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A PRESCRIPTION DRUG PEACE TREATY

CUTTING PRICES
TO MAKE PRESCRIPTION DRUGS AFFORDABLE FOR ALL
AND TO PROTECT RESEARCH

STATE-BY-STATE SAVINGS

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SUMMARY

Americans can win much lower drug prices and make all needed medications affordable for all citizens without harming drug makers' research—or even their profits—and without spending substantially more money. State action to achieve these goals is feasible, and will be necessary if Congress fails to act.

PART I of this report finds that:

- More than 69 million Americans have no insurance for prescription drugs. Many more millions have inadequate insurance.

- Cutting manufacturers' prices is essential to making medications affordable for all. Alternatives—such as continued increases in private insurance spending and public subsidies, or voluntary private medication insurance—are unaffordable and unworkable.

- This year, residents of the 50 states and the District of Columbia will pay manufacturers some $96.5 billion for brand name prescription drugs.

- ***Cutting brand name prescription drug makers' prices to Federal Supply Schedule (FSS) prices, we calculate, would save about $35.3 billion this year.*** People in ten states would save more than $1 billion each. Each state would save at least $50 million. ***These would be the savings, by state, in <u>millions</u> of dollars:***

1. California	***$2,888***
2. New York	***2,688***
3. Florida	***2,372***
4. Texas	***2,340***
5. Pennsylvania	***1,924***
6. Illinois	***1,613***
7. Michigan	***1,152***
8. Ohio	***1,547***
9. New Jersey	***1,350***
10. North Carolina	***1,023***
11. Georgia	***975***
12. Indiana	***865***
13. Tennessee	***844***
14. Virginia	***837***
15. Massachusetts	***801***
16. Missouri	***688***
17. Wisconsin	***660***
18. Maryland	***655***
19. Alabama	***630***
20. Washington	***612***
21. Kentucky	***599***
22. Louisiana	***597***
23. Minnesota	***562***
24. South Carolina	***528***
25. Arizona	***518***
26. Connecticut	***505***

27. Oklahoma	***$426***
28. Mississippi	***372***
29. Iowa	***369***
30. Colorado	***367***
31. Arkansas	***364***
32. Oregon	***354***
33. Kansas	***352***
34. West Virginia	***308***
35. Nebraska	***238***
36. Utah	***234***
37. Nevada	***186***
38. Maine	***175***
39. New Mexico	***154***
40. New Hampshire	***149***
41. Rhode Island	***144***
42. Idaho	***140***
43. Hawaii	***122***
44. Delaware	***112***
45. Montana	***94***
46. South Dakota	***81***
47. North Dakota	***76***
48. District of Columbia	***74***
49. Vermont	***68***
50. Wyoming	***54***
51. Alaska	***51***
U.S.A.	***$35,347***

- With these price cuts nation-wide, payments to brand name drug makers would drop from $96.5 billion to $61.2 billion. That would save 37 percent of this year's payments.

- Of the $35.3 billion in new savings this year, slightly over half would go to people with private third party insurance, and one-quarter to people who pay out-of-pocket. Medicaid and hospitals and nursing homes would split the rest of the savings.

- Instead of the 42 percent average FSS discount, different standards could be used, such as the prices paid in other nations for the same drugs from the same makers.

- In 1997-98, we calculate, drug makers charged 24 percent below their U.S. prices in Switzerland and 48 percent below in Italy.

Part II of this report finds that:

- Today, drug spending is rising by 15 to 20 percent yearly. Until drug prices and drug spending are brought under control, more Americans each year will suffer medically for lack of needed drugs—or will suffer financially as they struggle to pay higher prices, higher premiums, and higher co-payments.

- Congress or the 50 states could act to assure that all Americans get the medications we need, while drug makers are kept financially whole. Prices could be cut but drug makers' total revenue could be restored. They could be paid the cost of making more drugs to fill many more prescriptions. Several things combine to make this possible:

  - U.S. drug prices and spending per person are already the world's highest. ***We spend enough already to cover the cost of all needed medications.***

  - Many large states have buying power greater than foreign nations that have already won lower prices. This gives those states a great opportunity to make all needed medications affordable for all. Smaller states could join together to win lower prices.

  - Cutting drug prices an average of 42 percent to Federal Supply Schedule levels, would reduce manufacturers' revenues by $35.3 billion—***if nothing else changed***.

    - But the volume of prescriptions filled would rise as prices fell, because more people would be able to afford to fill their prescriptions. This would make up much or most of the revenue that would otherwise be lost to lower prices.

    - Also, the lower prices would make it much easier to expand government programs for people who can't afford even the lower prices. This would also raise the volume of prescriptions filled, replacing the rest of the lost revenue.

  - The real cost of making more pills averages only about 5 cents on the retail dollar.

  - Drug makers could be helped to cut their wasteful marketing and advertising costs.

- Drug makers use scare tactics to threaten that price cuts would destroy research. We explain why that is false. Lower prices are compatible with research and high profits.

Better, lower overall prices could be combined with generous rewards for breakthrough drugs to spark more investment in vital research and less investment in marketing.

- Drug makers' huge profits—year after year—mean that the industry is not very risky.

- Drug makers' high prices and huge profits result from monopoly and market power, not from free market competition. There is little of a genuine free market for medications.

- The industry makes dubious claims about industry-financed research, we find. High profits do not finance research. High profits are what's left over after paying for research, marketing, manufacturing, and other costs of doing business.

- Until now, federal and state governments have failed to protect citizens against high prices. If governments fail to act to cut drug prices, more and more citizens won't be able to afford life-saving medications.

- If Congress fails to act soon, state legislation will be needed. It can protect citizens today while helping to spark federal legislation tomorrow.

- Winning affordable prescription drugs for all Americans may be the easiest problem to solve in the United States of America. Americans already spend more per person than any other nation, yet high drug prices here mean we get less for our money.

- The U.S.A. needs a prescription drug peace treaty that guarantees all Americans the medications we need, without spending more money, and without hurting drug makers' legitimate needs for dollars to finance research and to retain capital.

- The alternatives to a prescription drug peace treaty are unworkable:
  - Subsidizing drug insurance under Medicare. But this will be very costly unless prices are limited. And subsidies will provide the drug makers with enormous windfall profits because their added revenue will be much greater than their added costs.
  - Reliance on managed care to make medications more affordable to Medicare patients. But more HMOs are cutting drug benefits to $500 yearly, and most are raising their premiums. And Medicare patients' enrollment in HMOs is falling.
  - Indirect attacks on drug prices. At this writing, one approach that is being debated would permit importation of low-priced drugs from other nations. But the drug makers will then probably respond by lowering their overseas inventories, or working to negotiate higher overseas prices, leaving fewer medications to be imported back to the U.S., and at higher prices.

A drug peace treaty will win affordable medications for all Americans through lower prices. It will protect drug makers through higher volumes. And it will boost research through high returns for breakthrough drugs and through reductions in wasteful marketing and administration.

A drug peace treaty is a vital first step toward making medications durably affordable. It can buy time for efforts to develop much better evidence for doctors and families on which patients need which medications. ***This report therefore proposes direct regulation of U.S. drug prices at levels designed to preserve drug makers' revenues, profits, and research.***

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INTRODUCTION

This report's conclusion is stark: The United States and individual states can win much lower prescription drug prices and make all needed medications affordable for all citizens without harming drug makers' research—or even their profits—and without spending more money.

The report's purpose is to explain and document that conclusion.

We begin by noting that many citizens of the 50 states can't afford needed medications. Fully 69 million citizens of the United States—25.1 percent of all Americans—lack any insurance for prescription drugs, we find. Our calculations are conservative.[1]

Three large groups of people lack prescription drug insurance:

- Some 12.2 million people lacking prescription drug insurance are aged 65 and above. That is 17.7 percent of the 69.1 million people lacking drug coverage. ***This means that extending prescription drug insurance to all seniors through Medicare will cover no more than one American in every five lacking coverage for prescription drugs.***

- Some 44.9 million people lack any health insurance at all. They make up 64.9 percent of the 69.1 million people lacking drug coverage.

- An estimated 12.0 million people under age 65 have private health insurance that does not cover prescription drugs. They make up 17.4 percent of the 69.1 million people lacking drug coverage.

These national totals are shown on the last two lines of ***Exhibit 1***, which also displays new estimates of the number and percentage of people in each state and in the District of Columbia who lack any insurance for prescription drugs. [2]

Looking across the 50 states:

- California is home to the greatest number of Americans lacking insurance for prescription drugs, some 10.0 million. Texas is next, with 6.5 million, followed by New York, Florida, and Illinois.

- Arizona ranks highest on the percentage of its population lacking drug coverage, with 32.6 percent uninsured—almost one in three citizens. Texas is second, at 32.1 percent, followed by California, Nevada, and New Mexico.

- Nebraskans are most likely to have prescription drug insurance, with only 18.7 percent uninsured. (That is, they rank 50th on percent lacking coverage.) Minnesotans do second-best, also at 18.7 percent uninsured, followed by Vermonters, Hawaiians, and Iowans.

Exhibit 1

Residents Lacking Insurance for Prescription Drugs, 2000
(thousands)

	Age 65+ lacking Rx coverage	Lack Any Health Insurance	Privately Insured/ No Drug Coverage	***TOTAL*** Lacking Drug Coverage	***PERCENT*** Lacking Drug Coverage	***RANK*** on % Lacking Drug Coverage
Alabama	200	746	190	1,136	25.9%	15
Alaska	12	108	26	146	23.4%	28
Arizona	226	1,184	187	1,597	32.6%	1
Arkansas	128	480	106	713	27.8%	9
California	1,297	7,429	1,313	10,039	29.9%	3
Colorado	146	626	201	974	23.5%	27
Connecticut	165	415	151	731	22.2%	32
Delaware	35	112	35	182	23.8%	24
Distr. of Columbia	25	88	20	133	25.7%	--
Florida	976	2,680	606	4,263	27.8%	8
Georgia	273	1,390	344	2,007	25.3%	19
Hawaii	56	118	54	228	19.3%	47
Idaho	51	225	58	334	26.2%	13
Illinois	528	1,828	563	2,919	24.0%	22
Indiana	262	861	288	1,411	23.6%	26
Iowa	151	268	143	562	19.5%	46
Kansas	125	275	128	528	19.8%	44
Kentucky	174	562	177	913	22.9%	30
Louisiana	176	832	176	1,185	27.0%	11
Maine	62	160	57	279	22.2%	33
Maryland	210	865	251	1,327	25.4%	17
Massachusetts	303	639	284	1,226	19.8%	45
Michigan	431	1,308	454	2,192	22.1%	34
Minnesota	208	449	243	900	18.7%	49
Mississippi	119	557	113	789	28.3%	7
Missouri	263	577	261	1,101	20.0%	42
Montana	41	174	36	251	28.3%	6
Nebraska	80	150	81	312	18.7%	50
Nevada	75	398	84	557	29.7%	4
New Hampshire	51	137	59	248	20.4%	40
New Jersey	391	1,343	376	2,110	25.8%	16
New Mexico	70	368	67	505	28.9%	5
New York	852	3,155	730	4,737	26.0%	14
North Carolina	339	1,164	342	1,845	23.8%	25
North Dakota	32	89	28	150	23.8%	23
Ohio	527	1,173	536	2,236	19.8%	43
Oklahoma	158	618	138	914	27.1%	10

Exhibit 1
(continued)

Residents Lacking Insurance for Prescription Drugs, 2000
(thousands)

	Age 65+ lacking Rx coverage	Lack Any Health Insurance	Privately Insured/ No Drug Coverage	***TOTAL*** Lacking Drug Coverage	***PERCENT*** Lacking Drug Coverage	***RANK*** on % Lacking Drug Coverage
Oregon	154	479	147	780	23.3%	29
Pennsylvania	665	1,258	556	2,479	20.7%	39
Rhode Island	54	99	47	201	20.2%	41
South Carolina	168	606	178	951	24.2%	20
South Dakota	37	105	34	176	24.0%	21
Tennessee	241	720	225	1,185	21.4%	36
Texas	720	4,993	821	6,534	32.1%	2
Utah	66	300	108	474	21.9%	35
Vermont	26	59	27	112	18.8%	48
Virginia	275	981	328	1,584	22.8%	31
Washington	233	717	273	1,223	21.0%	38
West Virginia	95	310	69	474	26.3%	12
Wisconsin	244	623	255	1,121	21.2%	37
Wyoming	19	81	21	121	25.3%	18
United States	***12,226***	***44,850***	***11,990***	***69,066***	***25.1%***	***--***
% of U.S. total lacking drug insurance	***17.7%***	***64.9%***	***17.4%***	***100.0%***		

In addition to those Americans without any prescription drug insurance, millions of others have grossly inadequate insurance, such as those with policies that set a cap of $500 yearly on coverage, or those that charge high co-payments.

As noted in Section C of Part I, one-sixth of Americans are not able to fill prescriptions for financial reasons; some 42 percent of people without insurance suffer that problem.

Without adequate insurance, and unable to afford needed medications, many residents of each state suffer avoidable pain and disability, and premature death.

Yet total U.S. drug spending per person is highest in the world.[3] It averages just over $500 per person.[4] This means that the people of each state already spend enough to cover the cost of all needed prescription drugs.

That makes the suffering a tragedy.

Americans have three choices in the face of this tragedy:

- allow people to suffer and die for lack of needed medications, but that is intolerable;
- spend more public or private money—or both—to buy needed drugs, but that is both unaffordable and unnecessary; or
- secure more drugs from manufacturers for the amount already spent.

Some people would resolve the tragedy by spending more money to subsidize the purchase of insurance to cover prescription drugs. But where would that money be found? Businesses, citizens, insurors, HMOs, and governments face many other pressing demands. They know they cannot continue to boost drug spending. Just as important, the drug makers simply don't need more money. Drug makers may want it, but they absolutely don't need it. Not to finance life-saving research, and not to produce the extra drugs that citizens of each state are dying for.

If higher public subsidies and higher premiums are used to extend insurance coverage for prescription drugs, the resulting extra revenue paid to drug makers would constitute an enormous windfall profit. That is because the drug makers' revenue rise would far outpace their rise in cost of manufacturing additional pills, capsules, and suspensions.

The challenge is to make all needed medications affordable and available to each person who needs them, without spending more money.

This requires cutting drug prices. And that means cutting the prices charged by manufacturers—because they are the source of high prices, because they garner roughly three-fourths of each dollar that Americans pay paid for medications, and because the retail sector has already been squeezed by existing price-cutting efforts.

(To slow the growth in drug spending, to make medications affordable, the only alternatives to cutting drug prices are to cut use of drugs, or to channel patients and doctors toward less expensive drugs. While these can do some good, they can also be cumbersome, bureaucratic, and even counter-productive—if, for example, they block access to useful drugs. And cutting drug use could cause drug makers to raise their prices still higher, in hopes of amassing the revenue they desire.)

Some hope that voluntary purchase of private health insurance, perhaps with public subsidies, will render it unnecessary to cut drug prices. The insurance industry does not to want to write those policies, because they fear that sicker people will be more likely to buy policies. Such adverse selection will drive up average costs and premiums, and embarrass all involved.[5] The private health insurors are right this time.[6] Voluntary prescription drug insurance purchase is doomed. Even if it worked—even if adverse selection magically did not operate—soaring drug prices would quickly cause its premiums to skyrocket.

This report is divided into two main parts.

In Part I, we present new evidence on current spending on prescription drugs in each state. This evidence concerns the dollars paid to drug makers by or for the residents of each state. We will describe current payments. These are payments that reflect existing discounts and rebates from manufacturers—both public and unreported. Our estimates of current payments rest on the bedrock of drug makers' own data on their revenues.

Then, we will show the savings that would be won for the people of each state by lowering drug prices. Since Congressional action to win durable and substantial price cuts seems unlikely, prices could be cut by the actions of individual state legislatures, or by groups of states acting together.

The savings shown in this report reflect the prices that would be paid to manufacturers if people in each state paid the prices already available to the Veterans Administration through the Federal Supply Schedule (FSS). The FSS prices reflect an average 42 percent discount from drug makers' factory prices. The FSS price is not the only possible standard. Near the end of Part I, we compare Americans' prices with those actually prevailing in other wealthy nations.

In Part II, we show that lower prices can be part of a package that would absolutely maintain the drug makers' total revenue, their profits, and their ability to finance needed research.

In other words, the nation or the states—individually or together—can act to protect their citizens without hurting the drug makers, and without increasing drug spending. This may seem impossible or magical. It is neither. Protecting people without raising drug spending is made possible by some remarkable financial opportunities and advantages, which we will describe.

Drug makers claim that government actions that interfere with either their prices or their profits will cause destruction and devastation. They claim that, for example, cutting prices means less money for research. "The lights go out in the labs, and there is no R&D, " according to Tracy Baroni, senior director of policy for the Pharmaceutical Research and Manufacturers of America (PhRMA), the drug industry's lobbying arm.[7]

PhRMA is wrong. The sky will not fall. Instead, controlling drug prices, in order to make medications affordable for all Americans, offers the best available protection—and the most durable protection—for drug makers' research, for their revenue, and even for their profits. Part II of this report describes methods of cutting prices and financing all the medications that Americans need—while protecting drug makers' revenue and profits and enhancing research.

PART I. CURRENT SPENDING AND AVAILABLE SAVINGS ON PRESCRIPTION DRUGS IN THE 50 STATES

A. FINDINGS

This year, private insurors, government programs, hospitals, nursing homes, and individual citizens of the 50 states and the District of Columbia will together pay the world's drug makers some $96.5 billion for brand name prescription drugs, we calculate. This figure takes into account both publicized and unreported discounts on manufacturers' prices, and rebates from manufacturers to various purchasers. (The methods employed to prepare these data are described in detail in the Appendix.)

Total spending on prescription drugs is even higher. The $96.5 billion does not include:

- wholesalers' or retail pharmacies' share of drug spending, or
- payments for generic drugs.[8]

Total spending for prescription drugs this year will be roughly $140 billion, we estimate.

Exhibit 2 shows that nationwide payments to manufacturers for brand name prescription drugs in the year 2000 would have been $105.5 billion if no discounts or rebates existed.

