

**Impact of the Deficit Reduction Act of 2005 on
Pharmacies by State**

May 12, 2008

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Executive Summary

The Medicaid program pays retail pharmacies a dispensing fee plus a reimbursement rate meant to cover the cost of acquiring the drug from the manufacturer for Medicaid prescriptions. The federal government imposes a federal upper limit ("FUL") on reimbursement rates for certain generic drugs that states generally adopt under their Medicaid programs. The Deficit Reduction Act of 2005 ("DRA") generally decreased FULs by changing their calculation method, but litigation has prevented the new reimbursement levels from being implemented. The changes in the Medicaid reimbursement rates under the DRA would dramatically lower pharmacy reimbursement rates. The decline in the profitability of pharmacies participating in Medicaid could result in thousands of pharmacies closing, making pharmacies less accessible to Medicaid participants. If reduced accessibility of pharmacies made beneficiaries less likely to utilize prescription drugs, their health could be adversely affected.

The National Association of Chain Drug Stores and the Food Marketing Institute engaged PricewaterhouseCoopers to analyze the potential impact of the DRA on pharmacies by state.

Because current dispensing fees are insufficient to cover the costs of dispensing drugs, pharmacies currently rely on the difference between drug acquisition costs and Medicaid reimbursements to cover the costs of dispensing drugs. Cuts in reimbursement rates, as enacted by the DRA, would further reduce the profitability of pharmacies and could lead to reduced pharmacy participation in the Medicaid program or to pharmacy closings.

Steven Schondelmeyer, an academic researcher, has estimated that 20 percent of pharmacies could close as a result of the DRA. This estimate suggests that the reimbursement cuts enacted in DRA could result in a loss of 11,105 pharmacies. If these pharmacies were to close, the economic consequences would extend beyond the pharmacy sector to its suppliers and other businesses that rely on incomes generated by the pharmacy sector. Table E-1 presents the direct, indirect, and induced economic contribution of the 11,105 pharmacies.

Table E-1. Economic Contribution of Pharmacies that Could Close under DRA

| | Direct Contribution | Indirect Contribution | Induced Contribution | Total Contribution |
|---|---------------------|-----------------------|----------------------|--------------------|
| Pharmacies Potentially Closing under DRA: | | | | |
| Number of Pharmacies | 11,105 | NA | NA | 11,105 |
| Employment | 159,705 | 47,049 | 95,017 | 301,771 |
| Output (\$millions) | 11,430 | 6,862 | 12,789 | 31,081 |
| Value Added (\$millions) | 7,124 | 3,915 | 6,918 | 17,957 |
| Labor Compensation (\$millions) | 5,231 | 2,379 | 4,004 | 11,614 |

Source: PricewaterhouseCoopers calculations based on Schondelmeyer.

In total, these pharmacies contributed over 300,000 jobs, \$31.1 billion in total output, \$18.0 billion in value added, and \$11.6 billion in labor compensation to the U.S. economy.

The overall impact of the DRA cuts could cause the loss of some of these jobs. If Medicaid beneficiaries respond to the cuts by going to other pharmacies, some of the loss in activity of closing pharmacies would be made up by others. For example, some employees at the closing pharmacies might be hired at other pharmacies remaining open to help accommodate the displaced beneficiaries. However, if beneficiaries fill fewer prescriptions as a result of the

decline in pharmacy access or if remaining pharmacies are less labor intensive, a portion of the economic activity described in the table above would disappear. The closure of pharmacies that serve Medicaid beneficiaries would result in a decrease in the level of access to drugs and a reduction in utilization may occur. As a result, the health of some Medicaid beneficiaries could suffer. The non-Medicaid population would face the same issues in the face of pharmacy closures: less access and a potential deterioration in health outcomes.

We have estimated the impact by state based on the state-specific information on Medicaid drug spending, generic drugs subject to FULs, and pharmacy operations. For states subject to the change, the percentage of pharmacies potentially closing ranges from 11.2 percent to 40.2 percent (see Table E-2).

Table E-2 also presents by state the employment attributable to those pharmacies potentially closing as a result of the DRA cuts. For example, in California the DRA cuts could cause 1,184 pharmacies to close, affecting 20,286 direct jobs and 38,586 jobs across the entire state economy.

Table E-2. Pharmacies Potentially Closing under DRA and Affected Employment

| | Pharmacies Potentially Closing | | Employment Attributable to Impacted Pharmacies | |
|----------------------|--------------------------------|----------------|--|----------------|
| | Number | Share of Total | Direct | Total |
| United States | 11,105 | 20.0% | 159,705 | 301,771 |
| Alabama | 265 | 23.4% | 3,071 | 5,366 |
| Alaska | 20 | 28.0% | 152 | 377 |
| Arizona | 0 | 0.0% | 0 | 1,267 |
| Arkansas | 184 | 25.9% | 1,443 | 2,653 |
| California | 1,184 | 23.9% | 20,268 | 38,586 |
| Colorado | 123 | 17.0% | 1,225 | 2,950 |
| Connecticut | 95 | 15.2% | 1,829 | 3,453 |
| Delaware | 24 | 16.2% | 507 | 869 |
| District Of Columbia | 40 | 36.6% | 657 | 1,083 |
| Florida | 546 | 15.6% | 7,817 | 16,082 |
| Georgia | 315 | 16.6% | 3,786 | 7,497 |
| Hawaii | 28 | 21.1% | 799 | 1,462 |
| Idaho | 48 | 18.5% | 481 | 1,033 |
| Illinois | 461 | 21.7% | 8,781 | 15,929 |
| Indiana | 150 | 13.5% | 2,502 | 5,086 |
| Iowa | 126 | 18.8% | 1,660 | 3,133 |
| Kansas | 94 | 16.8% | 1,210 | 2,446 |
| Kentucky | 259 | 27.4% | 3,171 | 5,502 |
| Louisiana | 309 | 31.8% | 4,066 | 7,044 |
| Maine | 43 | 17.9% | 561 | 1,167 |
| Maryland | 133 | 13.6% | 1,835 | 3,986 |
| Massachusetts | 189 | 17.9% | 4,003 | 7,330 |
| Michigan | 293 | 14.5% | 3,911 | 7,933 |
| Minnesota | 131 | 14.6% | 1,744 | 3,959 |
| Mississippi | 183 | 25.3% | 1,849 | 3,194 |
| Missouri | 233 | 21.5% | 3,274 | 6,437 |
| Montana | 51 | 24.6% | 324 | 688 |
| Nebraska | 81 | 21.4% | 1,148 | 2,140 |
| Nevada | 46 | 11.2% | 588 | 1,379 |
| New Hampshire | 36 | 15.0% | 499 | 1,038 |
| New Jersey | 350 | 19.3% | 5,542 | 10,076 |
| New Mexico | 29 | 11.4% | 430 | 1,053 |
| New York | 1,624 | 40.2% | 23,021 | 37,074 |
| North Carolina | 342 | 20.6% | 5,064 | 9,139 |
| North Dakota | 30 | 19.7% | 412 | 768 |
| Ohio | 319 | 14.8% | 5,451 | 10,748 |
| Oklahoma | 166 | 21.9% | 2,108 | 3,911 |
| Oregon | 92 | 15.4% | 820 | 2,075 |
| Pennsylvania | 409 | 15.3% | 6,073 | 12,005 |
| Rhode Island | 30 | 16.2% | 794 | 1,332 |
| South Carolina | 179 | 19.5% | 2,214 | 4,036 |
| South Dakota | 38 | 22.4% | 401 | 781 |
| Tennessee | 287 | 21.2% | 3,924 | 7,350 |
| Texas | 723 | 19.7% | 9,841 | 19,430 |
| Utah | 75 | 19.9% | 822 | 1,815 |
| Vermont | 20 | 16.1% | 269 | 567 |
| Virginia | 189 | 14.4% | 2,616 | 5,598 |
| Washington | 203 | 19.4% | 2,437 | 4,923 |
| West Virginia | 132 | 29.7% | 1,531 | 2,452 |
| Wisconsin | 157 | 17.2% | 2,597 | 5,199 |
| Wyoming | 20 | 18.7% | 175 | 370 |

Source: PricewaterhouseCoopers calculations.

I. Introduction

The Medicaid program reimburses pharmacies for the drugs provided to beneficiaries. Specifically, Medicaid pays retail pharmacies a dispensing fee plus a reimbursement rate meant to cover the cost of acquiring the drug from the manufacturer. The federal government imposes a federal upper limit ("FUL") on reimbursement rates for certain generic drugs that states generally adopt under their Medicaid programs. The Deficit Reduction Act of 2005 ("DRA"), as implemented by CMS, decreased FULs by changing their calculation method. The DRA revision requires that FULs equal 250 percent of the lowest average manufacturer price ("AMP"). These changes were supposed to become effective in 2007 but litigation has prevented the new reimbursement levels from being implemented. If implemented, they could have a significant impact on the pharmacy sector of the U.S. economy.

The National Association of Chain Drug Stores and the Food Marketing Institute engaged PricewaterhouseCoopers to analyze the potential impact of the legislation on pharmacies by state. For this analysis, we have examined the potential impact of the DRA revisions on pharmacies, assuming they were fully implemented.

Decreasing Medicaid prescription reimbursements to retail pharmacies would worsen the profitability of dispensing prescription drugs to Medicaid beneficiaries. Lower profitability could lead to pharmacy closures and less accessible retail pharmacy outlets to beneficiaries. Our report presents the potential impact of the reimbursement levels under the DRA on the number of pharmacies by state. We also provide estimates of the economic activity attributable to those pharmacies.

The following section of the report discusses the changes enacted in the DRA. The third section presents the methodology we used to calculate the impacts, and the final section presents our results. Appendices provide an overview of the U.S. pharmacy sector, the Medicaid program, and the IMPLAN model.

