
HMA

HEALTH MANAGEMENT ASSOCIATES

*Assessing the Effects of Medi-Cal's Ten Percent
Across-the-Board Provider Reimbursement
Reductions on Access, Services and the
Pharmacy Provider Network*

PRESENTED TO

PATIENTS FOR ACCESS TO MEDICINES

MAY 20, 2008

*Research and Consulting in the Fields of Health and Human Services Policy, Health Economics
and Finance, Program Evaluation, Data Analysis, and Health System Restructuring*

AUSTIN, TEXAS • CHICAGO, ILLINOIS • COLUMBUS, OHIO • INDIANAPOLIS, INDIANA • LANSING, MICHIGAN
SACRAMENTO, CALIFORNIA • SOUTHERN CALIFORNIA • TALLAHASSEE, FLORIDA • WASHINGTON, D.C.

Executive Summary

The State of California's projected \$15.2 billion structural budget gap has compelled the Governor to take extraordinary action to close the budget deficit. The Governor's plan includes a ten percent across-the-board reduction in Medi-Cal reimbursement for most physicians and other medical and service providers that would result in savings of \$33.4 million in 2007-08 and \$602.4 million in 2008-09. The savings that would result from the reduction in reimbursement for pharmacy services in fiscal year 2009 is estimated to be \$172 million or \$86 million in general revenues and \$86 million in federal matching funds. However, the actual reduction in pharmacy reimbursements is estimated to be \$232 million, factoring in rebates. There is concern that a reduction in Medi-Cal reimbursement of this magnitude, coupled with reductions in reimbursement that will be brought about by the Deficit Reduction Act of 2005, could adversely affect beneficiary access to pharmacy services, lead to increased service costs, and lead to a shrinking of the Medi-Cal pharmacy network.

The ten percent reduction in Medi-Cal provider reimbursement will result in participating pharmacy providers receiving reimbursement for many of the drugs they dispense to Medi-Cal beneficiaries that is less than the cost of acquiring and dispensing the drugs. Medicaid providers in other states and in California have shown a willingness to participate in Medicaid and to accept payment that is less than their charges, but when reimbursement rates are reduced to the point that they do not cover the cost of providing services, they have shown a tendency to become discouraged and alter their practice patterns or to stop participating in Medicaid altogether. If Medi-Cal pharmacy providers respond as other provider types have when faced with a similar situation, it is likely that access to prescription drugs for some Medi-Cal beneficiaries will be compromised as pharmacies reduce hours, no longer accept new Medi-Cal beneficiaries or decide to no longer participate as Medi-Cal providers. Pharmacies with a large percentage of Medi-Cal patients may go out of business if the profits they earn from other prescriptions and products do not offset losses from Medi-Cal transactions. This is important for Medicaid beneficiaries for whom seemingly minor changes in access to medication can create

major service barriers to treatment, and especially important for beneficiaries with mental health disorders and chronic diseases. While we do not know the exact extent to which pharmacists will reduce access to Medi-Cal recipients' medications, we do know that, based on our gross cost estimates outlined in this paper, it is quite plausible that reduced access could result in increased use of emergency departments, hospitals and other healthcare resources that would generate costs in excess of the savings generated by the ten percent pharmacy reimbursement reduction. Aside from the financial burden on Medi-Cal, there are potentially a myriad of other costs California is likely to incur such as lost school days for children who do not have access to the medications they need.

While there is evidence that imposing the ten percent reduction in pharmacy reimbursement is not good public policy, it is clear that the deficit facing the state is real and that it must be addressed. There are, however, alternative approaches to achieving the required savings that are not as likely to adversely affect provider access, provider services or the provider network as the ten percent reduction in provider reimbursement. Examples of these alternatives include joining a multi-state purchasing pool, which could save the state an estimated \$16 million annually; implementing medication therapy management for beneficiaries with multiple chronic conditions, which could save the state an estimated \$16.49 million annually; increasing the rate of the use of generic drugs by 11.6 percent, which could save the state an estimated \$105 million annually (adjusted for rebates); increasing the refill threshold from 75 percent to 80 percent, which could save the state an estimated \$3.74 million annually; and implementing e-prescribing and electronic records technology, which could save the state an estimated \$224.98 million annually.

The Medi-Cal Pharmacy Program: A Brief Overview

The Medi-Cal pharmacy benefit is the most used of all Medi-Cal benefits and is particularly important to Medi-Cal beneficiaries with chronic diseases, mental illnesses and disabilities.

All Medi-Cal beneficiaries have access to a comprehensive list of prescription drugs and some over the counter medications under the Medi-Cal pharmacy benefit. Fee-for-service beneficiaries with a Medicaid card and a valid prescription may fill their prescription at any participating pharmacy. During fiscal year (FY) 2007 the Medi-Cal program reimbursed almost 30 million fee-for-service prescriptions for outpatient drugs.¹ Approximately 5,500 pharmacies participate in Medi-Cal, with about 60 percent chain affiliated and 40 percent independent pharmacies.² The average Medi-Cal volume for enrolled pharmacies was approximately 2,900 prescriptions per pharmacy for a six month time period in 2006, and the median Medi-Cal volume for the same period was about 1,150 prescriptions.³ On average, fee-for-service Medi-Cal comprised about 16 percent of an enrolled pharmacy's total prescriptions.⁴

Medi-Cal reimbursement to pharmacies is the lower of a pharmacy's charge to the general public or the program rates for ingredient costs and a dispensing fee. The dispensing fee is payment to the pharmacist for filling a prescription and providing other related services. The current dispensing fee is \$7.25 for the majority of prescriptions and \$8.00 for prescriptions dispensed to nursing facility residents.⁵

The rates for ingredient costs paid by Medi-Cal to pharmacies are determined by the following formulas⁶:

¹ Medi-Cal Drug Utilization Data, California Department of Health Services.

² Survey of Dispensing and Acquisition Costs of Pharmaceuticals in the State of California. Prepared for the California Department of Health Services, December 2007.

³ Ibid.

⁴ Ibid.

⁵ Ibid.

⁶ A single-source drug is a brand name drug that is manufactured under a patent and has no competing products. A multiple-source drug is a drug whose patent has expired and is manufactured by a number of

- Average Wholesale Price (AWP) minus 17 percent for single source products and innovator multi-source products (commonly known as brand name drugs).
- Federal Upper Limit (FUL), as applicable for multi-source products (commonly known as generics)
- AWP minus 17 percent for non-innovator multi-source products for which there is no FUL
- California Maximum Allowable Ingredient Cost (MAIC), as applicable for multisource products.⁷

Reimbursement for specialty pharmacy products are subject to alternative reimbursement methodologies.

Medi-Cal actively manages the pharmacy benefit, using various utilization controls and tools such as:

- Quantity and frequency limits;
- Clinical prior authorization;
- A Preferred Drug List approach;
- Policies encouraging the use of generics when cost effective.

The Budget and the Proposed Cuts

The state of California's projected \$15.2 billion structural budget gap has compelled the Governor to take extraordinary action to close the budget deficit. This action plan includes proposing a ten percent across-the-board reduction in Medi-Cal reimbursement for most physicians and other medical and service providers that would result in savings of \$33.4 million in 2007-08 and \$602.4 million in 2008-09. The Governor's budget message indicates that "the across-the-board reduction approach is designed to protect essential services by spreading reductions as evenly as possible so that no single department or program is singled out for severe reductions." The reduction in pharmacy reimbursement for 2009 is estimated to be \$232 million while the savings realized by the

different drug companies under different names. Innovator multi-source drug means the drug that had the original patent, now expired, with the Food and Drug Administration.

⁷ Myers and Stauffer: Survey of Dispensing and Acquisition Costs of Pharmaceuticals in the State of California. December 2007

state is estimated to be \$172 million or \$86 million⁸ in general revenues and \$86 million in federal matching funds.

Pharmacies are concerned that these reductions in reimbursement are bad public policy for a number of reasons. First, because implementation of this policy could have a detrimental effect on Medi-Cal recipients' access to care as some pharmacies that cannot bear the loss of Medi-Cal revenue reduce hours of operation, reduce services or cease their participation with the Medi-Cal program. Second, there is also concern that the reduction in reimbursement could have a detrimental effect on overall Medi-Cal program costs as beneficiaries who are not able to access prescription drugs on a timely basis or access them at all are forced to seek higher cost care, which could result in the state incurring costs that are greater than the savings the reductions are supposed to produce. Third, there is concern because these reductions affect drug acquisition costs as well as the dispensing fees. Finally, imposing an across the board reduction does not allow the Governor and state legislature to analyze the Medi-Cal budget and set priorities, determining which services and programs are more efficient and therefore more deserving of greater support.

Effects of the Reduction in Reimbursement on Beneficiary Access

Implementation of the new pricing standard for generic drugs would cause pharmacies to be reimbursed by Medi-Cal for generic drugs at less than acquisition costs.

The proposed ten percent reduction in pharmacy reimbursement is being imposed in addition to new requirements in the Deficit Reduction Act of 2005 (DRA). For decades, the Centers for Medicare and Medicaid Services

(CMS) has set rates on multiple-source generic drugs called Federal Upper Limits (FULs). States have the option to use the FULs or their own Maximum Allowable Costs (MACs) – as long as payments for multiple-source generic drugs do not exceed what they would have been had the FULs been used. DRA changed the FUL calculation by using a re-defined Average Manufacturer Price (AMP) instead of Average Wholesale Price.

⁸ Health and Social Services LAO 2008-09 Analysis C-36

While the new FULs have not yet been published, consensus is that the resulting FULs will be lower and FULs will be placed on more drugs.

A study conducted by the federal General Accountability Office (GAO) noted that “the Congressional Budget Office estimated that when implemented, AMP-based Federal Upper Limits could reduce total Medicaid spending for prescription drugs by \$3.6 billion from 2007 to 2010 and by about \$11.8 billion from 2007 to 2015.”⁹ Using a sample of 77 generic drugs, the GAO estimated what the AMP-based FULs would have been if they were in effect in 2006 and compared them with average retail pharmacy acquisition costs from 2006 for frequently used and high cost generic prescription drugs in Medicaid. The GAO found that for the entire sample of 77 drugs the estimated AMP-based FULs “were, on average, 36 percent lower than average retail pharmacy acquisition costs for the first quarter of 2006.”¹⁰

Stephen Schondelmeyer, PhD., in an expert report presented before the U.S. District Court, stated that implementation of the new FULs would result in a substantial loss of a number of pharmacies. He estimated that the retail market could see the loss of 10,000 to 12,000 pharmacies, most of which would be in rural or inner city urban areas with high Medicaid volumes.¹¹

Although the U.S. District Court of the District of Columbia issued a temporary injunction in December of 2007 against the implementation of the pharmacy reimbursement provisions of the DRA, it is likely that the revised FULs will be implemented in some form in the future.

Historically, a high percentage of California pharmacies have participated in Medi-Cal. However, that may change as pharmacies are faced with a ten percent reduction in

⁹ Medicaid Outpatient Prescription Drugs: Estimated 2007 Federal Upper Limits for Reimbursement Compared with Retail Pharmacy Acquisition Costs. General Accountability Office. December 2006

¹⁰ Medicaid Outpatient Prescription Drugs: Estimated 2007 FUL Compared with Pharmacy Acquisition Costs, Government Accounting Office, GAO 07-239R, December 2006

¹¹ Expert Report of Stephen W. Schondelmeyer, PharmD., Ph.D. Case: 1:07-cv-02017. United States District Court for the District of Columbia.

reimbursement and the real possibility of an additional reduction in reimbursement for generic drugs with the implementation of the pharmacy reimbursement provisions of the Deficit Reduction Act.

The ten percent reduction will cause pharmacies to receive reimbursement that is less than their cost of acquiring and dispensing the ten drugs most commonly prescribed for Medi-Cal beneficiaries.

As mentioned earlier, the pharmacy reimbursement provisions of the DRA have the real potential for causing pharmacists to receive reimbursement from Medi-Cal that is significantly less than acquisition costs. The ten percent reduction in reimbursement to pharmacies would have the same effect with many of the most commonly prescribed drugs. For example, using Medi-Cal's current reimbursement formula, the estimated retail profit on Seroquel (300 mg) and Zyprexa (20 mg), two of the antipsychotics commonly prescribed for Medi-Cal beneficiaries, is approximately \$8 for Seroquel and \$17 for Zyprexa. Imposing the ten percent reduction, which means reducing both the ingredient costs and the dispensing fee by ten percent, not only completely eliminates the profit but also brings Medi-Cal reimbursement for Seroquel (300 mg) to approximately \$8 below acquisition costs and Zyprexa (20 mg) to \$32 below acquisition costs. Table 1 below shows the effect of the ten percent reduction in pharmacy reimbursement on gross margin of the ten drugs most commonly prescribed for Medi-Cal recipients. Using 2006 drug prices obtained from the Centers for Medicare and Medicaid Services (CMS), we have calculated what the average estimated gross margin for these drugs would have been for Medi-Cal participating pharmacies using the current reimbursement formula for these drugs and what it would be when the ten percent reduction is included. As Table 1 illustrates, pharmacists would receive reimbursement that is below their cost of acquiring and dispensing the drugs.