We have calculated that savings from manufacturers' existing discounts and rebates will total some $8.9 billion nationally this year. The $8.9 billion saving is 8.7 percent of the pre-discounted figure of $105.5 billion. Today, some payors save money through discounts and rebates, while others—such as people lacking drug coverage—typically pay full price.

Because of those savings, actual payments to manufacturers for brand name drugs this year are estimated at $96.5 billion.

We have calculated that raising discounts to the levels now achieved under the Federal Supply Schedule (FSS) would win additional savings of about $35.3 billion.

That is an additional saving of 36.6 percent of actual payments to manufacturers.

As a result, all people would pay the same price for a drug, regardless of their insurance coverage. That is fair. It achieves what would happen in a free market, where all pay the same price (or very close to the same price) because genuine competition leads prices to converge. The market makes the price. All buyers and sellers take the market price. No party has the power to make the price.

The combined savings from the existing discounts and rebates of $8.9 billion plus the new discounts and rebates of $35.3 billion equals $44.3 billion, or 42.0 percent of undiscounted prices. This 42.0 percent is the average discount from factory prices now won under the Federal Supply Schedule (FSS) for the Veterans Administration and several other federal programs.

Cutting all manufacturers' prices for brand name drugs down to FSS levels would reduce Americans' payments to roughly $61.2 billion this year. So the bottom line is that requiring the world's manufacturers to sell their brand name prescription drugs to all Americans at the FSS prices—prices actually paid by the United States government—would save $35.3 billion in the 50 states this year.

Exhibit 2

PAYMENTS TO PRESCRIPTION DRUG MANUFACTURERS, BEFORE AND AFTER EXISTING AND FSS DISCOUNTS AND REBATES, U.S.A., 2000

Payments to manufacturers before existing discounts + rebates	**$105.5 BILLION**
- savings from existing manufacturers' discounts + rebates	***- $8.9 BILLION***
= Actual payments to manufacturers after existing discounts + rebates	**= $96.5 BILLION**
- extra savings from Federal Supply Schedule (FSS) prices	***- $35.3 BILLION***
= Payments to manufacturers after winning FSS prices	**= $61.2 BILLION**

Note: Some subtractions appear to be off by 0.1 billion; this apparent error is caused by rounding.

Exhibit 3 displays the information from Exhibit 2 in a graph:

- The first column shows what payments to manufacturers would be in the absence of the discounts and rebates that exist today, about $105.5 billion.
- The second column subtracts out the $8.9 billion in existing discounts and rebates from the $105.5 billion, leaving $96.5 billion, this year's actual payments to manufacturers.
- The third column subtracts out the $35.3 billion in extra savings that Americans would win by paying FSS prices from the $96.5 billion, leaving $61.2 billion.
- The fourth column shows the remaining $61.2 billion that would be paid to drug makers if prices drop to FSS levels. ***This does not allow for the rise in the volumes of private or public purchases that would occur in response to price cuts.***

Exhibit 3

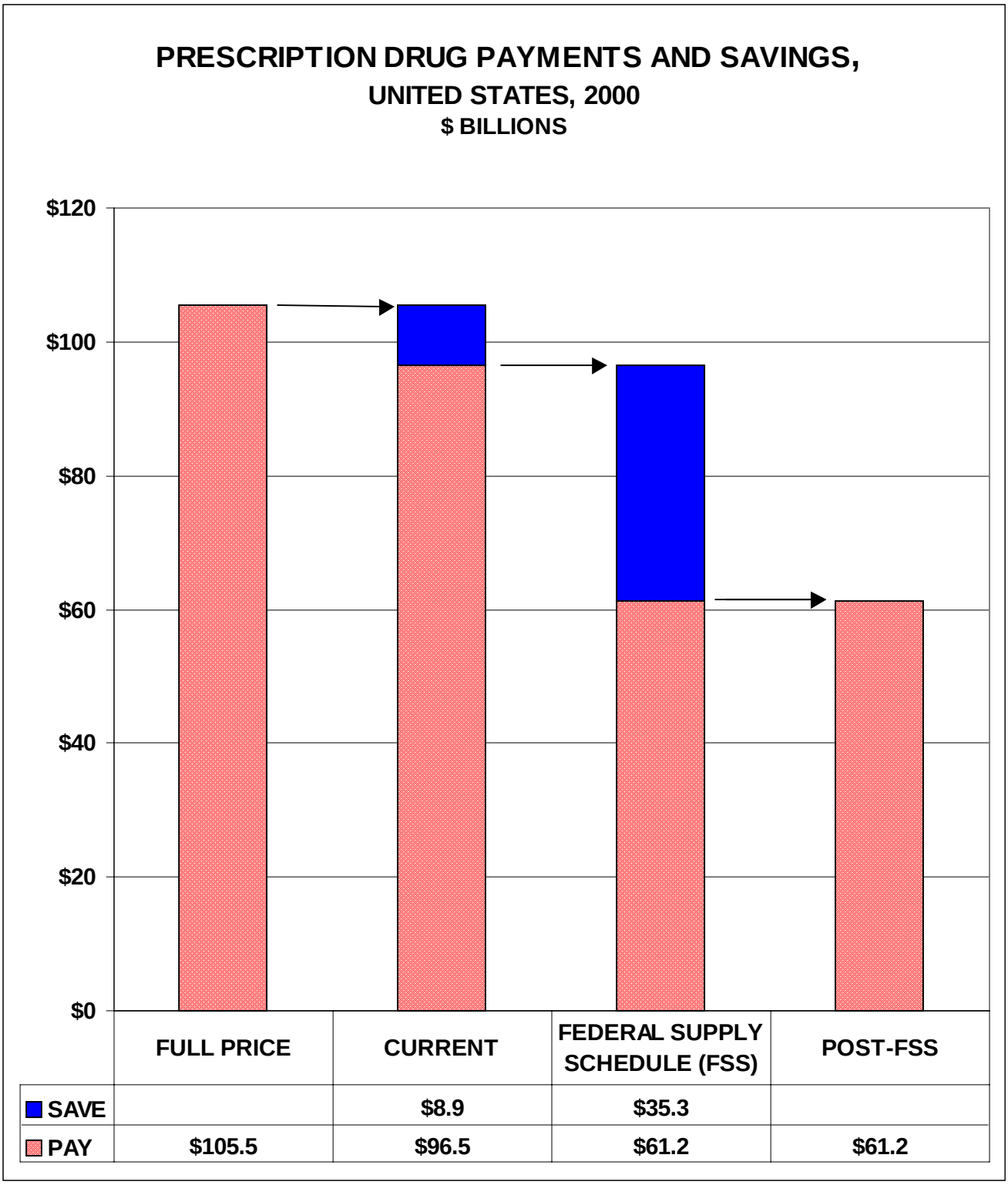

PRESCRIPTION DRUG PAYMENTS AND SAVINGS,
UNITED STATES, 2000
$ BILLIONS
$120
$100
$80
$60
$40
$20
$0
FULL PRICE
CURRENT
FEDERAL SUPPLY SCHEDULE (FSS)
POST-FSS
SAVE
$8.9
$35.3
PAY
$105.5
$96.5
$61.2
$61.2

Exhibit 4 presents state-by-state calculations of the spending and saving data summarized in exhibits 2 and 3. It shows:

- estimated payments in the absence of any discounts or rebates,
- the size of existing discounts and rebates,
- current payments by citizens, employers, and governments for the people of each state,
- additional savings to citizens, employers, and governments if all people in all states enjoyed Federal Supply Schedule prices, and
- payment levels once FSS prices prevailed—ignoring volume rises in response to price cuts.

Exhibit 4

PAYMENTS TO PRESCRIPTION DRUG MANUFACTURERS, BEFORE AND AFTER EXISTING AND FSS DISCOUNTS AND REBATES, INDIVIDUAL STATES AND U.S.A., 2000

$ Millions

	Est. Payments to Drug Makers before Existing D + R	***Minus*** Savings from Existing D + R	***Equals*** Actual Payments to Drug Makers after Existing D + R	***Minus*** Additional Savings If All Pay FSS Prices	***Equals*** Payments to Rx Makers if All Pay FSS Prices
Alabama	$1,854.7	$149.3	$1,705.4	$629.7	$1,075.7
Alaska	$148.2	$11.3	$136.9	$51.0	$85.9
Arizona	$1,511.6	$116.6	$1,395.0	$518.3	$876.7
Arkansas	$1,044.5	$75.0	$969.5	$363.7	$605.8
California	$8,840.5	$824.7	$8,015.8	$2,888.3	$5,127.5
Colorado	$1,078.0	$85.8	$992.3	$367.0	$625.2
Connecticut	$1,505.5	$127.3	$1,378.1	$505.0	$873.2
Delaware	$333.8	$28.1	$305.7	$112.1	$193.6
D. C.	$225.3	$20.7	$204.6	$73.9	$130.7
Florida	$7,019.6	$576.4	$6,443.2	$2,371.8	$4,071.4
Georgia	$2,900.7	$243.1	$2,657.6	$975.2	$1,682.4
Hawaii	$362.4	$30.1	$332.3	$122.1	$210.2
Idaho	$409.7	$31.7	$378.0	$140.4	$237.6
Illinois	$4,729.5	$373.3	$4,356.2	$1,613.1	$2,743.1
Indiana	$2,543.3	$203.6	$2,339.7	$864.6	$1,475.1
Iowa	$1,069.0	$79.8	$989.2	$369.2	$620.0
Kansas	$1,009.9	$72.4	$937.5	$351.8	$585.7
Kentucky	$1,823.2	$166.5	$1,656.7	$599.2	$1,057.5
Louisiana	$1,800.2	$158.7	$1,641.6	$597.4	$1,044.1
Maine	$535.5	$49.9	$485.6	$175.0	$310.6
Maryland	$1,980.3	$176.7	$1,803.6	$655.0	$1,148.6
Massachusetts	$2,473.0	$237.6	$2,235.5	$801.1	$1,434.3

Exhibit 4
(continued)

PAYMENTS TO PRESCRIPTION DRUG MANUFACTURERS,
BEFORE AND AFTER EXISTING AND FSS DISCOUNTS AND REBATES,
INDIVIDUAL STATES AND U.S.A.,
2000

$ Millions

	Est. Payments to Drug Makers before Existing D + R	***Minus*** Savings from Existing D + R	***Equals*** Actual Payments to Drug Makers after Existing D + R	***Minus*** Additional Savings If All Pay FSS Prices	***Equals*** Payments to Rx Makers if All Pay FSS Prices
Michigan	$4,757.1	$445.3	$4,311.8	$1,552.7	$2,759.1
Minnesota	$1,684.2	$145.4	$1,538.8	$562.0	$976.8
Mississippi	$1,119.3	$98.4	$1,020.9	$371.7	$649.2
Missouri	$2,034.9	$166.2	$1,868.7	$688.4	$1,180.2
Montana	$267.4	$18.5	$248.8	$93.8	$155.1
Nebraska	$701.1	$56.2	$644.9	$238.3	$406.6
Nevada	$542.7	$42.2	$500.5	$185.7	$314.8
New Hampshire	$443.2	$37.5	$405.6	$148.6	$257.0
New Jersey	$4,092.6	$369.4	$3,723.2	$1,349.5	$2,373.7
New Mexico	$481.0	$48.1	$432.9	$153.9	$279.0
New York	$8,412.7	$844.9	$7,567.8	$2,688.4	$4,879.4
North Carolina	$3,005.8	$239.8	$2,766.0	$1,022.6	$1,743.4
North Dakota	$217.0	$14.7	$202.3	$76.4	$125.8
Ohio	$4,660.0	$410.1	$4,249.9	$1,547.1	$2,702.8
Oklahoma	$1,235.3	$93.2	$1,142.1	$425.6	$716.5
Oregon	$1,036.8	$81.0	$955.8	$354.5	$601.3
Pennsylvania	$5,849.3	$532.4	$5,316.9	$1,924.3	$3,392.6
Rhode Island	$441.2	$41.4	$399.8	$143.9	$255.9
South Carolina	$1,573.1	$133.1	$1,439.9	$527.6	$912.4
South Dakota	$226.3	$14.5	$211.8	$80.6	$131.2
Tennessee	$2,444.7	$183.0	$2,261.7	$843.8	$1,417.9
Texas	$6,977.4	$590.7	$6,386.7	$2,339.8	$4,046.9
Utah	$682.9	$53.3	$629.6	$233.6	$396.1
Vermont	$209.9	$20.1	$189.8	$68.1	$121.8
Virginia	$2,508.0	$216.8	$2,291.3	$836.6	$1,454.7
Washington	$1,791.2	$140.7	$1,650.5	$611.6	$1,038.9
West Virginia	$947.3	$90.0	$857.2	$307.8	$549.4
Wisconsin	$1,961.0	$163.4	$1,797.5	$660.2	$1,137.4
Wyoming	$152.9	$10.3	$142.6	$53.9	$88.7
U.S.A.	***$105,462***	***$8,947***	***$96,515***	***$35,347***	***$61,168***

Notes:
D + R = discounts and rebates
FSS = Federal Supply Schedule prices

Exhibit 5 divides this year's estimated total payments of $96.5 billion—to manufacturers for brand name prescription drugs—among the four main groups of payors in each of the states. Of the national brand name prescription drug total:

- Some $21.3 billion (22.1 percent) will be paid in cash. This excludes additional cash co-payments under third party private insurance—an increasingly important problem owing to rising co-payments.
- An additional $53.8 billion (55.8 percent) will be paid for drugs bought through third party private insurance. This includes cash co-payments made by patients.
- A further $10.3 billion (10.7 percent) will be spent by state Medicaid programs.
- And a final $11.0 billion (11.4 percent) is estimated to be spent by hospitals and nursing homes (non-retail purchasers).

Exhibit 5

Estimated Spending on Brand Name Prescription Drugs, by Payor and State, 2000

$ Millions

	cash	3rd party	Medicaid	non-retail	Total
Alabama	$436.7	$876.4	$197.9	$194.4	$1,705.4
Alaska	$42.6	$60.8	$18.0	$15.6	$136.9
Arizona	$309.0	$920.8	$6.2	$159.0	$1,395.0
Arkansas	$334.1	$403.7	$121.1	$110.5	$969.5
California	$1,725.8	$4,587.9	$788.3	$913.8	$8,015.8
Colorado	$233.9	$603.1	$42.2	$113.1	$992.3
Connecticut	$307.7	$777.8	$135.5	$157.1	$1,378.1
Delaware	$62.8	$185.3	$22.8	$34.9	$305.7
District of Columbia	$39.2	$110.9	$31.2	$23.3	$204.6
Florida	$1,575.6	$3,425.2	$707.9	$734.5	$6,443.2
Georgia	$685.2	$1,335.1	$334.4	$303.0	$2,657.6
Hawaii	$61.6	$214.8	$18.0	$37.9	$332.3
Idaho	$107.5	$188.2	$39.2	$43.1	$378.0
Illinois	$1,130.9	$2,362.1	$366.7	$496.6	$4,356.2
Indiana	$568.0	$1,303.9	$201.1	$266.7	$2,339.7
Iowa	$328.7	$446.1	$101.7	$112.8	$989.2
Kansas	$327.3	$416.1	$87.2	$106.9	$937.5
Kentucky	$374.7	$812.5	$280.6	$188.9	$1,656.7
Louisiana	$429.1	$776.7	$248.7	$187.1	$1,641.6
Maine	$99.3	$224.4	$106.6	$55.4	$485.6
Maryland	$282.8	$1,163.4	$151.8	$205.6	$1,803.6
Massachusetts	$354.5	$1,287.4	$338.7	$254.8	$2,235.5
Michigan	$607.4	$2,838.5	$374.4	$491.6	$4,311.8

Exhibit 5
(continued)

Estimated Spending on Brand Name Prescription Drugs,
by Payor and State, 2000

$ Millions

	cash	3rd party	Medicaid	non-retail	Total
Minnesota	$306.5	$928.9	$128.0	$175.4	$1,538.8
Mississippi	$286.7	$408.8	$208.9	$116.4	$1,020.9
Missouri	$461.9	$1,029.8	$163.9	$213.0	$1,868.7
Montana	$104.2	$83.0	$33.3	$28.4	$248.8
Nebraska	$188.0	$312.0	$71.4	$73.5	$644.9
Nevada	$118.4	$302.0	$23.1	$57.1	$500.5
New Hampshire	$87.3	$236.8	$35.2	$46.2	$405.6
New Jersey	$653.8	$2,182.7	$462.3	$424.4	$3,723.2
New Mexico	$102.1	$226.9	$54.5	$49.4	$432.9
New York	$1,193.5	$4,090.1	$1,421.5	$862.7	$7,567.8
North Carolina	$803.8	$1,333.2	$313.7	$315.3	$2,766.0
North Dakota	$88.2	$66.5	$24.6	$23.1	$202.3
Ohio	$839.7	$2,447.5	$478.2	$484.5	$4,249.9
Oklahoma	$337.6	$608.6	$65.7	$130.2	$1,142.1
Oregon	$242.2	$546.2	$58.4	$109.0	$955.8
Pennsylvania	$800.8	$3,471.9	$438.1	$606.1	$5,316.9
Rhode Island	$56.3	$255.5	$42.5	$45.6	$399.8
South Carolina	$371.3	$710.6	$193.9	$164.2	$1,439.9
South Dakota	$90.5	$76.8	$20.5	$24.1	$211.8
Tennessee	$551.1	$1,446.8	$6.0	$257.8	$2,261.7
Texas	$1,539.1	$3,417.8	$701.7	$728.1	$6,386.7
Utah	$145.6	$384.4	$27.9	$71.8	$629.6
Vermont	$48.9	$84.1	$35.1	$21.6	$189.8
Virginia	$450.7	$1,392.6	$186.8	$261.2	$2,291.3
Washington	$413.9	$935.9	$112.6	$188.2	$1,650.5
West Virginia	$170.1	$435.2	$154.2	$97.7	$857.2
Wisconsin	$398.6	$1,055.4	$138.7	$204.9	$1,797.5
Wyoming	$56.5	$57.7	$12.1	$16.3	$142.6
U.S.A.	***$21,331***	***$53,849***	***$10,333***	***$11,003***	***$96,515***

Exhibit 6 presents estimated saving—by state and payment source—if Federal Supply Schedule (FSS) prices prevailed for all people, businesses, and governments in the 50 states this year. ***Total savings would be*** $35.3 billion if all Americans paid FSS prices.