II. Medicaid and the Deficit Reduction Act of 2005

The Medicaid program covers prescription drug expenses for its beneficiaries. State governments determine the specifics of the coverage, such as any limitations on prescriptions or applicable cost sharing, but certain federal restrictions limit what states can do. One important restriction is the FUL, which effectively caps pharmacy reimbursement for certain generic drugs. This section provides background information on Medicaid reimbursement of pharmacies for Medicaid drugs and the Deficit Reduction Act of 2005.

Background information on the U.S. pharmacy sector and the Medicaid program are provided in appendices to the report.

Medicaid Reimbursement of Pharmacies

The Medicaid program reimburses pharmacies for the drugs provided to beneficiaries based on the lower of:

1. each drug's "estimated acquisition costs" plus a dispensing fee, or
2. the provider's usual and customary charges to the general public.

Generally, each state sets its own reimbursement rates for drug costs based on published prices like average wholesale price (AWP) or wholesale acquisition price (WAC), but for certain multi-source drugs the federal government imposes a cap, or FUL, on reimbursement amounts.

States can provide payments to pharmacies in excess of the FULs but only receive federal matching funds up to the FUL. States can set reimbursement rates lower than the FUL with no impact on the percent matched by the federal government. The majority of states set "maximum allowable costs" (MAC) for Medicaid drugs that often are lower than FULs. In such cases, the pharmacy would only receive the MAC price.

Pharmacies also receive dispensing fees which vary by state for Medicaid prescriptions. For 2008, these dispensing fees average approximately \$4.50.

Beginning in 1987, FULs were set for drugs that had at least three manufacturers and that had commercial prices available for a sustained period of time. They were set to equal to 150 percent of the lowest-priced therapeutically and biologically equivalent drug in published compendia of prices. Although they were intended to apply to all drugs with generic competition, FULs ended up covering about two-thirds of generic spending. Newer generic drugs typically either had only one manufacturer or an insufficient record of public prices to establish an FUL.¹

The DRA changed the calculation of FUL to be 250 percent of the lowest average manufacturer price (AMP) for each drug. The AMP is supposed to represent the price that wholesalers pay for drugs distributed to the retail class of trade. The DRA also specified that FULs should be set for drugs with two or more manufacturers. The DRA changes were scheduled to become effective on January 1, 2007, but delays in rulemaking and subsequent litigation prevented their implementation.

Because current dispensing fees for Medicaid prescriptions are insufficient to cover the costs of dispensing drugs, pharmacies currently rely on the difference between drug acquisition costs and Medicaid reimbursements to cover the costs of dispensing drugs. Cuts to

¹ CBO (2004) states that CMS could set FULs for drugs with a single generic manufacturer, meaning that there would be only two manufacturers of the drug.

reimbursement rates, as enacted by the DRA, would further reduce the profitability of pharmacies and could lead to reduced pharmacy participation in the Medicaid program or to pharmacy closings. In either case, access to medication would decline, which could impact health outcomes.

Impact of the DRA Cuts

Government studies have calculated the difference between reimbursement levels caused by the DRA changes. The Government Accountability Office (GAO) analyzed a sample of 77 drugs commonly used in the Medicaid program.² It found that in the first quarter of 2006, the AMP-based FULs were 36 percent lower than pharmacy acquisition costs on average (the FUL was lower for 59 of the 77 drugs in the sample). The sample included the top 50 drugs in terms of total spending and another 27 drugs that had the highest utilization. The GAO analysis did not reflect dispensing fees, but the results suggest that pharmacies would lose money on each drug dispensed under Medicaid under the DRA reimbursement formula.

The Office of the Inspector General of the Department of Health and Human Services compared the Medicaid FULs to AMP for all drugs for which there was an FUL in the third quarter of 2004.³ The analysis found that requiring an FUL equal to 150 percent of the lowest AMP would cut Medicaid spending on drugs with FULs by an estimated 75 percent. This finding suggests that the levels set in the DRA, 250 percent of the lowest AMP, would cut spending by approximately 60 percent.

The Center for Medicare and Medicaid Services (CMS) produced estimates of the impact of the DRA reimbursement cuts at the time of enactment. CMS estimated that federal spending would fall by \$4.7 billion and total spending would decrease by \$8.0 billion as a result of the FUL changes. The DRA cuts would decrease Medicaid reimbursements by approximately 6 percent once fully phased in.

These estimates partially describe the potential impact of the DRA cuts. They do not consider the impact of the cuts on pharmacies or their customers. Stephen Schondelmeyer, a professor at the University of Minnesota, provided expert testimony in the litigation surrounding the DRA proposed rule. In his testimony, he estimated that the DRA changes could lead to the closure of 10,000 to 12,000 pharmacies. His estimate is based on the distribution of pharmacies by profits as a share of sales and the potential impact of the DRA cuts. He assumed that all pharmacies currently in a loss position (13 percent based on 2001 data, the most recent publicly available⁴) and about 15 percent of pharmacies earning less than 5 percent of profits (another 51 percent) could close as a result of the changes. Overall, he estimates that 20 percent of pharmacies could close.

² GAO, "Medicaid Outpatient Prescription Drugs: Estimated 2007 Federal Upper Limits for Reimbursement Compared with Retail Pharmacy Acquisition Costs," Letter to Honorable Joe Barton, December 22, 2006.

³ OIG, "Comparison of Medicaid Federal Upper Limit Amounts to Average Manufacturer Prices," June 2005.

⁴ The distribution is for independent pharmacies, but he assumes chain pharmacies would have a similar distribution.

III. Methodology

Assessing the impact of the DRA changes on the prices that pharmacies receive under Medicaid requires information that is not yet available. First, although AMP for each drug is supposed to be made public, currently it is not. There are disagreements about what should and should not be included in AMP, and certain components of AMP are proprietary, so calculating AMP by drug is difficult. Second, states could respond to the cut in reimbursement by increasing dispensing fees. At this point, the best information available is in the studies referred to in the prior section.

We use that information to assess the potential impact of the DRA on pharmacies in each of the 50 states and the District of Columbia. Specifically, we estimate the impact based on these steps:

1. Derive Medicaid spending on drugs subject to FULs by state.
2. Estimate the distribution of pharmacies by profit levels by state.
3. Assess the impact by state of the DRA cuts on pharmacy profits assuming full implementation of the proposed rule.
4. Allocate the national estimate provided by Schondelmeyer in his testimony to states, i.e., 20 percent of pharmacies could close.

We have performed these calculations assuming the change was fully effective in 2007. We have assumed that state dispensing fees do not rise to offset the DRA cuts. Our report provides a baseline on the potential impact of the proposal. Other policy changes, enacted at the federal or state level, could ease or worsen the impact, but we have not quantified those for these estimates.

In allocating the national estimate to the states, we assume the distribution of independent pharmacy profits from 2001 apply to all pharmacies. We assume that all pharmacies that were in loss positions prior to the implementation of the DRA cuts would close under DRA. Some fraction of pharmacies with positive profits would be pushed into loss positions under the DRA cuts. We have assumed that pharmacies are uniformly distributed within each of the four ranges of profitability provided by the 2002 NCPA-Pharmacia Digest data. For a given percentage change in pharmacy profits, we can derive the number of pharmacies pushed into loss positions and therefore closing.⁵

In general, both chain drug stores and independent pharmacies will be at risk under the policy. To determine the share of pharmacies in each state that could potentially close, we incorporate information on the share of pharmacies that are independent in the state and the level of competition between pharmacies. We believe that the profits of independent pharmacies have a greater exposure under the policy because they would have less opportunity to spread any losses across stores within the state or in other states. Also, pharmacies in a more competitive market, defined as the number of pharmacies within a specified number of miles, would be more sensitive because they would face greater competitive pressures that would place them more at risk of closing. To adjust for these two factors, we compare each state's share of pharmacies that are independent and the average number of pharmacies within a specified number of miles of independent pharmacies by state to the national values. We adjust the share of pharmacies that could close under DRA based on the following:

⁵ We also calculated the number of pharmacies pushed into loss positions assuming profits were normally distributed by state. The results were virtually the same. Given uncertainties about the distribution, we have chosen to use the best data available, or the 2001 distribution of pharmacies by profit level.

1. Share of pharmacies that are independent: for each 10 percentage points that the state exceeds (or lags behind) the national average, we increase (decrease) the share of pharmacies that could close by 2.5 percent.
2. Competition facing independent pharmacies: for each 10 percentage points that the state exceeds (or lags behind) the national average, we increase (decrease) the share of pharmacies that close by 2.5 percent.

While ad hoc in nature, these adjustments generally have a small impact on the number of pharmacies that close by state. In all but 8 states, the adjustment is less than 20 percent. New York merits mention: a relatively large share of its pharmacies are independent (43 percent), and each independent pharmacy has an average of 88 pharmacies within 2 to 15 miles. These values result in an adjustment factor that would double the number of pharmacies that close in New York. Because we believe this exaggerates the impact, we have capped the adjustment factor at 1.5 so it will never raise or lower our unadjusted estimates by more than 50 percent.

We estimate the number of jobs, gross output, value added, and labor compensation of pharmacies that are impacted by the DRA cuts. The economic contribution of these pharmacies is broader than the direct output and employment they generate. They purchase products and services (i.e., inputs) from other domestic industries, generating economic activity in those sectors (i.e., "indirect" effects). Employees spend their incomes, supporting the local and national economies (i.e., "induced" effects). Thus, the economic contribution of the impacted pharmacies includes direct, indirect, and induced effects.

To quantify these contributions, we rely on the IMPLAN economic model, a well known modeling system developed by the Minnesota IMPLAN Group for estimating economic impacts that is similar to the Regional Input-Output Modeling System developed by the U.S. Department of Commerce. Additional detail is provided in the appendix.