Table 1. Medi-Cal pharmacies have a negative gross margin on commonly prescribed Medi-Cal drugs assuming a ten percent cut

Product Name	Product Class	Average Price, 30 pills	Estimated Gross Margin, AWP-17% +\$7.25 Dispensing Fee	Estimated Gross Margin, AWP-17% +\$7.25 Dispensing Fee Less 10%
Prevacid 30 mg DR	Proton-Pump Inhibitors	\$ 133.98	\$ 2.56	\$ (2.18)
Seroquel 200 mg	Antipsychotics	\$ 170.46	\$ 4.98	\$ (4.44)
Nexium 40 mg	Proton-Pump Inhibitors	\$ 134.67	\$ 8.12	\$ (1.86)
Zyprexa 10 mg	Antipsychotics	\$ 296.64	\$ 8.75	\$ (12.55)
Risperdal 2 mg	Antipsychotics	\$ 175.35	\$ (2.16)	\$ (5.24)
Seroquel 300 mg	Antipsychotics	\$ 224.99	\$ 8.01	\$ (7.85)
Zyprexa 20 mg	Antipsychotics	\$ 593.13	\$ 17.42	\$ (31.62)
Risperdal 3 mg	Antipsychotics	\$ 206.62	\$ (1.87)	\$ (7.29)
Lipitor 20 mg	HMG-CoA Reductase Inhibitors	\$ 106.08	\$ 7.16	\$ (0.03)
Truvada	Antiretrovirals	\$ 742.64	\$ 7.28	\$ (42.19)

Sources: CMS drug utilization data for calendar year 2006 and Medi-Span's PriceCheck PC.

Note: Gross margin is the difference between revenue received and cost of goods sold. Net margin is net income - what is left after all costs are subtracted - operating costs, including salaries and rent, overhead, and capital costs - divided by net sales revenue. Gross margins for individual products were developed by using Medi-Cal calendar year 2006 CMS drug utilization data. The data were joined to Medi-Span's PriceCheckPC database using the National Drug Code (NDC) and a weighted average wholesale acquisition cost (WAC) was calculated for each product using units dispensed for CY 2006.

Basic economics dictate that businesses selling their products for less than they cost will ultimately go out of business. Below we provide some general information about Medi-Cal pharmacies and the financial constraints they will face given a ten percent cut in reimbursement.

Reductions in Medi-Cal reimbursement will disproportionately affect independent pharmacies since, on average, approximately 92 percent of independent pharmacies' business comes from prescription drugs, and they cannot make up the losses in front-end store sales.¹²

Dispensing fees paid by Medi-Cal are below costs but pharmacies participate because of margins realized on ingredients. The ten percent reduction will eliminate that margin which could drive pharmacies to drop Medi-Cal.

A report released in December 2007 by Myers and Stauffer on dispensing and acquisition costs showed that the dispensing fee paid by Medi-Cal is lower than the average cost of

¹² Communities at Risk, Community Pharmacy Fact Sheet. National Community Pharmacists Association. 2007

dispensing prescriptions. Despite the inadequate dispensing fee, pharmacies continue to participate in Medi-Cal because many realize positive net margins on Medi-Cal prescriptions due to margins on drug ingredient cost.¹³ Margins range from \$6.26 to \$9.65 for each prescription depending on whether it is a single source drug, a multisource drug without federal upper limit reimbursement (FUL) or a multisource drug with a FUL (Table 2. Col 8).¹⁴ However, with a ten percent cut the average pharmacy will lose on average \$13.76 on each single source drug dispensed. Single source drugs comprise about 28 percent of Medi-Cal prescriptions (Table 2. Col 9).

Table 2. Medi-Cal pharmacies, on average, would see a negative margin on almost a third of their prescriptions with a ten percent acquisition and dispensing fee cut.

	Ingredient Costs and Reimbursement			Dispensing Cost and Reimbursement			Total Avg Medi-Cal Margin	Percent of RXs (Col 9)	
	Product Type (Col 1)	Estimated Average Ingredient Reimbursement (Col 2)	Estimated Average Ingredient Cost (Col 3)	Estimated Average Margin on Ingredients (Col 4)	Estimated Average Dispensing Reimbursement (Col 5)	Estimated Average Dispensing Cost (Col 6)	Estimated Average Margin on Dispensing (Col 7)		Ingredient Margin Plus Dispensing Margin (Col 8)
Current Status	Single Source	\$196.76	\$186.56	\$10.20	\$7.25	\$10.81	-\$3.56	\$6.64	27.5%
	Multi-source without a FUL	\$42.00	\$32.18	\$9.82	\$7.25	\$10.81	-\$3.56	\$6.26	36.2%
	Multi-source with a FUL	\$21.69	\$8.48	\$13.21	\$7.25	\$10.81	-\$3.56	\$9.65	36.0%
10% Cut	Single Source	\$177.08	\$186.56	-\$9.48	\$6.53	\$10.81	-\$4.29	-\$13.76	27.5%
	Multi-source without a FUL	\$37.80	\$32.18	\$5.62	\$6.53	\$10.81	-\$4.29	\$1.34	36.2%
	Multi-source with a FUL	\$19.52	\$8.48	\$11.04	\$6.53	\$10.81	-\$4.29	\$6.76	36.0%

Source: "Current Status" data in Table 1 are from: A Survey of Dispensing and Acquisition Costs of Pharmaceuticals in the State of California Prepared for the California Department of Health Services December 2007, Myers and Stauffer

For a hypothetical pharmacy with 1,000 Medi-Cal prescriptions, with the average percentage of single source and multisource drugs, the pharmacy loses almost \$900 on its Medi-Cal business.

¹³ A Survey of Dispensing and Acquisition Costs of Pharmaceuticals in the State of California Prepared for the California Department of Health Services December 2007, Myers and Stauffer

¹⁴ Single source drugs are also referred to as non-generics and multisource drugs are those that are generic drugs. In many cases single source drugs do not have a generic equivalent.

Table 3. Sample Pharmacy with 1000 prescriptions and a ten percent cut

Drug Type	Number of Prescriptions*	Profit per RX	Total Profit
Source	275	-\$13.76	-\$3,788
source without an	362	\$1.34	\$484
Multi-source with	360	\$6.76	\$2,434
Total Profit	998		-\$871

* Numbers do not add to 100 since this excludes "Other unclassified Products" that account for less than 3% of the total.

Medicaid providers have shown a willingness to accept reimbursement that is less than their charges but when reimbursement is less than the cost of providing the service they alter their practice patterns or withdraw from Medicaid.

There is little in the literature that provides clear direction on how pharmacies in California’s Medi-Cal network or in Medicaid networks in other states have responded to

reductions in reimbursement of this magnitude that can guide policymakers in their deliberations. There are however a number of studies that address the response of other provider types, specifically physicians and dentists, to change in reimbursement. We would assume that pharmacists are driven by the same motivations as other provider types to participate in Medi-Cal (Medicaid) and would also be driven by the same motivations to limit their participation or withdraw from the program altogether. These studies conclude that while providers consistently cite low Medicaid reimbursement as a reason for not participating in Medicaid or for limiting their participation, they have shown a willingness to participate and to accept payment that is less than their charges. However, when reimbursement rates are reduced to the point that they do not cover the cost of providing services, providers become discouraged and alter their practice patterns or leave the program altogether.^{15,16}

¹⁵ Borchgrevink, A., Snyder A., Gehshan, S., “The Effects of Medicaid Reimbursement Rates on Access to Dental Care” National Academy for State Health Policy. (March 2008).

¹⁶ Peter J. Cunningham, Jack Hadley, “Effects of Changes in Incomes and Practice Circumstances on Physicians' Decisions to Treat Charity and Medicaid Patients” The Milbank Quarterly, Vol. 86, No. 1 (March 2008).

Zuckerman, McFeeters, Cunningham and Nichols found that paying Medicaid physicians at or near costs increases access for Medicaid beneficiaries and that when reimbursement lags, providers stop accepting new Medicaid beneficiaries and make other changes in their practice patterns.¹⁷ In one of the few studies on the effect of reimbursement rates and pharmacy participation in Medicaid, Pracht and Moore concluded that pharmacy reimbursement rates are correlated with pharmacy participation rates.¹⁸

Rural pharmacies have fewer cash reserves to absorb decreased revenues resulting from reductions in Medicaid reimbursement, which could make them more vulnerable to closure.

And finally a study conducted by researchers at the Cecil G. Sheps Center for Health Services Research concluded that reductions in Medicaid reimbursement for providers in rural areas could be particularly devastating for rural providers, and “could force the closure or relocation of providers and could discourage new providers from practicing in rural areas.”¹⁹ The authors of the study go on to note that while reductions in the drug dispensing fee or the acquisition cost of the drugs could adversely impact all pharmacists, these changes would have a bigger impact on rural pharmacies because rural pharmacies are more reliant on Medicaid as a source of revenue, which could make rural pharmacies more vulnerable to closure.²⁰

Conclusions

While many pharmacies recognize the need for and importance of serving the Medi-Cal population, it is challenging to stay in any business without covering operating costs. It is clear that Medi-Cal pharmacy providers were already experiencing some financial distress because of inadequate dispensing fees before the Governor announced the ten

¹⁷ Zuckerman, S., McFeeters, J., Cunningham, P., Nichols, L., “Changes In Medicaid Physician Fees, 1998– 2003: Implications For Physician Participation. *Health Affairs* Health Tracking Trends Web Exclusive (2004) June

¹⁸ Pracht, E. E., Moore, W. J., Interest Groups and State Medicaid Drug Programs. *Journal of Health Politics, Policy and Law* - Volume 28, Number 1, February 2003.

¹⁹ Silberman, P., Rudolph, M., D’Alpe, C., Randolph, R., Silfkin, R. “The impact of the Medicaid Budgetary Crisis on Rural Communities.” Working Paper Number 77. Cecil G. Sheps Center for Health Services Research. Cecil G. Sheps Center for Health Services Research The University of North Carolina at Chapel Hill. 2003 (August)

²⁰ Ibid.

percent reduction in provider reimbursement, and that yet other financial pressures in the form of additional reimbursement reductions brought about by the implementation of the new FULs were looming on the horizon. Although there is no way to accurately predict how pharmacists will respond, there is evidence to suggest that when Medi-Cal reimbursement rates fall below the cost of providing the service, providers may alter their practice patterns, limit their hours or otherwise limit the number of Medi-Cal beneficiaries they serve, or they will leave the program altogether. There is also evidence that the impact of reductions in reimbursement is greater in rural than in urban areas because rural pharmacies are more reliant on Medicaid as a source of revenue. Given the financial pressures that pharmacies are already facing, it is entirely possible and highly likely that the ten percent reduction in provider reimbursement will cause some pharmacies to reduce services to existing Medicaid beneficiaries, not accept new Medicaid beneficiaries or leave the Medicaid program altogether. If this does occur, beneficiaries may not be able to get their drugs at all or they may experience delays in accessing them, which could have severe health and cost consequences with the state picking up a large portion of the bill.

Effects of the Reduction in Reimbursement on Beneficiary Services

Non compliance with treatment regimens is higher, and often significantly higher, for Medicaid patients than for non-Medicaid patients.

Complying with a prescribed drug regimen is critical to managing many conditions and lack of compliance can often result in increased health risks and increased healthcare utilization, generating medical costs far in excess of

medication costs. For individuals with diseases such as diabetes, asthma, hypertension and mental disorders, taking medications is often as much a part of the daily routine as brushing their teeth. Some may only require a single, daily dosage of medication. Other regimens, such as some used to manage congestive heart failure or HIV disease, require complicated dosing schedules that could confound even the most diligent and organized individuals. A 1999 study published in the *Journal of the American Geriatrics Society* identified 26 factors that lead to noncompliance, many of which were conditions typical

of Medicaid recipients.²¹ In another study to determine the frequency of the TennCare Medicaid beneficiaries' failure to obtain timely antihypertensive medication refills, the authors of the study found that refill failure occurred in 33 percent of 7,413 refill opportunities studied.²² In addition, other studies have found that non-compliance with treatment regimens is higher, and often significantly higher, for Medicaid patients than for non-Medicaid patients. Feinberg and Hicks, in a study of compliance with the first newborn visit following discharge from the hospital, found that Medicaid patients were significantly more likely to be late for the first and subsequent appointments than were non-Medicaid patients, concluding that the problem was persistent.²³ In a report to the House Oversight and Government Reform Subcommittee on Domestic Policy, it was noted that in a study conducted by the Minnesota Department of Human Services, 82 percent of dentists surveyed reported that Medicaid beneficiary non-compliance as a significant problem.²⁴ Jhanjee *et al* reported that a study of over 300,000 children in Medi-Cal in California and Medicaid in Georgia and Michigan found that from 29 percent to 51 percent had none or only one well child visit in the first two years of their lives.²⁵ In this same study, they also reported that being insured through medical assistance (Medicaid) was a factor associated with non-compliance with treatment regimens.²⁶ Bhavna Shroff, D.D.S., M.D.Sc., found in a study of treatment outcomes for Medicaid and non-Medicaid patients that Medicaid orthodontic patients exhibit behavior indicating a greater tendency toward non-compliance,²⁷ and Horsley *et al* found in a study of appointment keeping behavior among Medicaid and non Medicaid patients that

²¹ Commonwealth of Massachusetts Group Health Insurance Commission Winter 2005

(<http://www.mass.gov/gic/healthartdrugcompliance.htm>)

²² Bailey, J.E., Lee M. D., Somes, G. W., Graham R. L., "Risk Factors for Antihypertensive Medication Refill Failure by Patients under Medicaid Managed Care." *Clinical Therapeutics* (1996)

²³ Feinberg, A., Hicks, W., "Patient Compliance with the First Newborn Visit Appointment", *Journal of Perinatology* (2003) Volume 23, 37–40

²⁴ Oversight of State Performance and Access to Dental Care for Medicaid Beneficiary Children, House Oversight and Government Reform Subcommittee on Domestic Policy (May 2007)

²⁵ Jhanjee, I., Saxeena, D., Arora, J., Dwenda K. Gjerdingen, D., K., Parents' "Health and Demographic Characteristics Predict Noncompliance with Well-Child Visits", *Journal of the American Board of Family Medicine*. September–October 2004 Vol. 17 No. 5

²⁶ *Ibid.*

²⁷ Ghaffari, A., "Treatment Outcomes and Retention in Medicaid and Non Medicaid Orthodontic Patients." A Thesis Submitted in Partial Fulfillment of The Requirements for the Degree of Master of Science at Virginia Commonwealth University. 2008

although Medicaid patients accounted for 26.6 percent of all appointments, they were responsible for about 40 percent of all appointment failures.²⁸

It is evident that Medicaid patients tend to be significantly less compliant with treatment regimens than non-Medicaid patients even in the absence of barriers to access. If a pharmacy limits its availability to Medi-Cal beneficiaries or has closed, patients will have greater difficulty getting their prescriptions filled, thereby further decreasing compliance with their drug therapy.

