the effect that enactment of such parity legislation would have on health care insurance in New Hampshire.

The Committee asked for the review without presenting to the Department a specific bill. The analysis therefore will make assumptions about key elements of a typical mandate, outlined in the body, based on the content of the Committee's report and the structure of similar legislation.

Background

Orally-administered chemotherapy represents a growing portion of chemotherapy administered to cancer patients. Under most health insurance plans, orally administered (as opposed to intravenously administered or injected) drugs are typically covered under the plan's pharmacy benefit, which often has patient-cost-sharing requirements (copays, coinsurance, deductibles, etc.) that differ from cost-sharing requirements for the plan's medical benefit, under which most IV and injected medications are covered. In some cases, the cost-sharing provisions of the pharmacy benefits are open-ended; for example, a pharmacy coinsurance provision might require a patient to pay a fixed percentage of the cost of prescription drugs without the limits on out-of-pocket expenditures typically present in medical benefits.

The mandate under consideration requires parity for oral chemotherapy; i.e., it requires insurers to cover orally-administered anticancer medication on a basis no less favorable than the basis under which they cover IV or injected anticancer medications. It is targeted primarily at plans with substantial coinsurance requirements (anywhere from 20 to 50 percent) with no cap on the patient's out-of-pocket expense. Combined with a drug that might cost thousands of dollars per month, coinsurance can result in a heavy financial burden on a patient.

The mandate will likely have two major effects. First, some portion of the cost-sharing for orally-administered drugs will shift from patients to insurers. Second, some patients who avoided orally administered drugs because of high cost-sharing requirements, or avoided treatment altogether, might switch to orally-administered drugs. This analysis looks at those components.

[1] As empowered under SB 510, Chapter 198:1, Laws of 2010 – AN ACT establishing a committee to evaluate the parity between oral and intravenous chemotherapy.
[2] Under RSA 400-A:39-b, Review and Evaluation of Proposed Insurance Mandated Benefit Proposals Under RSA 281-A, RSA 415, RSA 420-A, and RSA 420-B.

Note that the mandate, in the form presented to the Department for review, does not specify the types of insurance plans to which it will apply. For purposes of this analysis Compass assumed it will apply to commercial fully-insured plans.

The body of the analysis provides a brief summary of the background and clinical efficacy of oral chemotherapy and the issues framing the social impact of the mandate, topics included in the statutory language concerning the Department's mandate reviews. However, its main focus is the impact of oral chemotherapy parity on health insurance premiums.

Analysis

To estimate the overall impact of the proposed legislation, we considered three possible populations of members faced with choices between oral and IV chemotherapy and estimated the potential impact of the mandate on member and carrier costs for each population:

- Members who currently use oral chemotherapy treatments
- Members who refuse oral treatment and choose IV treatment because the cost to them of oral treatment is higher than that of IV treatment[3]
- Members who forgo chemotherapy treatment due to cost

For each population, we estimated, using New Hampshire's all-payer claim database, per member per month (PMPM) medical costs and member cost-sharing as a base for projecting the impact of the proposed bill, and estimated the effect of the bill on that PMPM base. We then adjusted the resulting PMPM for insurer retention for administrative costs and profit. Finally, we applied the result to the fully-insured membership. We developed a best estimate "mid-level" scenario, as well as low- and high-level scenarios.

Summary results

Table ES-1 below summarizes the effect of the mandate on premium costs for fully-insured plans. We estimate the mandate, if enacted, would increase fully-insured premiums by 0.003 percent to 0.020 percent on average across all fully-insured plans.

This analysis captures an average across the entire fully-insured market. The impact of the mandate on any one individual, employer-group, or carrier may vary significantly from the overall results of this analysis; the impact on specific entities will depend on the current level of benefits each receives or provides and on how the benefits will change under the enacted bill.

In fact, only a relatively modest portion of the commercial fully-insured members in New Hampshire have pharmacy benefits with the kind of cost-sharing arrangements that have the potential to produce extremely high burdens on members, i.e., cost-sharing arrangements relying

[3] Depending on the individual medication, oral products may be more expensive or less expensive than IV products, particularly when the cost for administering IV products is included, even when drugs have higher cost sharing percentages. However, in some cases the out of pocket costs for oral medications are much higher through a combination of high drug cost and high cost sharing percentage on the drug benefit.

on an uncapped coinsurance requirement. The relatively small size of the overall increase is mostly due to the correspondingly small portion of that membership within the overall market. Therefore, most of the increase in premiums will fall heavily on the membership of those plans that do rely on member cost-sharing employing coinsurance.

It is also worth noting that the impact of the mandate on premiums will probably rise steadily for at least the next few years. Current drug development trends suggest that, compared to drugs used in the past, each new drug will be more precisely targeted and developed for a smaller patient base, likely raising the cost per user. These more-targeted drugs will be developed for a wider range of cancers, causing an increasingly large portion of cancer treatment to rely on an increasing number of newly-developed and expensive orally-administered drugs.

Table ES-1
Estimated Incremental Impact on Premium Costs

	Low	Mid	High
Members	293,957	293,957	293,957
Medical Expense Annual Total	$40,749	$113,506	$286,525
Premium Annual Total (incl. retention)	$46,046	$128,262	$323,773
PMPM with Admin Load	$0.01	$0.04	$0.09
Average Premium PMPM	$465.69	$465.69	$465.69
% of Premium	0.003%	0.008%	0.020%

Actuarial Assessment of the Report of the Committee to Evaluate the Parity between Oral and Intravenous Chemotherapy

1. Introduction

The New Hampshire Joint Legislative Study Committee to evaluate the parity between oral and intravenous chemotherapy[4] (the Committee), asked, in its final report, the New Hampshire Insurance Department[5] (the Department) to determine the implications of establishing such parity. The Department engaged Compass Health Analytics, Inc. to provide an actuarial estimate of the effect that enactment of such parity legislation would have on health care insurance in New Hampshire.

The Committee asked for the review without presenting to the Department a specific bill. This analysis therefore will make assumptions about key elements based on the content of the Committee's report and the structure of similar legislation.

Section 2 of this analysis outlines the provisions of a potential oral chemotherapy parity mandate as interpreted for this analysis. Section 3 provides a brief summary of the background and clinical efficacy of oral chemotherapy and the issues framing the social impact of the mandate, topics included in the statutory language concerning the Department's mandate reviews.

However, our main focus is the impact of oral chemotherapy parity on health insurance premiums. Assessing that impact entails analyzing the incremental effect of the bill on spending for insurance plans subject to the proposed mandate. This in turn requires estimating spending under the provisions of the proposed mandate and comparing that projection to spending under current statutes and current benefit plans, for the relevant services.

Section 4 describes the basic methodology used for the estimate. Section 5 discusses important considerations in translating the mandate's intent into estimates of its incremental impact on health care costs. Section 6 describes the analysis and its results.

2. Interpretation of the Mandate

Because the Committee asked for a review without presenting a specific bill, we must make some assumptions about the content of important provisions of a potential bill to enact the mandate. We draw on the Committee's report and on the content of provisions typical of mandate legislation in general and of legislation in other states intending to mandate oral chemotherapy parity.

[4] As empowered under SB 510, Chapter 198:1, Laws of 2010 – AN ACT establishing a committee to evaluate the parity between oral and intravenous chemotherapy.
[5] Under RSA 400-A:39-b Review and Evaluation of Proposed Insurance Mandated Benefit Proposals Under RSA 281-A, RSA 415, RSA 420-A, and RSA 420-B.

2.1 Definition of anticancer medication

For the purpose of this analysis, we will assume that chemotherapy includes agents, administered in the treatment of cancer, that directly attack cancer (and other) cells (cytotoxic agents), that interfere with biologic processes specific to certain cancer cells (biologic agents), and that slow the growth of cancer cells by, for example, depriving them of selected chemicals (often hormonal treatments)[6].

2.2 Parity in cost-sharing

The primary intent of the mandate is to address situations in which the cost-sharing burden on the patient is much higher for oral chemotherapy agents than it is for intravenous (IV) or injected agents. The latter are typically covered under the patient's medical plan's core benefit, with cost-sharing requirements the same as those for any other medical service; the former are often covered under a pharmacy benefit, which in some cases has higher cost-sharing requirements. Indeed, many of the cases that spur action on this type of mandate involve an oral agent costing thousands of dollars per month covered by a pharmacy benefit with a coinsurance requirement under which the patient had to pay 20 to 50 percent of the cost.

For the purpose of this analysis, we assume that parity in cost-sharing means that the cost-sharing features of the pharmacy benefit meet some basic test of actuarial equivalence with the cost-sharing features of the medical benefit. That is, the expected financial exposure arising from all cost-sharing requirements to which the patient is subject – the copayments, the coinsurance percentages, the deductible and maximum amounts – is equal for the medical and pharmacy benefits, for a given level of required expenditure on covered benefits. But we do not assume the bill requires that the cost sharing dollar amount is necessarily the same. For example, if a member has a choice between an oral and an equivalent IV agent, and the cost sharing structure (percentages, caps, etc.) for each is the same, but the oral agent is much more expensive, the member's share of the cost of the oral agent will be a larger number of dollars and, we assume, allowed under the proposed mandate.

Finding 8 of the Committee's report seems to allow for the possibility that legislation requiring parity between oral and IV chemotherapies could simply equalize the coverage, even possibly by raising cost-sharing for IV therapy.

> *Not all legislative remedies should be considered "mandates." For example, legislation could be drafted so as not to mandate coverage of oral therapies. Rather, it could equalize coverage for all types of chemotherapy therapy that an insurer chooses to cover.*

However, for purposes of this analysis we will assume that a bill drafted to enact this mandate will contain language that limits an insurer's ability to treat all anti-cancer agents equally, with respect

[6] Some question remains about whether covered anti-cancer drugs include those that indirectly affect cancer cells by, for example, boosting the body's immune system. We did not intentionally include these agents on our list of oral chemotherapy agents, though some may have been present in the lists of agents we obtained from secondary sources.

to cost-sharing, by raising the cost-sharing on IV/injected agents. If no such limit were present, and assuming insurers somehow raised cost sharing on IV therapy, estimating the effect of such tactics on the cost of the mandate would be very difficult. Perhaps, the impact of such a bill on premium payers would be zero or even result in a savings to them.