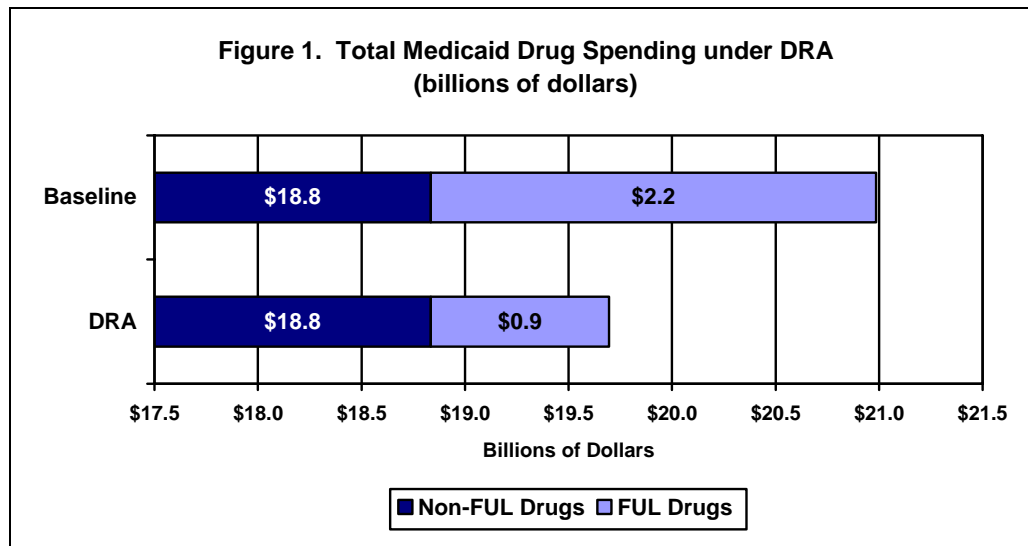
We have not estimated the potential impact of the DRA on beneficiaries and total pharmacy output as part of this project. Total output is more difficult to assess because some Medicaid beneficiaries may respond to the closing of their preferred pharmacy by moving to the next closest pharmacy that remains open. However, since the closure of pharmacies most likely will result in a decrease in the level of access to drugs, some reduction in utilization may occur. As a result, the health of some Medicaid beneficiaries could suffer. The non-Medicaid population would face the same issues in the face of pharmacy closures: less access and a potential deterioration in health outcomes.

IV. Results

Based on the methodology described in the prior section, we have estimated the potential impact of the DRA cuts on pharmacies in each state and the District of Columbia.

National Impacts

Nationally, based on the calculations of the OIG report, we assume that the DRA changes would reduce Medicaid reimbursements to pharmacies for drugs subject to FULs by 60 percent. Relative to overall Medicaid spending, that translates into a reduction of 6.2 percent, which is consistent with the original estimates of CMS of the DRA impact. As a result, total Medicaid spending on drugs would decrease by \$1.3 billion in 2007 (see Figure 1).



Source: PricewaterhouseCoopers calculations based on data provided by NACDS.

As a result of the change in reimbursements under the DRA, pharmacy profits would change. Based on data on the profitability of publicly held and independent pharmacies, we assume that average profits are 2.5 percent of total sales. Under this assumption, the average profit on drug sales per pharmacy is approximately \$108,300 (see Table 1). The change in profits is calculated assuming the same amount of Medicaid drugs are sold, but the lower reimbursement rate under DRA lowers pharmacy profits by the change in Medicaid reimbursements. Under the DRA reimbursement schedule, average profits would fall compared to baseline profits by 22 percent, to \$85,000.

Table 1. Average Pharmacy Profits and Pharmacies under DRA
(Average Profits per Pharmacy on Drug Sales and the Resulting Number of Pharmacies, 2007)

| | Profits on Drug Sales | Number of Pharmacies |
|--------------------|-----------------------|----------------------|
| Baseline | \$108,300 | 55,561 |
| DRA | \$85,000 | 44,456 |
| Difference | -\$23,300 | -11,105 |
| Percent Difference | -22% | -20% |

Source: PricewaterhouseCoopers calculations.

As a result of the decline in profits under the DRA reimbursement rates, an estimated 20 percent (11,105 pharmacies) could close, as estimated by Schondelmeyer.

We have calculated the economic contribution of the pharmacies that could close as a result of the DRA cuts. This contribution not only includes the direct jobs and output of the pharmacies, but also the jobs and output of suppliers to the pharmacies, which would be affected if the pharmacies were to close. Similarly, the employees of the pharmacy and its suppliers take their incomes and spend them in the community, generating additional economic effects. These "indirect" and "induced" contributions measure the connections between pharmacies and the rest of the economy. We have provided measures of these in terms of total output, value added, labor compensation, and employment (see Table 2).

Table 2. Description of Key Metrics

| Metric | Description |
|-----------------------|--|
| Total or gross output | The sum of receipts (or sales) and other gross income generated by each sector. For wholesale and retail sectors, total output only reflects the wholesale or retail margin and not the value of the product sold. |
| Value added | The total output of each sector less the associated value of intermediate inputs. The sum of value added across all sectors in the economy is gross domestic product (GDP). |
| Labor compensation | The wages, salaries and benefits paid to employees. |
| Employment | The number of full-time and part-time jobs, averaged over the year. |

The net economic impact of the DRA cuts could be quite different, but quantifying the net impact is difficult if not impossible. As mentioned in the previous section, beneficiaries may respond to the closing of their pharmacy by moving to the next closest pharmacy. As a result, the net decline in economic activity could be significantly less than the economic contribution of the impacted pharmacies. The net impact of the DRA cuts, however, would depend on which pharmacies close, the response of Medicaid beneficiaries, and any adjustments by pharmacies remaining open. If the pharmacies remaining in business are less labor intensive (or become less labor intensive by not hiring new pharmacists to serve the customers displaced by the pharmacy closures), more of the economic activity attributable to the impacted pharmacies would disappear. Similarly, if Medicaid beneficiaries and non-Medicaid customers decrease their pharmacy purchases because of the deterioration in access, again the net impact would approach the impacts presented below.

In Table 3, we have summarized the connections between the impacted pharmacies and the rest of the economy. The 11,105 pharmacies that could close under the DRA reimbursement rates directly employ 159,705 individuals who are paid \$5.2 billion in compensation; they produce \$11.4 billion in gross output and \$7.1 billion in value added. However, the overall economic contribution of these pharmacies is much larger after accounting for the impact of their suppliers and the incomes their employees inject into the economy. Overall, the 11,105 pharmacies generate 301,771 jobs, \$31.1 billion in gross output, \$18.0 billion in value added, and \$11.6 billion in labor compensation.

Table 3. Economic Contribution of Impacted Pharmacies, 2007

| | Direct Contribution | Indirect Contribution | Induced Contribution | Total Contribution |
|---|---------------------|-----------------------|----------------------|--------------------|
| Pharmacies Potentially Closing under DRA | | | | |
| Number of Pharmacies | 11,105 | NA | NA | 11,105 |
| Employment | 159,705 | 47,049 | 95,017 | 301,771 |
| Output (\$millions) | \$11,430 | \$6,862 | \$12,789 | \$31,081 |
| Value Added (\$millions) | \$7,124 | \$3,915 | \$6,918 | \$17,957 |
| Labor Compensation (\$millions) | \$5,231 | \$2,379 | \$4,004 | \$11,614 |

Source: PricewaterhouseCoopers calculations based on Schondelmeyer.