Medication compliance has been shown in many studies to help patients not only manage their conditions but also to save money. A 2007 report by the National Council on Patient Education and Information noted that in the United States lack of medication adherence leads to unnecessary disease progression, disease complications, reduced functional abilities, a lower quality of life, and even premature death. Poor adherence has been estimated to cost approximately \$177 billion annually in total direct and indirect healthcare costs.²⁹ Approximately 125,000 deaths in the United States each year are attributed to noncompliance with a doctor's prescription, which is twice the number of people killed in automobile accidents, according to LifeClinic, a website devoted to long-term health conditions. A recent study evaluating the impact of medication adherence on healthcare utilization and cost for four chronic conditions, diabetes, hypertension, hypercholesterolemia, and congestive heart failure, which are major drivers of drug spending, found that a high level of medication adherence was associated with lower disease-related medical costs.³⁰ Given that California's goal is to lower Medi-Cal costs, it is ironic that the state is potentially limiting access to drugs when private sector practice is expanding access to drugs in order to reduce costs.

²⁸ Horsley BP, Lindauer, S. J., Shroff B, Tufekci, E., Abubaker, A.O., Fowler CE, et al. "Appointment keeping behavior of Medicaid vs non-Medicaid orthodontic patients", *Am J Orthod Dentofacial Orthop.* 2007;132(1):49-53.

²⁹ Enhancing Prescription Medication Adherence: A National Action Plan National Council on Patient Education and Information, August 2007.

³⁰ Sokol, Michael C. MD, MS; McGuigan, Kimberly A. PhD; Verbrugge, Robert R. PhD; Epstein, Robert S. MD, MS, "Impact of Medication Adherence on Hospitalization Risk and Healthcare Cost", *Medical Care.* 43(6):521-530, June 2005.

Below we discuss the most frequently used and the most costly Medi-Cal drugs along with evidence that supports the value of appropriate medication in managing various chronic and mental health conditions, and reducing the social and medical costs that often result from decreased compliance that can stem from decreased access.

For FY 2007, the Medi-Cal program reimbursed almost 30 million prescriptions for fee-for-service outpatient drugs.³¹ Antipsychotics, gastrointestinal, antihyperlipidemics, antivirals, antidepressants, and anticonvulsants are the most costly drugs and, aside from analgesics, these are the ones most utilized by Medi-Cal fee-for-service recipients.^{32,33} The top ten utilized drug classes are listed below by number of prescriptions reimbursed (Table 4). These ten drug classes comprised about 43 percent of total Medicaid fee-for-service prescriptions and almost half of all payments. Three of the drug classes (antidepressants, antipsychotics, and anticonvulsants) are prescribed for mental disorders and comprise 15 percent of total prescriptions. Aside from analgesics, most prescriptions reimbursed are for these three classes of drugs. Prescriptions for treatment of asthma (antiasthmatic and bronchodilator agents), diabetes (antidiabetics) and high blood pressure (hypertension treated with antihypertensive) round out the top ten.

³¹ Medi-Cal Drug Utilization Data, California Department of Health Services.

³² Ibid.

³³ California HealthCare Foundation, Medi-Cal Facts and Figures, May 2007.

Table 4. Top ten Medi-Cal drugs by total prescriptions, FY 2007: Drugs for mental health top the list.

Rank	Therapeutic Class	Total Prescriptions	Total Payments	Avg Payment Per Prescription
1	Antipsychotics	1,577,398	\$466,701,056	\$296
2	Analgesics - NonNarcotic	1,560,334	\$14,846,923	\$10
3	Anticonvulsants	1,321,334	\$158,113,862	\$120
4	Antidepressants	1,319,134	\$105,860,996	\$80
5	Analgesics- opioid	1,312,518	\$83,280,129	\$63
6	Antiasthmatic and bronchodilator agents	1,093,693	\$97,815,535	\$89
7	Antidiabetics	1,063,045	\$94,555,764	\$89
8	Antihypertensives	1,007,169	\$60,631,396	\$60
9	Cough/Cold/Allergy	980,530	\$15,180,676	\$15
10	Analgesics- Anti-Inflammatory	966,722	\$44,561,154	\$46
	Other	15,985,600	1,327,193,608	\$83
	Total	28,187,477	\$2,468,741,099	\$88

Source: Medi-Cal fee-for-service drug utilization data files, CA Department of Health Services

The top ten therapeutic drug classes by total payments comprised about 35 percent of total prescriptions but about 60 percent of payments (Table 5). (Payments by county for all Medi-Cal fee-for-service drugs, CY 200, are in Appendix I.) Ulcer drugs and HIV/AIDS antivirals, which are not among the most prescribed drugs, are some of the most expensive. However, drugs for mental disorders such as antidepressants, antipsychotics, and anticonvulsants, along with asthma drugs and diabetes drugs are in both the top ten payment table (Table 5) and the top ten prescriptions table (Table 4).

Table 5. Top ten Medi-Cal drugs by total payments, FY 2007: Drugs for mental health top the list

Rank	Therapeutic Class	Total Prescriptions	Total Payments	Avg Payment Per Prescription
1	Antipsychotics	1,577,398	\$466,701,056	\$296
2	Anticonvulsants	1,321,334	\$158,113,862	\$120
3	Antivirals	280,504	\$152,129,598	\$542
4	Ulcer Drugs	950,359	\$126,595,851	\$133
5	Antidepressants	1,319,134	\$105,860,996	\$80
6	Antihyperlipidemics	780,409	\$100,710,122	\$129
7	Antiasthmatic and bronchodilator agents	1,093,693	\$97,815,535	\$89
8	Hematologic Agents- Misc	85,444	\$96,950,302	\$1,135
9	Antidiabetics	1,063,045	\$94,555,764	\$89
10	Analgesics- opioid	1,312,518	\$83,280,129	\$63
	Other	19,716,157	1,069,308,013	\$54
	Grand Total	28,187,477	\$2,468,741,099	\$88

Source: Medi-Cal fee-for-service drug utilization data files, CA Department of Health Services

Mental Health

Antipsychotics, antidepressants, and anticonvulsants, and other drugs to treat mental disorders rank at the top of the list for Medi-Cal payments and prescriptions as discussed above. Anticonvulsants, also called antiepileptic drugs (abbreviated "AEDs"), belong to a diverse group of pharmaceuticals used in prevention of the occurrence of epileptic seizures. However, anticonvulsants are used with increasing frequency for the treatment of bipolar disorder, since many seem to act as mood stabilizers. Anticonvulsants are notable due for the significant off-label use of drugs in that category, particularly off-label use for the treatment of mental and behavioral disorders. Depakote is often prescribed for treating bi-polar disorder, and Topamax for conditions as varied as alcoholism, sleep disorders, eating disorders, and bi-polar disorder.³⁴

The term antipsychotic is applied to a group of drugs commonly but not exclusively used to treat psychosis. Common conditions with which antipsychotics might be used include schizophrenia, bipolar disorder, mania and delusional disorder. Spending on the four

³⁴ Recommendations for Cost Savings Approaches Under the Medi-Cal Pharmacy Program, NACDS February 2008.

most frequently prescribed atypical anti-psychotics Zyprexa (\$128.3 million), Risperdal (\$120.8 million), Seroquel (\$109 million), and Geodon (\$25.9 million) constituted about 16.4 percent (\$384 million) of Medi-Cal drug spending during 2006.³⁵ Antidepressants are some of the most commonly prescribed drugs and include MAOIs, tricyclics and SSRIs. While they are used to treat depression, antidepressants are also often used in the treatment of other conditions, including anxiety disorders, bipolar disorder, obsessive compulsive disorder, eating disorders and chronic pain.

There are a little more than a half million patients in Medi-Cal who have been diagnosed with schizophrenia and there is substantial evidence that limited access to appropriate medications for schizophrenics has both severe health and cost consequences.

Schizophrenia is one of the conditions often treated by antipsychotics and is often a severe and persistent mental illness, characterized by cognitive deficits,

thought disorganization, mood abnormalities, and multiple functional deficits. Expert consensus guidelines for the treatment of schizophrenia have identified psychosocial interventions and continuous antipsychotic medications as core treatment modalities.³⁶ There are a little more than a half million patients in Medi-Cal who have been diagnosed with schizophrenia.³⁷

There is substantial literature suggesting that limited access to appropriate medications for schizophrenics has both severe health and cost consequences. A literature review of published studies from 1995 to 2002 examined economic evaluations of schizophrenia and antipsychotic therapies to determine the role of compliance with medication therapy in the economic cost of schizophrenia.³⁸ The data showed a definitive relationship between compliance and the economic costs of schizophrenia. Lower rates of compliance lead to higher costs of treating schizophrenia. Antipsychotic drugs, the most effective

³⁵ Ibid.

³⁶ Practice Guideline for the Treatment of Patients With Schizophrenia Am J Psychiatry 2004, 161(suppl):1-56.

³⁷ California Department of Health Services, 2007.

³⁸ Patricia Thieda, M.A., Stephen Beard, M.S., Anke Richter, Ph.D. and John Kane, M.D., "An Economic Review of Compliance With Medication Therapy in the Treatment of Schizophrenia", Psychiatric Services 54:508-516, April 2003.

treatment for acute episodes or exacerbations of schizophrenic illness, allow many patients to leave institutions and live in the community.^{39, 40, 41, 42} Rates of relapse among patients with schizophrenia who receive medication are two to three times lower than those among patients receiving placebo, and noncompliance increases the frequency of acute psychotic episodes and psychiatric hospitalization.^{43, 44, 45} Interruptions in antipsychotic therapy have been shown to diminish treatment effectiveness and increase the risk of hospitalization.^{46, 47, 48} Particularly noteworthy is a study using Medi-Cal data, which demonstrated that not only was risk of hospitalizations for Medi-Cal schizophrenics significantly associated with noncompliance, but there was also an increased risk of hospitalizations with any gap in medication.⁴⁹

The odds ratio for increased risk of hospitalization was almost doubled for schizophrenics with gaps in receiving medications of 1 to ten days; almost tripled with gaps of 11 to 30 days; and, almost quadrupled with gaps of more than 30 days.

This study found that the odds ratio for increased risk of hospitalization almost doubled with gaps in receiving medications of 1 to ten days, almost tripled with gaps of 11 to 30 days, and

³⁹ Kane JM, Marder SR. "Psychopharmacologic treatment of schizophrenia", *Schizophr Bull* 1993;19:287-302.

⁴⁰ Johnson DAW. "Drug treatment of schizophrenia", In: Bebbington P, McGuffin P, eds. *Schizophrenia: the major issues*. Oxford, England: Heinemann Professional, 1988:158-71.

⁴¹ Crane GE. "Clinical psychopharmacology in its 20th year: late, unanticipated effects of neuroleptics may limit their use in psychiatry". *Science* 1973;181:124-128

⁴² Ellenbroek BA. "Treatment of schizophrenia: a clinical and preclinical evaluation of neuroleptic drugs", *Pharmacol Ther* 1993;57:1-78.

⁴³ Kane JM, Marder SR. "Psychopharmacologic treatment of schizophrenia", *Schizophr Bull* 1993;19:287-302.

⁴⁴ Johnson DAW. "Drug treatment of schizophrenia", In: Bebbington P, McGuffin P, eds. *Schizophrenia: the major issues*. Oxford, England: Heinemann Professional, 1988:158-71.

⁴⁵ Davis JM, Gierl B. "Pharmacological treatment in the care of schizophrenic patients". In: Bellack AS, ed. *Treatment and care for schizophrenia*. Orlando, Fla.: Grune & Stratton, 1984.

⁴⁶ Herz MI, Glazer WM, Mostert MA, Sheard MA, Szymanski HV, Hafez H, Mirza M, Vana J: "Intermittent vs. maintenance medication in schizophrenia: two-year results", *Arch Gen Psychiatry* 1991, 48:333-339.

⁴⁷ Svarstad, B L, Shireman, T I, Sweeney, J K: "Using drug claims data to assess the relationship of medication adherence with hospitalization and costs", *Psychiatric Services* 2001, 52:805-811.

⁴⁸ Thieda P, Beard S, Richter A, Kane J: "An economic review of compliance with medication therapy in the treatment of schizophrenia", *Psychiatric Services* 2003, 54:508-516.

⁴⁹ Weiden, P, et al, "Partial Compliance and Risk of Rehospitalization among California Medicaid Patients with Schizophrenia, *Psychiatric Services*", Vol 55, No 8, August 2004.

almost quadrupled with gaps exceeding 30 days. It is not difficult to imagine that some Medi-Cal patients faced with not being able to obtain medications until the following day because of reduced hours or because they had to locate another pharmacy because their local pharmacy had stopped accepting Medi-Cal, would have both small and large gaps in compliance.