Instead, we note that similar mandates from other states, once in bill form, often forbid insurers from raising cost-sharing on IV/injected agents to achieve parity[7]. We will assume that such a provision will find its way into a final bill in New Hampshire.

Finally, note we do not assume the mandate specifies whether oral agents should ultimately be covered under a pharmacy or medical benefit, as long as they have cost-sharing no worse than that for IV/injected agents. And in theory, the bill might address policy terms other than cost-sharing requirements, but we believe these will not significantly affect the analysis.[8]

2.3 Plans subject to the proposed mandate

We assume a bill submitted to enact this mandate will reach the health insurance plans typically affected by such legislation, i.e., commercial fully-insured plans subject to the authority of the Department.[9] Finding 9 of the Committee's report identifies plans the legislators believe it cannot reach; fully-insured plans are not among them.

> *Self-insured plans (such as state employees) are not subject to legislation of this type under ERISA (Employee Retirement Income Security Act) nor are programs partially funded by the federal government (e.g., Medicare and Medicaid).*

We note the finding suggests the state employee plan is not reachable by a mandate. However, self-insured state employee plans, at least in other states, are often subject to state benefit mandates because the legislature can direct the plan's governing executive or board to purchase the desired coverage for state employees. Still, for purposes of the analysis we will assume will assume the Committee does not contemplate including state employee plans.[10]

As noted by the Committee, state health benefit mandates do not apply to Medicare, and we will assume this mandate likewise does not apply to Medicare extension/supplement plans even to the extent they are regulated by state law. Such plans are typically excluded from mandate legislation. Furthermore, most Medicare beneficiaries have drug coverage under Part D plans, which do not have the unlimited out-of-pocket maximums that create the most severe hardship for patients. In

[7] For example, see Senate Bill 1070: An Act relative to oral cancer therapy, before the 2011-2012 Session of the Massachusetts Legislature. http://www.malegislature.gov/Bills/187/Senate/S01070. Accessed June 29, 2012.

[8] For example, if a policy required a member to use a particular network (a pharmacy network) and the member had to go outside the network to get a specialized oral agent, would the insurer be required to cover the drug and might the member be subject to out-of-network cost-sharing? For purposes of the actuarial analysis, we expect this fact set to be rare, and will assume the covering insurer will bear the cost, with cost-sharing comparable to that for IV/injected agents.

[9] In general those regulated under RSA chapters 415, 420-A, and 420-B.

[10] If the insurance plans offered to state employees include any fully-insured (as opposed to self-insured) plans, those plans are subject to the mandate.

addition we follow the Committee's lead and exclude Medicaid programs (which typically have limited cost-sharing and are not likely to be affected by the mandate).

Therefore, for the purpose of this analysis, we assume the mandate applies to commercial fully-insured plans and only those. We assume the mandate applies to plan members who are residents of the State or who work for employers whose primary place of business is in the State. Finally, we exclude members over age 64, since Medicare coverage is available to almost all.

2.4 Medical necessity

The report provides no direct guidance as to whether insurers will retain the ability to review the decision to use oral chemotherapy. In general, without explicit language to the contrary, we will assume that they retain the ability to review the decision.

Finding 6 of the Committee's report states, "Therapeutic decisions should not be determined by plan design (and corresponding cost differentials)." We assume the phrase that costs should not influence therapeutic decisions refers to costs the patient experiences. In a case where two therapies, an oral one and an intravenous one, are equally efficacious and cost the same to the patient, but the oral one is far more expensive, we assume the insurer retains the ability to manage overall cost and require the less expensive therapy as the first resort.

Carriers, responding to a survey of benefit plans conducted for this analysis, indicated they rarely intervene with the member's oncologist's therapy choices. Indeed, the only time the medical necessity issue arises, even hypothetically, is when both an IV/injection therapy and an oral therapy are available and the insurer decides, for reasons of cost or its own evaluation of medical efficacy, it will not pay for the oral therapy. These situations are uncommon to begin with (see the discussion of substitution below in this report), even if the insurers intend to intervene. Therefore, even though insurers retain the ability to review utilization, we will also assume they rarely exercise it.

2.5 Existing laws affecting the cost of the mandate

<u>New Hampshire mandate requiring coverage for off-label drugs</u>

New Hampshire has on the books a mandate forbidding insurers that cover prescription drugs to refuse to cover "any such drug for a particular indication on the ground that the drug has not been approved by the Food and Drug Administration (FDA) for that indication, if such drug is recognized for treatment of such indication in one of the standard reference compendia or in the medical literature as recommended by current American Medical Association (AMA) policies."[11]

While the off-label mandate itself might expand the use of any given covered anti-cancer drug, the only way the off-label mandate can interact with an oral chemotherapy parity mandate to raise costs even further would be if lower cost-sharing burdens prompted even more off-label use than is

[11] RSA 415:18-j.

now underway.[12] As discussed in subsequent sections of this report, we see limited opportunities for patients to switch treatment as a result of the proposed mandate, and we assume this interaction between the off-label mandate and the proposed mandate is not significant.

The Affordable Care Act standard for essential prescription drug coverage

The federal Affordable Care Act (ACA) includes prescription drug coverage as an essential health benefit. The December 2011 HHS Bulletin "Essential Health Benefits"[13] states that HHS intends to propose a prescription drug standard similar to that found in Medicare Part D. If that standard incorporates the cost-sharing design of Part D then the resulting plan is not likely to include an unlimited out-of-pocket maximum, and even though Part D requires some cost-sharing, patients would not be subject to the most burdensome cost-sharing for oral chemotherapy agents that might currently exist under some commercial plans.

If such a prescription drug cost-sharing design were required, the net impact of the proposed parity mandate would be less than this analysis estimates. However, because the standard is not yet in place, we will exclude consideration of it from this analysis.[14]

3. Summary of the Efficacy and Social impact of Oral Chemotherapy

The Department's statutory obligation includes assessing the medical efficacy and social impact of the mandate and describing the effects of balancing financial, social, and medical considerations. Below we summarize information on the clinical efficacy of oral chemotherapy, deferring to findings of the Committee, and lay out the tradeoffs in balancing the social, financial, and medical impacts, but will leave resolving the balance to legislative and executive policy makers.

[12] In theory, a rapid increase in use of oral agents directly as a result of the passage of a mandate might potentially create shortages in some drugs. Given the limited effect of the mandate overall, as reflected in this analysis, and the relative size of the New Hampshire drug market within the national market, the magnitude of any such effect is likely to be very small.

[13] Centers for Medicare and Medicaid Services, Center for Consumer Information and Insurance Oversight, "Essential Health Benefits Bulletin," December 16, 2011. http://cciio.cms.gov/resources/files/Files2/12162011/essential_health_benefits_bulletin.pdf.

[14] Note also that under the ACA the federal government will provide premium tax credits to assist eligible persons with purchasing affordable qualified health plans through the exchanges. The federal Center for Consumer Information and Insurance Oversight (CCIIO) stated its intention to clarify its December 2011 bulletin to require that any state-mandated benefits enacted after December 2011 could not be part of the set of essential health benefits for which the federal government would provide tax credits, at least for 2014 and 2015, unless the benefits were already included within the essential benefit set regardless of the mandate. Thus, to the extent that the proposed parity mandate has a net actuarial cost, New Hampshire would have to pay for any subsidy attributable to that cost, thereby potentially raising the cost to the State of subsidizing coverage in those years. However, because this cost to taxpayers does not directly affect commercial premium payers, it will not be a factor in this analysis. Center for Consumer Information and Insurance Oversight, "Frequently Asked Questions on Essential Health Benefits Bulletin", http://cciio.cms.gov/resources/files/Files2/02172012/ehb-faq-508.pdf.

Summary of clinical efficacy

Chemotherapy is a class of treatment therapies that impede living cells in the human body, with the intention of stopping the rapid growth and reproduction common to cancer cells. In use since the mid-20th century, in its most common form, chemotherapy is infused intravenously into a patient, where the therapy disperses throughout the body by way of the blood and lymphatic systems.[15] This treatment method is effective for the delivery of cytotoxic therapies, i.e., those intended to kill cells; such therapies are normally administered in the maximum dose tolerable to the patient.

Ordinarily, cytotoxic infusions happen during short courses of treatment most often scheduled with periods of rest between; for example, a patient may receive daily chemotherapy for one week followed by no treatment for six weeks, and repeat this cycle for several months. This treatment routine is necessary, as cytotoxic chemotherapy drugs act without regard to the actual cells impacted, meaning that the drugs kill or harm both healthy and cancerous cells, or the drugs cause other serious illnesses. Serious and sometimes fatal side effects are common to certain chemotherapy treatments, depending on the toxicity of the drug combination, the type of cancer, and the overall health of the patient.[16]

Over time, scientists have created less harmful drugs, while oncologists have continued to alter drug combinations, as well as the treatment timing and regimen, in an effort to minimize the negative effects of chemotherapy treatments. These improvements have been variably successful, prompting research into alternative means to deliver more specific and targeted, and less toxic drugs to cancer patients. One advance has been the development of biologic cancer treatment agents, or those that target biological processes specific to certain cancer cells.