Savings would range from $2.9 billion in California this year, down to $51 million in Alaska. As a proportion of current spending, savings vary very slightly, as shown in the last column.

Among the different groups of payors:

- Patients paying cash would enjoy the greatest percentage savings, 42.0 percent, because they typically receive no meaningful discounts or rebates off factory prices now. That is an annual saving of $9.0 billion.
- Privately insured patients would save $19.1 billion, or 35.6 percent of current spending.
- Medicaid programs would gain the smallest percentage savings—some 29.0 percent—because they average the greatest rebates now, averaging 18.3 percent across the states. Even so, the additional Medicaid discount would reach almost $3 billion yearly.

Cash-payers would enjoy about one-quarter of the national savings; insured patients would enjoy slightly over one-half of the national savings; and Medicaid programs and hospitals/nursing homes would each enjoy about ten percent of the total new savings.

Exhibit 6

Estimated Savings on Brand Name Prescription Drugs, 2000, by Payor and State, If Federal Supply Schedule Prices Prevailed

$ Millions

	cash	3rd party	Medicaid	non-retail	Total	Savings as % of current spending
Alabama	$183.4	$311.6	$62.2	$72.5	$629.7	36.9%
Alaska	$17.9	$21.6	$5.7	$5.8	$51.0	37.2%
Arizona	$129.8	$327.4	$1.8	$59.3	$518.3	37.2%
Arkansas	$140.3	$143.5	$38.6	$41.2	$363.7	37.5%
California	$724.8	$1,631.2	$191.4	$340.8	$2,888.3	36.0%
Colorado	$98.2	$214.4	$12.2	$42.2	$367.0	37.0%
Connecticut	$129.2	$276.5	$40.6	$58.6	$505.0	36.6%
Delaware	$26.4	$65.9	$6.8	$13.0	$112.1	36.7%
District of Columbia	$16.4	$39.4	$9.3	$8.7	$73.9	36.1%
Florida	$661.7	$1,217.8	$218.3	$274.0	$2,371.8	36.8%
Georgia	$287.8	$474.7	$99.7	$113.0	$975.2	36.7%
Hawaii	$25.9	$76.4	$5.7	$14.1	$122.1	36.7%
Idaho	$45.1	$66.9	$12.2	$16.1	$140.4	37.1%
Illinois	$475.0	$839.8	$109.6	$185.2	$1,609.6	36.9%
Indiana	$238.6	$463.6	$62.9	$99.5	$864.6	37.0%
Iowa	$138.0	$158.6	$30.5	$42.1	$369.2	37.3%
Kansas	$137.5	$148.0	$26.5	$39.9	$351.8	37.5%
Kentucky	$157.4	$288.9	$82.5	$70.4	$599.2	36.2%

Exhibit 6
(continued)

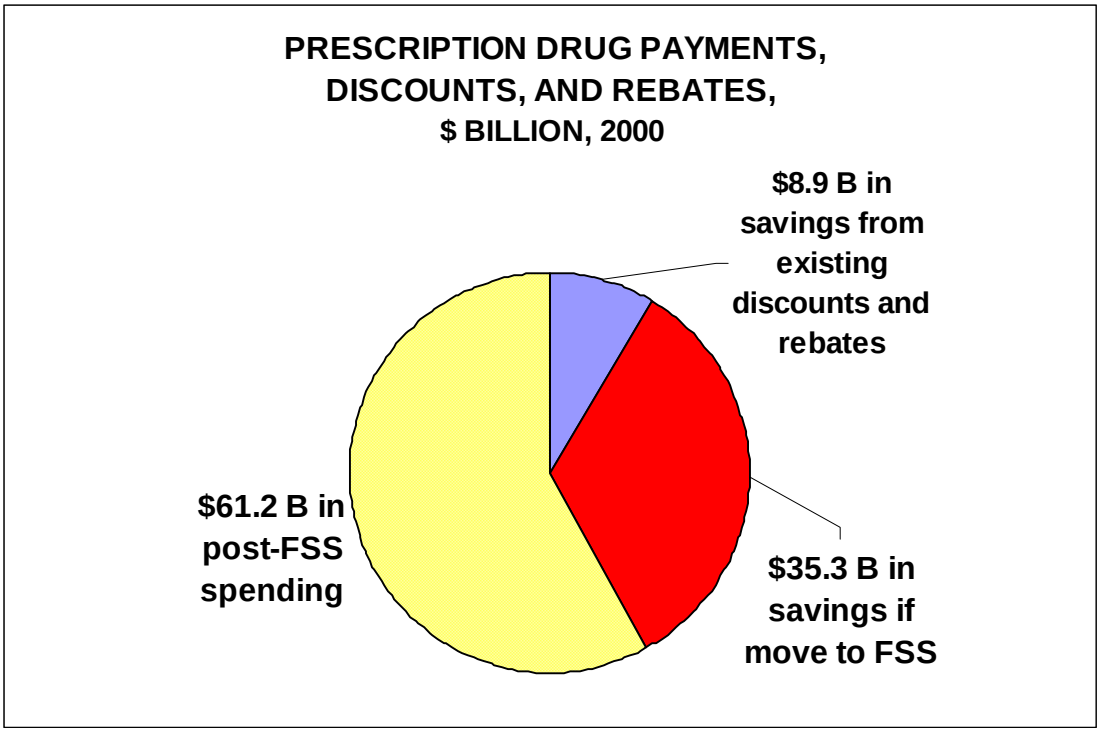
Estimated Savings on Brand Name Prescription Drugs, 2000,
by Payor and State,
If Federal Supply Schedule Prices Prevailed
$ Millions

	cash	3rd party	Medicaid	non-retail	Total	Savings as % of current spending
Louisiana	$180.2	$276.1	$71.3	$69.8	$597.4	36.4%
Maine	$41.7	$79.8	$32.9	$20.6	$175.0	36.0%
Maryland	$118.8	$413.6	$45.9	$76.7	$655.0	36.3%
Massachusetts	$148.9	$457.7	$99.4	$95.0	$801.1	35.8%
Michigan	$255.1	$1,009.2	$105.0	$183.3	$1,552.7	36.0%
Minnesota	$128.7	$330.3	$37.6	$65.4	$562.0	36.5%
Mississippi	$120.4	$145.4	$62.5	$43.4	$371.7	36.4%
Missouri	$194.0	$366.2	$48.8	$79.5	$688.4	36.8%
Montana	$43.8	$29.5	$9.9	$10.6	$93.8	37.7%
Nebraska	$78.9	$110.9	$21.0	$27.4	$238.3	36.9%
Nevada	$49.7	$107.4	$7.3	$21.3	$185.7	37.1%
New Hampshire	$36.7	$84.2	$10.5	$17.2	$148.6	36.6%
New Jersey	$274.6	$776.1	$140.6	$158.3	$1,349.5	36.2%
New Mexico	$42.9	$80.7	$12.0	$18.4	$153.9	35.6%
New York	$501.3	$1,454.3	$411.1	$321.8	$2,688.4	35.5%
North Carolina	$337.6	$474.0	$93.4	$117.6	$1,022.6	37.0%
North Dakota	$37.0	$23.6	$7.2	$8.6	$76.4	37.8%
Ohio	$352.7	$870.2	$143.5	$180.7	$1,547.1	36.4%
Oklahoma	$141.8	$216.4	$18.9	$48.6	$425.6	37.3%
Oregon	$101.7	$194.2	$17.9	$40.6	$354.5	37.1%
Pennsylvania	$336.4	$1,234.4	$127.5	$226.1	$1,924.3	36.2%
Rhode Island	$23.6	$90.8	$12.4	$17.0	$143.9	36.0%
South Carolina	$155.9	$252.7	$57.7	$61.2	$527.6	36.6%
South Dakota	$38.0	$27.3	$6.3	$9.0	$80.6	38.0%
Tennessee	$231.4	$514.4	$1.7	$96.2	$843.8	37.3%
Texas	$646.4	$1,215.2	$206.6	$271.6	$2,339.8	36.6%
Utah	$61.2	$136.7	$9.0	$26.8	$233.6	37.1%
Vermont	$20.6	$29.9	$9.5	$8.1	$68.1	35.9%
Virginia	$189.3	$495.2	$54.7	$97.4	$836.6	36.5%
Washington	$173.8	$332.8	$34.9	$70.2	$611.6	37.1%
West Virginia	$71.5	$154.7	$45.2	$36.4	$307.8	35.9%
Wisconsin	$167.4	$375.2	$41.1	$76.4	$660.2	36.7%
Wyoming	$23.7	$20.5	$3.6	$6.1	$53.9	37.8%
U.S.A.	***$8,959***	***$19,146***	***$2,997***	***$4,104***	***$35,347***	***36.5%***
savings as % of current spending	***42.0%***	***35.6%***	***29.0%***	***37.3%***	***36.7%***	
savings as % of new U.S. savings	***25.4%***	***54.4%***	***8.7%***	***11.7%***	***100.0%***	

Exhibit 7 summarizes the changes in prescription drug spending. It is a pie chart with three slices. The three slices together total the $105.5 billion that would be paid to manufacturers in the absence of any discounts or rebates.

- The smallest slice of $8.9 billion shows manufacturers' existing discounts and rebates.
- The medium slice of $35.3 billion reflects the additional savings that U.S. residents would win by paying FSS prices.
- The largest slice shows the $61.2 billion in payments to manufacturers that would remain after winning all savings. This reflects an overall cut in factory prices of 42.0 percent.

Exhibit 7



Saving the additional $35.3 billion by cutting drug prices to Federal Supply Schedule levels means more than price cuts. It means that many Americans—in each state—will be able to afford medications that they are now forced to do without. And that—as discussed later—means more drugs sold, allowing the drug makers to recoup through higher volume the revenue that would otherwise be lost to lower prices. Together, higher private and public purchases would replace all of the lost revenue.

B. PRICES ELSEWHERE ARE LOWER

The Federal Supply Schedule (FSS) prices were used as the standard to calculate the savings just described. We used a 42 percent average discount for these prices.[9] By some estimates, using the 42 percent average discount for FSS is conservative.[10]

Still other standards could be employed, such as the prices actually paid to manufacturers, after discounts and rebates, in various other industrial democracies. The Canadian government's Patented Medicines Prices Review Board has compiled the prices paid elsewhere, and compared them to U.S. prices. The Board finds that that U.S. prices are highest in the world, even after taking into account both the publicly reported rebates and discounts, and the estimates of unreported discounts and rebates.[11]

Using the Canadian Board's data, we have calculated the difference between the prices that manufacturers charge for the same drugs in seven nations, and their prices in the United States. These are reported in ***Exhibit 8***.

- The first column of data in Exhibit 8 shows foreign prices as a percentage of U.S. prices. For example, the prices that drug-makers charged in Canada averaged only 63.3 percent as high as their U.S. prices for the same medications.

Exhibit 8

Prices Paid to Drug Makers in Eight Nations:
Percentage of U.S. Prices
(mean of 1997 and 1998 experience)

Nation	Other nations' prices as % of U.S. prices	U.S. prices % above other nation's prices	Saving from U.S. prices
Italy	52.1%	92.0%	47.9%
France	57.4%	74.4%	42.6%
Canada	63.3%	58.1%	36.7%
United Kingdom	65.7%	52.3%	34.3%
Sweden	67.9%	47.4%	32.1%
Germany	69.5%	43.9%	30.5%
Switzerland	76.5%	30.8%	23.5%
United States	100.0%	0.0%	8.7% *

Source: The 1997 price ratios were calculated from Patented Medicine Prices Review Board, *Trends in Patented Drug Prices,* Ottawa: The Board, September 1998, PMPRB Study Series S-9811, data in Figure 11. The 1998 ratios were calculated from Patented Medicine Prices Review Board, *Eleventh Annual Report,* Year Ending December 21, 1998, Ottawa: The Board, 1999, p. 21, figure 9. The data reported in this exhibit for each nation are the means of the ratios calculated for 1997 and 1998. Prices are weighted by net sales, as described in the end notes.

* The 8.7 percent overall savings for U.S. residents from the ***reported*** average U.S. prices indicates the extent of secret discounts and rebates, not disclosed to the Canadian Board, that are granted by manufacturers to buyers in the United States, we calculate.[12]

- The second column of Exhibit 8 shows the extent to which reported U.S. prices exceed those in other nations. For example, drug-makers' prices in the U.S. were 92.0 percent higher than Italian prices—almost double.

These prices probably do not reflect all discounts and rebates provided by U.S. drug makers. That is because—through 1998—the Canadian Patented Medicines Prices Review Board collected data only on publicly known discounts and rebates, and data filed by manufacturers.[13]

The drug industry's position on its discounts and rebates in the United States is inconsistent. The drug makers have chosen not to report their secret U.S. discounts and rebates to the Canadian Patented Medicine Prices Review Board. It appears that they have not even reported the discounts and rebates they are required to give to public programs such as Medicaid or the Veterans Administration. One possible reason for this failure is that the Canadian Board would employ that information to drive down Canadian prices. Another possible reason is that Americans who were not getting discounts or rebates from manufacturers could learn how much extra they were paying.

But having failed to report their secret or public discounts and rebates to the Canadian Patented Medicine Prices Review Board, drug makers and their defenders urge Americans to ignore the Board's reports of high U.S. prices. Actual U.S. prices, they assert, would be lower if only the secret information were taken into account.[14]

Despite the drug industry's refusal to disclose its discounts and rebates, and its stubborn insistence that U.S. prices are much lower than they seem, it is possible to estimate the size of the secret discounts and rebates.

Employing the techniques described in the Appendix on Methods, we calculated that the overall effect of existing secret discounts and rebates from manufacturers—along with Medicaid discounts guaranteed by federal statute—is to lower manufacturers' prices for residents of the United States by about 8.7 percent overall.

But all of the seven foreign nations shown in Exhibit 8 have won substantially bigger cuts in manufacturers' prices.

- The third column of data in Exhibit 8 indicates the effective price reductions won by foreign nations, taken as a percentage of the manufacturers' prices in the United States, as reported to the Canadian Board. The exception concerns the United States. The final line of this third column, for the United States, displays the 8.7 percent overall secret discounts and rebates that residents of the U.S. receive off the reported U.S. factory prices, according to our calculations.

  Using the data in the third column, we can see that Italian price reductions are over five times as great as those in the United States (47.9 percent divided by 8.7 percent equals 5.5). And even the Swiss price reductions are over two and one-half times as great as those in the U.S. (23.5 percent divided by 8.7 percent equals 2.7).

  Similarly, the additional savings that would be won by Americans, were we to pay a foreign nation's prices, could be estimated by taking the difference between the 8.7 percent U.S. discounts and rebates and those in a foreign nation. For example, Americans would win a price reduction of 39.2 percent if we were to pay Italian prices.

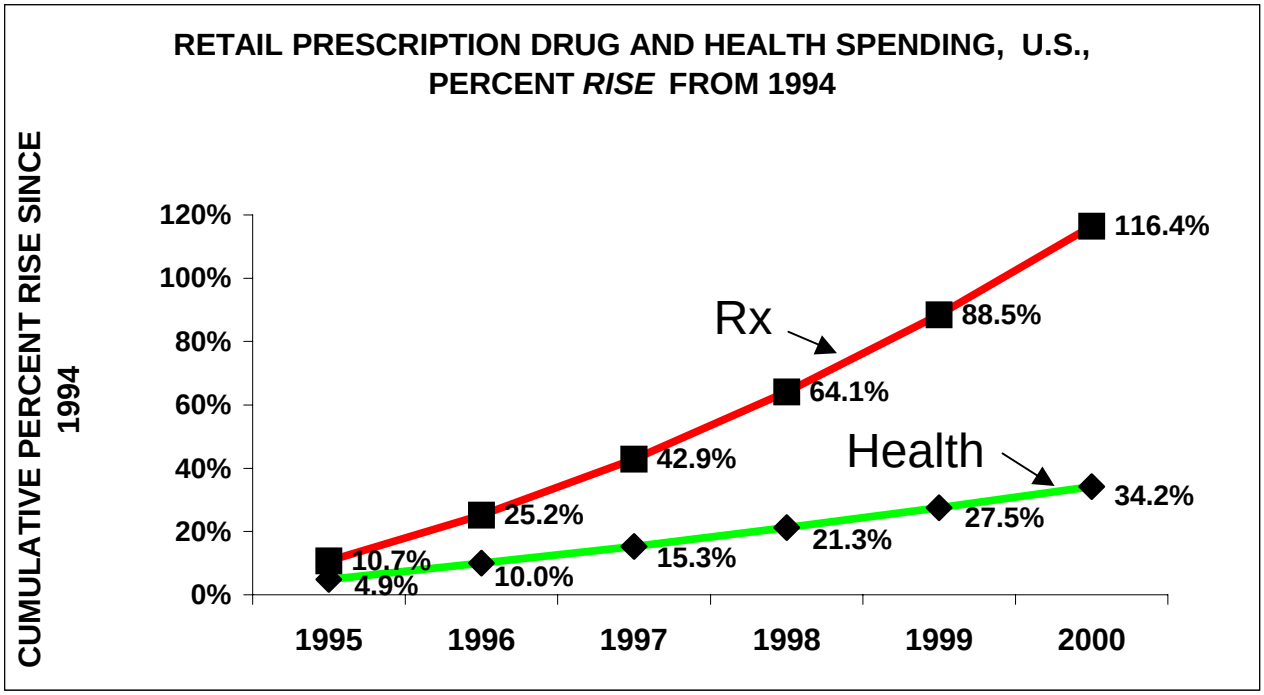
C. WHY FOCUS ON MANUFACTURERS' PRICES?

It is right to focus on the price of medications for at least five reasons:

- Winning lower drug prices is the only affordable path to ensuring that all Americans can obtain the medications they need.
- It is not fair for Americans to pay much higher prices than do citizens of other wealthy nations, and thereby contribute far more to manufacturers' revenues and profits.
- Failure to limit U.S. prices—at a time of annual 15 – 20 percent spending increases on prescription drugs—distorts cost control efforts and leads them to focus on limiting use of prescription drugs. Limiting use is always difficult, and often unwise.
- Failure to limit U.S. prices in simple and direct ways also drives cost control efforts to resort to indirect methods—such as generic substitution or mail order pharmacy. The drug makers then work to undermine these. The indirect methods often hurt drug stores.
- Winning lower drug prices is safe because it can be done in ways that protect or enhance drug makers' capacities to perform needed research or retain needed capital.