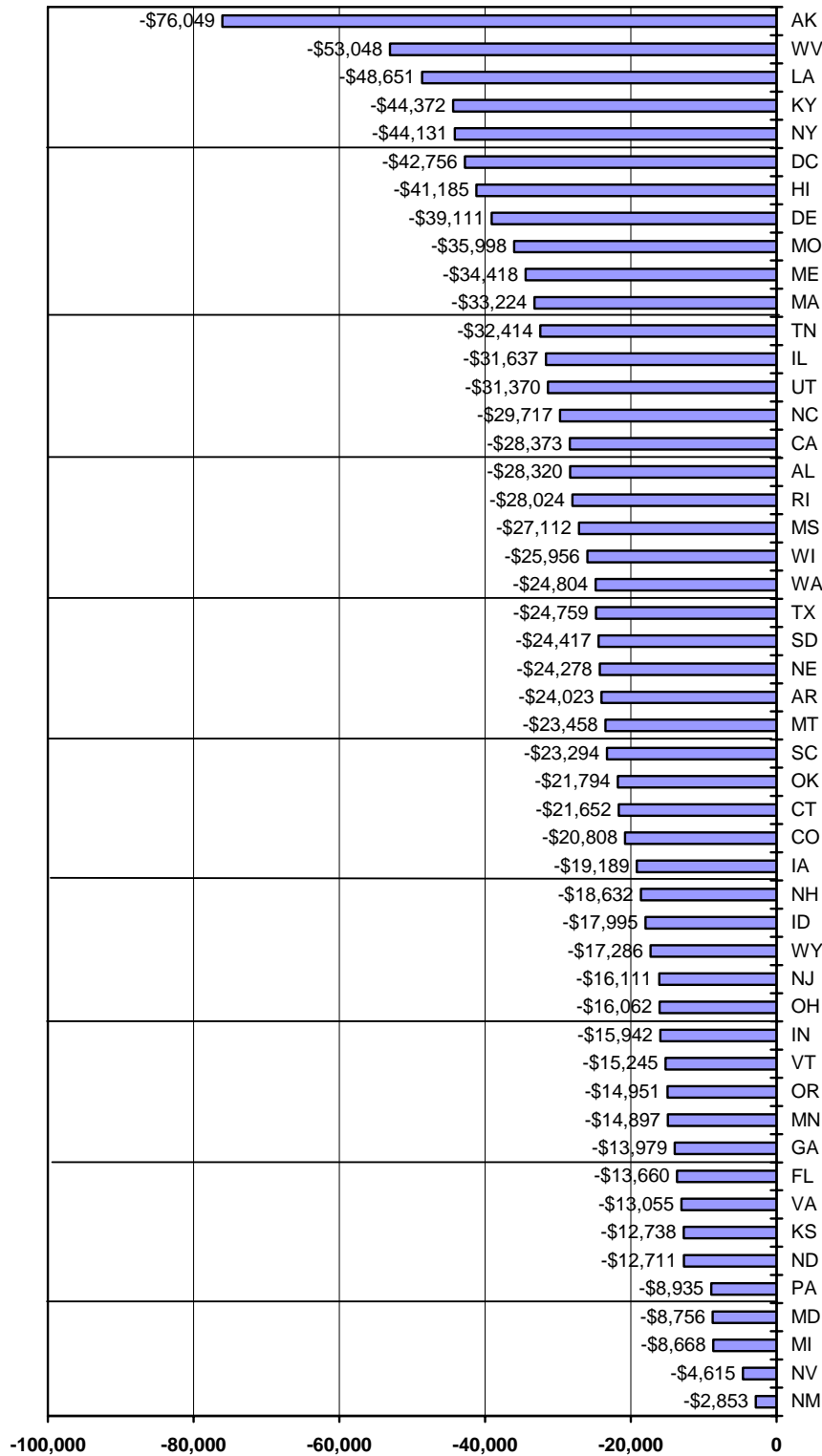
State Impacts

For each state, we have estimated the impact using the same methodology as we used for the national impact.⁶ The impact on each state will vary based on: Medicaid spending by state, the share of state Medicaid spending subject to FULs, average pharmacy profits in the state, the share of pharmacies in each state that are independents, and the level of pharmacy competition in the state. Depending on these variables, some states face much larger cuts under DRA than others.

Alaska would experience the largest decline in Medicaid spending per pharmacy under DRA, with each pharmacy losing an estimated \$76,049 on average, or 49 percent of profits (see Figure 2). West Virginia, Louisiana, Kentucky, and New York would experience the next largest declines in spending per pharmacy, ranging from \$53,048 to \$44,131 (or 54 percent to 38 percent of current profits). By comparison, the average decrease under DRA for the United States would be \$23,233 (21 percent of profits).

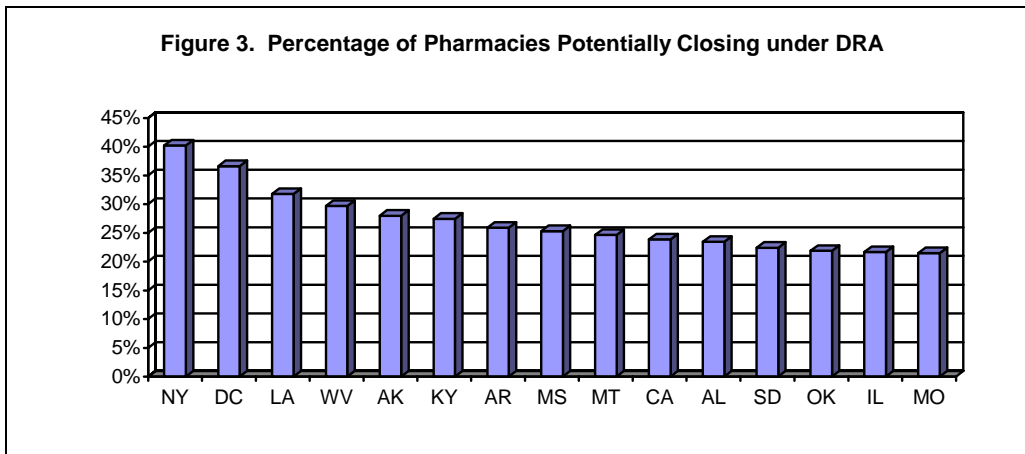
⁶ Pharmacies in Arizona would not be affected by the policy changes because Medicaid drug spending is not subject to FULs. The state program is run under a federally waived managed plan.

Figure 2. Average Change in Medicaid Reimbursement per Pharmacy under DRA



Source: PricewaterhouseCoopers calculations.

The impact of the decrease in reimbursement rates on the number of pharmacies in operation will vary by state. In percentage terms, the DRA reimbursement cuts could cause as many as 40 percent of the pharmacies to close in New York, 37 percent in the District of Columbia, 32 percent in Louisiana, and 30 percent in West Virginia. Figure 3 presents the impact on the 15 states experiencing the largest impact in percentage terms (see Table A-3 in the Appendix for detail for all states).



Source: PricewaterhouseCoopers calculations.

The pharmacies affected by the changes in reimbursement make significant contributions to the economies of each state. Direct employment in impacted pharmacies under DRA ranges from under 152 in Alaska to over 23,000 in New York (see Table 4).⁷ However, incorporating the economic linkages between sectors, the total employment attributable to the impacted pharmacies is much larger. For example, in Alaska the total employment is 377, while in New York the total employment exceeds 37,000. These employees receive compensation of over \$14 million and \$1.6 billion, respectively.

The gross output and value added generated by these pharmacies, incorporating indirect and induced effects, are also significant. In New York, gross output and value added amounted to \$3.9 billion and \$2.5 billion; in Alaska they equaled \$39 million and \$23 million, respectively.

⁷ Pharmacies in Arizona would not be directly impacted by the changes because they are not subject to the reimbursement change under the state's waiver program. However, because Arizona businesses provide services to businesses in other states, there would be an indirect and induced impact in Arizona.

Table 4. Economic Contribution of Pharmacies Potentially Closing under DRA

| | Employment | | | | Labor Compensation (\$millions) | | | |
|----------------------|------------|----------|---------|---------|---------------------------------|----------|---------|---------|
| | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total |
| United States | 159,705 | 47,049 | 95,017 | 301,771 | 5,231 | 2,379 | 4,004 | 11,614 |
| Alabama | 3,071 | 777 | 1,518 | 5,366 | 94.6 | 30.7 | 53.2 | 178.5 |
| Alaska | 152 | 70 | 155 | 377 | 4.2 | 3.5 | 6.8 | 14.5 |
| Arizona | 0 | 349 | 919 | 1,267 | 0.0 | 17.3 | 38.4 | 55.7 |
| Arkansas | 1,443 | 397 | 812 | 2,653 | 39.8 | 14.8 | 26.2 | 80.8 |
| California | 20,268 | 6,126 | 12,191 | 38,586 | 763.8 | 345.9 | 581.1 | 1,690.8 |
| Colorado | 1,225 | 546 | 1,180 | 2,950 | 30.6 | 28.7 | 52.0 | 111.3 |
| Connecticut | 1,829 | 526 | 1,097 | 3,453 | 63.2 | 33.5 | 58.3 | 155.0 |
| Delaware | 507 | 122 | 240 | 869 | 13.1 | 6.2 | 10.8 | 30.1 |
| District Of Columbia | 657 | 161 | 265 | 1,083 | 24.1 | 14.9 | 22.3 | 61.2 |
| Florida | 7,817 | 2,739 | 5,526 | 16,082 | 263.6 | 123.2 | 209.6 | 596.5 |
| Georgia | 3,786 | 1,240 | 2,470 | 7,497 | 109.4 | 61.4 | 101.9 | 272.7 |
| Hawaii | 799 | 222 | 442 | 1,462 | 24.5 | 10.2 | 17.0 | 51.7 |
| Idaho | 481 | 182 | 371 | 1,033 | 12.7 | 6.7 | 11.9 | 31.2 |
| Illinois | 8,781 | 2,411 | 4,737 | 15,929 | 275.5 | 132.4 | 209.5 | 617.5 |
| Indiana | 2,502 | 835 | 1,749 | 5,086 | 72.3 | 35.9 | 65.0 | 173.2 |
| Iowa | 1,660 | 486 | 987 | 3,133 | 44.2 | 18.6 | 32.7 | 95.4 |
| Kansas | 1,210 | 405 | 831 | 2,446 | 31.3 | 16.3 | 28.7 | 76.3 |
| Kentucky | 3,171 | 777 | 1,554 | 5,502 | 100.7 | 30.8 | 52.8 | 184.4 |
| Louisiana | 4,066 | 1,053 | 1,925 | 7,044 | 122.1 | 40.5 | 64.5 | 227.0 |
| Maine | 561 | 183 | 423 | 1,167 | 18.9 | 7.0 | 14.1 | 40.0 |
| Maryland | 1,835 | 687 | 1,464 | 3,986 | 58.4 | 36.4 | 67.4 | 162.2 |
| Massachusetts | 4,003 | 1,101 | 2,226 | 7,330 | 131.6 | 66.6 | 112.0 | 310.3 |
| Michigan | 3,911 | 1,270 | 2,753 | 7,933 | 131.7 | 68.0 | 117.1 | 316.9 |
| Minnesota | 1,744 | 715 | 1,500 | 3,959 | 49.4 | 35.2 | 61.7 | 146.3 |
| Mississippi | 1,849 | 449 | 897 | 3,194 | 54.0 | 15.9 | 28.1 | 98.1 |
| Missouri | 3,274 | 1,073 | 2,090 | 6,437 | 97.5 | 46.6 | 76.5 | 220.6 |
| Montana | 324 | 112 | 251 | 688 | 7.9 | 3.9 | 7.6 | 19.4 |
| Nebraska | 1,148 | 337 | 655 | 2,140 | 30.4 | 13.3 | 22.2 | 65.8 |
| Nevada | 588 | 250 | 541 | 1,379 | 19.4 | 12.5 | 23.1 | 54.9 |
| New Hampshire | 499 | 170 | 369 | 1,038 | 14.6 | 8.3 | 15.0 | 37.9 |
| New Jersey | 5,542 | 1,536 | 2,999 | 10,076 | 222.9 | 92.7 | 151.4 | 466.9 |
| New Mexico | 430 | 200 | 424 | 1,053 | 11.1 | 7.8 | 14.6 | 33.6 |
| New York | 23,021 | 4,741 | 9,313 | 37,074 | 845.9 | 310.1 | 466.7 | 1,622.7 |
| North Carolina | 5,064 | 1,359 | 2,715 | 9,139 | 140.4 | 58.0 | 99.3 | 297.8 |
| North Dakota | 412 | 118 | 238 | 768 | 11.3 | 4.1 | 7.2 | 22.6 |
| Ohio | 5,451 | 1,785 | 3,511 | 10,748 | 167.2 | 79.9 | 132.6 | 379.7 |
| Oklahoma | 2,108 | 619 | 1,184 | 3,911 | 54.8 | 24.0 | 39.8 | 118.6 |
| Oregon | 820 | 404 | 851 | 2,075 | 22.7 | 18.1 | 32.9 | 73.6 |
| Pennsylvania | 6,073 | 1,930 | 4,002 | 12,005 | 192.6 | 97.2 | 166.3 | 456.1 |
| Rhode Island | 794 | 164 | 375 | 1,332 | 28.1 | 7.6 | 15.0 | 50.6 |
| South Carolina | 2,214 | 591 | 1,232 | 4,036 | 65.2 | 23.2 | 42.1 | 130.5 |
| South Dakota | 401 | 119 | 262 | 781 | 10.4 | 4.3 | 8.1 | 22.8 |
| Tennessee | 3,924 | 1,083 | 2,342 | 7,350 | 137.2 | 49.0 | 90.1 | 276.3 |
| Texas | 9,841 | 3,205 | 6,384 | 19,430 | 303.9 | 158.5 | 271.0 | 733.3 |
| Utah | 822 | 331 | 662 | 1,815 | 21.7 | 13.5 | 23.3 | 58.5 |
| Vermont | 269 | 92 | 206 | 567 | 9.3 | 3.5 | 6.9 | 19.7 |
| Virginia | 2,616 | 966 | 2,016 | 5,598 | 75.1 | 50.7 | 88.2 | 214.0 |
| Washington | 2,437 | 798 | 1,687 | 4,923 | 79.8 | 41.1 | 73.8 | 194.7 |
| West Virginia | 1,531 | 317 | 604 | 2,452 | 48.7 | 11.3 | 19.1 | 79.1 |
| Wisconsin | 2,597 | 858 | 1,743 | 5,199 | 75.7 | 36.6 | 63.5 | 175.8 |
| Wyoming | 175 | 63 | 132 | 370 | 3.7 | 2.5 | 4.5 | 10.7 |