As the nature and specificity of anticancer agents continue to evolve, so do the methods of administering treatment. While scientists increasingly focus on targeted agents, oral routes of administration are becoming more common. While some drugs cannot be delivered by mouth because they severely irritate the digestive tract or are not properly absorbed, oral drugs have the potential to deliver more targeted drugs over a more sustained period in a more manner often more convenient for patients.[17] They may also provide patients with a sense of greater control over their treatment.[18]

The trade-offs between traditional infused therapy and oral therapies include balancing the aforementioned effectiveness, convenience, and control against safety and adherence. In most cases using oral therapies, patients are able to avoid the sometimes daily medical visits necessary

[15] American Cancer Society (ACS). Chemotherapy: An In-Depth Discussion of the Techniques and Its Role in Cancer Treatment. 10/26/2011. Accessed 8 June 2012: http://www.cancer.org/acs/groups/cid/documents/webcontent/002995-pdf.pdf.
[16] *Ibid.*
[17] American Cancer Society. Oral Chemotherapy: What You Need To Know. 1/31/2012. Accessed 8 June 2012: http://www.cancer.org/Treatment/TreatmentsandSideEffects/TreatmentTypes/Chemotherapy/oral-chemotherapy.
[18] Weingart SN, Brown E, Bach PB, et al. NCCN Task Force Report: Oral Chemotherapy. Journal of the National Comprehensive Cancer Network. 3 Mar 2008: Vol.6 Suppl. 3. Accessed 8 June 2012: http://www.nccn.org/JNCCN/PDF/JNSU3_combined_Oral_Chemo_2008.pdf.

for infusion services, but must in turn accept more individual responsibility for complying with the treatment regimen and for monitoring for complications.[19] Likewise, the traditional roles of the patient, his or her oncology treatment professionals (including doctors, nurses, and pharmacists), and insurance and delivery management systems all shift with this change in treatment route.[20]

Of the hundreds of FDA-approved chemotherapy drugs, some number greater than 40 (and growing) can or must be administered orally.[21] Each year, however, a larger proportion of newly-approved chemotherapy drugs are orally administered, including ten or so approved by the FDA in the last two years alone.[22] Of oral chemotherapy drugs, fewer than 30% have infusion equivalents.[23] And of cancer treatment drugs in the development and approval pipeline, approximately 25 percent are oral therapies, a clear indication of the growing role oral treatment will play.[24]

Social impact of the mandate

The primary focus of this report is on the financial impact of the proposed mandate. And as noted above, evidence of the increased use and acceptance of oral chemotherapy in treating cancer is substantial. This analysis will not attempt to strike the balance among the various social, financial, and medical issues arising in considering this mandate, but policy makers might consider several issues.

Spreading risk with health insurance

The general purpose of health insurance is to spread the financial cost of disease or injury across a large pool of people. Policy makers play a role, along with market forces, in deciding which elements of the cost are spread among all members of the pool and which are borne by those suffering the disease or injury.

The risks of abandoning therapy

Finding 5 of the Committee's report states that high cost-sharing is associated with abandonment of therapy. To the extent that patients have no alternative resources, such as charitable organization, to assist with cost-sharing, some might forego treatment. Policy makers will weigh the financial cost of the bill against the possibility that some patients might suffer or even die from lack of treatment.

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[19] ACS Oral Chemotherapy, *Op cit.*
[20] NCCN Task Force Report, *Op cit.*
[21] *Ibid.*
[22] U.S. Food & Drug Administration (FDA). Hematology/Oncology (Cancer) Approvals & Safety Notification. 27 April 2012. Accessed 8 June 2012: http://www.fda.gov/Drugs/InformationOnDrugs/ApprovedDrugs/ucm279174.htm.
[23] FDA. Drugs@FDA. http://www.accessdata.fda.gov/scripts/cder/drugsatfda/index.cfm?fuseaction=Search.Search_Drug_Name (Research compiled on administration routes based on comprehensive list of oral chemotherapy drugs provided by Milliman and [XX].)
[24] NCCN Task Force Report, *Op cit.*

Variation in cost to patients

Rapidly rising health care costs have led to calls for patients to take greater responsibility for the cost of their health care. Patient cost-sharing requirements in general play a role in shifting that responsibility. But for a patient with a given condition, policy makers should consider whether the amount the patient pays for treatment should vary by the method of treatment. Should the patient make treatment choices based on the cost of that treatment?

Increasingly, health care payment reform will ask patients to take more responsibility for the cost of their treatment choices, but when the cost of treatment choices varies so widely as to affect the basic decision of whether to undergo treatment and when that variation is introduced, not by the cost of developing and delivering the treatment, but by artifacts of the reimbursement system, policy makers might consider state action desirable.

Put differently, patients will increasingly have to make choices of treatment based on cost, but policy makers might decide that the State needs to intervene where the cost of treatment is so great that a patient cannot choose it without incurring the sort of personal cost that health insurance in general is intended to absorb. And while there will always be treatments that are expensive to the patient, policy makers might argue that at least that expense should be due to the underlying cost of delivering the treatment.

State action

Policy makers will likely consider whether state action is necessary or desirable to resolve a perceived inequity or whether market forces will do so. In some cases proposed mandate legislation affects little because insurance carriers already provide the mandated services because a large portion of the insured members demand them or because the carriers believe the services have value in controlling costs. For example, mandating coverage for colonoscopies will likely achieve little because they are so widely covered already. However, state action might be useful in resolving inequities applicable to small groups of people who do not have the power to move the market themselves, or in accelerating the pace of market change. It should be noted that the results of this study indicate that enactment of the mandate would affect a small number of persons, but the additional insurance protection for those affected would be large in some cases.

4. Methodology

4.1 Steps in the analysis

Compass estimated the impact of the mandate by employing the following steps:

- Estimate the populations covered by the mandate
- Estimate the amount of cost-sharing borne by patients using oral chemotherapy that will shift to the insurers if the bill is enacted:
  - Measure the cost of oral chemotherapy agents

  - Measure the average cost-sharing percentage for oral chemotherapies
  - Measure the average cost sharing for drugs administered to cancer patients under a medical benefit
  - Apply the difference in cost-sharing rates to the cost of oral chemotherapies
- Estimate (ranges for) the effect of members who either shift to oral chemotherapies they previously avoided due to the cost-sharing burden or who had previously foregone treatment and begin to use oral chemotherapy once the cost-sharing burden is removed.
- Estimate the impact on premiums by accounting for insurers' retention (administrative costs and profit)
- Estimate changes in per member cost by combining the cost estimates and insured population information

4.2 Data sources

The primary data sources used in the analysis were:

- Interviews with clinical experts
- Government reports and data and academic literature, including population data, cited as appropriate
- New Hampshire insurer claim and membership data from the Department's Comprehensive Health Care Information System (NHCHIS) all-payer claim database, for plans covering the overwhelming majority of the under-65 fully insured population subject to mandates
- Studies submitted in testimony concerning similar bills in other states
- A survey of major carriers soliciting information on their benefit structures for oral and IV chemotherapies

The step-by-step description of the estimation process below addresses limitations in some of these sources and the uncertainties they contribute to the cost estimate.

5. Factors Affecting the Analysis

Several issues arise in translating the intent of the mandate into an analysis of incremental cost.

5.1 Ongoing evolution of chemotherapy agents

One of the major trends in the evolution of anti-cancer medication is the development of increasingly precisely-targeted drugs. These drugs address increasingly narrow classes of cancer, but often with greater success and fewer side effects than past treatments. Development costs, fewer targeted patients over which to spread those costs, and the availability of patent protection all make these drugs relatively expensive. And with increasing frequency, these drugs are

developed for oral administration.[25] Therefore it is reasonable to expect the portion of cancer patients treated with oral chemotherapy to increase, and to expect the average cost of oral chemotherapy treatment to increase at a rate greater than that of general health care costs. Indeed, the three-year average cancer drug price increase observed in the Express Scripts 2010 Drug Trend Report[26] is close to 21 percent per year, and the report projected a similar rate for the subsequent three years.

It is worth noting in the claim data examined for this analysis, future trends notwithstanding, that the average total cost per patient per year (before insurance coverage) for persons in treatment with IV chemotherapy is approximately ten times the cost of patients in treatment with oral agents, because many oral agents are inexpensive, many IV agents are expensive, and IV agents have large administration costs (see Appendix C).[27] However, average cost-sharing per person (as a percentage of allowed charges) is almost twice as high for oral chemotherapy users due to the different cost-sharing rules for pharmacy benefits.

5.2 Oral chemotherapy agents included in the analysis

Measuring the volume of oral chemotherapy utilization, and the average cost-sharing to which it is subject, required that we identify oral chemotherapy agents in claim data (pharmacy claims). To do so, we began with a list of agents included in testimony before other state legislatures[28] and supplemented it with additional research, input from carriers, and an interview with an oncological pharmacist. The list of agents we used appears in Appendix A.

Note that while many oral chemotherapy agents are very expensive, others have existed for a long time and are relatively cheap. These include hormonal therapies that are widely prescribed. Thus some of the most commonly used drugs are unlikely to trigger severe cost-sharing burdens.

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[25] The National Comprehensive Cancer Network (NCCN) reported in 2008 that "more than one quarter of the 400 antineoplastic agents now in the pipeline are planned as oral drugs. Compared with the oral chemotherapy drugs available before 1996, these newer drugs, consistent with their parenteral contemporaries, are considered costly. For example, the estimated yearly cost of lenalidomide for a patient with multiple myeloma is $74,000, and, depending on dosage, the yearly cost of imatinib for patients with chronic myelogenous leukemia (CML) ranges from $29,000 to $57,000. [. . .] The availability of these new drugs has had an immediate impact on pharmacy budgets. Spending on oral chemotherapy drugs, while still a small proportion of total pharmacy benefit costs, has more than doubled between 2002 and 2006, from 0.3% to 0.7%." Weingart, SN, Bach, PB, et. al. NCCN Task Force Report: Oral Chemotherapy, Journal of the National Comprehensive Caner Network, 2008;6:S1-S17.
http://www.nccn.org/JNCCN/PDF/JNSU3_combined_Oral_Chemo_2008.pdf.