The prescription drug spending problem is bad today, and it will worsen if we do not act sensibly. Drug spending is rising more than three times as fast as overall health spending.[15] Between 1994 and 2000, retail prescription drug spending in the U.S. will have more than doubled, rising by 116.4 percent. At the same time, overall health care spending will have risen by 34.2 percent, we estimate. (See Exhibit 9.)

Exhibit 9



We expect that higher rates of increase in U.S. drug spending will persist. Having more than doubled from 1994 to 2000, drug spending will double again in five more years if it rises by fifteen percent yearly, which appears to be close to the average national increase presently. But even that may be conservative. New data from IMS Health indicate the U.S. prescription drug spending rose by 18.8 percent from 1998 to 1999.[16] Worse, some health maintenance organizations have indicated that they have been seeing 20 percent annual spending increases over the past year.[17] Looking forward, Watson Wyatt reports that employers who they surveyed project an average rise of 22.5 percent in costs of prescription drugs for employees in 2001.[18]

Between 1996 and 1998, spending on prescription drugs by the nation's Medicaid programs alone rose by 27.6%, we calculate.[19]

Some parties devote considerable effort to identifying the causes of higher drug spending. The 8-9 August 2000 conference on Pharmaceutical Pricing Practices, Utilization, and Costs, sponsored by the U.S. Department of Health and Human Services, invited 150 participants to air and compare various studies' data on the sources of the rise in spending.

The increase in total drug spending in the United States is attributable in part to (1) a growing population and (2) rises in the number of prescriptions per person. But it is also a result of (3) higher prices for existing drugs, (4) the introduction of new medications—often at very high prices, and (5) changes in the mix of drugs sold—usually from old to new and cheaper to costlier—often in response to drug makers' marketing and advertising.[20] The average price per retail prescription filled rose from $38.43 in 1998 to $43.06 in 1999.[21] This reflected a combination of the third, fourth, and fifth factors.

Some observers claim that rising prices have played a relatively small role in driving the rise in total drug spending. They seem to assert that rises in drug spending caused by introduction of costly new medications or by changes in the mix of drugs sold are somehow legitimate—or somehow irrelevant to the problem of higher prices—because they are not price increases for existing medications. We find that manufacturers' price increases on existing drugs have indeed played a fairly large role. And we find that the higher costs induced by changes in the mix of drugs sold are worthwhile only when the benefits won by changing the mix are commensurate with the higher costs.

But these are not the central issues because parsing out the possible causes of higher spending does little to lead Americans toward a durably affordable solution.

Rather, the central issue is how to make prescription drugs affordable to all Americans, without increasing spending and without damaging drug makers' research or capital retention. Since total spending is the product of price and use, two approaches are possible.

The first approach is to control use of drugs. This is probably the most widely-used approach in the U.S. today, at least in part because of the difficulty of limiting drug prices in the face of opposition from the drug makers. But controlling use of drugs to save money is very difficult because:

- Not enough is yet known about which drugs are safe and effective in treating which patients for which problems. For example, many drugs are not used appropriately today. One striking recent example concerns Premarin, the best-selling prescription drug in the

U.S. Many physicians had believed that Premarin protects against heart disease, but it may not.[22]

- Generally, there is little evidence that Americans overall consume too many prescription drugs. While some use too many, more use too few. And while our average spending per person is highest in the world, we pay so much per pill that our patients' use rates are lower than those elsewhere.

- Reducing drug use can harm patients, as Soumerai and his colleagues have reported.[23]

- Administrators who try to discourage physicians from using costlier drugs often lack leverage; putting physicians at financial risk is not always popular with doctors.

- As an administrative matter, it can be difficult and costly to review and manage doctors' prescribing behavior.

- Reductions in drug use are likely to lower manufacturers' revenues, other things equal. Wouldn't manufacturers respond by raising prices still higher, in order to rebuild profits to desired levels?

The second approach is to control the price of drugs. This is likely to be more effective for several reasons:

- U.S. drug prices are extraordinarily high *already.*

- High U.S. prices are the main reason why medications are unaffordable to many citizens. Any attempt to expand prescription drug coverage—for uninsured Medicare patients or other Americans—that fails to address the problem of high prices will be compromised, paralyzed, or demoralized.

- Lowering drug prices will, by itself, reduce manufacturers' total revenue, but this reduction can be fully offset by higher drug use by patients who could not previously afford needed medications. Thus, while cutting use could lead to higher prices, cutting prices would lead to higher use because medications would be more affordable.

- It is easier to cut prices in ways that do not harm drug makers' research and profits than it is to cut use without damaging patients.

- Cutting prices wins short-term relief and buys time to learn more about appropriate and cost-effective long-term prescribing—to save lives without breaking the bank.

Drug prices can be contained in two very different ways. The first is indirect and fragmentary. The second is direct, comprehensive, and integrated with revenue protection.

The indirect method is to advance a number of individual proposals that are designed to win lower prices without confronting the manufacturers' present pricing policies head-on. Examples include spurring generic substitution, legislating to permit "parallel importing" of medications originally sold to foreign wholesalers at lower than U.S. prices, and buying from nations of first Americans, such as the Pequot of Connecticut. These methods are all well-intentioned. They are not likely to work very well, largely because they are incomplete and

the drug makers will find ways around them if they are adopted on a large scale. If these methods do succeed in holding down some price increases, the drug makers will complain that they must recoup lost revenue, lest research suffer, so they will raise other prices.

The direct method is to cut prices across-the-board, in ways the drug makers cannot escape, but in combination with commitments to assure adequate revenue at the same time. The effort to contain prices is integrated with methods of sustaining drug makers' revenues at adequate levels.

Similarly, it is appropriate to focus price-cutting efforts on the prices charged by manufacturers at the factory—not on prices charged by retailers at the cash register—because manufacturers garner some 74 percent of the overall retail dollar.[24] Savings should be sought where the costs are incurred.

High U.S. drug prices are not a new problem:

- Four decades ago, the late Senator Estes Kefauver of Tennessee found that American prescription drug prices were much higher than those in other nations.[25]
- A series of reports by the United States General Accounting Office found that U.S. drug prices paid to manufacturers in the early 1990s were substantially higher than prices paid for the same drugs in other nations studied.[26]
- The General Accounting Office's comparisons of U.S. and British prices for the same drugs from the same companies showed that the U.S. price excess remained very substantial even after U.S. discounts and rebates from manufacturers were factored in. In the GAO's U.S. – U.K. comparison, the undiscounted factory prices for 77 drugs were fully 60 percent more in the U.S. than in the United Kingdom. The GAO found just a modest impact from using "an average U.S. price measure that includes discounts and rebates provided to certain nonfederal institutional buyers." Even after reflecting those discounted factory prices, the U.S. cost for the 77-drug market-basket was 51 percent above its U.K. cost. [27]
- The recent reports by the Canadian Patented Medicine Prices Review Board, discussed earlier, reinforce the U.S. General Accounting Office' s findings.

Because so many Americans lack insurance for prescription drugs, and because prices here are so high, it is not surprising that 17 percent of all Americans—and 42 percent of uninsured Americans—recently reported not filling prescriptions for financial reasons.[28] Anecdotal evidence grows that many Americans are having to choose between paying for medications and other requirements of health such as heat, housing, or food.[29]

Viewed in another way, 32 percent of below-average-income Americans reported not filling a prescription for financial reasons in the past year, compared with only six percent for above-average-income Americans. Poorer Americans were 5.3 times more likely to fail to fill a prescription than were wealthier Americans. By contrast, the average ratio for Britain, Canada, Australia, and New Zealand was 2.3—meaning that below-average-income citizens of these four nations were only about twice as likely to fail to fill prescriptions.[30]

These are not new problems. While they are discussed frequently today, they began to be documented at least a decade ago. A national survey in 1991 found that, among Americans age 45 and over, one out of every 10 reported a need to cut back on essentials such as food and heat in order to pay for their prescriptions. The same choice confronted one-fourth of low-income households, and one-fifth of those in poor or fair health.[31] Another study found that 13 percent of elderly Americans, or more than one of every eight, have been forced to choose between medications and food.[32]

These problems persist and grow during the U.S. economy's fat years, to paraphrase Joseph's explanation of Pharaoh's dream.[33]

Perhaps 1,000 new drugs are in the overall pharmaceutical pipeline.[34] If too few of these medications work, we will have many disappointed investors.

But what if a great number of them do work? Then, drug costs will skyrocket and many more patients will have to choose between their medications and other necessities.

Will medical miracles be affordable for all or merely profitable for some? Put another way, what good is today's research if tomorrow's patients are not able to afford the valuable new medications that are discovered or fabricated? Indeed, what good are past research successes if even many middle-income patients—along with employers and public programs—today have difficulty affording the resulting products?

If we fail to make vital drugs available to all who need them, the public will be fearful and angry. Reasonable action today will prevent political over-reaction tomorrow.

D. CAUSES OF HIGH U.S. DRUG PRICES

Americans pay the world's highest average prices for prescription drugs. And people in this country who lack insurance for prescription drugs typically pay above the U.S. average.

U.S. prices are high mainly because, alone in the world, our government does not protect us from the pricing power of the world's drug makers. Other nations generally reduce drug prices paid by their citizens by holding down the payments made to manufacturers.

Because of our governments' inaction to-date, prescription drug manufacturers charge far more in the United States than those companies charge in other wealthy, developed nations for the same drugs, often from the same factories.

Why have the federal and state governments failed to act to protect us against high prescription drug prices? Largely because the prescription drug industry has persuaded government not to act, arguing that government efforts to limit prices or profits would destroy research.[35] Most of the drug makers' arguments are unfounded or greatly exaggerated. But, even if they were valid, it would still be possible to finance all needed medications for all who live in the 50 states without damaging drug makers' finances or their research.

Part II of this report argues and demonstrates that public action to lower U.S. prescription drug prices is both necessary for patients who rely on drugs, and safe for the drug makers themselves. Prices can be lowered without damaging the drug makers' total revenues, their profits, or their capacities to finance research.

PART II: SAVING MONEY AND SAVING LIVES WITHOUT HURTING THE DRUG MAKERS' FINANCES OR THEIR RESEARCH

Two issues are raised if individual states, groups of states acting together, or the United States acted to secure a 42 percent discount on manufacturers' prescription drug prices, in accord with the Federal Supply Schedule:

- What would be the financial impact on drug manufacturers? Would drug manufacturers be able to sell their products at these lower prices and still make a profit?

- Would there be a significant impact on pharmaceutical research?

If all states were to enact such a cut, the immediate financial effect would be to reduce drug makers' take from the residents of the United States by roughly $35.3 billion, as shown in Part I of this report. But this immediate financial effect would be substantially offset by private sector revenue growth owing to the lower prices. More patients would be able to afford to fill prescriptions.

A. REVENUE GROWTH TO OFFSET PRICE CUTS

1. How much would the volume of private purchases of prescription drugs rise in response to lower prices? This is difficult to predict with great precision, but several estimates can be made. The estimates vary considerably. It will be useful to consider price cuts' effects on volume of private drug purchases in the context of other possible changes affecting manufacturers' revenues. Those are taken up shortly.

First, some market responses to predictions of lower drug prices suggest that high sales volumes would offset threatened price discounts. Three British drug companies' stock prices rose 3.4 percent (Glaxo), 2.3 percent (SmithKline Beecham), and 1.9 percent (AstraZeneca) following President Clinton's January 2000 State of the Union speech calling for a Medicare prescription drug program.[36]

Second, we have seen earlier estimates of the price elasticity of demand for prescription drugs ranging from -0.10 to –0.64.[37] (A price elasticity of demand of –0.10, for example, would mean that a 1 percent price cut for drugs would result in an offsetting 0.1 percent rise in volume of drugs purchased. The increase in volume, multiplied by the prices of the drugs purchased, would equal the replacement revenues garnered by the manufacturers in response to the lower prices.) Much of the empirical work on price elasticity of demand for medications rests on introduction of, or increases in, co-payments for prescription drugs. It is not clear how easily these findings can be generalized to price cuts, especially to substantial price cuts.

Third, a June 1999 Merrill Lynch analysis estimated that a 40 percent price cut for Medicare recipients lacking prescription drug coverage would result in a 45 percent volume increase for these individuals.[38] That translates into a price elasticity of demand of –1.125. (A similar price elasticity of demand might also apply to the remainder of the 69 million or more Americans lacking prescription drug coverage.)

Merrill Lynch also estimated that the same 40 percent price cut would net out to a 25 percent price cut for Medicare recipients who have prescription drug coverage (because they already enjoy discounts estimated to average 15 percent), and that the 25 percent price cut would raise the volume of drugs purchased by 10 percent. We suggest that is a very conservative estimate of the increase in volume for Medicare recipients who have prescription drug coverage. Many recipients have very shallow coverage, such as a benefit through an HMO with a cap of $500 annually.

Even with that conservative estimate, the Merrill Lynch report concluded that, taking increased sales volume into account, a 40 percent price cut for Medicare beneficiaries would yield only a 3.3 revenue loss—or even a slight revenue gain.

Fourteen months later, Merrill Lynch continues to strongly espouse this general position. In August of 2000, Merrill Lynch's health care manager, Jordan Schreiber, has asserted that "Even with drug price cuts I think there's a good chance the pharmaceutical group will actually come out as a net beneficiary as the presently uninsured become customers, albeit less profitable customers." [39] Other Wall Street observers have recently concurred.[40]

2. <u>If individual states or the nation as a whole expanded existing public programs to finance the purchase of prescription drugs, and added new public programs, how great an increase in revenue could be expected to result?</u> Even after prices are lowered through legislation or negotiation, many citizens of these states would still not be able to afford needed medications. But winning lower drug prices will substantially reduce the cost of starting or expanding state programs to purchase medications for those citizens. And expanding or starting these programs would substantially increase manufacturers' revenues.

When adding the effects of higher private volume and higher public purchases, however, care should be taken to avoid double-counting. Some of the beneficiaries of the new or expanded public programs might have struggled to purchase more medications privately in response to the lower prices (in the absence of those public programs).

3. <u>To what extent would drug makers try to increase the volume or effectiveness of their marketing efforts</u>, to seek still higher sales to restore some of the revenue lost through lower prices? This is difficult to ascertain, but would need to be considered by any parties seeking to negotiate fair drug company revenue and profit levels. The drug makers should be encouraged to recoup lost revenue by meeting patient need. They should be discouraged from artificially boosting demand through marketing and advertising.

4. The shape of a peace treaty: <u>Could drug makers be guaranteed specified revenues from a state or national market?</u> All payors might join together to negotiate and assure fair profit margins for drug makers, and to make available adequate dollars to finance all needed research. Drug makers would produce and distribute the types and volumes of medications required to fill all physicians' prescriptions for all residents. In exchange, drug makers would be guaranteed to receive a certain total revenue, commensurate with their needs to manufacture today's medications, to conduct research to develop tomorrow's medications, and to retain capital. This sum would be negotiated. Negotiators should recognize reasonable standards of efficiency in order to avoid simply paying drug makers for profligate marketing and administrative practices. The drug makers would win generous

rewards for developing new breakthrough drugs, not for devising copy-cat drugs. It would take time to negotiate these matters, as they are likely to generate dispute.

Until those negotiations were concluded, one simple alternative might be to begin by assuring that all residents receive the drugs their physicians prescribe—and by assuring that the industry's profits were undisturbed. This could be considered a baseline case.

This would mean that drug makers (as an industry) would garner the same total revenue that they would have received before price cuts, reflecting volume increases, and adding payment needed to cover the actual incremental costs of producing and distributing the additional volumes of medications required to fill all physicians' prescriptions this year.

In other words, payors would together assure that all manufacturers of brand name drugs together received:

- ***from all sources—public and private—the total revenues estimated at $96.5 billion in Part I of this report (for these states in the year 2000), plus***

- ***the costs of manufacturing and distributing additional volumes of medications.***

In this event, drug makers would report their total private revenue. Public funds would be appropriated to make up the difference between private revenue and $96.5 billion. Public funds would then also be appropriated to reimburse drug makers for the actual incremental cost of making additional volumes of medications.

Another way to handle this shift, administratively and legally, would be for the nation or individual states to secure some or all of the 42 percent price cut through a rebate. The rebated money would be retained in a trust fund and used to buy medications from the same manufacturers who provided it.

In this event, drug makers' profits and research financing would be unchanged, but all Americans would obtain all needed medications at a tiny additional cost—the incremental cost of manufacturing additional pills, capsules, and aerosols, and suspensions.

Subsequently, this baseline approach might be altered by negotiation. It would be in the public interest, we suggest, to give drug makers stronger incentive to develop breakthrough drugs, and weaker incentives to seek profits by investing in developing me-too drugs and in marketing.

B. COST TO MANUFACTURERS OF PROVIDING HIGHER VOLUMES OF DRUGS

Price cuts' financial impact on drug makers is not a matter of revenue alone. Their cost must also be considered—both factors that raise total costs, and opportunities for reducing costs.

When drug prices are reduced, and when public programs to underwrite drug costs are initiated or expanded, more patients will be able to fill more prescriptions. Manufacturers will have to produce more pills, capsules, aerosols, and suspensions. They will need to be paid more money to cover the higher manufacturing costs.

Fortunately, it appears that the incremental or marginal costs of manufacturing additional volumes of medications are relatively low.

Moreover, it should be possible for manufacturers to lower non-manufacturing costs through greater efficiency.

1. Higher volumes of prescription drug use will result from lower prices. What will be the cost of producing and distributing this incremental volume of medications? Once research is conducted and factories are built, it should not be very great. We estimate the marginal cost of additional volumes of medications at 5 percent of the retail dollar, or about 6.8 percent of the manufacturer's cost.[41] How can this be so low?

First, because producing the medications consumes a relatively small share of the average manufacturer's total revenues. In 1999, for example, only 32 percent of six large drug makers' revenues, on average, was devoted to acquiring raw materials and to manufacturing drugs. (***See Exhibit 10.***) [42] As this is the average cost, which includes substantial fixed costs for engineering, equipment, and workers, then the marginal cost of producing additional volumes will be substantially lower. Costs of raw materials are typically very low. One report noted that "the cost of the raw materials runs only a few cents in pills that often sell for up to $15 apiece."[43] A revealing example was reported recently. The vital ingredient for Xalatan, a successful medication to prevent glaucoma, costs only about one percent of annual sales.[44]

Second, private conversations with managers of drug factories have supported the 5 percent figure.