Source: PricewaterhouseCoopers calculations.

Table 4. Economic Contribution of Pharmacies Potentially Closing under DRA, continued

| | Gross Output (\$millions) | | | | Value Added (\$millions) | | | |
|----------------------|---------------------------|----------|----------|----------|--------------------------|----------|---------|----------|
| | Direct | Indirect | Induced | Total | Direct | Indirect | Induced | Total |
| United States | \$11,430 | \$6,862 | \$12,789 | \$31,081 | \$7,124 | \$3,915 | \$6,918 | \$17,957 |
| Alabama | 209.7 | 96.5 | 183.5 | 489.7 | 128.8 | 52.1 | 94.8 | 275.6 |
| Alaska | 9.6 | 9.8 | 19.9 | 39.3 | 5.8 | 5.7 | 11.2 | 22.7 |
| Arizona | 0.0 | 51.0 | 121.3 | 172.3 | 0.0 | 28.8 | 64.2 | 93.0 |
| Arkansas | 90.8 | 48.3 | 94.0 | 233.0 | 54.2 | 24.6 | 45.4 | 124.2 |
| California | 1,617.8 | 960.2 | 1,774.6 | 4,352.6 | 1,040.1 | 558.0 | 989.0 | 2,587.1 |
| Colorado | 71.7 | 84.1 | 165.7 | 321.5 | 41.7 | 48.6 | 89.9 | 180.2 |
| Connecticut | 136.4 | 90.4 | 172.4 | 399.2 | 86.0 | 54.7 | 98.9 | 239.6 |
| Delaware | 30.3 | 18.7 | 34.9 | 83.9 | 17.8 | 10.4 | 18.4 | 46.6 |
| District Of Columbia | 51.3 | 29.9 | 43.3 | 124.5 | 32.8 | 20.7 | 29.5 | 83.0 |
| Florida | 572.1 | 345.7 | 641.5 | 1,559.4 | 359.0 | 203.8 | 366.0 | 928.8 |
| Georgia | 246.5 | 180.4 | 335.0 | 761.9 | 149.0 | 103.4 | 180.2 | 432.7 |
| Hawaii | 54.4 | 28.3 | 50.0 | 132.7 | 33.4 | 16.6 | 28.8 | 78.7 |
| Idaho | 29.2 | 20.6 | 40.2 | 90.1 | 17.2 | 10.7 | 19.7 | 47.7 |
| Illinois | 608.3 | 375.5 | 669.3 | 1,653.0 | 375.3 | 216.7 | 364.0 | 955.9 |
| Indiana | 162.9 | 118.2 | 236.3 | 517.4 | 98.5 | 60.1 | 112.3 | 270.8 |
| Iowa | 101.7 | 59.8 | 118.4 | 279.9 | 60.1 | 30.5 | 56.7 | 147.3 |
| Kansas | 72.6 | 53.8 | 104.8 | 231.2 | 42.6 | 27.4 | 50.3 | 120.3 |
| Kentucky | 221.7 | 96.6 | 186.5 | 504.9 | 137.2 | 50.8 | 93.8 | 281.8 |
| Louisiana | 272.4 | 133.4 | 236.1 | 641.9 | 166.2 | 68.1 | 116.7 | 351.0 |
| Maine | 41.1 | 21.3 | 45.7 | 108.1 | 25.8 | 11.7 | 24.1 | 61.5 |
| Maryland | 128.4 | 96.6 | 190.9 | 415.8 | 79.5 | 58.6 | 110.6 | 248.7 |
| Massachusetts | 287.4 | 176.8 | 323.7 | 787.9 | 179.3 | 106.6 | 186.5 | 472.4 |
| Michigan | 286.0 | 204.7 | 399.2 | 889.9 | 179.4 | 112.0 | 201.9 | 493.3 |
| Minnesota | 111.8 | 103.7 | 201.7 | 417.2 | 67.2 | 57.4 | 104.5 | 229.1 |
| Mississippi | 121.4 | 51.6 | 100.0 | 273.0 | 73.6 | 26.3 | 49.4 | 149.3 |
| Missouri | 218.0 | 136.3 | 253.1 | 607.5 | 132.8 | 75.5 | 131.8 | 340.1 |
| Montana | 18.7 | 13.4 | 27.2 | 59.3 | 10.8 | 7.0 | 13.5 | 31.2 |
| Nebraska | 70.1 | 41.6 | 78.5 | 190.2 | 41.4 | 21.8 | 38.7 | 101.9 |
| Nevada | 42.3 | 34.6 | 69.4 | 146.2 | 26.4 | 20.9 | 40.0 | 87.3 |
| New Hampshire | 32.9 | 23.8 | 46.9 | 103.6 | 19.9 | 13.6 | 25.3 | 58.8 |
| New Jersey | 465.9 | 254.2 | 460.3 | 1,180.4 | 303.5 | 151.5 | 262.9 | 717.9 |
| New Mexico | 25.8 | 22.9 | 45.2 | 93.9 | 15.1 | 12.6 | 23.9 | 51.6 |
| New York | 1,801.4 | 799.9 | 1,348.6 | 3,949.9 | 1,152.0 | 504.6 | 809.6 | 2,466.2 |
| North Carolina | 319.9 | 178.3 | 338.0 | 836.2 | 191.3 | 98.2 | 175.3 | 464.7 |
| North Dakota | 25.8 | 13.4 | 25.2 | 64.4 | 15.3 | 7.0 | 12.8 | 35.1 |
| Ohio | 371.1 | 242.6 | 450.6 | 1,064.2 | 227.6 | 131.0 | 227.9 | 586.5 |
| Oklahoma | 127.0 | 75.9 | 137.7 | 340.5 | 74.6 | 40.9 | 71.5 | 187.0 |
| Oregon | 51.7 | 53.7 | 106.6 | 212.0 | 30.9 | 29.6 | 55.2 | 115.7 |
| Pennsylvania | 424.1 | 284.7 | 538.7 | 1,247.5 | 262.3 | 159.8 | 286.6 | 708.8 |
| Rhode Island | 60.3 | 21.8 | 45.2 | 127.2 | 38.2 | 12.7 | 25.3 | 76.2 |
| South Carolina | 146.1 | 73.1 | 143.8 | 363.0 | 88.7 | 39.6 | 73.7 | 202.0 |
| South Dakota | 24.2 | 13.8 | 27.8 | 65.7 | 14.2 | 7.3 | 13.9 | 35.4 |
| Tennessee | 295.3 | 150.6 | 303.1 | 748.9 | 186.8 | 83.5 | 160.2 | 430.5 |
| Texas | 673.3 | 505.2 | 959.5 | 2,138.1 | 413.8 | 274.1 | 491.8 | 1,179.7 |
| Utah | 50.1 | 41.2 | 77.2 | 168.5 | 29.6 | 21.8 | 38.7 | 90.1 |
| Vermont | 20.1 | 10.7 | 22.6 | 53.3 | 12.7 | 5.6 | 11.4 | 29.7 |
| Virginia | 169.5 | 137.6 | 261.1 | 568.2 | 102.3 | 81.2 | 145.7 | 329.3 |
| Washington | 174.3 | 119.6 | 231.8 | 525.8 | 108.6 | 68.2 | 126.0 | 302.8 |
| West Virginia | 107.2 | 36.8 | 66.9 | 210.9 | 66.4 | 18.9 | 33.9 | 119.2 |
| Wisconsin | 170.3 | 111.8 | 218.6 | 500.7 | 103.2 | 59.2 | 107.8 | 270.2 |
| Wyoming | 9.1 | 8.5 | 16.6 | 34.2 | 5.0 | 4.4 | 8.1 | 17.5 |