[26] Express Scripts, "Complex Challenges, New Solutions: 2010 Drug Trend Report".
http://www.expressscripts.com/research/research/dtr/archive/2010/dtrFinal.pdf

[27] Note that this comparison of relative costs, and indeed this analysis in general, does not account for the downstream, largely indirect costs of treatment. For example, while more targeted oral chemotherapies might result in fewer side-effects and related treatment costs than arise with traditional IV chemotherapy, estimating these values would be extremely difficult. Given the overall limited effect of a parity mandate on chemotherapy choices noted in this analysis, such an estimate of indirect costs is not included in the analysis.

[28] Milliman, "Parity for Oral and Intravenous/Injected Cancer Drugs", January 25, 2010, presented in testimony for Senate Bill 1070: An Act relative to oral cancer therapy, before the 2011-2012 Session of the Massachusetts Legislature.

To execute the analysis, we also needed to identify intravenous/injected chemotherapy agents and related services for use in calculating average cost-sharing for IV/injected chemotherapy. We employed a set of HCPCS[29] "J" codes (drug codes) appearing in Appendix B. Additionally, we included revenue codes for IV service (258) with a primary cancer diagnosis as IV Chemotherapy and included the series of CPT codes specifically identified as IV chemotherapy administration.

5.3 Current coverage

Much of the impetus for oral chemotherapy mandates, such as the subject of this analysis, comes from cases of patients faced with very large cost-sharing requirements when they had to pay, under their pharmacy benefits, relatively large coinsurance percentages on very expensive drugs, sometimes costing thousands of dollars per month.

In preparation for this analysis, we submitted to the New Hampshire carriers covering the overwhelming majority of fully-insured members a questionnaire about their current coverage for oral chemotherapy. Among plans responding to the questionnaire, cost-sharing arrangements varied, but the majority of plans had pharmacy benefits that covered prescription drugs with either a copayment or with coinsurance that was capped per-prescription (for example at $250). The cost-sharing arrangements that produce an extreme burden are present but less common.

This is not to say that some plans do not employ extremely burdensome cost-sharing extensively, but they occupy a relatively small portion of the market and the amount they contribute to the cost of the mandate will be limited.[30]

Ultimately, looking at the fully-insured market as a whole, the percentage increase in premiums will be relatively modest. But if any given plan currently employs a more burdensome cost-sharing arrangement, it will see a significantly greater increase in its medical costs than that applying to the state-wide average premium.

5.4 Cost arising from the administration of oral agents

One of the arguments for encouraging the use of oral chemotherapy agents is that the cost of administering such drugs appears to be less than the cost of administering IV agents, since taking a pill requires less equipment and manpower than delivering intravenous therapy. We can measure

[29] Healthcare Common Procedure Coding System.

[30] Note that some plans might employ a program to encourage members to select lower-cost medication when both a more expensive brand name drug and a generic equivalent are available. Under such a program, if a provider requests that the member receive a covered brand-name drug with no substitution when a generic equivalent is available, the member will pay the copayment applicable to the generic drug plus the difference between the cost of the generic drug and the cost of the brand-name drug. Furthermore, the difference between the cost of the generic drug and the cost of the brand-name drug does not apply towards a member's deductible or out-of-pocket maximum. While in theory, this might create a heavy cost-sharing burden for a patient, and therefore the mandate might shift some of that burden to the insurer, for purpose of this analysis we expect this particular situation to be rare, especially since the very expensive drugs that are the impetus for the mandate are not likely to have generic equivalents.

much of the administration cost for IV therapy in claim data, but even oral therapies have administration costs, much of which we cannot measure with data sources available to us.

For example, very expensive oral chemotherapy agents are often closely managed by pharmacy benefit managers who require careful monitoring on the part of prescribers and pharmacists. The cost of these measures is not always captured in claims.

Furthermore, enactment of the mandate will impose additional administrative burden on carriers as they determine how to meet the requirements of the mandate in the context of current pharmacy benefit management systems, especially in the transitional period after enactment. Those plans that maintain pharmacy benefits with uncapped coinsurance will need to modify their procedures to makes sure patients fulfilling oral chemotherapy prescriptions pay the proper cost-sharing amount.

6. Analysis

To estimate the overall impact of the proposed legislation, we considered three possible populations of members faced with choices between oral and IV chemotherapy and estimated the potential impact of the mandate on member and carrier costs for each population:

- Members who currently use oral chemotherapy treatments
- Members who refuse oral treatment and choose IV treatment because the cost to them of oral treatment is higher than that of IV treatment
- Members who forgo chemotherapy treatment due to cost

For each population, we estimated per-member per-month (PMPM) medical costs and member cost-sharing from the NHCHIS claim database as a base for projecting the impact of the proposed bill and estimated the effect of the bill on that PMPM base. The overall impact of the mandate is the sum of the impact on each of these populations.

We then adjusted the resulting PMPM costs for insurer retention for administrative costs and profit. Finally, we multiplied the result by the fully-insured membership in the State to arrive at dollar estimates.

A best estimate "mid-level" scenario was developed, as well as a low-level scenario using assumptions that produced a lower total dollar estimate, and a high-level scenario using more conservative assumptions that produced a higher total dollar estimated impact.

6.1 Insured membership affected by the mandate

We estimate the number of members in fully-insured plans at 289,100, based on the 2010 NHID Supplemental Report but excluding the estimated number of members in the Healthy Kids program. As noted above we exclude self-insured plans, including those for State employees, as well as

Medicaid. This analysis does not include individuals with Medicare coverage and "medigap" policies; we have excluded people over age 64.

For the summary results (Table 5) we adjusted the 2010 membership to approximately 294,000 by applying growth rates for the under-65 population for 2011 to 2013 from Census Bureau projections. We also note that if policy makers should attempt to project the costs of this mandate into the future, the federal Affordable Care Act is likely to affect the number of people enrolled in fully-insured plans.

6.2 Cost of patients currently using oral chemotherapy

Number of patients currently using oral chemotherapy

The number of patients currently using oral chemotherapy treatments was estimated as the percentage of members in the 2010 claim database with claims for oral chemotherapy prescriptions (based on the drugs listed in Appendix A). This percentage was used for the high-level scenario. The low-level scenario uses a percentage calculated based on findings, reported in a 2010 study[31], that approximately 1.5% of the commercially-insured population has cancer-related claims in a given year and, of those, 16.1% use oral chemotherapy, either alone or in conjunction with infused therapy. The mid-level scenario is the midpoint between the high- and low-level scenarios. Table 1 provides the values used in the analysis.

Table 1:
Percentage of Members with Claims in a Year Using Oral Chemotherapy in that Year

Low Scenario	0.24%
Mid Scenario	0.56%
High Scenario	0.87%

Current costs of oral chemotherapy

Based on analysis of the claim data, and supported by the responses to the carrier questionnaire, a majority of people with fully-insured commercial coverage in New Hampshire have prescription drug coverage with cost-sharing in the form of copayments only or coinsurance with a per-prescription cap, which limits the member's out-of-pocket cost-sharing. The claim data show that in 2010 approximately 97 percent of those with claims for oral chemotherapy prescriptions (based on drugs listed in Appendix A) had a total out-of-pocket amount for these claims of $500 or less for the year. For the remaining few percent of the members, out-of-pocket amounts ranged from just over $500 to about $31,000. Table 2 illustrates this distribution of per-user out-of-pocket costs against the allowed charges per user.

[31] Milliman, "Parity for Oral and Intravenous/Injected Cancer Drugs", January 25, 2010, presented in testimony for Senate Bill 1070: An Act relative to oral cancer therapy, before the 2011-2012 Session of the Massachusetts Legislature.

Table 2
Distribution of Member Annual Out-of-Pocket Costs by
Total Annual Allowed Amount for Oral Chemotherapy Agents

Impact of the mandate on the current use population

The impact of the mandate on the population of current users of oral chemotherapy is the difference between current cost-sharing, i.e., cost-sharing under the pharmacy benefit, and cost-sharing after the bill mandates parity, i.e., in effect, under the medical benefit. Detailed information on each member's benefit plan design would allow us to calculate this value with precision; however in its absence we must make some assumptions about both the pharmacy and medical benefit cost-sharing.

The member cost-sharing percentage before parity was calculated from the claim database as the total member out-of-pocket costs (including deductibles, coinsurance, and copayments) divided by the total amount allowed for oral chemotherapy prescriptions. To estimate the member cost-sharing after parity, we recalculated total member out-of-pocket costs at a member level by limiting the cost-sharing percentage in the claims to an assumed average medical cost-sharing percentage (discussed in the next paragraph). If a member's cost-sharing percentage was already less than the assumed average medical cost-sharing percentage it was not increased. This represents a conservative assumption consistent with the mandate's intent, as assumed in section 2.2 above, that the cost impact of the mandate will not be mitigated by many cases where the patient sees increased cost-sharing, although such consequences are theoretically possible in some individual cases even though policies have average coverage that is equivalent. Table 3a shows the values of average cost-sharing for oral chemotherapy calculated from the claim data and used in the analysis.

The average medical benefit cost-sharing percentages used in the calculation described above were estimated from the claim database as follows. The low-level cost-sharing percentage is the total

out-of-pocket cost for IV chemotherapy divided by the total allowed amount for IV chemotherapy, estimated to be 0.2 percent. The mid-level cost-sharing percentage is the total out-of-pocket for all medical services for patients with a cancer diagnosis divided by the total allowed amount for these services, estimated to be 2.8 percent. The high-level cost-sharing percentage is the overall out-of-pocket amount for medical services divided by the overall allowed amount for medical services for all patients in the claim database, estimated to be 7.8 percent. Table 3b shows the values used in the analysis.