Third, the prices set by manufacturers of generic drugs are very much lower than those set by manufacturers of brand name drugs. A Mylan executive has asserted that her company sells two-fifths of its 104 products at prices equal to 10 percent (or less) of the prices charged by brand name manufacturers.[45] This, too, suggests that drug makers' marginal costs are very low.

If manufacturers' marginal cost as a percentage of retail price is 5 percent, then it would cost manufacturers only $50 million to make drugs with a retail value of $ 1 billion to Americans.[46]

2. How much of the reduction in revenue resulting from lower drug prices could be offset by greater efficiency of the drug makers? It should be possible to win substantially greater efficiency.

First, drug makers' in-house marketing employment rose by almost one-third between 1995 and 1999, reaching 72.6 thousand in 1999. That amounted to fully 34.0 percent of total drug industry employment in that year.[47] This seems excessive. In a reasonable world, it should be less costly to inform physicians about which drugs are effective and worth the money.

Second, drug industry expenditures on direct-to-consumer advertising are probably excessive by most reasonable measures, and could be cut.

Third, it should be possible to reduce drug makers' profits without damaging research or retention of needed capital. This issue is discussed further, below.

C. WILL LOWER DRUG PRICES DAMAGE RESEARCH?

The drug makers claim that federal or state government efforts to win lower drug prices would damage research. Their claim is subject to question in several ways.

1. Would lower drug prices threaten research? Prices are not the only influence on the amount of money available for research. Other factors are involved. First, volume powerfully affects total revenue. So, if lower drug prices were offset by the combined increases in the volume of privately and publicly purchased medications, the drug makers would suffer no loss in total revenue. Second, were the drug makers compensated for the incremental cost of making more pills, they would suffer no loss in profit. Third, lower spending for advertising, marketing, and administration would free more money for research, other things equal. Then, there would be little reason to fear that lower prices would threaten research in any way—even in someone's imagination.

The drug makers' profits might be protected in this way during a transition period, lasting a specified number of years. Subsequently, drug makers might be given more of an incentive arrangement, under which they would make more money when they developed more breakthrough drugs, and less money when they failed to do so.

2. The drug makers' own intransigent policies may be the main long-term threat to research. The drug makers complain that public efforts to restrain prices or profits will damage research. Is this threat credible?

Pharmaceutical Research and Manufacturers of American (PhRMA), the drug industry's main trade association, blames drops in drug makers' stock prices on investors' worries about government actions that might constrain prices or profits. Some individuals connected with the biotech and prescription drug industries have worried aloud about the instability of stock prices in 1993-1994 and again in recent months. They have condemned legislative efforts to contain prices or improve coverage, claiming that these efforts would impede the flow of capital to the industry. PhRMA claims that drug makers' research and development spending dropped in 1994, after the Clintons proposed drug price controls.[48] But it is worth noting that drug industry profits, measured by return on equity, rose from 28.0 percent in 1993 to 31.2 percent in 1994.[49]

PhRMA has tried to erect a "one way" sign on the street that connects the drug makers with government. Government is permitted to finance research through the National Institutes of Health. Government is permitted to grant the drug industry patents on NIH-financed findings without payment and without undertaking to charge reasonable prices—prices that reflect the value of the public investment and the public risk-taking.[50] Government is permitted to provide generous tax credits for private research. But government is not permitted to ask anything in return. The industry's position is remarkably unreasonable.

In the U.S.A., federal and state governments will continue to debate proposals that aim to make medications affordable—until the day that goal is won. PhRMA says that government is creating a problem when it tries to lower drug prices. That is inaccurate. These government efforts are only symptoms of the underlying problem of unaffordable drugs.

As long as many Americans cannot afford needed medications, state and federal governments will repeatedly attempt to lower prices and improve coverage. The industry cannot wish away this simple reality. Therefore, until all patients win equitable and

affordable access to medications, investors will have reason to anticipate price-cutting efforts by government. Investors will consequently have reason to worry about the stability of drug profits. The challenge is to meet the legitimate needs of both patients and investors.

Because the drug makers' insistence on maintaining unnatural and unsustainable price levels is the main barrier to making medications more affordable, their insistence is also the main force that engenders the various public proposals for reform.

For this reason, the drug makers' rigid position has become the main long-term threat to pharmaceutical research—the main long-term force likely to destabilize research in the United States. Were the drug makers to compromise now, they could help to shape a durably workable framework of prices and profits—one that makes all needed medications affordable for all Americans while protecting revenue needed to finance research and also to retain capital.

But if the drug makers do not compromise now, and if they continue to block public reforms that will make medications affordable for all, an angry future Congress or group of states could well legislate price controls so sharp and so deep that they could actually undermine research. Moderate action and compromise today will protect both Americans and our vital drug research community tomorrow.

3. <u>How much research do the drug makers conduct, of what kinds, and how is it financed?</u> To evaluate the effects of various price cuts on research, it is useful to consider how research is financed—where does the money originate?

In this connection, the drug makers make a number of claims of doubtful validity. First, they claim that they set prices to cover research costs. This is entirely unlikely. Their duty to their stockholders is to set prices to try to maximize profits. That is what their stockholders expect. In 1998, the top ten drug makers' profits averaged one and one-half times their research costs.[51] [52]

Second, the drug makers say they need high profits to finance research. But they do not use their profits to finance research. The profits that they report—and that are so far above those of other industries[53]—are the sums left over ***after*** they pay for research, manufacturing, marketing, advertising, administration, taxes, and other costs.

Further, the drug makers are not willing to identify a ceiling on their profits or revenues—the level of profit or revenue beyond which no more money is needed to finance useful research. Similarly, the drug makers are unwilling to identify any floor on their profits or revenues—the level below which vital research would suffer. Their position is simple: more money (for themselves) is better. That would make sense only if the drug makers operated in a competitive free market. They do not, as discussed in the following section.

The drug makers seem to explain or rationalize various behaviors by claiming that they are undertaken to advance research. Generally, PhRMA tries to argue, in effect, that high drug prices are good for us because they finance research that would not otherwise be conducted. More specifically, for example, Glaxo Wellcome and SmithKlineBeecham asserted that their merger should be welcomed because "the combined entity will save $250 million in research and development expenses, and that all savings will be funded back into research." The savings " `will not go to the bottom line.' "[54] But how can that be assured?

Third, drug makers claim that it costs them about $500 million, on average, to bring a successful new drug to market. PhRMA claims that Boston Consulting Group found that "average cost of development [for] a new drug is about $500 million, including the cost of research failures as well as interest costs over the period of investment." [55] This estimate seems to rest in large part on earlier work by DiMasi and his colleagues.[56]

The work by DiMasi and his colleagues, however, seems to apply only to drugs originated entirely by the manufacturers, and not to the substantial number of drugs developed with National Institutes of Health or other public financing at either government or university laboratories, as *The New York Times* recently reported. Including those other drugs would lower substantially the $500 million per drug estimate.[57] Further, much of the $500 million claimed cost represents opportunity cost—the money that investors presumably could have made if they had invested elsewhere while drug research was underway.[58]

Fourth, PhRMA claims that its members expect to spend some $26.4 billion on research world-wide in the year 2000, up 10.1 percent from 1999's level.[59] But it is far from clear what this figure means. In the absence of standardized cost accounting rules or standardized financial reporting, PhRMA members have substantial latitude in deciding what they count as research. How much of these sums, then, are for true research into breakthrough drugs? How much for development of copy-cat drugs that do much less good for humanity? How much for *market* research? The U.S. Senate Special Committee on Aging raised serious concerns about these matters almost one decade ago.[60] Those concerns have not been resolved. Indeed they have grown. According to Goozner, DiMasi agrees that some 40 percent of industry-financed research aims to develop me-too drugs.[61]

Forty percent of $26.4 billion equals $10.6 billion in estimated expenditures to develop copy-cat drugs. It might be asserted that copy-cat drugs can offer some clinical benefits to some patients. And it might be asserted that copy-cat drugs help promote price competition, and thereby work to lower prices. But it would be simpler and more direct to legislate lower prices and thereby save the $10.6 billion. In the absence of a free market, the multiplication of copycat drugs does not do enough to achieve genuine price competition.

Fifth, drug research, like most science, is international, and so are many of the large drug makers. It is possible that a disproportionate share of research does take place in the United States, as PhRMA claims. It is also possible that PhRMA downplays the share of research that takes place in other nations and exaggerates the U.S. share. No rigid rules govern that assignment. So if a firm conducts research in several nations, it has leeway in deciding which nation receives credit for developing a new drug. The decision could be influenced by a desire to win political or public relations advantage.

But no matter where the research takes place physically, it is not fair for Americans to finance a disproportionate share of that research.

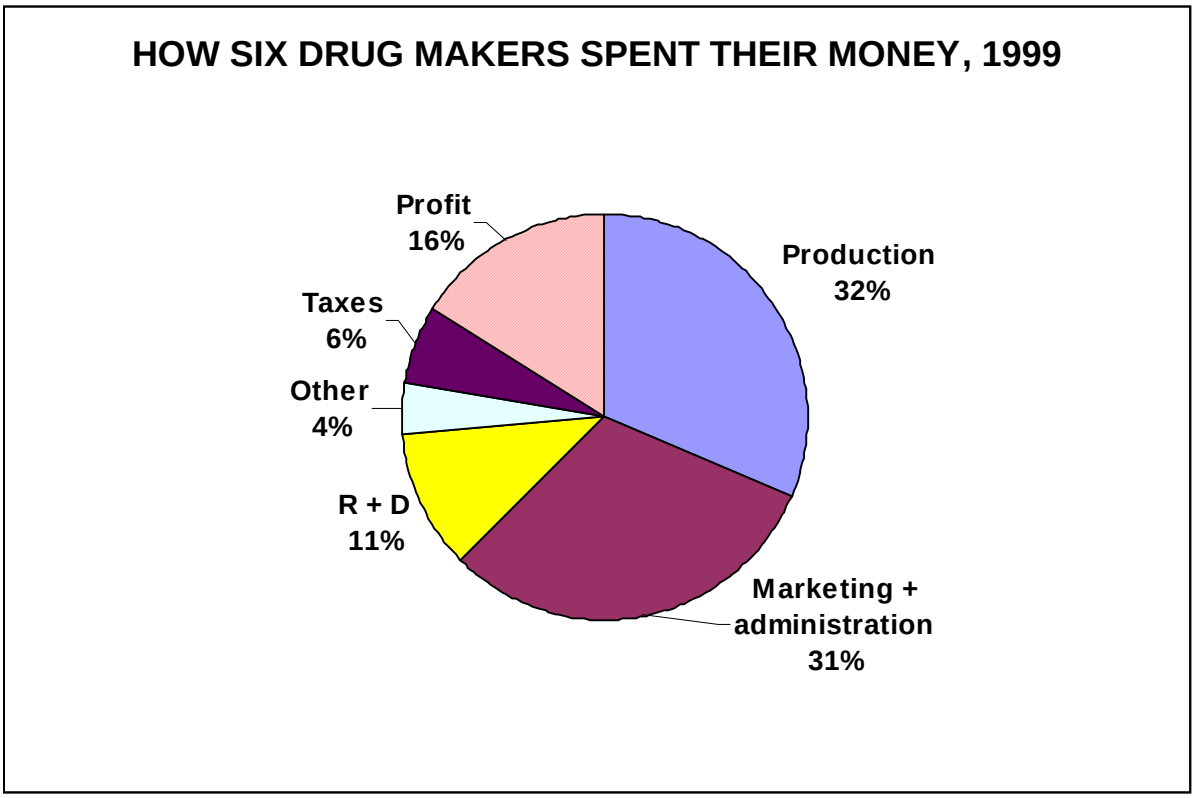
The cost of paying for the research is unfairly distributed, and so are the benefits of the research. All the world's wealthy nations pay money to the drug makers that finance research (among other things), but Americans clearly pay more. Citizens of all the world's wealthy nations benefit from research, if they can afford the medications they require. But one-quarter of all Americans lack any insurance for prescription drug costs, and many more are under-insured. As a result, Americans—who shoulder a disproportionately great share of the costs of drug makers' research worldwide through our high prices—reap a disproportionately low share of the benefits of that research.

Worse, it may well be that the huge sums paid by Americans are not even going to finance additional research, but are spent on marketing and the like or simply absorbed as profit. We find reason for concern in calculations from the industry's own data on drug manufacturer-financed research in 1997. U.S. firms' share of the industry's research in eight leading nations was 40 percent. This appears simply to be proportional to the U.S. share of the same eight nations' population, also 40 percent. And it is far smaller than the U.S. share of health spending in these eight nations, 59 percent.[62]

An examination of the ways in which six large drug makers spent their money in 1999 reveals troubling patterns.[63] The results of this examination are displayed in ***Exhibit 10***. These six drug makers (combined) devoted 32 percent of their revenue to producing medications (manufacturing), 31 percent to marketing and administration, and 11 percent to research and development. Profits were 16 percent of revenue. Profits were one and one-half times as great as research, and marketing/administration were almost triple research.

How much better the world would be if the drug makers could be induced to switch the share spent on marketing and administration with the share spent on research and development. Then, drug makers would devote 31 percent of their revenue to research and a still-substantial 11 percent to marketing. This benefit would be greater still if a greater share of research dollars were directed toward developing breakthrough drugs.

Exhibit 10



4. Methods of enhancing research to develop valuable new breakthrough medications. To generate profits today, drug makers like Pfizer may rely too heavily on marketing and too little on research.[64] If this is so, it is possible that the real reason drug makers fear government efforts to lower prices is not any imagined threat to research, but rather that ***the drug makers would be obliged to compete by conducting research to develop more medications that patients need—more breakthrough drugs***. On this line of thinking, the drug makers' real fear is being forced to do in reality much more of the research they say they have been doing.

At least three approaches could be taken to spur research into valuable new breakthrough drugs:

- Rewarding drug makers with generous profits if they develop breakthrough drugs. The British government has sought to provide bonus profits to manufacturers that do so. It might be possible to learn something from the British experience.

- Ceasing to offer generous rewards for me-too drugs that offer few clinical advantages, perhaps by shortening their patent lives. Since the drug market does not—and cannot—behave like a free market, competition from me-too drugs cannot be expected to contain prices or total spending.

- Increasing National Institutes of Health support for research. Profits on drugs resulting from that research should be commensurate with the shares of the research risk and cost that are borne publicly.

D. ONLY REASONABLE GOVERNMENT ACTION CAN PROTECT THE PUBLIC

For many years, the drug makers and some researchers argued that U.S. prices were not the highest in the world.[65] Now, the drug makers and some researchers sometimes abandon that position. Instead, they concede that prices might be high here, but then claim that is justified by higher U.S. incomes. They also claim that lower drug prices overseas don't translate into lower drug spending, and that high prices are good because Americans benefit from increased drug research.[66]

The drug makers assert that high U.S. prices and profits finance higher U.S. drug innovation[67] and that the "U.S. has an environment that nurtures biomedical research."[68] Similarly, they argue that any efforts by governments in the United States to lower prices and profits would badly harm drug research, causing many Americans to die needlessly.[69]

In these ways, the drug makers have worked tirelessly to paralyze government action to make medications affordable for all Americans. They claim:

- that high U.S. prices and profits are needed to finance vital research;
- that today's prices and profits are legitimate products of a free market; and
- that even moderate public restraint on prices or profits will collapse the drug makers' fragile financial house of cards.

The link between high U.S. prices and profits, and research, was addressed in the preceding section. The remaining claims are taken up here.

The drug makers' profits far exceed those that other industries garner. ***During the decade of the 1990s, the nation's big drug makers' returns on equity were two and one-quarter times the average for all U.S. industries, and their profits by other standard measures have also been extraordinarily high***.[70]

Profitability levels for 1999 are compared in ***Exhibit 11***.

Exhibit 11

Prescription Drug Industry Returns on Equity and Revenue Compared with 41-Industry Median, 1999

	prescription drugs	41-industry median	Rx/41-industry ratio
return on equity	35.6%	16.1 %	2.21
return on revenue	18.6%	5.2 %	3.58

The data in Exhibit 11 indicate that the prescription drug industry's return on equity in 1999 of 35.6 percent was 2.21 times as great as the 41-industry median of 16.1 percent. And the prescription drug industry's return on revenue of 18.6 percent was 3.58 times as great as the 41-industry median of 5.2 percent. [71]

It is unrealistic to expect today that American patients can or will continue to pay prices high enough to sustain these profits. But Americans might look more kindly on high profit rates if the drug makers were willing to produce all needed medications without raising total spending, along the lines proposed in this report.

Drug companies maintain that their industry is very risky. As we showed elsewhere, though, major drug manufacturers have had strikingly high profits, decade after decade, apparently since the 1930s. [72] That consistently high level of drug industry profits, especially during the 1990s, raises the question: where is the risk? Risk implies uncertainty. Some uncertainty may surface among individual firms, but it is certainly not apparent across the industry. Thus, the extraordinary rate of return does not seem to be justified by the risks run.

The United States government emphatically rejects PhRMA's claims that a free market legitimizes drug makers' prices, or that cutting prices is dangerous, by taking a 42 percent (or so) price discount for medications for the Veterans Administration and the military, and by taking an 18 percent (or so) rebate for the Medicaid program. This is the sort of thing foreign governments have long done for all their citizens.

But unlike governments elsewhere, our government has protected only itself alone. In so doing, it leaves the drug makers free to raise prices on the rest of us in order to reach their domestic revenue targets—the level of revenue they aim to harvest from American patients.

Indeed, there is no free market to legitimize the drug makers' high profits. Few signs of a free and competitive market can be detected in the drug industry (outside the retail

pharmacy sector).[73] We point to these six specific indicators of the absence of a free and competitive market:

1. Prevailing price disparities are themselves evidence of the lack of a free market for prescription drugs. While different payors today pay very different prices for the same drug, prices would tend to converge if there were a free market. In a free market, price competition would result in the same price throughout the market.