One study examining the effects of limits on Medicaid payments for drug treatment on access to effective pharmacotherapy and on the use of acute mental disorder care services among low-income, non-institutionalized patients with schizophrenia found that the increases in the costs of mental disorder services exceeded the savings in drug expenditures by a factor of more than 17.⁵⁰ They even stated that their methods probably underestimated the increase in health services that included use of emergency mental disorder services and partial hospitalizations, i.e. a non-residential day or evening treatment program that may be hospital-based or free-standing. Another study found that when New Hampshire limited access by setting a reimbursement limit of three prescriptions per month, drug use decreased in patients taking psychoactive drugs but the accompanying increase in emergency care and hospitalization costs exceeded drug coverage savings.⁵¹

A large majority of Californians who use California's county Mental Disorder services are enrolled in Medi-Cal. Medi-Cal beneficiaries who are living with a severe and/or persistent mental illness are eligible for services under California's Medi-Cal Specialty Mental Disorder Services program, which is administered by the state Department of Mental Health (DMH). Unlike most other states, California's Medi-Cal Specialty Mental Disorder program is entirely managed by local government. Drugs are an important part of this program and among the nearly half million clients in FY02-03 nearly half had

⁵⁰ Soumerai, S., McLaughlin, T., Ross-Degnan, D., Casteris, C., Bollini, P. "Effects of Limiting Medicaid Drug-Reimbursement Benefits on the Use of Psychotropic Agents and Acute Mental Disorder Services by Patients with Schizophrenia", *NEJM*, Volume 331:650-655, September 8, 1994

⁵¹ Surles, R., "Atypical Antipsychotics: Considerations for Medicaid Coverage", *The American Journal of Managed Care*, Vol. II No.8. Sup, September 2005.

medications. Total medication costs were about \$219 million.⁵² (A list of medication expenditures and number of clients in this program by county is in Appendix II.) For many of these people, whether they have schizophrenia or bipolar disorder, medication compliance is often difficult, but compliance is critical to managing their condition.

If five percent of Medi-Cal beneficiaries receiving specialty mental health services have difficulty in gaining access to their medications and as a result do not take their medications, have a crisis and require hospitalization, Medi-Cal program costs could increase by about \$33 million.

While we don't know how many people would have their access to appropriate medications limited by the California pharmacy provider cuts, we do know from

the literature cited earlier that when vulnerable populations face barriers to needed medications, e.g. limits on Medicaid payments for drug treatment as a cost containment strategy, this strategy can backfire. Sumaerai *et al* examined the effects of caps on Medicaid payment for access to effective pharmacotherapy and on the use of acute mental health services for low-income non-institutionalized patients. They found that the increase in costs exceeded the savings by a factor of 17 with an estimated \$1,530 average increase in mental health costs per patient.⁵³ Adjusted for medical inflation, this is \$5,800 per patient. Of those clients in the Medi-Cal Specialty Mental Disorder Services program receiving medications, we estimate the potential impact of reduced pharmacy access for five percent, ten percent and 15 percent of the clients based on the assumption that they would incur an additional cost of \$5,800 per year as a result of inadequate medication. Our estimates show that if just five percent of patients have difficulty in gaining access to their medications and as a result do not take their medications, have a crisis and require hospitalization, costs could increase by about \$33 million. If 15 percent of patients have difficulty in gaining access to their medications and as a result do not take their medications, have a crisis and require hospitalization, costs could increase by about \$134 million (Table 6).⁵⁴ A table that displays these increases in cost by county is included at

⁵² California Department of Mental Health Medi-Cal Trend Report for FY 2002-03.

⁵³ Ibid.

⁵⁴ The estimated average increase in total mental health costs are based on the following: 1) Statewide there are approximately 230,000 clients receiving medications. Statewide there are approximately 33,000 clients receiving inpatient care and about 5,000 receiving residential care. We don't know how many of the

Appendix III. In considering these data, it is important to remember that compliance is difficult for people with mental disorders and simply by increasing the distance patients or their caretakers must travel to get their medications the patient faces yet another hurdle to managing his or her condition.

Table 6. Barriers to medication could increase Medi-Cal mental health costs

County	Total Clients	Clients with Medications	Estimated average increase in total mental health costs assuming 5% have decreased access	Estimated average increase in total mental health costs assuming 10% have decreased access	Estimated average increase in total mental health costs assuming 15% have decreased access
Statewide	415,867	229,837	\$33,642,411	\$89,224,971	\$133,837,457

Source: Columns 1-3 are from the California Department of Mental Health Medi-Cal Trend Report for FY 2002-03. The methods for calculating costs in columns 3-6 are described in the text of this paper, "Assessing the Effects of Medi-Cal's Ten Percent Across-the-Board Provider Reimbursement Reductions on Access, Services and the Pharmacy Provider Network", May 2008.

Asthma

Asthma is one of the most common chronic diseases in the United States and has been recognized as a growing public health concern. The effects of asthma include missed school and work days, disruption of sleep and daily activities, urgent medical visits for asthma exacerbations, and even death. Asthma not only impacts people with asthma but also their family members and friends, as well as schools and businesses. There is no cure for asthma, but with access to medical care, appropriate medications, and proper self-management, people can control their symptoms so that they have a minimal effect on their daily lives.

Based on the California Health Interview Survey (CHIS), about 15 percent of California's Medi-Cal population has been diagnosed at some time with asthma.⁵⁵ This

clients receiving medications are receiving inpatient care, so, to be conservative we subtract out clients receiving inpatient and residential care to estimate the noninstitutionalized population. 2) The estimated average increase in total mental health costs for a percentage of the non-institutionalized population (five percent, ten percent, and 15 percent) is then calculated based on the assumption that they incur additional annual costs of \$5,800 per year net of a ten percent reduction in the payments of medications for the entire population.

⁵⁵ California Health Interview Survey, 2005 and California Dept of Health Services, Medical Care Statistics, Eligibility Data for March 2007.

translates to almost one million Medi-Cal beneficiaries and more than a half a million are children.

While asthma episodes can range from mild to life threatening, most can be prevented with appropriate clinical management, appropriate medication and a healthy physical environment.⁵⁶ To reduce asthma prevalence, morbidity, and mortality, the National Asthma Education and Prevention Program under the auspices of the National Heart, Lung, and Blood Institute developed expert guidelines for the diagnosis, management, and treatment of asthma.⁵⁷ Medications for asthma are categorized into two general classes: long-term control medications used to achieve and maintain control of persistent asthma and quick-relief medications used to treat acute symptoms and exacerbations. The guidelines advocate first-line use of anti-inflammatory agents, that is, inhaled steroids and mast-cell stabilizers, as maintenance drugs for chronic disease control and inhaled short-acting beta-2 agonists as rescue medications for the treatment of acute exacerbations only on an "as needed" basis.⁵⁸

There are almost 500 deaths, 36,000 hospital discharges, and 145,000 emergency department visits in California per year due to asthma.

As recently as June 2007, the California Department of Health Services (CDHS) released a report recognizing the need to address the health and cost burden of

asthma through better preventive care. The report noted that there are almost 500 deaths, 36,000 hospital discharges, and 145,000 emergency department (ED) visits (that did not result in hospitalization) per year due to asthma and that CDHS had established a blueprint for taking action against asthma through the Strategic Plan for Asthma in California. Over the past five years, strategies outlined in the plan have been implemented in an effort to reduce the burden of asthma in California.⁵⁹ Creating

⁵⁶ San Diego Regional Asthma Coalition, Asthma Report Card 2005.

⁵⁷ National Heart, Lung, and Blood Institute: Expert Panel Report 3, Guidelines for the Diagnosis and Management of Asthma, Full Report, August 28, 2007.

⁵⁸ Ibid.

⁵⁹ The Burden of Asthma in California: A Surveillance Report, California Department of Health Services, June 2007.

conditions that could limit access for the poorest Californians is unlikely to support their plan.

Medi-Cal pays approximately 45 percent of the cost of care for all children in California with asthma and the average charge for an asthma hospitalization was \$25,957 in 2007.

Asthma afflicts people of all ages. While managing this condition is critical for both adults and children, childhood asthma is an epidemic in

California with about 1.4 million children—14.8 percent of all the state's children -- now affected.⁶⁰ Some counties in California report that up to one out of four children have asthma.⁶¹ Asthma is also a leading cause of school absences. The average charge for an asthma hospitalization was \$25,957 in 2007.⁶² Asthma costs California approximately \$1.3 billion per year, with Medi-Cal paying approximately 45 percent of the cost of care for children.⁶³ Most of these expenditures are concentrated within a small group. National Medicaid data shows that the 25 percent of children with the most severe asthma cost 28 times as much as the least-severe quartile of children with asthma.⁶⁴

Due to scientific advances over the last 20 years, nearly all suffering and related costs for asthma are preventable. Asthma care management combines accurate diagnosis, preventive medical care, family health education, and assistance to help families reduce their children's exposure to asthma triggers. The National Institutes of Health has had widely accepted national clinical guidelines in place since 1991. Yet, current healthcare reimbursement policies do not adequately support chronic care management. As a result, many children are repeatedly prescribed ineffective cough medicines and short-acting rescue medication, leaving these children and their families in a life-threatening--and expensive--“emergency room revolving door.” Statewide there were 44,000 Medi-Cal

⁶⁰ Lund, L.E. “Asthma in Children and Adolescents in California Counties”, 2003. California Department of Health Services, Center for Health Statistics, 2005

⁶¹ Ibid

⁶² The Burden of Asthma in California, A Surveillance Report, CA Department of Health Services, June 2007.

⁶³ Allergy and Asthma Foundation of America, 1998

⁶⁴ Center for Healthcare Strategies, “Asthma Care for Children: Financing Issues, A CHCS Chartbook”, October 2001, p. 11 and 27

asthma emergency department encounters and more than half, about 24,000, were for children.⁶⁵ (See Appendix IV for Medi-Cal asthma emergency department data by county.)

We know that for many children and adults, lack of medication means missed school, missed work, and the agonizing and horrifying desperation of getting a breath. There is very limited data on the costs associated with missed medication, but later we will look at avoidable hospitalizations in California for conditions such as asthma and diabetes and consider what the costs would be if these hospitalizations increased due to lack of access to appropriate medication.

Diabetes

Diabetes is a syndrome characterized by disordered metabolism and abnormally high blood sugar (hyperglycaemia) resulting from low levels of the hormone insulin with or without abnormal resistance to insulin's effects.⁶⁶ The World Health Organization recognizes three main forms of diabetes mellitus: Type 1, Type 2, and gestational diabetes (occurring during pregnancy), which have different causes and population distribution. Type 1 and Type 2 are chronic conditions and all types have been treatable since insulin became medically available in 1921. Type 1 diabetes, in which insulin is not secreted by the pancreas, is directly treatable only with injected insulin, although dietary and other lifestyle adjustments are part of management. Type 2 may be managed with a combination of dietary treatment, tablets and injections and, frequently, insulin supplementation.

Diabetes can cause many complications. Acute complications, including coma, may occur if the condition is not adequately controlled. Serious long-term complications include cardiovascular disease (doubled risk), chronic renal failure, retinal damage (which can lead to blindness), nerve damage (of several kinds), and microvascular damage, which may cause impotence and poor healing. Poor healing of wounds,

⁶⁵ Office of Statewide Health Planning and Development, Emergency Department Data, 2006.

⁶⁶ L M Tierney, S J McPhee, M A Papadakis (2002). *Current medical Diagnosis & Treatment*. International edition. New York: Lange Medical Books/McGraw-Hill, 1203-1215. ISBN 0-07-137688-7.

particularly of the feet, can lead to gangrene, which may require amputation. Adequate treatment of diabetes, as well as increased emphasis on blood pressure control and lifestyle factors (such as not smoking and keeping a healthy body weight), may improve the risk profile of most aforementioned complications. In the developed world, diabetes is the most significant cause of adult blindness in the non-elderly and the leading cause of non-traumatic amputation in adults.⁶⁷

There are an estimated 860,000 Medi-Cal patients with diabetes.⁶⁸ Many are potentially at risk of a life threatening event resulting from inadequate medication. Pitney Bowes Inc, a long time member of the S&P 500, recently revamped its drug benefit by shifting all diabetes drugs and devices from Tier 2 or 3 formulary status to Tier 1 based on a predictive model showing that low medication adherence was linked to subsequent increases in healthcare costs in patients with diabetes,. The rationale was that reducing patient out-of-pocket costs would eliminate financial barriers to preventive care, and thereby increase adherence, reduce costly complications, and slow the overall rate of rising healthcare costs.⁶⁹

Contraceptive Services

In 2005, there were 251,926 Medi-Cal deliveries, representing 46 percent of all births in California hospitals in that year.⁷⁰ The number of deliveries has been increasing steadily since 1998 with a compound annual growth rate of 2.2 percent.⁷¹ Based on historical data, we can probably expect Medi-Cal births to continue to increase at this rate. However, if Medi-Cal beneficiaries' access to contraceptives is delayed or denied the result could be an increased birth rate among Medi-Cal beneficiaries.

⁶⁷ Diabetes Mellitus, Wikipedia (<http://en.wikipedia.org/wiki/Diabetes>) Accessed April 21, 2007

⁶⁸ California Health Interview Survey, 2005 and California Dept of Health Services, Medical Care Statistics, Eligibility Data for March 2007.

⁶⁹ John J. Mahoney, MD, "Reducing Patient Drug Acquisition Costs Can Lower Diabetes Health Claims", The American Journal of Managed Care, Volume 11:S170-S176, August 2005, Number 5 Supply

⁷⁰ Medi-Cal Funded Delivers 2004, California Department of Healthcare Services, 2006. Statistics are for 2004 data.