Table 3a:
Assumed Average Member Cost-Sharing Percentage for Oral Agents before Parity

Low Scenario	4.0%
Mid Scenario	5.0%
High Scenario	6.0%

Table 3b:
Assumed Average Member Cost-Sharing Percentage for Oral Agents after Parity

Low Scenario	0.7%
Mid Scenario	3.1%
High Scenario	7.6%

6.3 Cost of members substituting or foregoing treatment

While the current use population is easily identifiable, the second population (IV substitution) and third population (foregone treatment) are not so, and we need to make some informed assumptions. Anecdotal information from an oncologist in a tertiary care setting suggests that there is very little substitution of therapies and those who need oral chemotherapy treatment get it, in some cases with charitable support. However, a second oncologist in a community setting stated that of the relatively small number of patients prescribed expensive oral medications who are insured and exposed to high cost-sharing, approximately 10 to 25 percent choose not to use oral therapy because of the out-of-pocket cost. Of these patients, the oncologist suggested 80 to 90 percent will switch to an IV therapy and 10 to 20 percent will forgo treatment. Under this latter assessment, to assume that the proposed legislation would result in no additional utilization of oral therapies would understate its potential impact. Furthermore, as noted, Finding 5 of the Committee's report states that high cost-sharing is associated with abandonment of therapy.

Therefore, we assumed in these estimates that some patients make choices about treatment based on their out-of-pocket costs. Not all patients face this decision, as many or most have relatively small out-of-pocket costs with their current benefits. We assume that non-adherence to recommended therapy for financial reasons applies only to those for whom the out-of-pocket costs

represent a significant financial burden. For purposes of this calculation, we assumed that those patients in the claim data (i.e., using oral agents) with annual out-of-pocket costs for oral chemotherapy greater than $500 represent the 75 to 90 percent who chose to use oral chemotherapy despite the cost. The remaining 10 to 25 percent who would change their choice (and, we assume, would use oral agents under parity) can be calculated from this number. Table 4a shows the values used in the analysis.

The analysis requires applying these percentages to the proportion of plan members who have the option of oral agents and are faced with a decision based on cost. To approximate that group, we estimated the proportion of the members with oral chemotherapy claims who had annual out-of-pocket cost for oral chemotherapy greater than $500. For each scenario, we multiplied this percentage by the penetration rate (where the penetration rates are those in Table 1) to estimate the proportion of the plan population who have the option of oral agents and are faced with a decision based on cost. Table 4b shows the values used in the analysis.

From this point we estimated the split between the second and third populations (IV substitution and foregoing treatment) by applying splits of 90%/10%, 85%/15%, and 80%/20% (switch therapies/forgo therapy) for the low-, mid-, and high-level scenarios respectively. Table 4c illustrates. Note that, given a patient who avoids oral chemotherapy, the less likely he/she is to switch to IV therapy (i.e., the more likely he/she is to forego therapy entirely) the lower the cost to the insurer (prior to the mandate). Thus the per-user effect of the mandate, which in our model eliminates avoidance of oral chemotherapy, on insurer costs is greater if the patient is less likely to switch (i.e., more likely to forego therapy entirely).

Ultimately, the resulting total number of people who switch or skip therapy (visible in the calculations in Appendix C) is very small, estimated to be approximately 3 statewide in the low scenario (2 “switchers” and 1 “skippers”), and 28 in the high scenario (22 and 6).

Table 4a:
Percentage of Members Who
Choose Not to Use Oral Chemotherapy Due to Cost

Low Scenario	10%
Mid Scenario	18%
High Scenario	25%

Table 4b:
Percentage of overall population with
Oral Agent out-of-Pocket $'s > $500

Low Scenario	0.008%
Mid Scenario	0.018%
High Scenario	0.029%

Table 4c:
Percentage of Members Who Choose Not to Use Oral Chemotherapy Who Switch Therapies

Low Scenario	90%
Mid Scenario	85%
High Scenario	80%

The impact on the second population, those who substitute IV treatment due to cost, is the difference between the cost of the oral chemotherapy treatment, with cost-sharing limited by the proposed legislation, and the cost of the IV treatment they are currently receiving with current medical cost-sharing applied.

- The average cost per user of oral chemotherapy treatment was estimated from the claim database by calculating the average allowed amount per user for the population of people whose out-of-pocket costs were greater than $500.
- The average member cost-sharing percentage for oral chemotherapy was estimated by using the per-user claims for the population of patients whose out-of-pocket costs were greater than $500 and limiting the cost-sharing percentage to the assumed average medical cost-sharing percentage, for each of the low, middle, and high scenarios.
- The cost of the IV treatment per user was estimated from the 2010 claim database (using the list of codes in Appendix A).[32]
- The current member cost-sharing percentage for IV treatment was also derived from the claim database. The low-scenario cost-sharing percentage is the total out-of-pocket for IV chemotherapy divided by the total allowed amount for IV chemotherapy. The mid-scenario cost-sharing percentage is the total out-of-pocket for all medical services for patients with a cancer diagnosis divided by the total allowed amount for these services. The high-scenario cost-sharing percentage is the overall out-of-pocket amount for medical services divided by the overall allowed amount for medical services for all patients in the claim database.

The impact on the third population, those who forgo treatment due to cost, is the additional cost of the oral chemotherapy treatment with cost-sharing limited by the proposed legislation. The assumptions used for the cost of the oral chemotherapy treatment and the cost-sharing are the same as those discussed above for the second population.

Some patients are able to get financial assistance through various outside organizations to help cover the cost of oral chemotherapy treatment. For those with fully-insured coverage, we assumed the claim would first be submitted to the carrier to capture its negotiated discounts and existing

[32] In comparison to data from at least one other state with a more urban population, the difference in cost between IV and oral chemotherapy in New Hampshire is relatively greater. This could be due to the market for providing these services in New Hampshire; hospital payments for outpatient IV chemo are charge-based and might be relatively high because of relatively small and sole-hospital markets.

benefits, and then private funding would be used to help offset patient cost-sharing. If this is true, then the claim experience for these patients is included in the claim data used in the analysis.

Supporting calculations for the three sub-populations (current users, patients substituting, and patients foregoing) are displayed in Appendix C for each of the three scenarios.

6.4 Trends the cost of oral chemotherapy

As noted in Section 5 above, trends in oral chemotherapy utilization and pricing suggest these drugs make up an increasingly large percentage of overall drug costs; i.e., PMPM costs attributable to use of these drugs have been rising faster than overall inflation in health care for the last few years. Because the claim data that form the basis for most of this analysis are from 2010, to estimate the impact of the mandate over the next year (2013), we need to adjust the measured costs for these increases over the intervening three years. Based on the information in the previously cited drug trend report, we are assuming an annual percentage increase for the period from 2010 to 2013 of approximately 16, 20, and 23 percent (low- to high- level scenarios respectively), where the midpoint is based on the actual growth rate for expenditures on cancer drugs measured from 2010 to 2011 and the rate projected for 2012 and 2013[33].

6.5 Estimated impact of the mandate

Finally, we multiplied the per-member increase in medical expense attributable to the mandate by the fully-insured membership to arrive at dollar-denominated estimates. Assuming an average retention rate of 13 percent[34], we adjusted the increase in medical expense upward to approximate the impact on premiums. Table 5 shows the overall result in dollars and as a percentage of the average premium[35].

We project an oral chemotherapy parity mandate will increase premiums by 0.003 percent to 0.020 percent.

This analysis enables us to estimate an overall impact without the greatly detailed information on benefit plan design needed to model more exact impacts. The impact of the mandate on any one individual, employer-group, or carrier may vary significantly from the overall results of this analysis; the impact on specific entities will depend on the current level of benefits each receives or provides and on how the benefits will change under parity.

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[33] Express Scripts, op. cit. Note that the methodology for these projections includes trends in the following factors: historical prevalence, cost/unit, units per prescription, patent expirations, the advent of new drugs, prescription intensity, and prescription mix.

[34] Compass Health Analytics, "Report to the State of New Hampshire Insurance Department: 2010 Cost Drivers", April 10, 2012, Exhibit 22.

[35] 2010 NHID Supplemental Report. Premium has been adjusted to account for inflation of six percent annually for three years, based on historical growth rate of PMPM revenue from NAIC data for 2007-2010. Note that we have used a fixed premium base for the high-, mid-, and low-level scenarios. While naturally the premium estimate is subject to error, it is not central to the mandate analysis, serving only as a reference against which to measure the general magnitude of the cost of the mandate.

As noted above, the relatively small size of this overall increase is due mostly to the correspondingly small portion of the membership covered by plans with pharmacy benefit cost-sharing requirements relying on anything more than a copayment. Therefore, most of the increase in premiums will fall on the membership of those plans that do rely on member cost-sharing employing coinsurance.

Finally, given trends in oral chemotherapy utilization and pricing, we expect these drugs to make up an increasingly large percentage of overall drug costs. Should policy makers attempt to project the costs of this mandate into the future, they should assume that the PMPM costs for this benefit will rise at an annual rate between 16 and 25 percent, based on the information in the previously cited drug trend report[36].

Table 5:
Summary Results

	Low	Mid	High
Members	293,957	293,957	293,957
Medical Expense Annual Total	$40,749	$113,506	$286,525
Premium Annual Total (incl. retention)	$46,046	$128,262	$323,773
PMPM with Admin Load	$0.01	$0.04	$0.09
Average Premium PMPM	$465.69	$465.69	$465.69
% of Premium	0.003%	0.008%	0.020%

[36] Express Scripts, op. cit.