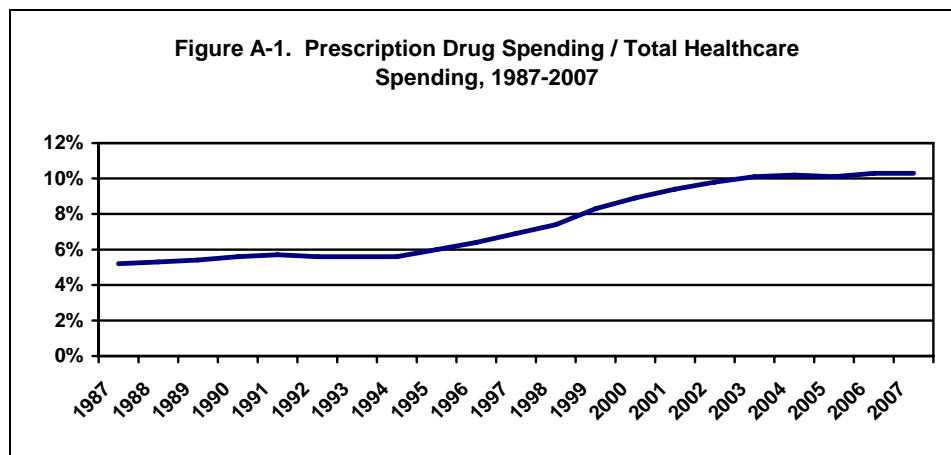
Source: PricewaterhouseCoopers calculations.

APPENDIX I: OVERVIEW OF THE U.S. PHARMACY SECTOR

Prescription drug spending represents an increasing share of total healthcare costs over the past several decades, almost doubling from 5.2 percent in 1987 to 10.3 percent in 2007. Spending on prescription drugs exceeded \$231 billion in 2007. Community pharmacies are responsible for dispensing the majority of these drugs. This section provides an overview of the U.S. pharmacy sector.

Total Drug Spending

Innovation in the drug industry has increased the importance of prescription drugs as a share of the overall healthcare industry. As illustrated in Figure A-1, drug spending as a share of total healthcare spending has increased significantly over the past 20 years, but much of the increase occurred between 1994 and 2003.



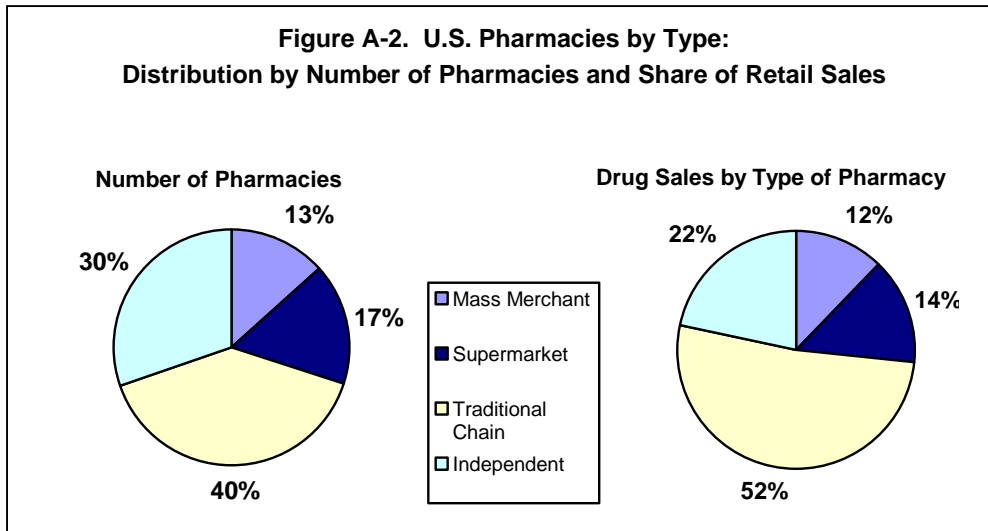
Source: CMS, National Health Expenditures and PricewaterhouseCoopers calculations.

Generic drugs are becoming an increasingly important segment of the prescription drug market. The blockbuster drugs introduced in the 1980s and 1990s that fueled the increase in drug spending have lost or will lose patent protection in the next several years. As a result, the generic share of drug spending has been rising steadily. In 2007, generic drugs represented over half of prescriptions and approximately 20 percent of spending. The expiration of patents over the next several years is expected to push these levels higher.

Types of Retail Pharmacies

In 2007, there were over 55,000 U.S. pharmacies. These pharmacies operate as chain drug stores, independent pharmacies, supermarket pharmacies, or mass marketer pharmacies (i.e., pharmacies in "big box" stores). In 2007, chain drug stores represented 40 percent of the total number of retail pharmacies in the United States,⁸ and they sold approximately 52 percent of the drugs sold in retail stores (see Figure A-2).⁸

⁸ Excludes mail order pharmacies, which account for an additional 25 percent of drug sales.



Source: National Association of Chain Drug Stores.

By state, the share of pharmacies represented by traditional chains varies from none, in Alaska, to 72 percent, in Delaware (see Table A-1). Independent pharmacies account for approximately 30 percent of the total nationwide, but account for at least half of pharmacies in North Dakota (70 percent) and Arkansas (51 percent). Supermarkets and mass marketers are generally smaller players nationwide, but are significant in certain states.

Pharmacy Compensation

Pharmacies receive several forms of compensation in return for dispensing prescriptions, depending on the coverage status of the purchaser. First, for those without health insurance, the pharmacy simply charges the purchaser a flat price per drug and keeps the entire amount.

For an individual with health insurance coverage, pharmacies collect copayments or coinsurance, they receive dispensing fees for each prescription, and they receive reimbursement from health plans for the drugs they sell. Contracts with health plans recognize the copayments or coinsurance that pharmacies receive and adjust reimbursement amounts for those payments. For each prescription that it fills, the pharmacy is paid a dispensing fee that averages \$2 for private plans.⁹ Recent research has found that the average cost of filling a prescription ranges between \$10 and \$12.¹⁰ Given that prescription filling costs exceed dispensing fees, pharmacy profits (or losses) are determined largely by the relationship between the reimbursement provided by the plans for drugs and the costs pharmacies must pay to purchase those drugs. In order for pharmacies to be profitable, reimbursement rates must be large enough to cover the portion of dispensing costs not covered by dispensing fees and provide a return on capital.

⁹ Pharmacy Benefit Management Institute, "Prescription Drug Benefit Cost and Plan Design, Online Report," available at http://www.pbmi.com/2007report/pharmacy_reimbursement/index.html. Medicaid pays higher dispensing fees, as described in the next section.

¹⁰ Grant Thornton, "Cost of Dispensing Study: An Independent Comparative Analysis of U.S. Prescription Drug Dispensing Costs," prepared for Coalition for Community Pharmacy Action, January 2007. The average per pharmacy was \$12.10 and the average per prescription was \$10.50.

Table A-1. Number of Pharmacies by State, by Type, 2007

| | Total | Share of Total | | | | Average Number of Pharmacies within 2-15 Miles of Independent* |
|----------------------|--------|----------------|-------------|--------------|-------------------|--|
| | | Independent | Mass Market | Super-market | Traditional Chain | |
| US | 55,561 | 30% | 13% | 17% | 40% | 21 |
| Alabama | 1,129 | 40% | 15% | 12% | 34% | 14 |
| Alaska | 73 | 40% | 15% | 45% | 0% | 7 |
| Arizona | 915 | 8% | 17% | 35% | 40% | 10 |
| Arkansas | 709 | 51% | 18% | 10% | 21% | 11 |
| California | 4,963 | 34% | 11% | 14% | 41% | 24 |
| Colorado | 728 | 19% | 18% | 38% | 25% | 10 |
| Connecticut | 623 | 18% | 9% | 17% | 56% | 13 |
| Delaware | 151 | 7% | 9% | 13% | 72% | 9 |
| District of Columbia | 108 | 28% | 0% | 12% | 60% | 36 |
| Florida | 3,506 | 19% | 13% | 26% | 42% | 20 |
| Georgia | 1,900 | 28% | 12% | 20% | 40% | 12 |
| Hawaii | 133 | 43% | 14% | 14% | 29% | 11 |
| Idaho | 260 | 37% | 17% | 26% | 21% | 8 |
| Illinois | 2,128 | 26% | 15% | 17% | 41% | 18 |
| Indiana | 1,109 | 17% | 19% | 17% | 47% | 8 |
| Iowa | 670 | 34% | 18% | 16% | 32% | 8 |
| Kansas | 561 | 43% | 17% | 18% | 21% | 7 |
| Kentucky | 944 | 44% | 14% | 12% | 30% | 11 |
| Louisiana | 971 | 42% | 13% | 12% | 33% | 15 |
| Maine | 242 | 18% | 12% | 21% | 49% | 7 |
| Maryland | 980 | 22% | 11% | 24% | 43% | 16 |
| Massachusetts | 1,055 | 14% | 8% | 14% | 64% | 17 |
| Michigan | 2,026 | 26% | 17% | 10% | 47% | 15 |
| Minnesota | 894 | 25% | 22% | 15% | 37% | 8 |
| Mississippi | 723 | 48% | 17% | 7% | 28% | 10 |
| Missouri | 1,086 | 34% | 18% | 16% | 32% | 9 |
| Montana | 206 | 49% | 20% | 18% | 12% | 6 |
| Nebraska | 381 | 40% | 19% | 21% | 20% | 9 |
| Nevada | 413 | 9% | 16% | 30% | 45% | 15 |
| New Hampshire | 241 | 13% | 15% | 17% | 55% | 13 |
| New Jersey | 1,808 | 34% | 6% | 18% | 42% | 25 |
| New Mexico | 251 | 27% | 24% | 20% | 29% | 7 |
| New York | 4,042 | 43% | 5% | 10% | 42% | 88 |
| North Carolina | 1,661 | 31% | 13% | 7% | 49% | 14 |
| North Dakota | 152 | 70% | 3% | 0% | 27% | 5 |
| Ohio | 2,160 | 20% | 15% | 18% | 47% | 12 |
| Oklahoma | 761 | 45% | 16% | 10% | 29% | 10 |
| Oregon | 597 | 24% | 21% | 30% | 26% | 10 |
| Pennsylvania | 2,669 | 28% | 9% | 14% | 49% | 19 |
| Rhode Island | 188 | 16% | 5% | 15% | 64% | 15 |
| South Carolina | 919 | 29% | 13% | 15% | 44% | 13 |
| South Dakota | 168 | 42% | 21% | 11% | 27% | 5 |
| Tennessee | 1,359 | 29% | 16% | 16% | 38% | 13 |
| Texas | 3,679 | 28% | 16% | 22% | 33% | 13 |
| Utah | 377 | 27% | 23% | 35% | 15% | 12 |
| Vermont | 123 | 32% | 4% | 16% | 48% | 8 |
| Virginia | 1,311 | 23% | 15% | 19% | 43% | 11 |
| Washington | 1,050 | 24% | 12% | 32% | 32% | 14 |
| West Virginia | 445 | 33% | 12% | 11% | 44% | 11 |
| Wisconsin | 915 | 24% | 23% | 5% | 48% | 8 |
| Wyoming | 107 | 39% | 25% | 26% | 9% | 5 |
| Unassigned | 991 | 80% | 5% | 0% | 15% | NA |