⁷¹ Ibid

In 2000, Medi-Cal spent approximately \$6,900 per child for the delivery and first year of care for each child born to a Medi-Cal mother.⁷² Based on the estimated number of 2007 Medi-Cal deliveries, a one percent increase in the birth rate resulting from delayed or denied contraceptives would result in an additional 2,261 unplanned deliveries and an additional \$18 million in payments for the first year alone, based on Medi-Cal payments for 2000.

Table 7. Deliveries to Medi-Cal beneficiaries, CY2005 and CY2007, and estimated costs associated with an assumed increase in deliveries of one percent

Region	Number of Medi-Cal Deliveries, 2005	Estimated Number of Medi-Cal Deliveries 2007 (1)	Number of deliveries based on a one percent increase from 2007	Costs Associated with a one percent increase in deliveries (2)
CA STATEWIDE	251,926	262,104	2,621	\$18,171,657

Source: Medi-Cal funded deliveries, 2005, California Department of Health Services, 2006.

(1) Births for 2007 were estimated based on a historical compound annual growth rate of 2.2% derived from data for 1998-2005 from the source document cited above.

(2) Costs are based on the estimated costs for 2000 of an average Medi-Cal delivery and the first year of life published in FFACT Project, Expenditure Limit Demonstration Year 1, CDHS, May 21, 2004.

(County level data on Medi-Cal deliveries and costs associated with a one percent increase in deliveries are included in Appendix IV.)

Asthma, Diabetes and Avoidable Hospitalizations

One measure of Medi-Cal beneficiaries' access to ambulatory care and appropriate medication is preventable hospitalization rates, i.e. admissions for conditions such as asthma, diabetes, and hypertension that can often be managed with timely and effective treatment in an outpatient setting and appropriate medication. A recently released report provides the rate of preventable hospitalizations by county. Hospitalization often reflects

⁷² Costs are based on the estimated payments for an average Medi-Cal delivery and the first year of life as published in FFACT Project, Expenditure Limit Demonstration Year 1, CA Dept. of Health Services, May 21, 2004. The costs were estimated at \$6,933 for 2000.

the most serious of consequences of lack of medication and provides just a small part of the picture of suffering and difficulty encountered by others whose condition does not result in a hospital admission. Nonetheless, because we know that drugs are a critical component for controlling conditions such as diabetes and asthma, it is not unreasonable to assume that if patients do not have access to drugs hospitalizations could increase. More than likely the lack of access would put strains on other components of the health system, adversely affect the family, and result in loss of work or school days. (Data on the number and costs associated with avoidable hospitalizations for Medi-Cal patients by county assuming a one percent, five percent and ten percent increase in avoidable hospitalizations are included in Appendix VI.)

Conclusions

A ten percent reduction in Medi-Cal provider reimbursement will result in participating pharmacy providers receiving reimbursement that is less than the cost of acquiring and dispensing many of the drugs they provide to Medi-Cal beneficiaries. Studies of provider behavior have found that although Medicaid providers are willing to accept reimbursement that is less than they are paid by other payers, when reimbursement rates are reduced to the point that they do not cover the cost of providing services, providers become discouraged and alter their practice patterns or leave the program altogether. If Medi-Cal pharmacy providers respond as other provider types have when faced with a similar situation. It is likely that access to prescription drugs for some Medi-Cal beneficiaries will be compromised as pharmacies reduce hours, no longer accept new Medi-Cal beneficiaries or decide to no longer participate as Medi-Cal providers. This is especially important for Medicaid beneficiaries for whom seemingly minor changes in access to medication can create major service barriers to treatment.

The ten most prescribed classes of drugs for Medi-Cal beneficiaries are drugs for the treatment of mental health disorders and chronic diseases including asthma and diabetes, all conditions and diseases in which medication noncompliance is one of the greatest risk factors for relapse. If beneficiaries with any of these conditions do not get their medications or if they do not get timely medications, their condition is likely to

deteriorate and result in an emergency department visit or an admission into a hospital, and increased costs to the Medi-Cal program.

If five percent of Medi-Cal beneficiaries receiving specialty mental health services have difficulty in gaining access to their medications and as a result of not taking their medications have a crisis and require hospitalization, Medi-Cal program costs could increase by an estimated \$33.6 million; ten percent, an estimated \$89.2 million; and, fifteen percent, an estimated \$133.8 million.

Alternatives to the Provider Reimbursement Reductions

It is clear that imposing a ten percent across the board reduction in Medi-Cal pharmacy provider reimbursement will yield the initial reductions in pharmacy costs desired by the state. However, imposing the reductions may well ultimately result in the state incurring costs for beneficiary care that are higher than the savings that will be achieved, and may also result in pharmacies reducing services or leaving the Medi-Cal pharmacy provider network. Nevertheless, the state is facing a significant budget deficit, and there is no question that steps must be taken to close the deficit.

As mentioned earlier, the Medi-Cal Pharmacy benefit is broad and widely used, and the pharmacy program is well managed. Medi-Cal has taken a number of steps over the years to control prescription drug costs and ensure that the pharmacy benefit is used appropriately. Nevertheless, there are still steps that can be taken to yield savings that are equal to or greater than the \$86 million in general revenue savings that the ten percent reduction in provider reimbursement was designed to yield.

Presented below are examples of cost savings strategies that could be implemented to yield total savings greater than those that would be achieved by implementing the ten percent reduction in provider reimbursement. The examples that are included are not an inclusive list and care has been taken not to include examples on the list that require extensive prior authorization, excessive co-pays or any other mechanism that might inhibit access to needed prescription drugs.

Multi-State Purchasing Pools

The estimated savings to be realized from Medi-Cal's joining a multi-state pool are more than \$16 million.

Although Medi-Cal is not currently a member of a multi-state drug purchasing pool, California government is no stranger to multi-state purchasing pools. California is a member of the Minnesota Multi-state Contracting Alliance for Pharmacy (MMCAP). The MMCAP is a multi-state voluntary group purchasing organization whose mission is to provide, through volume contracting and careful contract management, the best value in pharmaceuticals and related products to its members - eligible governmental healthcare facilities. The National Conference of State Legislators reports that "According to program staff, MMCAP achieves average savings of approximately 23.7 percent below AWP for brand name pharmaceuticals and 65 percent below AWP for generics."⁷³ Medi-Cal cannot participate in this pool because membership is limited to governmental healthcare facilities that dispense drugs, such as correctional institutions and government operated hospitals and other healthcare facilities. There are however purchasing pools in which Medi-Cal can participate.

Twenty-four states have joined to form Medicaid multiple-state prescription drug purchasing arrangements to leverage better prices and greater rebates from manufacturers. The Centers for Medicare and Medicaid Services (CMS) initially approved an arrangement in 2004 involving Alaska, Hawaii, Michigan, Minnesota, Montana, New Hampshire, Nevada and Vermont. In 2005, two other multi-state purchasing pools were approved by the Centers for Medicare and Medicaid Services (CMS), increasing the number of states involved to seventeen. Since 2006, an additional seven states have joined, bringing the total to 24.

States involved in the purchasing pools reported increased savings ranging from two and one-half to three percent of total drug costs for some states to an increase of ten percent

⁷³ Pharmaceutical Bulk Purchasing: Multi-state and Inter-agency Plans, 2008 Edition. National Association of State Legislators (2008)

over state specific rebate arrangements for others.⁷⁴ Because most of the savings are realized from increased rebate payments from manufacturers and because the Medi-Cal program has been so aggressive in pursuing rebates and supplemental rebates, it would be practical to estimate the savings to be realized from California's joining such a multi-state pool at two percent of total Medi-Cal fee-for-service pharmacy costs, or 20 percent less than the lowest reported savings rate. With total fee-for-service Medi-Cal pharmacy costs being estimated at \$803.9 million for FY 2008 in the November 2007 Medi-Cal Estimate, the savings to be realized from joining a multi-state pool are \$16 million.

Medication Therapy Management (MTM) for Beneficiaries with Multiple Chronic Medical Conditions

Introducing Medication Therapy Management for Medi-Cal Beneficiaries with Multiple Chronic Medical Conditions could yield an estimated \$16.49 million in savings

MTM is primarily intended to help patients to better understand their drug therapies and to improve adherence to prescribed regimens. These programs typically focus interventions on patients with complex chronic medical

conditions, especially those with a high risk of complications and co-morbidities, such as diabetes, kidney disease, asthma and other chronic pulmonary diseases, or chronic heart disease.

MTM gained widespread public attention when Congress mandated that it be offered as a service by plans participating in the new Medicare Part D benefit. Given that Part D requires MTM for high-use, high-cost Medicare beneficiaries using multiple medications – including many dual eligibles that are still covered by Medicaid for other services such as long-term care – a logical extension would be to apply the same MTM requirements to high-use, high-cost beneficiaries on multiple medications for chronic conditions who remain in Medicaid. MTM services provided by community pharmacists to Blue Cross Blue Shield health plan beneficiaries, in collaboration with primary care providers,

⁷⁴ 2007 “State Perspectives Medicaid Pharmacy Policies and Practices.” National Association of State Medicaid Directors (2007)

resulted in a 31.5 percent reduction in total health expenditures per person from \$11,965 to \$8,197, and a 14 percent increase in patient's goals of therapy being met from first encounter to final encounter with their pharmacist. The reduction in total annual health expenditures exceeded the cost of providing MTM services by more than 12 to 1.⁷⁵

An Oregon Medical Assistance Program medication therapy management program reviews the drug therapy of any patient who has been prescribed more than 15 unique fee-for-service medications in a six-month period. The OMAP program reviews:

- a. Overuse of selected drug classes;
- b. Under-use of generic drugs;
- c. Therapeutic drug duplication;
- d. Drug to disease interactions;
- e. Drug to drug interactions;
- f. Inappropriate drug dosage;
- g. Drug selection for age;
- h. Duration of treatment;
- i. Clinical abuse or misuse.

An independent analysis of a medication therapy management program in Minnesota indicates that the program identified and resolved 789 drug therapy problems in 259 recipients (3.1 drug therapy problems per recipient) in its first year of operation, with the most effective results achieved through collaborative relationships with treating physicians.⁷⁶ A similar program in North Carolina reduces fraud and abuse by doctor-shopping beneficiaries by also locking in beneficiaries to specific pharmacies.

In July 2003, the state of Missouri undertook a pharmacy-led disease management program for Medicaid beneficiaries with asthma, depression, diabetes, and a history of

⁷⁵ Isetts, Brian, Schondelmeyer, Stephen, Artz, Margaret, Lenarz, Lois, Heaton, Alan, Wadd, "Clinical and Economic Outcomes of Medication Therapy Management Services: The Minnesota Experience", Wallace, Brown, Lawrence, Cipolle, Robert. *Journal of the American Pharmacists Association* Volume 48, Number 2 / March - April 2008.

⁷⁶ Isetts, Brian, "Evaluating Effectiveness of the Minnesota Medication Therapy Management Care Program", University of Minnesota College of Pharmacy, State Contract B00749, December 14, 2007.

congestive heart failure, choosing those beneficiaries for participation who were most at risk. Once a candidate was identified, the Department of Medicaid Services recruited the beneficiary's primary care provider and the pharmacist normally used to fill the beneficiary's prescriptions, asking those providers to work with the program in a collaborative mode. The providers were encouraged to have at least one initial face-to-face meeting after the physician conducted his or her analysis of the beneficiary's condition and set up treatment guidelines and the pharmacist had analyzed the beneficiary's drug regimen and medical history. Following that initial provider meeting, medication therapy management and disease management was provided through face-to-face meetings between the beneficiary and one or both providers – depending on the issues to be discussed.

At the end of the first year of program operation, Missouri Medicaid officials estimated that per capita annual Medicaid expenditures had been reduced by \$6,804 and they projected annualized savings for the program of \$2.4 million.⁷⁷ The 1,203 high-risk patients enrolled in the Missouri Medicaid disease management program (out of a population of about 931,500 enrollees at the time) showed a 7.6 percent reduction in healthcare utilization, including fewer hospitalizations, fewer emergency room visits, lower prescription drug utilization, fewer office visits, and lower per-month expenditures.

Missouri Medicaid has since enhanced the program. The system now gathers and integrates lab and clinical data into a web-based electronic patient record containing 24 months of drug and medical data and encounter information that primary care and pharmacy providers can access at the same time they access a database of best practices. As a result of the better patient follow-up, patients miss fewer primary care provider appointments and receive better education in the treatments they need and the conditions and illnesses from which they suffer.

⁷⁷ *2006 Disease Management Directory & Guidebook*, "Pharmacist-Led DM Delivers Clinical, Financial Dividends, pp. 7-ten, and Missouri Medicaid DM Program Shows Positive First-Year Outcomes, pp. 583-84.

While it is difficult to calculate how many Medi-Cal beneficiaries would qualify for inclusion in the target population for a medication therapy management program designed for beneficiaries with multiple chronic conditions, assuming participation in the California program parallels the 0.13 percent participation in the Missouri Program, using estimated Medi-Cal's 2008 monthly Medicaid population of 6,563,800, and applying the \$2,000 per participating patient savings from the Missouri Medicaid program (measured in terms of a decrease in total health expenditures per person for the year following implementation of MTM) yields a potential 8,243 participants and potential savings in California from this approach of \$16.49 million.

Increase the Rate of the Use of Generic Drugs

Raising Medi-Cal's 53.6 percent generic dispensing rate by 11.2 percentage points to neighboring Oregon's 64.8 percent rate would yield more than an estimated \$100 million annually.