Appendix A: Oral Chemotherapy Agents

National Drug Code	Proprietary Name	Non-Proprietary Name	Dosage Form Name
000780620	Afinitor	Everolimus	TABLET
000780566	Afinitor	Everolimus	TABLET
000780594	Afinitor	Everolimus	TABLET
000780567	Afinitor	Everolimus	TABLET
540920063	Agrylin	Anagrelide Hydrochloride	CAPSULE
526090001	Alkeran	Melphalan	TABLET, FILM COATED
548684339	Alkeran	Melphalan	TABLET, FILM COATED
001730045	Alkeran	Melphalan	TABLET, FILM COATED
001850155	Anagrelide Hydrochloride	Anagrelide Hydrochloride	CAPSULE
001850156	Anagrelide Hydrochloride	Anagrelide Hydrochloride	CAPSULE
001725241	Anagrelide Hydrochloride	Anagrelide Hydrochloride	CAPSULE
003786869	Anagrelide Hydrochloride	Anagrelide Hydrochloride	CAPSULE
003786868	Anagrelide Hydrochloride	Anagrelide Hydrochloride	CAPSULE
001725240	Anagrelide Hydrochloride	Anagrelide Hydrochloride	CAPSULE
683820209	Anastrozole	Anastrozole	TABLET, COATED
216950990	Anastrozole	Anastrozole	TABLET
420430180	Anastrozole	Anastrozole	TABLET, FILM COATED
510790323	Anastrozole	Anastrozole	TABLET, FILM COATED
519910620	Anastrozole	Anastrozole	TABLET
548686130	Anastrozole	Anastrozole	TABLET
551110647	Anastrozole	Anastrozole	TABLET, FILM COATED
602580866	Anastrozole	Anastrozole	TABLET, COATED
000937536	Anastrozole	Anastrozole	TABLET, FILM COATED
003786034	Anastrozole	Anastrozole	TABLET, FILM COATED
001790068	Anastrozole	Anastrozole	TABLET
000540164	Anastrozole	Anastrozole	TABLET
165710421	Anastrozole	Anastrozole	TABLET
167290035	Anastrozole	Anastrozole	TABLET
007815356	Anastrozole	Anastrozole	TABLET, FILM COATED
009046195	Anastrozole	Anastrozole	TABLET
009046229	Anastrozole	Anastrozole	TABLET
636720015	Anastrozole	Anastrozole	TABLET, FILM COATED
621750710	Anastrozole	Anastrozole	TABLET, FILM COATED
664350415	Anastrozole	Anastrozole	TABLET, FILM COATED
680840448	Anastrozole	Anastrozole	TABLET
678770171	Anastrozole	Anastrozole	TABLET
633230129	Anastrozole	Anastrozole	TABLET
658410743	Anastrozole	Anastrozole	TABLET, COATED
627560250	Anastrozole	Anastrozole	TABLET, FILM COATED
548685000	Arimidex	Anastrozole	TABLET
003100201	Arimidex	Anastrozole	TABLET
000097663	Aromasin	Exemestane	TABLET
683820224	Bicalutamide	Bicalutamide	TABLET, FILM COATED
510790692	Bicalutamide	Bicalutamide	TABLET, FILM COATED
519910560	Bicalutamide	Bicalutamide	TABLET, FILM COATED

National Drug Code	Proprietary Name	Non-Proprietary Name	Dosage Form Name
548686133	Bicalutamide	Bicalutamide	TABLET, FILM COATED
000930220	Bicalutamide	Bicalutamide	TABLET, FILM COATED
003787017	Bicalutamide	Bicalutamide	TABLET, FILM COATED
167140571	Bicalutamide	Bicalutamide	TABLET, FILM COATED
009046019	Bicalutamide	Bicalutamide	TABLET
007815409	Bicalutamide	Bicalutamide	TABLET
680840374	Bicalutamide	Bicalutamide	TABLET, FILM COATED
672530191	Bicalutamide	Bicalutamide	TABLET, FILM COATED
636720005	Bicalutamide	Bicalutamide	TABLET, FILM COATED
658410613	Bicalutamide	Bicalutamide	TABLET, FILM COATED
548684503	Casodex	Bicalutamide	TABLET
003100705	Casodex	Bicalutamide	TABLET
000153031	Ceenu	Lomustine	CAPSULE, GELATIN COATED
000153032	Ceenu	Lomustine	CAPSULE, GELATIN COATED
000153030	Ceenu	Lomustine	CAPSULE, GELATIN COATED
548685005	Cyclophosphamide	Cyclophosphamide	TABLET
548685218	Cyclophosphamide	Cyclophosphamide	TABLET
000544129	Cyclophosphamide	Cyclophosphamide	TABLET
000544130	Cyclophosphamide	Cyclophosphamide	TABLET
000036336	Droxia	Hydroxyurea	CAPSULE
000036335	Droxia	Hydroxyurea	CAPSULE
000036337	Droxia	Hydroxyurea	CAPSULE
000130132	Emcyt	Estramustine Phosphate Sodium	CAPSULE
502420140	Erivedge	Vismodegib	CAPSULE
003783266	Etoposide	Etoposide	CAPSULE
597622858	Exemestane	Exemestane	TABLET, SUGAR COATED
000540080	Exemestane	Exemestane	TABLET, FILM COATED
113990005	Fareston	Toremifene Citrate	TABLET
548684151	Femara	Letrozole	TABLET, FILM COATED
000780249	Femara	Letrozole	TABLET, FILM COATED
498840753	Flutamide	Flutamide	CAPSULE
604290272	Flutamide	Flutamide	CAPSULE
001724960	Flutamide	Flutamide	CAPSULE
005912466	Flutamide	Flutamide	CAPSULE
548685289	Gleevec	Imatinib Mesylate	TABLET
548685427	Gleevec	Imatinib Mesylate	TABLET
000780401	Gleevec	Imatinib Mesylate	TABLET
000780438	Gleevec	Imatinib Mesylate	TABLET
668280030	Gleevec	Imatinib Mesylate	TABLET
628560001	Hexalen	Altretamine	CAPSULE
000074207	Hycamtin	Topotecan Hydrochloride	CAPSULE
000074205	Hycamtin	Topotecan Hydrochloride	CAPSULE
000030830	Hydrea	Hydroxyurea	CAPSULE
005550882	Hydroxyurea	Hydroxyurea	CAPSULE
680840284	Hydroxyurea	Hydroxyurea	CAPSULE
000690151	Inlyta	Axitinib	TABLET, FILM COATED

National Drug Code	Proprietary Name	Non-Proprietary Name	Dosage Form Name
000690145	Inlyta	Axitinib	TABLET, FILM COATED
003100482	Iressa	Gefitinib	TABLET, COATED
508810015	Jakafi	Ruxolitinib	TABLET
508810025	Jakafi	Ruxolitinib	TABLET
508810010	Jakafi	Ruxolitinib	TABLET
508810020	Jakafi	Ruxolitinib	TABLET
508810005	Jakafi	Ruxolitinib	TABLET
683820363	Letrozole	Letrozole	TABLET, FILM COATED
247240030	Letrozole	Letrozole	TABLET
519910759	Letrozole	Letrozole	TABLET
551110646	Letrozole	Letrozole	TABLET, FILM COATED
548686252	Letrozole	Letrozole	TABLET, FILM COATED
000540269	Letrozole	Letrozole	TABLET
003782071	Letrozole	Letrozole	TABLET, FILM COATED
000937620	Letrozole	Letrozole	TABLET, FILM COATED
167290034	Letrozole	Letrozole	TABLET, FILM COATED
006034180	Letrozole	Letrozole	TABLET, COATED
658410744	Letrozole	Letrozole	TABLET, FILM COATED
633230772	Letrozole	Letrozole	TABLET, FILM COATED
627560511	Letrozole	Letrozole	TABLET, FILM COATED
621750888	Letrozole	Letrozole	TABLET, FILM COATED
001730635	Leukeran	Chlorambucil	TABLET, FILM COATED
000153080	Lysodren	Mitotane	TABLET
544820053	Matulane	Procarbazine Hydrochloride	CAPSULE
000150508	Megace	Megestrol Acetate	SUSPENSION
498840949	Megace ES	Megesterol Acetate	SUSPENSION
548685572	Megace Es	Megesterol Acetate	SUSPENSION
165900254	Megace ES	Megestrol Acetate	SUSPENSION
165900898	Megestol	Megestrol Acetate	SUSPENSION
510790435	Megestrol Acetate	Megestrol Acetate	TABLET
510790434	Megestrol Acetate	Megestrol Acetate	TABLET
498840290	Megestrol Acetate	Megestrol Acetate	TABLET
498840289	Megestrol Acetate	Megestrol Acetate	TABLET
498840907	Megestrol Acetate	Megestrol Acetate	SUSPENSION
551545516	Megestrol Acetate	Megestrol Acetate	TABLET
548685389	Megestrol Acetate	Megestrol Acetate	SUSPENSION
551541582	Megestrol Acetate	Megestrol Acetate	SUSPENSION
538080614	Megestrol Acetate	Megestrol Acetate	TABLET
551541579	Megestrol Acetate	Megestrol Acetate	SUSPENSION
548681629	Megestrol Acetate	Megestrol Acetate	TABLET
604320126	Megestrol Acetate	Megestrol Acetate	SUSPENSION
000548603	Megestrol Acetate	Megestrol Acetate	TABLET
000548604	Megestrol Acetate	Megestrol Acetate	TABLET
000939634	Megestrol Acetate	Megestrol Acetate	SUSPENSION
000544603	Megestrol Acetate	Megestrol Acetate	TABLET
000544604	Megestrol Acetate	Megestrol Acetate	TABLET
001214776	Megestrol Acetate	Megestrol Acetate	SUSPENSION
005550606	Megestrol Acetate	Megestrol Acetate	TABLET
005550607	Megestrol Acetate	Megestrol Acetate	TABLET