2. The drug industry's high U.S. prices—prices many times marginal cost of production—also suggest that nothing close to a freely competitive market is at work here. In a free market, prices tend to track marginal costs.

3. The industry's monopolistic (or oligopolistic) character in many sectors gives drug manufacturers tremendous power to set prices. Recent reports have documented that there is only limited competition within many major categories of medication. For example, in four important categories of drugs, the top-selling three drugs accounted for 71-90 percent of 1998 U.S. retail sales.[74]

4. This power will grow as drug makers merge into fewer and larger corporations.[75]

5. Vertical integration—including Merck's control of a major PBM—is also a concern.

6. And allegations of such anti-competitive practices as suppression of generic competitors are further signs of continued monopoly and oligopoly.[76]

Without either functioning free markets or effective government action, we have only one thing—anarchy. And anarchy allows the strong to earn unwarranted profits—unnaturally high profits—by charging unnaturally high prices.

That is why PhRMA spreads a fog of fear—PhRMA's Fog of Fear—to try to paralyze public action and to preserve anarchy. The Fog's main component is the claim that government efforts to win lower prices will cripple research, leading to unnecessary suffering and death.

As noted in the Introduction to this report, PhRMA claims that limiting drug prices necessarily means less money for research. "The lights go out in the labs, and there is no R&D," according to Tracy Baroni, PhRMA's senior director of policy.[77]

PhRMA tries to paralyze government action in a number of other ways, some of which conflict with others. It denies that U.S. prices are particularly high. It claims that U.S. patients should pay more for drugs in order to finance research.

To protect its members' high prices and profits, PhRMA boosts a number of policies. First, PhRMA urges private insurance for drugs, claiming that it will suffice to cover seniors who can't now afford needed medications. But private insurors do not wish to write prescription drug benefits.[78] Some possible reasons: a) they expect that people with higher drug costs would be likelier to sign up;[79] b) this adverse selection would lead to rapid premium rises; and c) these increases would harm the insurance industry's image.

Second, PhRMA urges patients to shop among pharmacies to get lower prices.[80] But patients who need costly medications usually need more than one. Buying drugs at different

pharmacies makes it much harder for any one pharmacist to spot potentially dangerous drug interactions. Additionally, there is no evidence that high retail mark-ups are the source of high U.S. drug prices. This PhRMA approach is not shooting at the target. Indeed, it may have been crafted to deflect attention away from manufacturers' own high charges.

Third, PhRMA urges reliance on private efforts to win lower prices, such as use of pharmacy benefit managers (PBMs). But both PhRMA itself and groups that are said to have very close ties to the drug industry have opposed the use of formularies,[81] one of the techniques that PBMs (and HMOs) employ to win price discounts or rebates. Moreover, PBMs' buying power is fragmented; they do not represent the entire nation. PBMs are unable to win the price discounts that sovereign governments regularly obtain from drug makers through negotiation or regulation.[82] And some PBMs have been subsidiaries of drug makers. Others may select drugs that hike PBM profits, through rebate arrangements and the like, in place of those that might be more cost-effective.

It appears that PhRMA boosts private solutions precisely because they would do little to lower prices.

Yet PhRMA is light on its feet. During the 2000 election campaign, Congressional interest began to grow in allowing "parallel importation" of lower-priced drugs made in FDA-monitored factories into the U.S. That interest prompted PhRMA to urge "expanding coverage under an improved Medicare program."[83] If Congress does allow importation, the drug makers may well be able to constrain the volume of drugs they sell to distributors abroad—the supply of drugs available to be brought into the U.S.A. Without a sufficient supply of drugs to import, the new law will be of little practical value.

E. ONLY A PRESCRIPTION DRUG PEACE TREATY WILL PROVIDE DURABLY AFFORDABLE MEDICATIONS FOR ALL AND PROTECTION FOR RESEARCH

1. Alternatives to a Peace Treaty

The alternatives to a prescription drug peace treaty are unworkable. Still, some are better than others because they would do more good today, and because they would open the door to doing still more good tomorrow.

Despite their flaws, the plans offered by President Clinton's and Vice-president Gore are markedly superior to such approaches as greater reliance on Medicare managed care to contain cost and protect people, or guerrilla attacks on drug prices like legislation to allow re-importation of drugs.

One alternative to a peace treaty would be subsidizing drug benefits under Medicare.

- But this will be very costly unless prices are limited. President Clinton's and Vice-president Gore's plans, for example, are estimated to cost some $253 billion over ten years to subsidize premiums for a new Medicare prescription drug program.

- President Clinton and Vice-president Gore's approaches would provide the drug makers with enormous windfall profits because the revenue they would add by making more

drugs for Medicare beneficiaries will be much greater than the costs they would add (marginal or incremental costs) to manufacture those drugs.

- These plans would rely on private PBMs to constrain spending. But PBMs already operate widely, yet drug spending is rising 15 to 20 percent annually.

Still, the Clinton and Gore plans offer substantial advantages.

- They are expected to cover the great majority of Medicare recipients.[84] They offer substantially greater financial relief to more people than does Governor Bush's plan.

- And by making the federal government responsible for offering coverage and subsidizing premiums, the government would be obliged to respond to rising drug prices and spending. The alternative would be to hike government subsidies and charge beneficiaries steadily higher premiums—or to cut benefits. None of these would be acceptable.

- Thus, President Clinton's and Vice-president Gore's approaches would make government feel the heat of high drug prices—heat that is now diffused among millions of suffering Americans. In time, this would oblige Congress and the administration to work to lower drug prices. This is one of the main reasons for PhRMA's opposition to a genuine Medicare prescription drug benefit such as President Clinton's or Vice-president Gore's.

A second alternative to a peace treaty would be greater reliance on managed care to make medications more affordable to Medicare patients. This is at the heart of Governor Bush's prescription drug plan. That plan is badly flawed in several ways.

- The size of the dollar subsidy for prescription drug purchase is not known. Governor Bush has proposed $110 billion over six years to help subsidize seniors' enrollment in health maintenance organizations and other managed care arrangements. Because managed care plans could use some of this money to finance benefits other than prescription drugs, to pay for marketing, or to raise their profits, the share of this $110 billion that would help seniors afford prescription drugs is not ascertainable.[85]

- Governor Bush's calls for greater reliance on competing managed care plans to cover Medicare patients' drug costs comes at a time when serious problems are arising with these plans. The policy of enrolling senior citizens in managed care plans has not saved money. Instead, it has increased cost to the federal government.[86] At the same time, rising health care costs—and especially rising costs of covering prescription drugs—have been impelling HMOs and other managed care plans to raise their premiums for Medicare patients—and to cut the value of prescription drug benefits. This year, more HMOs are cutting drug benefits to $500 yearly, and most are raising their premiums. And Medicare patients' enrollment in HMO is falling, [87] often owing to "forced exit."[88]

- Worst of all, Governor Bush's plan fragments accountability for high drug spending. Unlike President Clinton's and Vice-president Gore's plans, the federal government

would not face direct responsibility for financing prescription drug costs. And without focused accountability, action to lower drug prices will be delayed.

- Further, under Governor Bush's plan, those costs would be buried in overall HMO premiums. The HMOs and other managed care plans have (along with the PBMs with which they contract) failed to protect Americans from rising prescription drug spending. Asking them to take on a larger job is a recipe for failure.

A third alternative to a peace treaty would be to continue making indirect attacks on drug prices, such as legislation to allow importation of lower-cost drugs. As discussed earlier, some have urged revising federal law to permit importation of drugs manufactured either in U.S. factories, and exported to other nations, or in other factories subject to FDA inspection. Some pursue this approach idealistically because they reside in border states and are frustrated by visibly lower prices nearby. They justly bemoan the burden borne by older or chronically ill patients who are forced to travel across the border to buy drugs, when it would be far cheaper and easier to truck the medications to the patients' pharmacies. Pills are lighter and easier to transport.

Others pursue this approach less idealistically—because they are buffeted by strong political pressure to at least seem to be doing something about high drug prices.

But were the law changed to allow importation of medications at foreign prices, we expect that the drug makers would adapt to this reform, as they have to others in recent years. We predict that they would:

- export lower volumes of medications from U.S. factories to other nations in the first place, thereby drying up one source of lower-priced prescription drugs;

- hold down the volume of drugs produced at the foreign factories subject to FDA inspection, thereby drying up the other source of lower-priced drugs; and

- try to threaten foreign nations with higher prices if they allow medications to be exported to the U.S.[89]

We do not argue against passing a law to allow re-importation. But we do not expect it to do enough to make medications affordable for all Americans.

Allowing easier importation of medications is an attractive idea. But it resembles other attractive ideas of recent years—many of them implemented through changes in legislation or medical practice—that have failed to make medications affordable to all Americans. These attractive ideas include promoting generic substitution, patenting of copy-cat drugs, developing formularies, relying on PBMs, and relying on managed care generally. All of these ideas were appealing. None has succeeded in slowing the rate of increase in U.S. drug spending. Consider, for example, that generic drugs now account for about two-fifths of all U.S. prescriptions but less than one-tenth of drug makers' revenues. [90]

While supporters of these ideas could argue that U.S. spending increases would have been even greater without these ideas, their case is not a strong one. That is because all of these ideas are devoted to changing the mechanisms or the individual factors that affect drug prices or spending—usually factors with surprisingly little influence on total spending. These

ideas fail to assure that Americans can receive all needed medications at an affordable price. In a sense, they focus on pieces of a process; they do not assure an outcome.

We suspect that the re-importation legislation, if passed, will probably not succeed in lowering prescription drug prices substantially and durably. And to the extent that it does succeed, it will do so by relying not on competition but on regulation to restrict drug prices. That is, ***it will rely on foreign governments' regulation or negotiation of prices in their countries. Drug makers will work to hold down supplies and raise prices abroad.***

2. Guarantees, Not Promises: The Shape of a Peace Treaty

We conclude that the United States will fare better by regulating drug prices directly at the factory than we will by relying on a complex, uncontrollable, and unpredictable mixture of foreign governments' regulations and drug makers' responding efforts to restrict supply.

And we conclude that the United States will fare better by taking a comprehensive approach to assuring that all Americans get the drugs they need—by paying attention to drug makers' prices, revenues, profits, and research.

This report therefore proposes direct regulation of U.S. drug prices at levels designed to preserve drug makers' revenues, profits, and research. It proposes setting both a ceiling on drug spending and a floor on drug spending. It aims to offer guarantees, not promises. At the same time, it ties drug makers' total revenue to providing enough medications to fill all prescriptions. (They provide all needed drugs and we pay them fairly.) It both assures financing for research and would work to redirect dollars from marketing, administration, and copy-cat research into breakthrough research.

While Governor Bush has not suggested that the U.S. government take a more active role in bringing down drug prices, he has called on the states to do so. After proposing a four-year and $48 billion dollar interim program of grants to states to subsidize drug purchases by low-income seniors, ***Governor Bush argued that "With these large buying pools, states will be able to negotiate for significant discounts on drugs***."[91]

If Governor Bush is willing to endorse state negotiations to win lower prices in principle, why stop with what would still be relatively small state buying pools? And why stop with voluntary negotiations, in which the drug makers can easily decline to participate?

If the aim is indeed to win lower prices, it would be desirable to pursue that aim as directly and efficiently as possible, and with proper respect for all of the vital interests at stake.

A drug peace treaty will win affordable medications for all Americans through lower prices. It will protect drug makers through higher volumes. And it will boost research through high returns for breakthrough drugs and through reductions in wasteful marketing and administration. A drug peace treaty is a vital first step toward making medications durably affordable. It can win time for efforts to develop and disseminate much better evidence to doctors and families on which patients need which medications.

In summary, the approach suggested here offers advantages in eight specific areas.

1. Instead of pulling its punches when limiting price, this approach forcefully insists on making today's Federal Supply Schedule prices available to all Americans.

2. Instead of protecting the drug makers by allowing only weak price cuts for some patients, as most price-limiting proposals would, this approach protects drug makers by guaranteeing replacement revenues through higher volumes.

3. Instead of relying on gimmicks to limit prices—gimmicks that the drug makers can quickly game or manipulate—this approach would establish a solid and administratively feasible baseline standard of the Federal Supply Schedule's prices which prevailed on 30 June 2000, and would allow only reasonable price increases on existing drugs thereafter. Prices on new drugs would be set in proportion to their clinical value.

4. Instead of continuing to protect drug makers' profits by allowing them to use their monopoly or oligopoly power to administer high prices, this approach protects patients through lower prices and assurances that all needed prescriptions will be filled—and protects drug makers' revenues and profits at the same time.

5. Instead of perpetuating today's fury over high drug prices and profits, combined with high anxiety over the affordability of needed medications, this approach would negotiate a peace treaty that assures drug makers fair returns commensurate with the value of the research they perform and the resulting products they bring to market.

6. Instead of allowing drug makers to continue to advertise, market, and monopolize their way to high profits, this approach would sustain today's high profits in the short run, and make them contingent on breakthrough research in the long run.

7. Instead of coddling bloated marketing and administrative costs, this approach would reward drug makers who divert dollars toward research into breakthrough drugs.

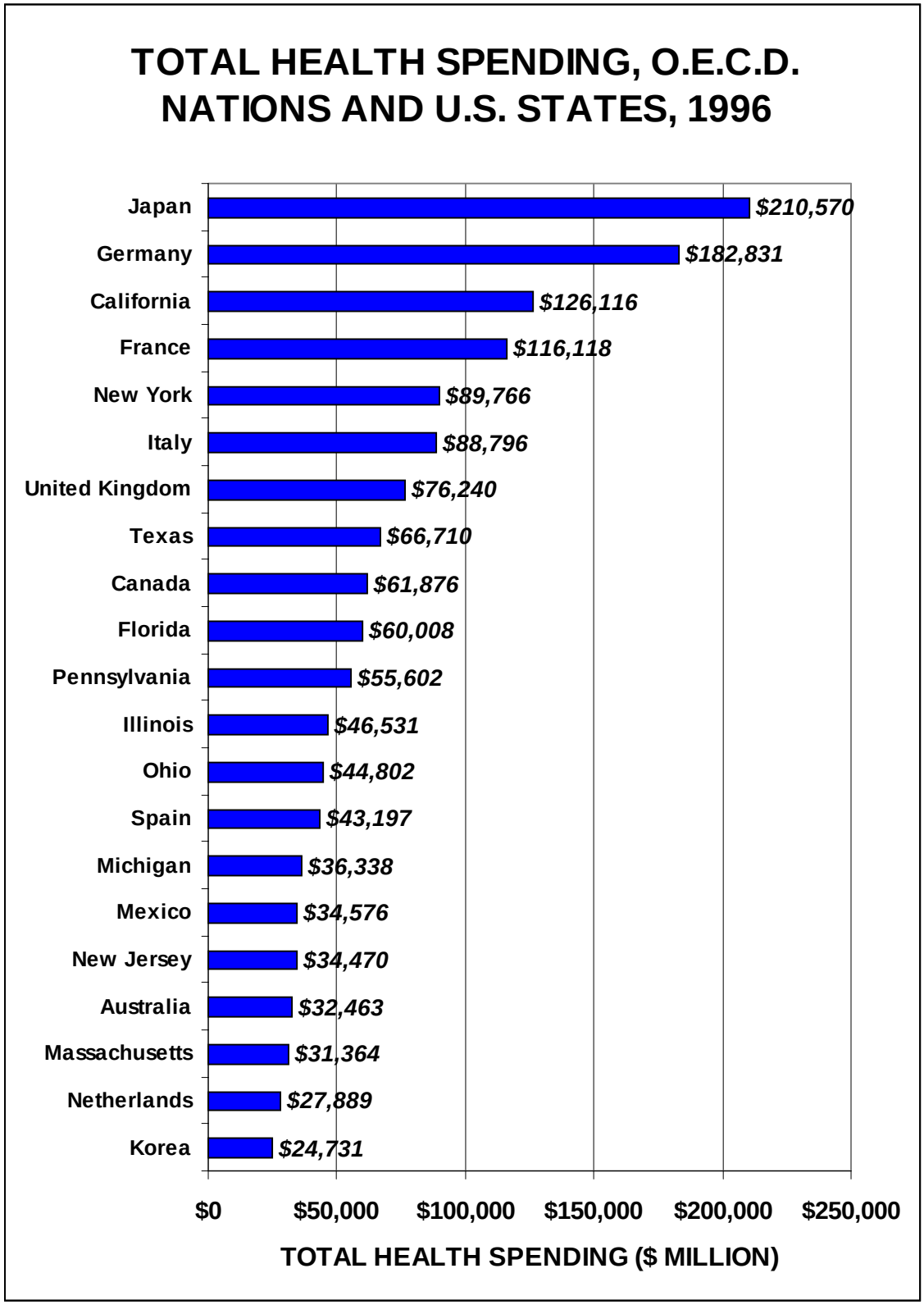
8. Instead of relying on drug maker-financed research and information dissemination, this approach would use public dollars to develop accurate information on which drugs work, and on which are cost effective, and would make that information available to health professionals and to the public at large.

While only solid action by governments can protect the public by winning affordable medications for all Americans, governments must still proceed carefully. Other wealthy nations have already won lower drug prices for themselves and for their citizens. The drug makers have become unfairly and artificially dependent on extracting disproportionate shares of their revenues from American patients, employers, and federal/state governments.

But because our people do provide so much money to the drug makers, we should lower prices carefully. A smaller nation—or a small American state—can lower its drug prices with relatively little effect on the drug makers. Because our nation provides the drug makers with between one-quarter and one-third of their worldwide revenues, we must act deliberately.

Large states seem to have the market power to act individually. Indeed, setting aside the United States total, California alone was third in the world in total health care spending

Exhibit 12


TOTAL HEALTH SPENDING, O.E.C.D. NATIONS AND U.S. STATES, 1996
Japan $210,570
Germany $182,831
California $126,116
France $116,118
New York $89,766
Italy $88,796
United Kingdom $76,240
Texas $66,710
Canada $61,876
Florida $60,008
Pennsylvania $55,602
Illinois $46,531
Ohio $44,802
Spain $43,197
Michigan $36,338
Mexico $34,576
New Jersey $34,470
Australia $32,463
Massachusetts $31,364
Netherlands $27,889
Korea $24,731
$0
$50,000
$100,000
$150,000
$200,000
$250,000
TOTAL HEALTH SPENDING ($ MILLION)

recently—after only Japan and Germany. New York placed fifth, just after France and before Italy. Texas ranked eighth, just after the U.K. and before Canada. Florida was tenth, after Canada, and was immediately followed by Pennsylvania, Illinois, and Ohio. ***Exhibit 12,*** on the following page, ranks total health care spending in 1996 for the ten highest-spending states along with the highest-spending nations.