California pharmacy law authorizes pharmacies to dispense generic equivalents of prescribed brand name drugs unless the prescriber indicates orally or in

writing "do not substitute."⁷⁸ In addition, the Medi-Cal Pharmacy Provider Manual provisions governing reimbursement state that reimbursement will be provided in excess of the federal FUL or the state Maximum Allowable Ingredient Cost (MAIC) for a branded multiple source drug only when the brand is medically necessary and when prior approval is obtained from a Medi-Cal consultant.⁷⁹ Dennis Smith, Director of the Center for Medicaid and State Operations Centers for Medicare & Medicaid Services, testifying before the House Energy and Commerce Subcommittee on Oversight and Investigations in 2004 noted that many private plans have generic use rates of over 90 percent and also noted that 39 state Medicaid programs required that generics be dispensed to beneficiaries when they are available.⁸⁰

⁷⁸ West's Ann.Cal.Bus. & Prof.Code § 4073.

⁷⁹ Medi-Cal Pharmacy Manual, *Reimbursement Guidelines*, p.4, April 2006.

⁸⁰ Testimony of Dennis Smith Director, Center for Medicaid and State Operations, Centers for Medicare & Medicaid Services on Medicaid Prescription Drug Reimbursement before the House Energy and Commerce Subcommittee on Oversight and Investigations (2004)

Nevertheless, Medi-Cal's 53.6 percent generic utilization rate in 2006 ranked it in the bottom five percent of state Medicaid generic utilization rates for that year. However, if a financial incentive to dispense generics exists, the pharmacist could still place a follow-up call to a prescriber who has had a brand name prescription authorized to explain why the use of a generic equivalent might still be advisable. Changing the law to encourage or require the use of generics when a generic alternative is available and when the generic alternative costs less than the brand name drug could yield substantial savings. In Calendar Year 2006, every one percent increase in the Medi-Cal Program's generic utilization rate would have saved the state about \$20.85 million, pre-rebate.

It is important to recognize that Medi-Cal's rebate and supplemental rebate programs are designed to realize significant savings for the state. The exact percentage that rebates yield is not available because the information is proprietary, and the rebate agreements between the state and pharmaceutical manufacturers prohibit release of this information. Even if that amount is adjusted downward by 55 percent to account for the rebates and supplemental rebates, the state would still have realized a savings of approximately \$9.4 million for each one percent increase in the Medi-Cal Program's generic utilization rate. The estimate of 55 percent was developed by assuming that the total rebates received by Medi-Cal was 75 percent greater than the average rebate of 31.4 percent received in 2003 by Medicaid programs in general as reported in a Congressional Budget Office Report in 2005.⁸¹

Brand name drugs that pay supplemental rebates are placed on a "Contract Drug List" by Medi-Cal, and pharmacists are able to dispense them and receive payment without having to go through a prior approval process. If a physician or a pharmacist wishes to dispense a generic equivalent in place of one of the brand name drugs on the list, they must first get prior approval from Medi-Cal. Presumably, because of the total rebates received for them from manufacturers, some of these brand name drugs actually cost the state less

⁸¹ The Rebate Medicaid Receives on Brand-Name Prescription Drugs, Congressional Budget Office June 21, 2005

than generic equivalents. However, this is not the case with all brand name drugs and even with those drugs which were found to be less expensive than generics, it is only the case when rebate contracts are current, when information in the contracts is entered into the Medi-Cal claims payment system timely so that payments are made correctly and when Medi-Cal staff take all the steps necessary to collect the correct rebate amount.

Therefore, in order for the state to ensure that it receives the maximum rebates Medi-Cal it is important that Medi-Cal staff:

1. Know which brand name drugs are less expensive than their generic equivalents and know the number of rebate contracts, by drug, they have in force;
2. Monitor these contracts to ensure that they are renegotiated timely and to ensure that the maximum rebates are received by the state;
3. Ensure that renegotiated contracts are loaded into the Medi-Cal claims payment system timely so that claims are paid accurately and rebates are calculated correctly; and,
4. Ensure that when rebate and supplemental rebate contracts lapse or are terminated the information is loaded into the Medi-Cal claims payment system timely so that the payment system will not prevent pharmacists from dispensing a generic equivalent.

Although there are circumstances in which some brand name drugs are less expensive than their generic alternatives, most generic drugs are still the least costly alternative. The average cost of a generic dispensed to Medi-Cal enrollees in Federal Fiscal Year 2006 was about \$26.65, which is just 13.9 percent of the \$191.85 average cost for a single-source (patented) brand name medication and an average difference of about \$165.20 per prescription. Even if the brand name drugs are adjusted downward 55 percent for rebates and the generic drugs are not adjusted for rebates, the price difference remains significant. The average brand name price and the size of the difference between generic and brand name drugs in the Medi-Cal program are among the highest

among all state Medicaid programs. Despite being dispensed 53.6 percent of the time, generics constituted only about 13.8 percent of program spending on prescriptions. AARP reported in March 2007 that over the previous year, the average prices of brand name drugs crucial to the elderly had increased by 6.2 percent, while the average prices of commonly used generic medications had dropped by about two percent. Generic drugs continue to appear to be the best buy.

During 2006, the federal Food and Drug Administration authorized the manufacture of generic versions of a number of highly utilized, high-cost brand name prescription drugs. Seven of those drugs – Zocor (\$58.11 million), Zoloft (\$45.1 million), Ambien (\$40.27 million), Pravachol (\$39.75 million), Lexapro (\$31.51 million), Mobic (\$28.11 million), and Wellbutrin XL (\$8.83 million) – cost Medi-Cal about \$251.68 million in 2005. That was 5.6 percent of the \$4.46 billion spent on Medicaid prescriptions. In 2007, a generic equivalent of the high blood pressure medicine Norvasc, on which the California Medicaid program spent \$73.72 million in 2005, entered the market. In 2008, at least four highly utilized anticonvulsants on which Medi-Cal spent \$93.13 million (four percent of Medicaid drug expenditures) in 2006 – Depakote (\$38.79 million), Lamictal (\$19.92 million), Topamax (\$23.79 million), and Keppra (\$10.63 million) – are scheduled to lose patents. Within the next year, use of these newly released generic equivalents could reduce Medicaid expenditures for these drug therapies by 80 to 85 percent pre-rebate.

A one percent increase in the generic dispensing rate in California would yield an estimated \$9.40 million, adjusted for rebates, in annual savings. Raising Medi-Cal's 53.6 percent generic dispensing rate by 11.2 percentage points to neighboring Oregon's 64.8 percent rate would yield more than \$105 million, adjusted for rebates, annually. Four brand name anticonvulsants on which Medi-Cal spent \$93.13 million (pre-rebate) in 2006 – four percent of Medicaid drug expenditures – are due to go off-patent in 2008. If the new generic versions are preferred by the state, savings in the first year should range from \$31 million to \$46.6 million pre-rebate. In subsequent years, if the number of prescriptions of the four drugs remains consistent and prices of the generic equivalents

trend as expected, preferring the generic versions of these drugs should yield \$62.1 million to \$77.6 million pre-rebate in savings annually. It is important therefore to the program's continuing cost-savings efforts that generics are preferred when a generic alternative that is less costly to the state is available but also that Medi-Cal maximizes opportunities to add generics to the list of drugs that are reimbursed at MAIC. It is also important that generics be the preferred alternative in the minds of those who prescribe and dispense prescription drugs.

Changing the Early Refill Restriction from 75 to 80 Days for Medi-Cal beneficiaries would yield approximately \$3.7 million.

Changing the Early Refill Restriction from 75 to 80 Days

Although the Medi-Cal DUR Alert Criteria Manual indicates that refills cannot be dispensed unless 75 percent of the prescription has been utilized, there is still a significant potential for waste of the medication prescribed if the patient subsequently abandons his or her medication regimen or that regimen is discontinued, changed or modified by the prescribing provider. Even a 75 percent threshold on a 100-day prescription supply allows for the dispensing of a new prescription with 25 days' supply still left to be consumed. An 80 percent threshold would still give beneficiaries 20 days to refill a 100-day prescription, but would reduce the potential for waste and fraud.

Prohibiting refills of 100-day supplies unless the prescription has been 80 percent consumed would prevent waste when the patient's therapy is subsequently discontinued, changed, or modified by the prescriber or abandoned by the patient. It also would prevent patient hoarding of medications. NACDS estimates a 0.16 percent savings from increasing the refill threshold from 75 percent to 80 percent, or savings of approximately \$3.74 million annually.

If Medi-Cal implemented e-prescribing with e-technology to 20 percent (22,725) of its providers, the state could save an estimated \$224.98 million annually.

E-Prescribing & Electronic Health Records Technology

The Florida Agency for

Healthcare Administration has experienced great success with its ongoing Florida Medicaid pilot program utilizing wireless handheld devices in e-prescribing. In addition

to facilitating the electronic transmission of prescriptions to pharmacies across the state, those personal digital assistants (PDAs) are capable of calling up and displaying the state Medicaid preferred drug list, 100 days of patient-specific prescription history, and patient-specific drug utilization reports (including drug interaction reports). The devices are currently being used by 3,000 prescribers in the state, and the Florida pilot has produced average savings over more than two years of about \$825 per participating provider per month.

These devices also can be utilized to afford prescribers a better and quicker indication of which of their patients would best benefit from medication therapy management or disease management. Disease management program participants are often identified by contracted program consultants and only on occasion have participants been recommended for participation by treating providers or pharmacists. However, the array of information made available via wireless handheld prescribing devices makes it easier for primary care providers to identify potential candidates for medication therapy management and disease management. These devices can alert providers when patients are on five or more medications, and are thus more likely to be susceptible to medication interactions or reactions or to be involved in medication misuse and abuse. In addition, they could provide more readily available indications to a patient's primary care provider that the patient is being treated by another provider or specialist for conditions that signal a chronic condition that lends itself to more patient-centered care.

California has approximately 113,624 physicians providing services in the state. If California achieved results similar to Florida's with just 20 percent (22,725) of its providers, the state could save as much as \$224.98 million annually by implementing e-prescribing with e-technology.

Conclusions

California is facing a significant budget deficit and it is clear that reductions must be made in government spending in this year and next year to close that deficit. However, there are alternatives to the ten percent reduction in Medi-Cal provider rates imposed by

the Governor that will yield savings that are equal to or greater than the savings that would be produced by the reimbursement reductions without creating possible negative effects on beneficiary access, beneficiaries services and the pharmacy provider network. These alternatives include having Medi-Cal join a multi-state pool which would yield an estimated \$16 million in savings; introducing medication therapy management for Medi-Cal Beneficiaries with Multiple Chronic Medical Conditions which would yield an estimated \$16.49 million in savings; requiring/encouraging generic substitution which if Medi-Cal's 53.6 percent generic dispensing rate were raised to 64.8 percent would yield more than \$105 million annually adjusted for rebates; changing the early refill restriction from 75 to 80 days for Medi-Cal beneficiaries would yield approximately \$3.7 million; and, adopting e-prescribing with e-technology which would yield an estimated \$224.98 million annually if 20 percent of Medi-Cal physician providers were equipped and enrolled.

Bibliography

Prescription Drug Access Project

National Association of Chain Drug Stores Foundation. 2007. *The Chain Pharmacy Industry Profile*

California Pharmacists Association, California Retailers Association. Capitol Advocacy *Budget Issue: Medi-Cal Pharmacy Provider Rates ten% Cuts Recommendations for Cost Savings Approaches Under the Medi-Cal Pharmacy Program*. February 2008

The San Diego Regional Asthma Coalition. 2005. *Asthma Report Card*

California Department of Health Services. June 2007. *The Burden of Asthma in California Surveillance Report*

Riverside Press Enterprise. April 15 2008. *Fewer Riverside County Doctors Would Treat Medi-Cal Patients if State Budget cuts come to Fruition, a Survey Says*

Weiden, M.D, P.J., C. Kozma, Ph.D., A. Grogg, Pharm.D., J. Locklear, Pharm.D., M.B.A.. "Partial Compliance and Risk of Rehospitalization Among California Medicaid Patients With Schizophrenia." *Psychiatric Services* 55.8 (2004): 886-91.

Myers and Stauffer LC. *Survey of Dispensing and Acquisition Costs of Pharmaceuticals in the State of California*. 2007.

Tootelian, PhD, Dennis H. *Independent Community Pharmacy Survey on the State of Pharmacy Practice*. April 2007

Gilmer, T.P., C.R. Dolder, Pharm.D., J.P. Lacro, Pharm.D., D.P. Folsom, M.D., L. Lindamer, Ph.D., P. Garcia, Ed.D., D.V. Jeste, M.D. "Independent Community Pharmacy Survey on the State of Pharmacy Practice." *American Journal Psychiatry* 161 (2004): 692-99.

Lichtenberg, F.R. "Are the Benefits of Newer Drugs Worth the Cost? Evidence from the 1996 MEPS." *Health Affairs* 20.5 (2001): 241-51.

Soumerai, S.B. "Benefits and Risks of Increasing Restrictions on Access to Costly Drugs in Medicaid." *Health Affairs* 23.1 (2004): 135-46.

Soumerai, S.B., F. Zhang, D. Ross-Degnan, D.E. Ball, R.F. LeCates, M.R. Law, T.E. Hughes, D. Chapman, and A.S. Adams. "Use Of Atypical Antipsychotic Drugs For Schizophrenia In Maine Medicaid Following A Policy Change." Web Exclusive *Health Affairs* (April 1, 2008): w195-w185.