National Drug Code	Proprietary Name	Non-Proprietary Name	Dosage Form Name
680940518	Megestrol Acetate	Megestrol Acetate	SUSPENSION
680940528	Megestrol Acetate	Megestrol Acetate	SUSPENSION
493490606	Mercaptopurine	Mercaptopurine	TABLET
498840922	Mercaptopurine	Mercaptopurine	TABLET
548685282	Mercaptopurine	Mercaptopurine	TABLET
000935510	Mercaptopurine	Mercaptopurine	TABLET
000544581	Mercaptopurine	Mercaptopurine	TABLET
003783547	Mercaptopurine	Mercaptopurine	TABLET
680840325	Mercaptopurine	Mercaptopurine	TABLET
510790670	Methotrexate	Methotrexate	TABLET
552890924	Methotrexate	Methotrexate	TABLET
003780014	Methotrexate	Methotrexate	TABLET
005550572	Methotrexate	Methotrexate	TABLET
009046012	Methotrexate	Methotrexate	TABLET
672530320	Methotrexate	Methotrexate	TABLET
216950111	Methotrexate	Methotrexate Sodium	TABLET
493490406	Methotrexate Sodium	Methotrexate Sodium	TABLET
493490314	Methotrexate Sodium	Methotrexate Sodium	TABLET
548683826	Methotrexate Sodium	Methotrexate Sodium	TABLET
000544550	Methotrexate Sodium	Methotrexate Sodium	TABLET
000548550	Methotrexate Sodium	Methotrexate Sodium	TABLET
636291472	Methotrexate Sodium	Methotrexate Sodium	TABLET
001730713	Myleran	Busulfan	TABLET, FILM COATED
504190488	Nexavar	Sorafenib	TABLET, FILM COATED
000881111	Nilandron	Nilutamide	TABLET
000245820	Oforta	Fludarabine Phosphate	TABLET, FILM COATED
578440522	Purinethol	Mercaptopurine	TABLET
595720415	Revlimid	Lenalidomide	CAPSULE
595720410	Revlimid	Lenalidomide	CAPSULE
595720402	Revlimid	Lenalidomide	CAPSULE
595720425	Revlimid	Lenalidomide	CAPSULE
595720405	Revlimid	Lenalidomide	CAPSULE
672530580	Rheumatrex	Methotrexate	TABLET
000030852	Sprycel	Dasatinib	TABLET
000030528	Sprycel	Dasatinib	TABLET
000030527	Sprycel	Dasatinib	TABLET
000030855	Sprycel	Dasatinib	TABLET
000030524	Sprycel	Dasatinib	TABLET
000030857	Sprycel	Dasatinib	TABLET
000690980	Sutent	Sunitinib Malate	CAPSULE
000690770	Sutent	Sunitinib Malate	CAPSULE
000690550	Sutent	Sunitinib Malate	CAPSULE
001730880	Tabloid	Thioguanine	TABLET
548683004	Tamoxifen Citrate	Tamoxifen Citrate	TABLET, FILM COATED
548684287	Tamoxifen Citrate	Tamoxifen Citrate	TABLET, FILM COATED
000930782	Tamoxifen Citrate	Tamoxifen Citrate	TABLET, FILM COATED
000930784	Tamoxifen Citrate	Tamoxifen Citrate	TABLET, FILM COATED
003780274	Tamoxifen Citrate	Tamoxifen Citrate	TABLET
003780144	Tamoxifen Citrate	Tamoxifen Citrate	TABLET

National Drug Code	Proprietary Name	Non-Proprietary Name	Dosage Form Name
005912233	Tamoxifen Citrate	Tamoxifen Citrate	TABLET
005912232	Tamoxifen Citrate	Tamoxifen Citrate	TABLET
005912472	Tamoxifen Citrate	Tamoxifen Citrate	TABLET
005912473	Tamoxifen Citrate	Tamoxifen Citrate	TABLET
637390269	Tamoxifen Citrate	Tamoxifen Citrate	TABLET
636294413	Tamoxifen Citrate	Tamoxifen Citrate	TABLET
502420064	Tarceva	Erlotinib Hydrochloride	TABLET
502420063	Tarceva	Erlotinib Hydrochloride	TABLET
502420062	Tarceva	Erlotinib Hydrochloride	TABLET
548685290	Tarceva	Erlotinib Hydrochloride	TABLET
548685447	Tarceva	Erlotinib Hydrochloride	TABLET
548685474	Tarceva	Erlotinib Hydrochloride	TABLET
628560602	Targretin	Bexarotene	CAPSULE, LIQUID FILLED
000780592	Tasigna	Nilotinib	CAPSULE
000780526	Tasigna	Nilotinib	CAPSULE
548685980	Temodar	Temozolomide	CAPSULE
548685354	Temodar	Temozolomide	CAPSULE
548685350	Temodar	Temozolomide	CAPSULE
548685348	Temodar	Temozolomide	CAPSULE
548684142	Temodar	Temozolomide	CAPSULE
000851430	Temodar	Temozolomide	CAPSULE
000853004	Temodar	Temozolomide	CAPSULE
000851366	Temodar	Temozolomide	CAPSULE
000851425	Temodar	Temozolomide	CAPSULE
000851417	Temodar	Temozolomide	CAPSULE
000851519	Temodar	Temozolomide	CAPSULE
595720215	Thalomid	Thalidomide	CAPSULE
595720210	Thalomid	Thalidomide	CAPSULE
595720205	Thalomid	Thalidomide	CAPSULE
595720220	Thalomid	Thalidomide	CAPSULE
005550808	Tretinoin	Tretinoin	CAPSULE
512850366	Trexall	Methotrexate	TABLET, FILM COATED
512850369	Trexall	Methotrexate	TABLET, FILM COATED
512850368	Trexall	Methotrexate	TABLET, FILM COATED
512850367	Trexall	Methotrexate	TABLET, FILM COATED
001730752	Tykerb	Lapatinib	TABLET
001730804	Votrient	Pazopanib Hydrochloride	TABLET, FILM COATED
000698140	Xalkori	Crizotinib	CAPSULE
000698141	Xalkori	Crizotinib	CAPSULE
538080411	Xeloda	Capecitabine	TABLET, FILM COATED
548685260	Xeloda	Capecitabine	TABLET, FILM COATED
548684143	Xeloda	Capecitabine	TABLET, FILM COATED
000041100	Xeloda	Capecitabine	TABLET, FILM COATED
000041101	Xeloda	Capecitabine	TABLET, FILM COATED
502420090	Zelboraf	Vemurafenib	TABLET, FILM COATED
000060568	Zolinza	Vorinostat	CAPSULE
000780417	Zortress	Everolimus	TABLET
000780415	Zortress	Everolimus	TABLET
000780414	Zortress	Everolimus	TABLET

National Drug Code	Proprietary Name	Non-Proprietary Name	Dosage Form Name
578940150	Zytiga	Abiraterone Acetate	TABLET
003107810	Vandetanib	Vandetanib	TABLET
003107830	Vandetanib	Vandetanib	TABLET

Appendix B: Codes Used to Identify IV Chemotherapy

HCPCS/CPT Code	Drug Description
96401	CHEMO ANTI-NEOPL SQ/IM
96402	CHEMO HORMON ANTINEOPL SQ/IM
96405	CHEMO INTRALESIONAL UP TO 7
96406	CHEMO INTRALESIONAL OVER 7
96409	CHEMO IV PUSH SNGL DRUG
96411	CHEMO IV PUSH ADDL DRUG
96413	CHEMO IV INFUSION 1 HR
96415	CHEMO IV INFUSION ADDL HR
96416	CHEMO PROLONG INFUSE W/PUMP
96417	CHEMO IV INFUS EACH ADDL SEQ
96420	CHEMO IA PUSH TECNIQUE
96422	CHEMO IA INFUSION UP TO 1 HR
96423	CHEMO IA INFUSE EACH ADDL HR
96425	CHEMOTHERAPY INFUSION METHOD
96440	CHEMOTHERAPY INTRACAVITARY
96446	CHEMOTX ADMN PRTL CAVITY
96450	CHEMOTHERAPY INTO CNS
96521	REFILL/MAINT PORTABLE PUMP
96522	REFILL/MAINT PUMP/RESVR SYST
96523	IRRIG DRUG DELIVERY DEVICE
96542	CHEMOTHERAPY INJECTION
96549	CHEMOTHERAPY UNSPECIFIED
J8510	ORAL BUSULFAN
J8520	CAPECITABINE, ORAL, 150 MG
J8521	CAPECITABINE, ORAL, 500 MG
J8530	CYCLOPHOSPHAMIDE ORAL 25 MG
J8560	ETOPOSIDE ORAL 50 MG
J8565	GEFITINIB ORAL
J8600	MELPHALAN ORAL 2 MG
J8610	METHOTREXATE ORAL 2.5 MG
J8700	TEMOZOLOMIDE
J8705	TOPOTECAN ORAL
J8999	ORAL PRESCRIPTION DRUG CHEMO
J9000	DOXORUBICIN HCL INJECTION
J9001	DOXORUBICIN HCL LIPOSOME INJ
J9010	ALEMTUZUMAB INJECTION
J9015	ALDESLEUKIN INJECTION
J9017	ARSENIC TRIOXIDE INJECTION

HCPCS/CPT Code	Drug Description
J9020	ASPARAGINASE INJECTION
J9025	AZACITIDINE INJECTION
J9027	CLOFARABINE INJECTION
J9031	BCG LIVE INTRAVESICAL VAC
J9033	BENDAMUSTINE INJECTION
J9035	BEVACIZUMAB INJECTION
J9040	BLEOMYCIN SULFATE INJECTION
J9041	BORTEZOMIB INJECTION
J9043	CABAZITAXEL INJECTION
J9045	CARBOPLATIN INJECTION
J9050	CARMUSTINE INJECTION
J9055	CETUXIMAB INJECTION
J9060	CISPLATIN 10 MG INJECTION
J9065	INJ CLADRIBINE PER 1 MG
J9070	CYCLOPHOSPHAMIDE 100 MG INJ
J9098	CYTARABINE LIPOSOME INJ
J9100	CYTARABINE HCL 100 MG INJ
J9120	DACTINOMYCIN INJECTION
J9130	DACARBAZINE 100 MG INJ
J9150	DAUNORUBICIN INJECTION
J9151	DAUNORUBICIN CITRATE INJ
J9155	DEGARELIX INJECTION
J9160	DENILEUKIN DIFTITOX INJ
J9165	DIETHYLSTILBESTROL INJECTION
J9171	DOCETAXEL INJECTION
J9175	ELLIOTTS B SOLUTION PER ML
J9178	INJ, EPIRUBICIN HCL, 2 MG
J9179	ERIBULIN MESYLATE INJECTION
J9181	ETOPOSIDE INJECTION
J9185	FLUDARABINE PHOSPHATE INJ
J9190	FLUOROURACIL INJECTION
J9200	FLOXURIDINE INJECTION
J9201	GEMCITABINE HCL INJECTION
J9202	GOSERELIN ACETATE IMPLANT
J9206	IRINOTECAN INJECTION
J9207	IXABEPILONE INJECTION
J9208	IFOSFAMIDE INJECTION
J9209	MESNA INJECTION
J9211	IDARUBICIN HCL INJECTION
J9212	INTERFERON ALFACON-1 INJ
J9213	INTERFERON ALFA-2A INJ
J9214	INTERFERON ALFA-2B INJ