Each large state's enormous purchasing power could allow it to negotiate substantial state-level price reductions. Even Maine, with far lower spending, has recognized that its unified market power should win lower prices.[92]

Some drug makers' and researchers' magical solution is to promise that new drugs will reduce costs of hospital and doctor care.[93] That's easy to promise but hard to deliver, on average. Some short-run savings may be possible in some instances. But even in the short run, using more drugs can boost use of physician services to adjust dosages and monitor safety—or simply to discuss patient interest in new medications. In the long run, while preventing or treating one disease is a blessing, doing so will inevitably expose patients to other diseases. This means that any dollar savings from new drugs are one-time only. And it is questionable whether we are even enjoying such short-run savings, as today's surge in prescription drug spending is accompanied by rising costs in other health care sectors.

Prudence demands that we plan against the contingency that drug breakthroughs will fuel higher spending. Public action to make needed medications affordable for all is therefore required.

Federal legislation to mandate lower drug prices for seniors has been introduced,[94] as has legislation to offer prescription drug benefits under Medicare.[95] One new legislative proposal would directly tackle drug prices for all Americans by linking allowable prices here with those in other wealthy nations.[96] Neither approach—expanded coverage or cutting prices—can work well in isolation. The first is too costly to Americans, and the second is too disruptive to the drug makers.

Impatient with the pace of federal action, many states are considering legislation to win lower drug prices. As just noted, Maine passed a promising new statute this year.[97] Similar bills are being pursued in some 20 other states.[98] This efforts can be expected to continue.[99] Since effective and speedy federal action to cut drug prices is unlikely, states should and can act to win both lower prices and assured provision of needed prescription drugs for all their citizens.

It is entirely possible to protect the residents of each state—and all Americans—against the cost of prescription drugs at very little expense, and in ways that provide fair and adequate financing for research to develop new and effective drugs. Four rich opportunities make this possible:

- First, U.S. drug prices and U.S. drug spending per person are the highest in the world.[100] This means that all of us together already spend enough, by any reasonable standard, to buy the medications all Americans need.

- Second, Americans together generate, by various estimates, from one-quarter to one-third to nearly two-fifths of the world's drug makers' revenues.[101] This gives our nation great leverage, though—as noted earlier—it means that government here must act carefully.

- Third, the price elasticity of demand for medications appears to be very substantial. As prices drop, patients will fill more prescriptions. Thus, price reductions would probably lead Americans to buy more medications. That would allow drug manufacturers to make up in volume much—or most—of the revenue that they would forgo through lower prices.

- Fourth, once drug research is performed and once the factories are built, the marginal cost of manufacturing additional volumes of medications—more capsules, pills, and suspensions—is very low, an average of just 5 cents on the retail dollar.[102] That means that manufacturers can make drugs worth $20 billion to Americans (at retail) at a cost to them of only $1 billion.

State and federal governments can act to make needed medications available to all Americans. If PhRMA's Fog of Fear continues to paralyze federal efforts or make them unnecessarily costly, states should act on their own while continuing to press for federal legislation. If states don't act, human misery will multiply needlessly.

States should enact lower prices. Private individuals will respond with greater private purchases of medications, as more people are able to afford to fill their prescriptions. And state or federal governments should provide money to help the people who are unable to afford even the discounted prices. Total spending grows slightly—enough to cover the added costs of manufacturing. All people get the medications their physicians prescribe. The drug makers' profits and dollars for research remain at least as high as they were.

Assuring that each person in each state receives all needed medications does not require vast increases in spending. And it does not require harming the drug makers' research. It does require spending our money better. We can do that.

APPENDIX ON METHODS

A. NATIONAL ESTIMATES

1. The estimates presented in this report are for calendar year 2000. All estimates of savings concern dollars paid to manufacturers for brand name drugs.

2. These estimates concern the actual prices paid to manufacturers after rebates, discounts, and other reductions—not the retail prices in drug stores.

3. Our calculations of savings begin with the Pharmaceutical Research and Manufacturers of America (PhRMA) own estimate of its members' U.S. domestic sales in 2000, $105.6 billion, after discounts and rebates.[103] This figure represents actual revenue received by PhRMA member firms from Americans. It includes retail sales of drugs for outpatient use and drugs sold for use in non-retail settings, such as hospitals and nursing homes.

4. PhRMA's $105.6 billion base figure is slightly (3.4 percent) higher than our own previous estimate of total payments to manufacturers this year, $102.1 billion.[104] It is possible that both figures are somewhat conservative. Other things equal, this means that actual national and state-level savings from paying foreign prices might be slightly greater than those estimated in this report.[105]

5. This manufacturers-level sales figure is net of rebates and discounts. It appears to exclude sales by independent generic manufacturers, such as Mylan.[106] But it apparently does include sales by subsidiaries of PhRMA members. In 1994, 8 of the 15 largest generic manufacturers were owned by firms of the type that belong to PhRMA. These accounted for 46 percent of generic sales.[107]

Even though the PhRMA $105.6 billion estimate seems to exclude generic drugs not manufactured by PhRMA members, we have, to be conservative, removed the entire share of total sales earned by generic manufacturers. This is estimated at approximately 8.6 percent,[108] or $9.1 billion.

This leaves $96.5 billion in estimated manufacturers' revenue from sales of brand name drugs in the United States in 2000.

B. THE STATES' BASELINE ESTIMATES FOR 2000

We calculated each state's share of the estimated U.S. year 2000 payments to brand name prescription drug makers of $96.5 billion by employing the following procedures.

1. We began with the 1997 estimates of state-level retail prescription drug spending. These were obtained from the National Association of Chain Drug Stores.[109] We then calculated the state's share of national 1997 retail drug spending.

2. We assumed that a state's share of the nation's retail drug spending was roughly comparable to its share of the nation's total prescription drug spending, including nursing homes and hospitals. This assumption is reasonable; also, it is not very consequential, since retail spending is approximately 88.6 percent of total prescription drug spending, we have estimated conservatively.

3. We also assumed that the state's share of retail prescription drug spending in 2000 is roughly the same as it was in 1997.

4. We then applied each state's 1997 percentage of retail U.S. prescription drug sales to the $96.5 billion in estimated manufacturers' revenue from sales of brand name drugs in the United States in 2000. That yielded an estimate of the state's actual payments for brand name drugs in 2000. Californians, for example, spent roughly 8.3 percent of the nation's prescription drug bill in 1997. Taking 8.3 percent of $96.5 billion translates into a year 2000 payment to manufacturers of $8,015.8 million (that is, $8.0 billion) for brand name drugs, as reported in the middle column (actual current spending) of Exhibit 4.

C. MEASURING EXISTING DISCOUNTS AND REBATES

The calculations of actual prescription drug spending in each state measure each state's ***actual payments to manufacturers for brand name drugs in 2000***. This payment reflects certain discounts and rebates that already prevail. Those won by Medicaid and other federal programs by federal law are public. Those won by HMOs, PBMs, and other private parties are secret. We therefore estimated the size of the secret private discounts and rebates.

This was necessary for two reasons: First, without estimating existing discounts and rebates, it is not possible to gauge the savings that would be won by statewide use of the 42 percent discount achieved by the Federal Supply Schedule pricing—or, indeed, the savings that would be won by applying the manufacturers' prices in other nations. Second, without estimating existing discounts and rebates, it is not possible to fairly compare each state's prices with those paid by citizens of other nations.

We proceeded in this way:

1. We divided each state's total spending in 2000 (the $8.0 billion figure for California, for example) among the four main categories of payors. These are the three major retail categories (self-pay, insured, and Medicaid) and the non-retail category (principally hospitals and nursing homes). To do so, we first backed out the non-retail share, estimated at 11.4 percent of the total, as calculated earlier.[110] Second, we then divided the remaining dollars among the three retail categories. This was done in proportion to their share of retail sales in each state in 1997.[111]

(We acknowledge that this allocation ignores differences among payors in shares of existing discounts and rebates. This shortcoming will be addressed in future work. It is not believed that this approach introduces serious distortions into the calculations.)

2. We estimated existing discounts and rebates, by payor, in each state.

Self-pay patients were assumed to enjoy no discounts and rebates. This ignores discounts or rebates that might be paid to insurors for some patients—very few—we believe, who were counted as self-pay but who were in fact insured. These patients could include, for example, those with traditional insurance that requires a patient to pay cash for prescriptions, and then file claims for reimbursement.

For third party payors, we estimated a manufacturers' combined discount and rebate averaging 10.0 percent. A U.S. General Accounting Office study sought to measure the value of discounts and rebates won by a pharmacy benefits manager (PBM) for federal employees insured through Blue Cross/Blue Shield. The discounts and rebates secured from manufacturers and provided to Blue Cross/Blue Shield were estimated at roughly $107 million out of a pre-discount and pre-rebate cost of $1.9 billion. This means that the PBM obtained price reductions which saved about 5.6 percent of the total.[112]

This figure requires three qualifications. First, in the General Accounting Office study of Blue Cross/Blue Shield's PBM, 10 percent of the discounts and rebates were retained by the PBM to encourage it to work harder. Second, some HMOs might gain bigger discounts and rebates if they close their formularies or otherwise provide preferences to some manufacturers' drugs. But third, other payors might not be willing or able to extract savings from manufacturers as large as those won for the large federal workforce by Blue Cross/Blue Shield's PBM. The two other federal health plans examined in the General Accounting Office's study of PBMs, for example, seemed to show much smaller discounts or rebates from manufacturers than those secured for Blue Cross/Blue Shield.[113]

For this report, we have assumed that private parties currently win discounts and rebates on brand name drugs from manufacturers that total an average of 10.0 percent in each of the 50 states.[114]

Some might be surprised that this figure is so low. After all, PBMs have reportedly won savings of between 20 and 27 percent in one study, and between 14 and 31 percent in another study.[115] But those data reflect *all savings* that might be obtained by PBMs—not only through discounts and rebates from *manufacturers*, but also through discounts and rebates from retailers and mail order houses, prior approval, drug utilization review, and the like. In the General Accounting Office's study of Blue Cross/Blue Shield's PBM, only about 21 percent of the savings won by the PBM were attributed to discounts and rebates from manufacturers.[116]

For Medicaid patients, we calculated a rebate percentage separately for each state, as shown in ***Exhibit A-1***.

Exhibit A-1

Medicaid Prescription Drug Rebate Percentages, by State, 1998

State	Medicaid Prescription Drug Rebate, 1998		State	Medicaid Prescription Drug Rebate, 1998
National Total*	18.3%			
Alabama	15.4%		Montana	17.4%
Alaska	15.3%		Nebraska	17.9%
Arizona	18.3%		Nevada	14.9%
Arkansas	14.9%		New Hampshire	17.5%
California	23.4%		New Jersey	16.7%
Colorado	18.5%		New Mexico	25.7%
Connecticut	17.2%		New York	18.4%
Delaware	17.2%		North Carolina	17.4%
District of Columbia	17.2%		North Dakota	18.1%
Florida	16.1%		Ohio	17.1%
Georgia	17.4%		Oklahoma	18.6%
Hawaii	15.1%		Oregon	16.4%
Idaho	15.7%		Pennsylvania	18.2%
Illinois	17.3%		Rhode Island	18.0%
Indiana	15.6%		South Carolina	17.4%
Iowa	17.2%		South Dakota	16.3%
Kansas	16.7%		Tennessee	18.3%
Kentucky	17.8%		Texas	17.8%
Louisiana	18.7%		Utah	14.5%
Maine	16.1%		Vermont	20.4%
Maryland	16.8%		Virginia	17.9%
Massachusetts	17.9%		Washington	16.0%
Michigan	19.4%		West Virginia	18.0%
Minnesota	17.9%		Wisconsin	17.6%
Mississippi	17.3%		Wyoming	17.7%
Missouri	17.4%			

Sources: National Pharmaceutical Council, *Pharmaceutical Benefits under State Medical Assistance Programs,* Reston, Virginia: The Council, 1997 and 1999 editions. The Council obtains data on rebates from HCFA 64 Medicaid Financial Management Report. It obtains data on total drug spending from HCFA (CMSO) HCFA-2082 reports.

*NOTE: Arizona and Tennessee did not report data on Medicaid prescription drug rebates. The weighted national average of 18.3 percent has been used for these states.

For non-retail payors, principally hospitals and nursing homes, we estimated discounts and rebates at 7.5 percent of manufacturers' prices. According to one Congressional Budget Office study, hospitals paid 9 percent below the average price invoiced by manufacturers to retail pharmacies, and long-term care facilities paid 5 percent less.[117]

3. In light of these discounts and rebates, we estimated what the payments to manufacturers would have been if each payor paid full, undiscounted factory prices. We added the estimated discounts and rebates currently won by each payor to the current payments for each payor. To do so, we divided the post-discount and -rebate price by (1.0 minus the discount/rebate rate) for each of the four payors. Summed across all payors, the overall discount and rebate rate estimated to be in effect in all states in the year 2000 is 8.7 percent of full manufacturers' prices.

4. We then calculated the additional savings that would be won if all residents of each state paid Federal Supply Schedule prices. These were taken to average a 42 percent cut from manufacturers' full prices, as described earlier in this report.

To do so, we first subtracted the discount and rebate percentages currently enjoyed by each of the four classes of payors from the 42 percent figure. The resulting differences represent the new, additional discount percentage for each payor. We then multiplied each of the additional discount percentages by that payor's year 2000 spending at full manufacturers' prices, as estimated in step three.

The result was an additional saving across all 50 states of roughly $35.3 billion this year.

5. We then subtracted this additional saving from the roughly $96.5 billion to be paid this year by the residents of the 50 states (calculated earlier in step B-4). The result is the sum that would be paid to manufacturers for brand name drugs this year if the Federal Supply Schedule prices were actually in effect for all buyers here. This assumes no change in the volume of sales.

Private sales would rise in response to the lower prices. This would restore much and perhaps most of the revenue lost to manufacturers from cut in prices to the Federal Supply Schedule. The remaining revenue loss could be restored by higher public payments, to help people unable to afford even the newly discounted prices. Additional revenue would be provided to drug makers to cover the actual cost of producing the higher volumes of medications.

D. INTERNATIONAL COMPARISONS

1. Brand name drugs are those that currently receive—or formerly received— patent protection. In this report, we have compared the factory prices of these drugs paid by Americans with the factory prices paid by citizens of other nations.

2. This is why it is appropriate to do so. The brand name drugs could be divided into four groups:[118]

a. breakthrough drugs still under patent that face no competition from a drug that uses the same therapeutic mechanism

b. breakthrough drugs still under patent that face competition from a "me-too" drug that uses the same therapeutic mechanism

c. me-too drugs still under patent

d. breakthrough or me-too drugs formerly under patent that now face competition from a generic equivalent.

The first three groups of drugs are still under patent. Their U.S. prices can therefore clearly be compared with the prices of drugs under patent in other nations. The fourth group of drugs, while no longer under patent, is treated similarly in this study. That is because, as a recent Congressional Budget Office Study noted:

> Various studies have found that generic entry has little effect on the prices of brand name drugs, which continue to increase faster than inflation. CBO's analyses of the average prices that manufacturers charge for drugs distributed to retail pharmacies is consistent with that result. [119]

One reason why off-patent brand name drug prices do not fall is that buyers who are price-sensitive may be more likely to switch to generics, and those who continue to buy a brand name drug are less price-sensitive.[120]

CBO did note that non-retail purchasers, such as HMOs or hospitals, might receive steeper discounts on brand name drugs once a generic is marketed.[121] We do not consider this issue in the present study. There are two reasons. First, the effect of the discounts and rebates is removed from the price comparisons employed in the study. Second, the PhRMA estimate of prescription drug sales by drug makers in the United States market in the year 2000 was net of discounts and rebates.

3. To compare prices paid to manufacturers in the United States with prices paid in other nations for the same drugs, we turned to the price compilations for patented drugs prepared by the Canadian government.

We considered the average prices paid for prescription drugs in each of eight wealthy nations, including the United States.

The prices are compiled by the Canadian government's Patented Medicine Prices Review Board (PMPRB).[122] Prices are weighted by net sales. These are the prices actually paid to manufacturers, after rebates, discounts, promotions, and the like. (It should be noted that some discounts and rebates, such as those earned by the U.S. Veterans Administration and other federal programs, were apparently not factored in by the PMPRB. These programs, while large in dollar terms, are relatively small shares of total U.S. prescription drug spending. Drug manufacturers might claim that price comparisons like these made by the PMPRB overstate U.S. prices by ignoring private sector discounts and rebates, but if they want that assertion to be reflected in public discussions, they need to document publicly to what extent—and where—such price discounts and rebates exist.)

The other seven nations are Italy, France, Canada, the United Kingdom, Sweden, Germany, and Switzerland. The PMPRB data allow us to present evidence on six of the wealthy nations of the European Union, and also on neighboring Canada, the focus of recent discussion of international drug pricing disparities.

4. We averaged the price ratios for the two most recent years for which data were available, 1997 and 1998.[123] Exhibit 8 presented those ratios.

- To convert currencies, the Patented Medicine Prices Review Board used average exchange rates prevailing over the previous 36 months; in this case, the 36 months prior to 1997, and the 36 months prior to 1998.

- The Board expressed each nation's prices in ratio to Canada's, with Canada assigned a value of 1.00. We used those ratios to calculate the relationship of prices in Canada and in the other nations to prices in the U.S. (Dividing each ratio by the ratio of U.S. prices to Canadian prices, we re-expressed each nation's prices in ratio to those in the United States, with the United States assigned a value of 1.00.)

NOTES

[1] They do not include some 1.9 million Medicare recipients under age 65 who lack Medicaid or other prescription drug coverage. Some 5.3 million Medicare beneficiaries less than 65 years old. See www.hcfa.gov/stats/enrltrnd.htm.