Cromwell, D.M. "Can restrictions on reimbursement for anti-ulcer drugs decrease Medicaid pharmacy costs without increasing hospitalizations? - Changing Treatment Patterns." *Health Services Research* (1999).

Chernew, M, M.R. Shah, A. Wegh, S.N. Rosenberg, I.A. Juster, A.B. Rosen, M.C. Sokol, K. Yu-Isenberg, A.M. Fendrick. "Impact Of Decreasing Copayments On Medication Adherence Within A Disease Management Environment." Health Affairs 27.1 (2008): ten3-112.

The Rebate Medicaid Receives on Brand-Name Prescription Drugs, Congressional Budget Office June 21, 2005

Silberman, JD, DrPH, P., M. Rudolf, BS, L. Brogan, BS, and S. Poley, BS, R. Slifkin, PhD, C. Moore, PhD. "The Impact of Medicaid Cuts on Rural Communities." North Carolina Rural Health Research and Policy Analysis Center. (August 2005) Working Paper #82. .

ISPOR Medication Compliance Bibliography Group. Bibliography of Medication Compliance Costs of medication noncompliance publications sorted by year

Legislative Analyst's Office. 2008-2009 Analysis. Health and Social Services

Lichtenberg, F.R., *The American Economic Review*, Vol. 86, No. 2, Papers and Proceedings of the Hundredth and Eighth Annual Meeting of the American Economic Association San Francisco, CA, January 5-7, 1996. (May, 1996), pp. 384-388.

Gilmer TP, Dolder CR, Lacro JP, Folsom DP, et al.; "Adherence to Treatment With Antipsychotic Medication and Healthcare Costs Among Medicaid Beneficiaries With Schizophrenia". American Journal of Psychiatry 161 (4); 692-699.

Surles, PhD, R.C., "Atypical Antipsychotics: Considerations for Medicaid Coverage". The American Journal of Managed Care (September 2005): S248-S253.

National Community of Pharmacists Association. Communities at Risk A Community Pharmacy Fact Sheet

Medi-Cal Fact Sheet. March 1, 2008

Ascher-Svanum H, B. Zhu; D. Faries; R. Landbloom; M. Swartz; J. Swanson, "Time to discontinuation of atypical versus typical antipsychotics in the naturalistic treatment of schizophrenia". *Medscape* (April 14, 2006).

Grant Thornton LLP. "National Study to Determine the Cost of Dispensing Prescriptions in Community Retail Pharmacies". (January 2007)

Patients for Access to Medicines. "What People are saying about Cuts in Medi-Cal Reimbursement Rates"

Bindman, MD, A.B., K. Goodwin, A. Chattopadhyah, Ph.D., G. Auerback, M.P.H., "Preventable Hospitalizations Among Medi-Cal Beneficiaries and the Uninsured" The California Healthcare Foundation (December 2007)

McCombs, Ph.D., J.S., M.B. Nichol, Ph.D. B.M. Johnstone, Ph.D., G.L. Stimmel, Pharm.D., J. Shi, M.S, R. Smith, Pharm.D., “Antipsychotic Drug Use Patterns and the Cost of Treating Schizophrenia”. Psychiatric Services 51.4 (2000) 525-527.

Duggan, M. “Do new prescription drugs pay for themselves? The case of second-generation antipsychotics Journal of Health Economics” Journal of Health Economics 24 (2005) 1–31.

Gencarelli, D.M. “Medicaid Prescription Drug Coverage: State Efforts to Control Costs” *National Association of Health Policy Brief* No.790 (May ten, 2003).

Kleinke, J.D. “The Price Of Progress: Prescription Drugs In The Healthcare Market” Health Affairs 20.5 (2001) 43-60.

Adams, E.K., Gavin, N. “Patterns of pharmacy participation in Medicaid: implications for enrollee access”, Inquiry (1996-1997) Winter; 33(4):339-51.

Zuckerman, S., McFeeters, J., Cunningham, P., Nichols, L. “Changes In Medicaid Physician Fees, 1998– 2003: Implications For Physician Participation Health Affairs Health Tracking Trends Web Exclusive (2004) June

Baker, L. C., Royalty, A. B., "Medicaid Policy, Physician Behavior, and Healthcare for the Low-Income Population" (July 1997) Social Science Research Network.

Borchgrevink, A., Snyder A., Gehshan, S., “The Effects of Medicaid Reimbursement Rates on Access to Dental Care” , National Academy for State Health Policy. (March 2008).

Schneider, D., DDS, MPH, “South Carolina Dental Medicaid: Payment and Other Reforms” Children’s Dental Health Project. (January 2007).

Peter J. Cunningham, Jack Hadley, “Effects of Changes in Incomes and Practice Circumstances on Physicians' Decisions to Treat Charity and Medicaid Patients” The Milbank Quarterly, Vol. 86, No. 1 (March 2008).

Richard C. Surlles, PhD, “Atypical Antipsychotics: Considerations for Medicaid Coverage”, *The American Journal of Managed Care*, Volume 11:S248-S253 (September 2005)

Feinberg, A., Hicks, W., “Patient Compliance with the First Newborn Visit Appointment”, Journal of Perinatology (2003) Volume 23, 37–40

Oversight of State Performance and Access to Dental Care for Medicaid Beneficiary Children House Oversight and Government Reform Subcommittee on Domestic Policy (May 2007)

Eisert S, Gabow P. “Effect of Child Health Insurance Plan Enrollment on the Utilization of Healthcare services by children using a public safety net system”, Pediatrics (2002) 1ten:940 –5.

Weingarten N, Meyer D.L., Schneid J.A. “Failed appointments in residency practices: who misses them and what providers are most affected?”, Journal of the American Board of Family Practice (1997) ten:407–11

Bailey, J.E., Lee M. D., Somes G. W., Graham R. L., “Risk Factors for Antihypertensive Medication Refill Failure by Patients under Medicaid Managed Care”, Clinical Therapeutics (1996)

Ghaffari, A., “Treatment Outcomes and Retention in Medicaid and Non Medicaid Orthodontic Patients”. A Thesis Submitted in Partial Fulfillment of The Requirements for the Degree of Master of Science at Virginia Commonwealth University. 2008

Horsley BP, Lindauer SJ, Shroff B, Tufekci E, Abubaker AO, Fowler CE, et al. “Appointment keeping behavior of Medicaid vs non-Medicaid orthodontic patients”, Am J Orthod Dentofacial Orthop. 2007;132(1):49-53.

2007 State Perspectives Medicaid Pharmacy Policies and Practices. National Association of State Medicaid Directors (2007)

Pharmaceutical Bulk Purchasing: Multi-state and Inter-agency Plans, 2008 Edition. National Association of State Legislators (2008)

Testimony of Dennis Smith Director, Center for Medicaid and State Operations, Centers for Medicare & Medicaid Services on Medicaid Prescription Drug Reimbursement before the House Energy and Commerce Subcommittee on Oversight and Investigations (2004)

Appendix I. Medi-Cal Specialty Mental Health Services Clients & Drug Expenditures by County FY02-03

County	Clients with Medications	Medication Expenditures
Statewide	229,837	\$219,401,486
Alameda	9,040	8,193,756
Alpine*		
Amador	220	88,067
Butte	2,705	3,072,473
Calaveras	231	212,653
Colusa	155	111,283
Contra Costa	4,739	6,153,975
Del Norte	494	340,668
El Dorado	705	308,390
Fresno	5,656	4,734,354
Glenn	153	390,818
Humboldt	1,721	2,747,461
Imperial	2,229	2,172,331
Inyo*		
Kern	5,885	8,048,678
Kings	1,554	1,187,899
Lake	531	912,334
Lassen	278	233,773
Los Angeles	65,526	60,609,023
Madera	908	599,247
Marin	951	1,442,971
Mariposa*		
Mendocino	804	669,062
Merced	1,788	1,646,316
Modoc*		
Mono*		
Monterey	1,687	1,793,165
Napa	576	621,058
Nevada	624	795,382
Orange	12,340	6,904,335
Placer	1,309	1,159,489
Plumas	127	270,166
Riverside	9,986	7,235,318
Sacramento	10,284	8,938,670
San Benito	268	180,144
San Bernardino	14,615	12,012,956
San Diego	19,121	16,819,625
San Francisco	8,140	14,531,610
San Joaquin	6,132	4,008,953
San Luis Obispo	1,483	1,119,440
San Mateo ¹	2,809	
Santa Barbara	2,494	4,799,762
Santa Clara	8,964	9,954,014
Santa Cruz	313	486,221
Shasta	2,245	1,306,487
Sierra*		
Siskiyou	650	835,078
Solano	2,319	2,433,729
Sonoma	2,146	3,660,249
Stanislaus	3,882	3,277,715
Sutter/Yuba	2,019	2,723,376
Tehama	766	675,029
Trinity*		
Tulare	2,795	3,395,197
Tuolumne	645	764,916
Ventura	3,224	3,639,472
Yolo	1,155	791,495
Small Counties*	446	392,903

*Small Counties include Alpine, Inyo, Mariposa, Modoc, Mono, Sierra, and Trinity counties.

¹San Mateo County utilizes case rates, so expenditures cannot be associated with specific services.

Source: California Department of Mental Health Medi-Cal Trend Report for FY 2002-03.

Appendix II. Estimated Increases in Costs for Medi-Cal Specialty Mental Health Patients Assuming Reduced Access for 5%, ten% and 15% of Patients

County	Total Clients	Clients with Medications	Estimated Increase in Mental Health Costs Assuming Reduced Access for 5%	Estimated Increase in Mental Health Costs Assuming Reduced Access for 10%	Estimated Increase in Mental Health Costs Assuming Reduced Access for 15%
Statewide	415,867	229,837	\$33,642,411	\$89,224,971	\$133,837,457
Alameda	16,261	9,040	\$1,228,314	\$3,276,004	\$4,914,007
Alpine*	see below				
Amador	394	220	\$53,253	\$115,313	\$172,970
Butte	5,143	2,705	\$330,173	\$967,593	\$1,451,389
Calaveras	364	231	\$37,605	\$96,475	\$144,712
Colusa	308	155	\$31,212	\$73,552	\$110,328
Contra Costa	8,561	4,739	\$516,183	\$1,647,763	\$2,471,644
Del Norte	952	494	\$103,103	\$240,273	\$360,410
El Dorado	1,361	705	\$140,551	\$311,941	\$467,912
Fresno	13,150	5,656	\$952,205	\$2,377,845	\$3,566,767
Glenn	456	153	-\$802	\$37,478	\$56,217
Humboldt	2,825	1,721	\$162,864	\$600,474	\$900,711
Imperial	2,798	2,229	\$406,267	\$1,029,767	\$1,544,650
Inyo*	see below				
Kern	12,612	5,885	\$750,692	\$2,306,252	\$3,459,378
Kings	2,483	1,554	\$306,640	\$732,070	\$1,098,105
Lake	1,372	531	\$42,457	\$176,147	\$264,220
Lassen	617	278	\$51,153	\$125,683	\$188,524
Los Angeles	127,939	65,526	\$9,410,018	\$24,880,938	\$37,321,407
Madera	1,910	908	\$186,865	\$433,655	\$650,483
Marin	1,983	951	\$81,323	\$306,943	\$460,414
Mariposa*	see below				
Mendocino	1,852	804	\$137,254	\$341,414	\$512,121
Merced	3,253	1,788	\$257,608	\$679,848	\$1,019,773
Modoc*	see below				
Mono*	see below				
Monterey	3,114	1,687	\$204,354	\$588,024	\$882,035
Napa	968	576	\$60,854	\$183,814	\$275,721
Nevada	997	624	\$87,792	\$255,122	\$382,683
Orange	20,914	12,340	\$2,513,487	\$5,717,407	\$8,576,110
Placer	2,198	1,309	\$183,621	\$483,191	\$724,787
Plumas	329	127	\$7,783	\$42,583	\$63,875
Riverside	17,365	9,986	\$1,597,628	\$3,918,788	\$5,878,182
Sacramento	18,546	10,284	\$1,950,453	\$4,794,773	\$7,192,160
San Benito	612	268	\$55,936	\$129,886	\$194,828
San Bernardino	22,183	14,615	\$2,213,744	\$5,628,784	\$8,443,177
San Diego	31,703	19,121	\$2,752,718	\$7,187,398	\$10,781,096
San Francisco	13,997	8,140	\$334,399	\$2,121,959	\$3,182,939
San Joaquin	9,110	6,132	\$1,256,455	\$2,913,805	\$4,370,707
San Luis Obispo	2,612	1,483	\$230,256	\$572,456	\$858,684
San Mateo	5,193	2,809			
Santa Barbara	4,258	2,494	\$152,224	\$784,424	\$1,176,636
Santa Clara	12,797	8,964	\$1,241,659	\$3,478,719	\$5,218,078
Santa Cruz	2,490	313	-\$72,112	-\$95,602	-\$143,403
Shasta	4,219	2,245	\$411,941	\$954,531	\$1,431,797

Appendix II. continued

County	Total Clients	Clients with Medications	Estimated Increase in Mental Health Costs Assuming Reduced Access for 5%	Estimated Increase in Mental Health Costs Assuming Reduced Access for ten%	Estimated Increase in Mental Health Costs Assuming Reduced Access for 15%
Sierra*	see below				
Siskiyou	1,332	650	\$98,032	\$279,572	\$419,356
Solano	3,408	2,319	\$389,407	\$1,022,187	\$1,533,281
Sonoma	3,474	2,146	\$165,255	\$696,535	\$1,044,803
Stanislaus	7,749	3,882	\$483,359	\$1,294,489	\$1,941,733
Sutter/Yuba	2,732	2,019	\$257,492	\$787,322	\$1,180,984
Tehama	1,466	766	\$144,777	\$357,057	\$535,586
Trinity*	see below				
Tulare	5,359	2,795	\$413,320	\$1,166,160	\$1,749,240
Tuolumne	1,125	645	\$79,528	\$235,548	\$353,323
Ventura	5,536	3,224	\$326,253	\$1,016,453	\$1,524,679
Yolo	2,289	1,155	\$199,541	\$478,231	\$717,346
Small Counties*	1,198	446	\$71,200	\$181,690	\$272,535

*Small Counties include Alpine, Inyo, Mariposa, Modoc, Mono, Sierra, and Trinity counties.