HCPCS/CPT Code	Drug Description
J9215	INTERFERON ALFA-N3 INJ
J9216	INTERFERON GAMMA 1-B INJ
J9217	LEUPROLIDE ACETATE SUSPNSION
J9218	LEUPROLIDE ACETATE INJECITON
J9219	LEUPROLIDE ACETATE IMPLANT
J9225	VANTAS IMPLANT
J9226	SUPPRELIN LA IMPLANT
J9228	IPILIMUMAB INJECTION
J9230	MECHLORETHAMINE HCL INJ
J9245	INJ MELPHALAN HYDROCHL 50 MG
J9250	METHOTREXATE SODIUM INJ
J9260	METHOTREXATE SODIUM INJ
J9261	NELARABINE INJECTION
J9263	OXALIPLATIN
J9264	PACLITAXEL PROTEIN BOUND
J9265	PACLITAXEL INJECTION
J9266	PEGASPARGASE INJECTION
J9268	PENTOSTATIN INJECTION
J9270	PLICAMYCIN (MITHRAMYCIN) INJ
J9280	MITOMYCIN 5 MG INJ
J9293	MITOXANTRONE HYDROCHL / 5 MG
J9300	GEMTUZUMAB OZOGAMICIN INJ
J9302	OFATUMUMAB INJECTION
J9303	PANITUMUMAB INJECTION
J9305	PEMETREXED INJECTION
J9307	PRALATREXATE INJECTION
J9310	RITUXIMAB INJECTION
J9315	ROMIDEPSIN INJECTION
J9320	STREPTOZOCIN INJECTION
J9328	TEMOZOLOMIDE INJECTION
J9330	TEMSIROLIMUS INJECTION
J9340	THIOTEPA INJECTION
J9351	TOPOTECAN INJECTION
J9355	TRASTUZUMAB INJECTION
J9357	VALRUBICIN INJECTION
J9360	VINBLASTINE SULFATE INJ
J9370	VINCRISTINE SULFATE 1 MG INJ
J9390	VINORELBINE TARTRATE INJ
J9395	INJECTION, FULVESTRANT
J9600	PORFIMER SODIUM INJECTION
J9999	CHEMOTHERAPY DRUG

Appendix C: Calculations Supporting the Analysis

Low Level Scenario

Analysis of change in cost paid by Carrier

	Before Parity		After Parity		Change in Cost per User	% of Population	Members	Total Change in Cost	PMPM Change in Cost
Patients using oral agent	Coverage of oral agent under Pharmacy benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
	Oral agent cost/user	Avg Pharmacy benefit Carrier %	Oral agent cost/user	Avg Pharmacy benefit after parity					
	1,946	96.0%	1,946	99.5%	68.24	0.24%	698	47,644	$0.01
Patients substituting IV agent	Coverage of IV agent and administration under Medical benefit		Coverage of oral agent with member cost share equal to Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
	IV agent cost/user	Avg Medical benefit Carrier %	Oral agent cost/user	Avg Pharmacy benefit after parity					
	23,180	99.3%	10,846	99.3%	(12,248.19)	0.00%	2	(28,190)	($0.01)
Patients forgoing treatment	None		Coverage of oral agent with member cost share equal to Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
			Oral agent cost/user	Avg Pharmacy benefit after parity					
			10,846	99.3%	10,771.31	0.00%	0	2,755	$0.00
Rest of Population						99.76%	288,397	-	$0.00
Total Change in Cost to Carriers						100.00%	289,098	22,209	$0.01

Analysis of change in cost paid by members

	Before Parity		After Parity		Change in Cost per User	% of Population	Members	Total Change in Cost	PMPM Change in Cost
Patients using oral agent	Coverage of oral agent under Pharmacy benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
	Oral agent cost/user	Avg Pharmacy benefit member %	Oral agent cost/user	Avg Pharmacy benefit after parity member %					
	1,946	4.0%	1,946	0.5%	(68.24)	0.24%	698	(47,644)	($0.01)
Patients substituting IV agent	Coverage of IV agent and administration under Medical benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
	IV agent cost/user	Avg Medical benefit member %	Oral agent cost/user	Avg Pharmacy benefit after parity member %					
	23,180	0.7%	10,846	0.7%	(86.31)	0.00%	2	(199)	($0.00)
Patients forgoing treatment	None		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
			Oral agent cost/user	Avg Pharmacy benefit after parity member %					
			10,846	0.7%	74.23	0.00%	0	19	$0.00
Rest of Population						99.76%	288,397	-	$0.00
Total Change in Cost to Members						100.00%	289,098	(47,824)	($0.01)

Mid-Level Scenario

Analysis of change in cost paid by Carrier

	Before Parity		After Parity		Change in Cost per User	% of Population	Members	Total Change in Cost	PMPM Change in Cost
Patients using oral agent	Coverage of oral agent under Pharmacy benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
	Oral agent cost/user	Avg Pharmacy benefit Carrier %	Oral agent cost/user	Avg Pharmacy benefit after parity					
	2,432	95.0%	2,432	98.7%	89.43	0.56%	1,610	143,944	$0.04
Patients substituting IV agent	Coverage of IV agent and administration under Medical benefit		Coverage of oral agent with member cost share equal to Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
	IV agent cost/user	Avg Medical benefit Carrier %	Oral agent cost/user	Avg Pharmacy benefit after parity					
	25,756	96.9%	13,557	97.7%	(11,716.91)	0.00%	10	(112,100)	($0.03)
Patients forgoing treatment	None		Coverage of oral agent with member cost share equal to Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
			Oral agent cost/user	Avg Pharmacy benefit after parity					
			13,557	97.7%	13,243.91	0.00%	2	22,360	$0.01
Rest of Population						99.44%	287,477	-	$0.00
Total Change in Cost to Carriers						100.00%	289,098	54,205	$0.02

Analysis of change in cost paid by members

	Before Parity		After Parity		Change in Cost per User	% of Population	Members	Total Change in Cost	PMPM Change in Cost
Patients using oral agent	Coverage of oral agent under Pharmacy benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
	Oral agent cost/user	Avg Pharmacy benefit member %	Oral agent cost/user	Avg Pharmacy benefit after parity member %					
	2,432	5.0%	2,432	1.3%	(89.43)	0.56%	1,610	(143,944)	($0.04)
Patients substituting IV agent	Coverage of IV agent and administration under Medical benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
	IV agent cost/user	Avg Medical benefit member %	Oral agent cost/user	Avg Pharmacy benefit after parity member %					
	25,756	3.1%	13,557	2.3%	(481.76)	0.00%	10	(4,609)	($0.00)
Patients forgoing treatment	None		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
			Oral agent cost/user	Avg Pharmacy benefit after parity member %					
			13,557	2.3%	313.01	0.00%	2	528	$0.00
Rest of Population						99.44%	287,477	-	$0.00
Total Change in Cost to Members						100.00%	289,098	(148,025)	($0.04)

High-Level Scenario

Analysis of change in cost paid by Carrier

	Before Parity		After Parity		Change in Cost per User	% of Population	Members	Total Change in Cost	PMPM Change in Cost
Patients using oral agent	Coverage of oral agent under Pharmacy benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
	Oral agent cost/user	Avg Pharmacy benefit Carrier %	Oral agent cost/user	Avg Pharmacy benefit after parity					
	2,918	94.0%	2,918	97.7%	107.97	0.87%	2,521	272,209	$0.08
Patients substituting IV agent	Coverage of IV agent and administration under Medical benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
	IV agent cost/user	Avg Medical benefit Carrier %	Oral agent cost/user	Avg Pharmacy benefit after parity					
	28,331	92.4%	16,268	95.7%	(10,603.66)	0.01%	22	(235,005)	($0.07)
Patients forgoing treatment	None		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost to Carrier less Before Parity cost to Carrier				
			Oral agent cost/user	Avg Pharmacy benefit after parity					
			16,268	95.7%	15,575.75	0.00%	6	86,300	$0.02
Rest of Population						99.12%	286,549	-	$0.00
Total Change in Cost to Carriers						100.00%	289,098	123,504	$0.04

Analysis of change in cost paid by members

	Before Parity		After Parity		Change in Cost per User	% of Population	Members	Total Change in Cost	PMPM Change in Cost
Patients using oral agent	Coverage of oral agent under Pharmacy benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
	Oral agent cost/user	Avg Pharmacy benefit member %	Oral agent cost/user	Avg Pharmacy benefit after parity member %					
	2,918	6.0%	2,918	2.3%	(107.97)	0.87%	2,521	(272,209)	($0.08)
Patients substituting IV agent	Coverage of IV agent and administration under Medical benefit		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
	IV agent cost/user	Avg Medical benefit member %	Oral agent cost/user	Avg Pharmacy benefit after parity member %					
	28,331	7.6%	16,268	4.3%	(1,459.19)	0.01%	22	(32,339)	($0.01)
Patients forgoing treatment	None		Coverage of oral agent with member cost share not greater than Medical benefit		After Parity cost less Before Parity cost				
			Oral agent cost/user	Avg Pharmacy benefit after parity member %					
			16,268	4.3%	692.55	0.00%	6	3,837	$0.00
Rest of Population						99.12%	286,549	-	$0.00
Total Change in Cost to Members						100.00%	289,098	(300,711)	($0.09)