Source: Data on pharmacy counts by type and state provided by National Association of Chain Drug Stores, Average number of pharmacies within 2-15 miles of an independent pharmacy from SK&A, *Consumer Access to Pharmacies in the United States, 2007*.

* For independent pharmacies in urban areas, the measure counts pharmacies within 2 miles; in suburban areas, 5 miles; and in rural areas, 15 miles.

Pharmacy Competition

Pharmacies are limited in their ability to compete directly for customers on the basis of price of prescription drugs. Most prescriptions are purchased through third party insurance or Medicaid, which means that an individual pharmacy collects the copayment (or coinsurance) specified under the insurance plan. The consumer pays a fixed copayment (or coinsurance based on a fixed price) and therefore has little incentive to select one pharmacy over another.

Health plans control costs by limiting their networks of preferred pharmacies and negotiating stricter terms with those pharmacies. Pharmacies compete with one another by agreeing to these stricter terms. Losing access to a large health plan's covered population could force a pharmacy to close.

Retail pharmacies also face competition from mail order pharmacies, which are able to take advantage of scale operations and automated processes. Nationwide, mail order activity represents approximately 7 percent of prescriptions but 20 percent of spending.

As a result of these conditions, the pharmacy sector is generally competitive and exhibits relatively low profit margins. In 2006, average after-tax income of publicly held pharmacies and drug stores were 2.5 percent of sales.¹¹ Independent pharmacies earned profits of approximately 2.6 percent of sales in 2006.¹² This level was similar to that in 2001, when 13 percent of independent pharmacies were in loss positions, 28 percent had profits of under 2 percent, 33 percent had profits between 2 and 5 percent, and 26 percent had profits of over 5 percent of sales.¹³

Pharmacy Access

An important determinant of the outcomes in the healthcare system is the level of access. In 2006, the average distance to a pharmacy was 2.36 miles in the United States.¹⁴ Increased distances could lead to worse outcomes as people would be less likely to fill prescriptions.

Pharmacy access can also affect the level of competition that the pharmacy faces. A larger number of pharmacies in a small area could result in greater competition and result in lower pharmacy prices for uninsured individuals and lower reimbursement rates from health plans. As a measure of the level of access, Table 3 replicates figures from another study of the number of pharmacies within a competitive distance of independent pharmacies by state.¹⁵ For an independent pharmacy in an urban area, the measure counts the number of pharmacies within 2 miles; in a suburban area, 5 miles; and in a rural area, 15 miles.

Nationally, the average independent faces competition from 21 pharmacies. State values exhibit significant variation. The average number of pharmacies competing with independents is 88 in New York, while in North Dakota, South Dakota, and Wyoming there are only 5 pharmacies within a competitive distance. These figures demonstrate the different levels of access and pharmacy competition by state.

¹¹ PwC tabulation of Compustat data for 2006.

¹² NCPA-Pfizer Digest, 2007.

¹³ NCPA-Pharmacia Digest, 2002, cited in Schondelmeyer testimony for National Association of Chain Drug Stores and National Community Pharmacists Association v. U.S. Department of Health and Human Services, et al., November 7, 2007.

¹⁴ NACDS, 2007 Chain Pharmacy Industry Profile.

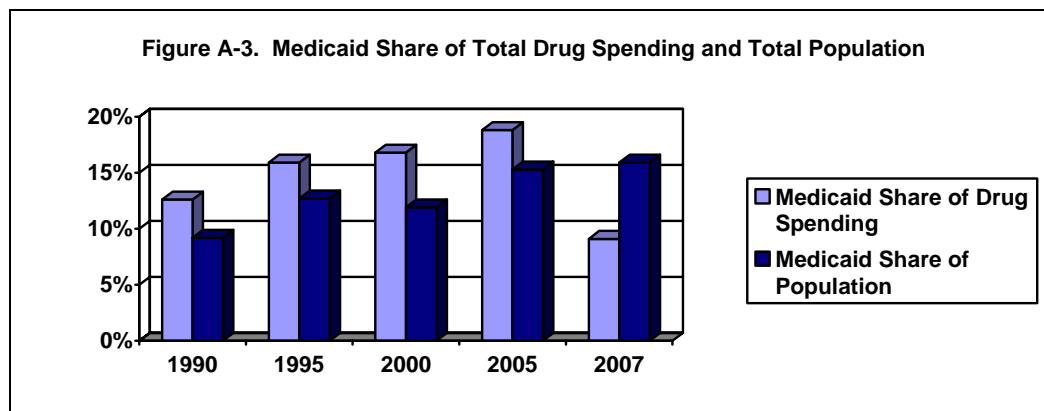
¹⁵ SK&A, *Consumer Access to Pharmacies in the United States, 2007*, prepared for the Pharmaceutical Care Management Association, May 2007.

APPENDIX II: MEDICAID AND PHARMACEUTICAL PRODUCTS

The Medicaid program covers prescription drug expenses for its beneficiaries. State governments determine the specifics of the coverage, such as any limitations on prescriptions or applicable cost sharing, but certain federal restrictions limit what states can do. One important restriction is the FUL, which effectively caps pharmacy reimbursement for certain generic drugs. This section provides background information on the Medicaid program and describes the reimbursement of pharmacies for Medicaid drugs.

Utilization of Drugs by Medicaid Beneficiaries

Medicaid's share of total drug spending increased from 12.6 percent in 1990 to 18.8 percent in 2005. With the enactment of Medicare Part D, which shifted the drug coverage of dual eligibles from Medicaid to Medicare, Medicaid's share of spending fell in half to 9.1 percent of total drug spending in 2007. During this same period, the share of the population covered by Medicaid increased, from 9.2 percent to 15.9 percent (see Figure A-3).



Medicaid beneficiaries purchase virtually all of their drugs in retail pharmacies: 99 percent of the number of scripts and 97 percent of the value of drugs were sold in a retail establishment in 2007.¹⁶ Mail order pharmacies are not a source used by Medicaid beneficiaries.

Generic drugs represent 60 percent of all prescriptions and 16 percent of spending in the Medicaid program (see Table A-2). By state, the generic share of scripts varies from 51 percent (in Maryland) to 73 percent (in Hawaii), while the generic share of spending ranges from 10 percent (in Maryland and Michigan) to 26 percent (in Utah). These ratios should rise with the expiration of patent protection on certain high-selling drugs in coming years.

Reimbursements for drugs subject to FULs represented 27 percent of Medicaid scripts and 10 percent of Medicaid spending. By state, the share of scripts subject to FULs ranged from 18 percent (in North Carolina) to 36 percent (in Hawaii), and the share of spending ranged from 7 percent (in Maryland) to 17 percent (in Hawaii).

¹⁶ NACDS tabulation of Wolters Kluwer Price-Chek PC data.