Source: Columns one through three are from the California Department of Mental Health Medi-Cal Trend Report for FY 2002-03. All other columns are derived based on calculations described in the text.

Appendix III. Number of Medi-Cal Asthma Related Emergency Department Encounters By County CY2006

County	Children (<18 Yrs)	Adults (18-65 Yrs)	Total Medi-Cal ED Encounters
Ca Statewide	24,277	19,738	44,015
Alameda	1,474	965	2,439
Alpine	0	0	0
Amador	19	34	53
Butte	76	204	280
Calaveras	21	28	49
Colusa	16	25	41
Contra Costa	742	860	1,602
Del Norte	46	56	102
El Dorado	58	139	197
Fresno	1,588	892	2,480
Glenn	6	0	6
Humboldt	114	202	316
Imperial	387	241	628
Inyo	7	12	19
Kern	801	471	1,272
Kings	201	170	371
Lake	70	109	179
Lassen	15	15	30
Los Angeles	6,690	4,455	11,145
Madera	255	94	349
Marin	74	88	162
Mariposa	5	23	28
Mendocino	81	184	265
Merced	386	253	639
Modoc	8	7	15
Mono	0	0	0
Monterey	375	222	597
Napa	48	52	100
Nevada	28	104	132
Orange	940	513	1,453
Placer	74	95	169
Plumas	14	27	41
Riverside	887	720	1,607
Sacramento	884	1,065	1,949
San Benito	57	53	110
San Bernardino	1,881	1,214	3,095
San Diego	1,580	1,175	2,755
San Francisco	114	310	424
San Joaquin	440	640	1,080
San Luis Obispo	125	153	278
San Mateo	206	162	368
Santa Barbara	180	147	327
Santa Clara	479	473	952
Santa Cruz	188	99	287
See Note Below	208	421	629
Shasta	130	235	365
Sierra	0	6	6
Siskiyou	25	37	62
Solano	385	545	930
Sonoma	279	310	589
Stanislaus	301	329	630
Sutter	67	83	150
Tehama	81	124	205
Trinity	0	20	20
Tulare	514	350	864
Tuolumne	31	83	114
Ventura	465	248	713
Yolo	84	98	182
Yuba	67	98	165

Source: State of California, Office of Statewide Health Planning and Development, ED Data, CY 2006

Note: Includes all encounters for patients with asthma identified as ICD-9-CM codes 493.xx primary diagnosis only.

Appendix IV. Medi-Cal Deliveries by County, CY2005 and CY2007, and Estimated Costs Associated with an Assumed Increase of One Percent

Region	Number of Medi-Cal Deliveries, 2005	Estimated Number of Medi-Cal Deliveries 2007 (1)	Number of deliveries based on a one percent increase from 2007	Costs Associated with a one percent increase in deliveries (2)
CA STATEWIDE	251,926	262,104	2,621	18,171,657
ALAMEDA	7,036	7,320	73	507,513
ALPINE	7	7	0	505
AMADOR	118	123	1	8,511
BUTTE	1,308	1,361	14	94,347
CALAVERAS	145	151	2	10,459
COLUSA	263	274	3	18,970
CONTRA COSTA	3,949	4,109	41	284,845
DEL NORTE	207	215	2	14,931
EL DORADO	572	595	6	41,259
FRESNO	10,321	10,738	107	744,463
GLENN	254	264	3	18,321
HUMBOLDT	610	635	6	44,000
IMPERIAL	1,609	1,674	17	116,059
INYO	112	117	1	8,079
KERN	8,195	8,526	85	591,113
KINGS	1,354	1,409	14	97,665
LAKE	420	437	4	30,295
LASSEN	136	141	1	9,810
LOS ANGELES	81,023	84,296	843	5,844,265
MADERA	1,533	1,595	16	110,577
MARIN	647	673	7	46,669
MARIPOSA	49	51	1	3,534
MENDOCINO	679	706	7	48,977
MERCED	2,728	2,838	28	196,773
MODOC	47	49	0	3,390
MONO	79	82	1	5,698
MONTEREY	4,206	4,376	44	303,383
NAPA	611	636	6	44,072
NEVADA	285	297	3	20,557
ORANGE	18,424	19,168	192	1,328,940
PLACER	811	844	8	58,498
PLUMAS	77	80	1	5,554
RIVERSIDE	14,897	15,499	155	1,074,534
SACRAMENTO	9,179	9,550	95	662,090
SAN BENITO	419	436	4	30,223
SAN BERNARDINO	15,660	16,293	163	1,129,570
SAN DIEGO	14,475	15,060	151	1,044,095
SAN FRANCISCO	2,698	2,807	28	194,609
SAN JOAQUIN	5,884	6,122	61	424,418
SAN LUIS OBISPO	1,100	1,144	11	79,344
SAN MATEO	2,790	2,903	29	201,245
SANTA BARBARA	3,477	3,617	36	250,799
SANTA CLARA	7,849	8,166	82	566,156
SANTA CRUZ	1,743	1,813	18	125,724
SHASTA	1,140	1,186	12	82,229
SIERRA	10	10	0	721
SISKIYOU	251	261	3	18,105
SOLANO	1,955	2,034	20	141,016
SONOMA	2,036	2,118	21	146,859
STANISLAUS	4,421	4,600	46	318,891
SUTTER	716	745	7	51,646
TEHAMA	562	585	6	40,538
TRINITY	64	67	1	4,616
TULARE	5,722	5,953	60	412,733
TUOLUMNE	208	216	2	15,003
VENTURA	5,169	5,378	54	372,845
YOLO	1,042	1,084	11	75,160
YUBA	640	666	7	46,164
INVALID CODE	4	4	0	289

Source: Medi-Cal funded deliveries, 2005, California Department of Health Services, 2006.

(1) Births for 2007 were estimated based on a historical compound annual growth rate of 2.2% derived from data for 1998-2005 from the source document cited above.

(2) Costs are based on the estimated 2000 costs of an average Medi-Cal delivery and the first year of life published in FPACT Project, Expenditure Limit Demonstration Year 1, CDHS May 21, 2004.

Appendix V. Number & Cost of Avoidable Medi-Cal Hospitalizations by County Assuming 1%, 5%, & 10% Increases in Avoidable Hospitalizations

	Avoidable hospitalizations assuming a 1% increase	Avoidable hospitalizations assuming a 5% increase	Avoidable hospitalizations assuming a 10% increase	Increase in payments assuming a 1% increase in avoidable hospitalizations	Increase in payments assuming a 5% increase in avoidable hospitalizations	Increase in payments assuming a 10% increase in avoidable hospitalizations
California Medi-Cal Total	1,522	7,610	15,220	\$3,590,877	\$17,954,387	\$35,908,774
Alameda	46	229	458	\$116,330	\$581,649	\$1,163,297
Alpine, Amador, Calaveras, Inyo, Mariposa, Mono, Tuolumne	5	25	49	\$12,301	\$61,506	\$123,011
Butte	14	68	137	\$34,599	\$172,996	\$345,992
Colusa, Glen, Tehama	5	25	51	\$12,297	\$61,484	\$122,968
Contra Costa	27	134	269	\$64,152	\$320,759	\$641,518
Del Norte, Humboldt	6	31	63	\$16,032	\$80,158	\$160,317
El Dorado	3	15	29	\$7,191	\$35,953	\$71,907
Fresno	55	273	547	\$124,581	\$622,904	\$1,245,808
Imperial	14	70	139	\$30,966	\$154,831	\$309,662
Kern	48	240	480	\$113,067	\$565,334	\$1,130,667
Kings	8	38	76	\$17,476	\$87,379	\$174,759
Lake, Mendocino	7	34	67	\$16,563	\$82,817	\$165,634
Lassen, Modoc, Siskiyou, Trinity	4	18	37	\$9,436	\$47,178	\$94,357
Los Angeles	560	2,798	5,597	\$1,319,533	\$6,597,663	\$13,195,325
Madera	8	42	84	\$19,336	\$96,679	\$193,358
Marin	3	17	33	\$7,772	\$38,862	\$77,725
Merced	14	71	141	\$32,913	\$164,563	\$329,126
Monterey, San Benito	19	94	189	\$42,176	\$210,881	\$421,762
Napa	2	11	23	\$5,354	\$26,772	\$53,544
Nevada, Sierra, Plumas	2	12	25	\$6,200	\$31,001	\$62,003
Orange	75	375	750	\$171,397	\$856,983	\$1,713,967
Placer	5	23	45	\$10,970	\$54,848	\$109,696
Riverside	91	455	909	\$211,886	\$1,059,428	\$2,118,857
Sacramento	45	226	452	\$110,519	\$552,597	\$1,105,195
San Bernardino	104	521	1,042	\$244,487	\$1,222,434	\$2,444,868
San Diego	85	426	851	\$202,475	\$1,012,374	\$2,024,748
San Francisco	36	180	360	\$89,625	\$448,125	\$896,249
San Joaquin	34	170	341	\$80,569	\$402,843	\$805,686
San Luis Obispo	6	29	57	\$13,747	\$68,736	\$137,471
San Mateo	11	53	105	\$23,860	\$119,302	\$238,605
Santa Barbara	12	61	122	\$27,715	\$138,576	\$277,152
Santa Clara	38	189	378	\$86,415	\$432,075	\$864,150
Santa Cruz	6	32	63	\$14,681	\$73,404	\$146,808
Shasta	8	42	84	\$21,419	\$107,095	\$214,190
Solano	11	55	110	\$26,369	\$131,846	\$263,692
Sonoma	9	45	90	\$21,644	\$108,219	\$216,437
Stanislaus	27	135	270	\$64,613	\$323,064	\$646,128
Sutter, Yuba	11	54	108	\$26,059	\$130,295	\$260,590
Tulare	33	166	331	\$75,818	\$379,092	\$758,185
Ventura	21	104	207	\$46,624	\$233,119	\$466,238
Yolo	5	24	49	\$11,712	\$58,562	\$117,123

Source: Estimates derived using data from "Preventable Hospitalizations among Medi-cal Beneficiaries and the Uninsured, California Health Care Foundation, December 2007. The estimates take into account the published differences in hospitalization rates and costs for the CalWorks population versus the disabled population.

Note: Avoidable hospitalizations, also known as preventable hospitalizations are admissions rates for ambulatory-care-sensitive admissions, including asthma, diabetes and hypertension, which can often be treated in outpatient settings with appropriate medication, thereby preventing hospitalization. Data related to avoidable hospitalizations do not generally include mental health conditions, e.g. schizophrenia.

HEALTH MANAGEMENT ASSOCIATES

Health Management Associates is an independent national research and consulting firm specializing in complex healthcare program and policy issues. Founded in 1985, in Lansing, Michigan, Health Management Associates provides leadership, experience, and technical expertise to local, state, and federal governmental agencies, regional and national foundations, investors, multi-state health system organizations and single site healthcare providers, as well as employers and other purchasers in the public and private sectors.

The authors of *Assessing the Effects of Medi-Cal's Ten Percent Across-the-Board Provider Reimbursement Reductions on Access, Services and the Pharmacy Provider Network* are listed below. They may be contacted by telephone at Health Management Associate's Sacramento office at 916.446.4601.

David Coronado, MPA

Mr. Coronado has over 30 years experience in healthcare, including experience as a Medicaid Director, managed care executive, senior level public health official and as a consultant. He is experienced in the planning, development, implementation, operation, evaluation and regulation of publicly supported healthcare programs, including Medicaid and Medicare. As a consultant his clients have included the federal government, state governments, insurers and managed care plans, providers, pharmaceutical manufacturers, pharmaceutical benefit managers, foundations, associations and law firms facing issues involving publicly supported healthcare programs. The services he has provided to his clients include assistance with regulatory matters, compliance, operations improvement, litigation support, testifying as an expert witness in litigation involving Medicaid and health insurance matters, and program and product development, implementation and assessment.

Lisa Maiuro, MSPH, Ph.D.

Ms. Maiuro has close to 25 years of experience in healthcare policy and research. She is a former RAND/UCLA Pew Health Policy Fellow and served as a consultant at Rand Corporation, Santa Monica, after completing her doctoral work. Shortly after this, she worked as a senior economist for the California Office of Statewide Health Planning and Development (OSHPD). Subsequently, she became Deputy Director of OSHPD's Health Planning and Policy unit where she directed a research unit that provided analysis and publications on issues related to hospitals outcomes, charity care, healthcare finance, and healthcare markets. She also acquired funding from the Robert Wood Johnson Foundation to conduct a study on hospital mergers and worked with the CA Department of Justice as an expert witness on more than a dozen hospital market and antitrust investigations. Extensive work with OSHPD data has led to many publications and presentations on a range of healthcare issues. Following her work with the State she was an independent contractor working with a variety of clients including UC Berkeley, First Five of California, the CA Dept of Justice and CA foundations. Most recently she was with Thomson/Medstat where she oversaw a team of analysts through a \$35 million contract with DHS to address Medi-Cal cost, quality and access issues using MIS/DSS data.