Table A-2. Medicaid Drug Spending by State, 2007

| | Total Medicaid Drug Utilization (millions) | | Share of Total Medicaid Drug Spending | | | |
|----------------------|--|------------|---------------------------------------|----------|--------------|----------|
| | | | Generic Spending | | FUL Spending | |
| | Scripts | Spending | Scripts | Spending | Scripts | Spending |
| US | 294.8 | \$20,986.0 | 60% | 16% | 27% | 10% |
| Alabama | 6.6 | 407.0 | 63% | 23% | 27% | 13% |
| Alaska | 0.9 | 72.2 | 53% | 19% | 27% | 13% |
| Arizona | 0.9 | 81.8 | 60% | 16% | NA | NA |
| Arkansas | 4.2 | 306.7 | 56% | 17% | 22% | 9% |
| California | 25.6 | 2,290.6 | 58% | 14% | 35% | 10% |
| Colorado | 2.5 | 194.4 | 60% | 20% | 28% | 13% |
| Connecticut | 2.1 | 197.4 | 56% | 16% | 32% | 11% |
| Delaware | 1.3 | 94.5 | 55% | 17% | 24% | 10% |
| District of Columbia | 0.6 | 58.3 | 60% | 20% | 28% | 13% |
| Florida | 12.4 | 1,002.2 | 59% | 12% | 25% | 8% |
| Georgia | 6.2 | 466.1 | 59% | 14% | 28% | 9% |
| Hawaii | 0.8 | 54.9 | 73% | 24% | 36% | 17% |
| Idaho | 1.3 | 91.9 | 58% | 14% | 23% | 8% |
| Illinois | 18.6 | 1,037.6 | 66% | 17% | 26% | 11% |
| Indiana | 4.8 | 344.3 | 68% | 13% | 25% | 9% |
| Iowa | 3.5 | 223.7 | 58% | 13% | 32% | 10% |
| Kansas | 1.7 | 133.7 | 58% | 13% | 25% | 9% |
| Kentucky | 9.6 | 490.9 | 66% | 22% | 31% | 14% |
| Louisiana | 9.0 | 660.2 | 56% | 21% | 24% | 12% |
| Maine | 2.9 | 176.9 | 54% | 11% | 31% | 8% |
| Maryland | 2.1 | 211.0 | 51% | 10% | 19% | 7% |
| Massachusetts | 7.2 | 437.1 | 69% | 19% | 30% | 13% |
| Michigan | 5.9 | 423.3 | 57% | 10% | 21% | 7% |
| Minnesota | 2.8 | 209.0 | 62% | 16% | 29% | 11% |
| Mississippi | 4.1 | 274.1 | 61% | 21% | 26% | 12% |
| Missouri | 8.3 | 562.3 | 63% | 18% | 29% | 12% |
| Montana | 0.8 | 58.2 | 63% | 21% | 33% | 14% |
| Nebraska | 2.5 | 143.4 | 66% | 19% | 22% | 11% |
| Nevada | 0.3 | 26.4 | 63% | 18% | 32% | 12% |
| New Hampshire | 1.1 | 64.9 | 65% | 18% | 27% | 12% |
| New Jersey | 4.8 | 463.6 | 55% | 18% | 23% | 10% |
| New Mexico | 0.2 | 10.7 | 69% | 21% | 20% | 11% |
| New York | 37.4 | 3,104.5 | 57% | 15% | 29% | 10% |
| North Carolina | 12.9 | 935.0 | 55% | 15% | 18% | 9% |
| North Dakota | 0.5 | 29.1 | 58% | 18% | 27% | 11% |
| Ohio | 9.7 | 627.4 | 61% | 13% | 35% | 9% |
| Oklahoma | 4.2 | 343.6 | 60% | 13% | 24% | 8% |
| Oregon | 1.7 | 125.9 | 65% | 17% | 30% | 12% |
| Pennsylvania | 6.7 | 347.9 | 63% | 16% | 28% | 11% |
| Rhode Island | 0.9 | 62.5 | 63% | 20% | 32% | 14% |
| South Carolina | 5.4 | 377.3 | 57% | 16% | 21% | 9% |
| South Dakota | 0.9 | 66.2 | 60% | 16% | 28% | 10% |
| Tennessee | 9.8 | 588.2 | 64% | 20% | 27% | 12% |
| Texas | 25.5 | 1,701.8 | 60% | 18% | 23% | 9% |
| Utah | 1.9 | 123.2 | 64% | 26% | 30% | 16% |
| Vermont | 0.4 | 26.4 | 64% | 19% | 28% | 12% |
| Virginia | 3.9 | 221.1 | 69% | 21% | 28% | 13% |
| Washington | 6.2 | 360.7 | 68% | 17% | 31% | 12% |
| West Virginia | 4.8 | 292.9 | 58% | 19% | 31% | 13% |
| Wisconsin | 6.0 | 350.6 | 61% | 17% | 26% | 11% |
| Wyoming | 0.5 | 32.0 | 60% | 17% | 19% | 10% |

Source: PricewaterhouseCoopers estimates based on Medicaid Utilization data for first three quarters of 2007 and NHE estimates of total Medicaid drug spending. NACDS provided information on the share of spending subject to FULs.

Medicaid Reimbursement of Pharmacies

The Medicaid program reimburses pharmacies for the drugs provided to beneficiaries based on the lower of:

1. each drug's "estimated acquisition costs" plus a dispensing fee, or
2. the provider's usual and customary charges to the general public.

Generally, each state sets its own reimbursement rates for drug costs based on published prices like average wholesale price (AWP) or wholesale acquisition price (WAC), but for certain multi-source drugs the federal government imposes a cap, called a federal upper limit (FUL), on reimbursement amounts.

States can provide payments to pharmacies in excess of the FULs but only receive federal matching funds up to the FUL. States can set reimbursement rates lower than the FUL with no impact on the percent matched by the federal government. The majority of states set "maximum allowable costs" (MAC) for Medicaid drugs that often are lower than FULs. In such cases, the pharmacy would only receive the MAC price.

Pharmacies also receive dispensing fees which vary by state for Medicaid prescriptions. For 2008, these dispensing fees range between \$1.75 (in New Hampshire) and \$11.46 (in certain Alaska pharmacies).

Beginning in 1987, FULs were set for drugs that had at least three manufacturers and that had commercial prices available for a sustained period of time. They were set to equal to 150 percent of the lowest-priced therapeutically and biologically equivalent drug in published compendia of prices. Although they were intended to apply to all drugs with generic competition, FULs ended up covering about two-thirds of generic spending. Newer generic drugs typically either had only one manufacturer or an insufficient record of public prices to establish an FUL.¹⁷

The Deficit Reduction Act of 2005 (DRA) changed the calculation of FUL to be 250 percent of the lowest average manufacturer price (AMP) for each drug. The AMP is supposed to represent the price that wholesalers pay for drugs, reflecting the various discounts that occur throughout the supply chain. The DRA also specified that FULs should be set for drugs with two or more manufacturers. The DRA changes were scheduled to become effective on January 1, 2007, but delays in rulemaking and subsequent litigation has prevented their implementation. Because AMPs are significantly lower than published prices, the new reimbursement levels would be significantly lower than the pre-DRA levels.

Because current dispensing fees for Medicaid prescriptions are insufficient to cover the costs of dispensing drugs, pharmacies currently rely on the difference between drug acquisition costs and Medicaid reimbursements to cover the costs of dispensing drugs. Cuts to reimbursement rates, as enacted by the DRA, would further reduce the profitability of pharmacies and could lead to reduced pharmacy participation in the Medicaid program or to pharmacy closings. In either case, access to medication would decline, which could impact health outcomes.

¹⁷ CBO (2004) states that CMS could set FULs for drugs with a single generic manufacturer, meaning that there would be only two manufacturers of the drug.

APPENDIX III: DESCRIPTION OF IMPLAN MODEL

IMPLAN is a well known modeling system developed by the Minnesota IMPLAN Group for estimating economic impacts and is similar to the Regional Input-Output Modeling System developed by the U.S. Department of Commerce. The model is primarily based on government data sources. It can address a wide range of impact topics in a given region (county, State, or the country as a whole).

IMPLAN is built around an “input-output” table that relates the purchases that each industry has made from other industries to the value of the output of each industry. To meet the demand for goods and services from an industry, purchases are made in other industries according to the patterns recorded in the input-output table. These purchases in turn spark still more purchases by the industry’s suppliers, and so on. Meanwhile, employees and business owners make personal purchases out of the additional income that is generated by this process, sending more new demands rippling through the economy. Multipliers describe these iterations. The Type I multiplier measures the direct and indirect effects of a change in economic activity. It captures the inter-industry effects only, i.e. industries buying from local industries. The Type SAM (Social Accounting Matrix) multiplier captures the direct and indirect effects. In addition, it also reflects induced effects (i.e., changes in spending from households as income increases or decreases due to the changes in production).

Table A-3. Number of Pharmacies Impacted by State

| | DRA Reimbursement Rates | |
|----------------------|--|---------------------------|
| | Number of Pharmacies Potentially Closing | Percent of all pharmacies |
| United States | 11,105 | 20% |
| Alabama | 265 | 23% |
| Alaska | 20 | 28% |
| Arkansas | 184 | 26% |
| California | 1,184 | 24% |
| Colorado | 123 | 17% |
| Connecticut | 95 | 15% |
| Delaware | 24 | 16% |
| District Of Columbia | 40 | 37% |
| Florida | 546 | 16% |
| Georgia | 315 | 17% |
| Hawaii | 28 | 21% |
| Idaho | 48 | 19% |
| Illinois | 461 | 22% |
| Indiana | 150 | 13% |
| Iowa | 126 | 19% |
| Kansas | 94 | 17% |
| Kentucky | 259 | 27% |
| Louisiana | 309 | 32% |
| Maine | 43 | 18% |
| Maryland | 133 | 14% |
| Massachusetts | 189 | 18% |
| Michigan | 293 | 14% |
| Minnesota | 131 | 15% |
| Mississippi | 183 | 25% |
| Missouri | 233 | 21% |
| Montana | 51 | 25% |
| Nebraska | 81 | 21% |
| Nevada | 46 | 11% |
| New Hampshire | 36 | 15% |
| New Jersey | 350 | 19% |
| New Mexico | 29 | 11% |
| New York | 1,624 | 40% |
| North Carolina | 342 | 21% |
| North Dakota | 30 | 20% |
| Ohio | 319 | 15% |
| Oklahoma | 166 | 22% |
| Oregon | 92 | 15% |
| Pennsylvania | 409 | 15% |
| Rhode Island | 30 | 16% |
| South Carolina | 179 | 20% |
| South Dakota | 38 | 22% |
| Tennessee | 287 | 21% |
| Texas | 723 | 20% |
| Utah | 75 | 20% |
| Vermont | 20 | 16% |
| Virginia | 189 | 14% |
| Washington | 203 | 19% |
| West Virginia | 132 | 30% |
| Wisconsin | 157 | 17% |
| Wyoming | 20 | 19% |

Source: PricewaterhouseCoopers calculations, based on Schondelmeyer estimates of overall impact.