If 35 percent lack prescription drug insurance, as is the case for Medicare beneficiaries aged 65 and above, then 1.9 million Medicare beneficiaries under age 65 lack prescription drug coverage. See Health Care Financing Administration, Office of Strategic Planning, data from the Medicare Current Beneficiary Survey, cited in Margaret Davis, John Poisal, George Chulis, and others, "Prescription Drug Coverage, Utilization, and Spending among Medicare Beneficiaries," *Health Affairs*, Vol. 18, No. 1 (January – February 1999), pp. 231-243, exhibit 1.

[2] These figures include:

- 35 percent of those over age 65. Again, see Health Care Financing Administration, Office of Strategic Planning, data from the Medicare Current Beneficiary Survey, cited in Margaret Davis, John Poisal, George Chulis, and others, "Prescription Drug Coverage, Utilization, and Spending among Medicare Beneficiaries," *Health Affairs*, Vol. 18, No. 1 (January – February 1999), pp. 231-243, exhibit 1.

- the people who lack any health insurance (using each state's estimated year 2000 population and the same percentage uninsured as in 1998, the most recent year available as this report is written). See U.S. Bureau of the Census, "Health Insurance Coverage: 1998," 4 October 1999, Table 8, http://www.census.gov/hhes/hlthins/hlthin98/hi98t8.html.
  Please note that single-year estimates of the percentage uninsured in each state are less reliable for smaller states than they are for larger states; still, the rates do not usually fluctuate markedly from year to year.

- seven percent of those under age 65 with private insurance. Personal communication reporting on 1993 survey by the Health Insurance Association of America, Al Minor, HIAA Research Department, 18 September 1995. Some 171 million under age 65 are privately insured nationally. If the share lacking drug coverage has fallen to 5 percent, their number would total roughly 8.6 million, rather than the 12.0 million reported here. But if the share has risen to 9 percent in the face of rising prescription drug costs, their numbers would total roughly 15.4 million, we calculate.

The year 2000 population was estimated by taking the state's 1 July 1999 population estimate and raising it by the rate of increase between 1 July 1998 and 1 July 1999. See U.S. Bureau of the Census, "State Population Estimates: Annual Time Series, July 1, 1990 to July 1, 1999," ST-99-3, 29 December 1999, http://www.census.gov/population/estimates/state/st-99-3.txt.

The share of the year 2000 population that is over age 65 in each state was estimated using the average percentage that prevailed in that state in 1998 and 1999. See U.S. Bureau of the Census, "Population Estimates for the U.S., Regions, and States by Selected Age Groups and Sex: Annual Time series, July 1, 1990 to July 1, 1999," ST-99-9, 9 March 2000, http://www.census.gov/population/estimates/state/st-99-09.txt.

The share of each state's under 65 population who had private health insurance in 1998 was estimated from Current Population Survey data files using the U.S. Census Bureau's Ferret tool.

[3] This assertion rests on our calculations for the year 2000. In 1997, The U.S. ranked fourth in the world in per capita pharmaceutical spending, according to a PhRMA presentation of OECD data. See *OECD Health Data, 1998,* cited in www.phrma.org/publications/industry/profile99/figures99/7-7.html.
See Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999. http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf.

We then raised each nation's spending figures by its rate of recent spending increase, as reported by IMS Health. For the rise from 1997 to 1998, we relied on IMS Health, "Market Report," in www.ims-global.com/insight/report/world_market/report.htm. From 1998 forward to 2000, we extrapolated from the 1997 to 1998 changes.

This approach is probably conservative since we used IMS's spending increase from 1997 to 1998 for the U.S. of 11 percent. Rises in recent years seem to be closer to 15 percent.

[4] We estimate total U.S. prescription drug spending this year at $138 billion. This rests on the estimate of $120 billion that we prepared for 1999. See Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999. http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf. We raised the 1999 figure by 15 percent. This may itself be conservative, as new IMS Health data indicate a rise in total U.S. prescription drug spending of 18.8 percent between 1998 and 1999. See Rebecca Thomas, "Brains on Drugs in Washington," Dow Jones Newswires, 26 September 2000.

[5] The insurors' initial refusal to bid on Nevada's new program backs up the industry's words with solid inaction. See Robert Pear, "Ominous Start for Programs to Insure Drugs for Elders," *New York Times,* 8 July 2000. Late in September, one firm was selected from five that did submit bids in August. See Cy Ryan, "Insurance Firm Is Selected for Senior Drug Plan," *Las Vegas Sun,* 21 September 2000.

[6] Adverse selection occurs when the people with higher costs are more likely to sign up for insurance protection against those costs. High drug costs are the most predictable expense in health care, because most people with high costs have been suffering chronic illnesses for years, and have been paying for expensive drugs for years. See Alan Sager and Deborah Socolar, "Flaws in Governor Cellucci's Prescription Drug Plan," letter to the editor, *Boston Globe,* 31 May 1999. For a lucid exposition of this problem, see Paul Krugman, "Prescription for Failure," op-ed, *New York Times*, 26 July 2000.

[7] Cited in Deborah Baker (Associated Press), "Many in Southwest Lack Drug Benefits," *Albuquerque Journal,* 7 September 2000. Ms. Baroni was testifying before the New Mexico legislature's Health and Human Services Committee.

[8] Generic drugs are omitted from all calculations in this report. That is because pricing methods for generics are very different. And discounts are substantially lower. International comparisons of prices typically employ brand name drugs only. And the Federal Supply Schedule treats brand name and generic drugs differently. This omission does not affect any of the findings of this report. Spending on generics is only about 8.6 percent of total (in 1998) U.S. prescription drug spending. See Generic Pharmacy Industry Association, "Generic Share of U.S. Market," Facts and Figures, www.gpia.org/edu_facts.html.

[9] Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry,* July 1998, http://www.cbo.gov/showdoc.cfm? index=655&sequence=4.

[10] The U.S. General Accounting Office found that FSS prices for one cluster of drugs averaged 52 percent below the average non-federal manufacturers' prices. See United States General Accounting Office, *Drug Prices: Effects of Opening Federal Supply Schedule for Pharmaceuticals Are Uncertain,* Washington: The Office, June 1997, GAO/HEHS-97-60, p. 7. Merrill Lynch estimated the average FSS discount enjoyed by the Veterans Administration at 40 percent. See Merrill Lynch, *Pharmaceuticals: A Medicare Drug Benefit: May Not Be So Bad,* New York: Merrill Lynch, 23 June 1999, p. 2.

[11] For the 1997 price data, see Patented Medicine Prices Review Board, *Trends in Patented Drug Prices,* Ottawa: The Board, September 1998, PMPRB Study Series S-9811, http://www.pmprb-cepmb.gc.ca/pdf/rm-pat-e.pdf. For the 1998 data, see Patented Medicine Prices Review Board, *Eleventh Annual Report,* Year Ending December 21, 1998, Ottawa: The Board, 1999, p. 21, figure 9, http://www.pmprb-cepmb.gc.ca/.

Those reports present other nations' average prices as a percentage of Canadian prices. We converted those data to show other nations' prices as a percentage of U.S. prices.

That Canadian Board confirmed its data on prescription drug prices charged by manufacturers in six other countries by comparing information from two separate sources—figures filed by the manufacturers with the Board, and figures calculated from publicly available data in each country—as described in another report. See Patented Medicine Prices Review Board, *Verification of Foreign Patented Drug Prices,* Ottawa: The Board, September 1998, PMPRB Study Series S-9812, http://www.pmprb-cepmb.gc.ca/pdf/rm-vere.pdf

Prices are weighted by net sales. This means that the price ratios reflect not only the differences in prices across nations, but the amount of each type of medication sold. For example, if medication A is prescribed twice as often as medication B, then medication A will have twice as much influence as medication B when the international price ratios are calculated.

These prices reported to the Board are supposed to be the prices actually paid to manufacturers, after rebates, discounts, promotions, and the like.

In 1998, however, the Board concluded that the data which manufacturers were filing on their prices in the U.S. were overestimates, because they did not report on the discounted prices provided to the Veterans Administration and some other federal programs under the "Federal Supply Schedule." See Patented Medicine Prices Review Board, *U.S. Prices: Department of Veterans Affairs Formulary*: The Board, September 1998 (attachment to PMPRB report, *Road Map for the Next Decade*). http://www.pmprb-cepmb.gc.ca/pdf/rm-us-dvae.pdf. Viewed across the U.S., these public sector discounts and rebates are considerable, both in dollar terms and as a percentage of manufacturers' pre-discounted prices. But they do not represent a large share of spending on medications nationally or in any one state. For that reason, and because they would not be affected by state legislation, they are not considered in this report.

In addition, drug manufacturers might claim that price comparisons like these made by the PMPRB overstate U.S. prices by ignoring private sector discounts and rebates. But it is the manufacturers who have apparently refused to disclose the size of these private sector discounts and rebates.

The present report reports new estimates of the size of these secret private sector discounts and rebates. It appears that they average some 8.7 percent of pre-discounted manufacturers' prices, as shown in Exhibit 8. The Appendix on Methods describes the method by which the 8.7 percent figure was calculated.

[12] The 8.7 percent figure is our best current estimate of the size of public and undisclosed discounts and rebates in the U.S. as a whole. It was calculated using data for the United States as a whole (see previous endnote and appendix on methods). It is inserted as an estimate of the saving from undiscounted U.S. prices. This estimate reflects the share of brand name prescription drugs bought by uninsured individuals, private third parties, Medicaid programs, and institutional purchasers in the United States, as well as the rebates paid by drug makers to each state's Medicaid program.

[13] Beginning with data reported in its recently-issued report for 1999, the PMPRB began taking account of U.S. government discounts for the Department of Veterans Affairs and for the military. We are examining these new data and will report on them in a subsequent study.

[14] See, for example, Pharmaceutical Research and Manufacturers of America, Pharmaceutical Industry Profile 2000, Chapter 7, page 96, http://www.phrma.org/publications/industry/profile00/PhRMA_Chapter7b.pdf.

[15] Office of the Actuary, Health Care Financing Administration, "National Health Expenditures, 1998, Highlights," 11 January 2000, Table 2, www.hcfa.gov/sats/nhe-oact/hilites.htm. These estimates assume that prescription drug spending and overall health spending both continue to rise as fast as they did between 1997 and 1998. (This may be somewhat conservative in both cases.)

[16] Rebecca Thomas, “Brains on Drugs in Washington,” Dow Jones Newswire, 26 September 2000.

[17] Several private communications to the authors.

[18] Watson Wyatt Worldwide, “Medical, Dental, and Prescription Drug Increases Pick Up Steam,” in *Health Care Costs 2001: A Washington Business Group on Health/Watson Wyatt Worldwide Survey,* www.watsonwyatt.com/homepage/us/res/hcc20001-tm.htm.

[19] National Pharmaceutical Council, *Pharmaceutical Benefits under State Medical Assistance Programs,* Reston, Virginia: The Council, 1997 and 1999 editions. The Council obtains data on rebates from HCFA 64 Medicaid Financial Management Report. It obtains data on total drug spending from HCFA (CMSO) HCFA-2082 reports.

[20] For a disturbing description of one drug maker’s marketing efforts, see Melody Petersen, “What’s Black and White and Sells Medicine?” *New York Times,* 27 August 2000.

[21] National Association of Chain Drug Stores, www.nacds.org/industry/industry_fr.html.

[22] See Gina Kolata, “Estrogen Heart Study Proves Discouraging,” *New York Times,* 24 August 2000.

[23] For example, two New Hampshire studies showed that, for a low-income population unable to pay for prescription drugs, the state's former policy of denying Medicaid coverage for more than three prescriptions per month led to increased institutionalization of frail elders and soaring use of emergency mental health services. Stephen B. Soumerai and others, "Effects of Medicaid Drug-Payment Limits on Admission to Hospitals and Nursing Homes," New England Journal of Medicine, Vol. 325 (1991), pp. 1072-7; Stephen B. Soumerai and others, "Effects of Limiting Medicaid Drug-Reimbursement Benefits on the Use of Psychotropic Agents and Acute Mental Health Services by patients with Schizophrenia," New England Journal of Medicine, Vol. 331, No. 10, 8 September 1994, pp. 650-5

[24] National Association of Chain Drug Stores, "The Facts about Prescription Drug Pricing," Alexandria, Virginia: NACDS, 1999 (unpublished draft), 3rd quarter 1998, chain drug stores only.

[25] Estes Kefauver, *In a Few Hands: Monopoly Power in America,* New York: Pantheon, 1965, pp. 34-35.

[26] See, for example, U.S. General Accounting Office, *Prescription Drugs: Companies Typically Charge More in the United States than in Canada,* Washington: The Office, September 1992, GAO/HRD-92-110; U.S. General Accounting Office, *Prescription Drugs: Companies Typically Charge More in the United States than in the United Kingdom,* Washington: The Office, January 1994, GAO/HEHS-94-29; U.S. General Accounting Office, *Prescription Drugs: Spending Controls in Four European Countries,* Washington: The Office, May 1994, GAO/HEHS-94-30; U.S. General Accounting Office, *German Health Reforms: Changes Result in Lower Health Costs in 1993,* Washington: The Office, December 1994, GAO/HEHS-95-27. These estimates rest on comparisons of the manufacturers’ prices— also called factory prices (the prices that manufacturers charge wholesalers)— charged for the same drug, in the same form and dose, in different countries.

[27] U.S. General Accounting Office, *Prescription Drugs: Companies Typically Charge More in the United States Than in the United Kingdom*, Washington: GAO, January 1994, GAO/HEHS-94-29, pp. 4, 7, 24.

[28] Karen Donelan, Robert J. Blendon, Cathy Schoen, Karen Davis, and Katherine Binns, "The Cost of Health Care System Change: Public Discontent in Five Nations," *Health Affairs,* Vol. 18, No. 3 (May – June 1999), pp. 206-216, exhibit 6.

[29] See, for example, Gregory Kesich, "Ailing Mainers lobby for cap on drug prices," *Portland Press Herald*, 9 March 2000, www.portland.com/news/drugprices0309.shtml; Ross Sneyd, "New England Lawmakers taking on drug prices again," Associated Press, 7 February 2000; Eric Schmitt, "Politics Stalls Congressional Action on Medicare Drug Benefits," *The New York Times*, 27 February 2000; Michael Lasalandra, "Menino leads nation with drug-cost plan," *Boston Herald*, 27 January 2000, www.bostonherald.com/bostonherald/lonw/drug01272000.htm

[30] Calculated from data presented in The Commonwealth Fund's 1998 International Health Policy Survey, cited in Kristi Olson, "The Auctioning of the Public Health, National Health Law Program, August 2000, www.healthlaw.org/pubs/200008Auctioning.html.

[31] Chilton Research Services, Survey on the Need for a Prescription Drug Benefit Under the Medicare Program, American Association of Retired Persons, June 1992, p. 4. That survey may underestimate the share of the population with difficulty paying for medications, because it included only English-speaking households with telephones.

[32] Martha R. Burt, *Hunger Among the Elderly: Local and National Comparisons,* Washington, D.C.: The Urban Institute, 1993, as cited in Families USA Foundation, Better Benefits: Millions Helped by Clinton Reform, Washington, D.C.: The Foundation, December 1993, p. 4.

[33] *Genesis*, 41:25-27.

[34] Neil Munro, "Technology: Frontier Ethics," *National Journal*, 4 June 99.

[35] This year, the drug industry has supplemented its arguments with unprecedented amounts of campaign contributions, lobbying, and advertising to try to influence Congressional and legislative decisions. See, for example, Tom Hamburger, "Drug Industry Raises Spending for Ads, Lobbyists to Fight Critics," *Wall Street Journal Interactive Edition,* 22 September 2000; and Public Citizen, *New Investigative Study Reveals How Congress' Addiction to Drug Industry Money Threatens Medicare Drug Bill,"* Press Release, 6 July 2000.

[36] "Glaxo Leads UK Drugs up after Clinton Speech," *Dow Jones Newswires, 28 January 2000.*

[37] See, for example, Mandy Ryan and Stephen Birch, " Charging for Health Care: Evidence on the Utilisation of NHS Prescribed Drugs," *Social Science and Medicine,* Vol. 33, No. 6 (1991), pp. 681-687; B. O'Brien, "The Effect of Patient Charges on the Utilisation of Prescription Medicines," *Journal of Health Economics,* Vol. 8, No. 1 (March 1989), pp. 109-

132; R.J. Lavers, "Prescription Charges, the Demand for Prescriptions, and Morbidity," *Applied Economics,* Vol. 21 (1989), pp. 1043-1052.

[38] Merrill Lynch, "Pharmaceuticals: A Medicare Drug Benefit: May Not Be So Bad," 23 June 1999.

[39] Ian McDonald, "10 Questions With Merrill Lynch Healthcare Manager Jordan Schreiber," *TheStreet.com,* Fund Watch I, 14 August 2000, http://biz.yahoo.com/ts/000814/fund1_000814.html.
See also Beth M. Mantz, "Merrill's Tighe Sees $207.08B in '00 Global Drug Revs," Dow Jones Newswires, 25 September 2000.

[40] See Derrick Jackson, "Drug price cuts won't kill industry," *Boston Globe,* op-ed, 22 September 2000.

[41] Taking the manufacturer's share of the retail dollar at 74 percent, as discussed earlier.

[42] We have earlier reported a figure of 34 percent of Merck's and Pfizer's revenue devoted to manufacturing. See Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, Exhibit 11, http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf.

[43] Elyse Tanouye, "Drug Dependency: U.S. Has Developed an Expensive Habit: Now, How to Pay for It?" *Wall Street Journal*, 16 November 1998.

[44] Jeff Gerth and Sheryl Gay Stolberg, "Medicine Merchants: Birth of a Blockbuster; Drug Makers Reap Profits on Tax-backed Research," *New York Times,* 23 April 2000.

[45] Patricia Sunseri, "FTC Antitrust Complaint vs. Mylan," 23 December 1998, www.genericaccess.com/info.html.

[46] The marginal cost is a greater percentage of the manufacturers' prices because manufacturers take 74 percent of the retail dollar, on average. The marginal cost as a percentage of manufacturer's price is 6.8 percent, at *today's* manufacturers' prices. (That is, 5 percent divided by the manufacturers' 74 percent share of the retail dollar equals 6.8 percent.) If manufacturers' prices are cut down to the Federal Supply Schedule price, the average price reduction would rise from 8.7 percent to 42 percent, as shown in Part I of this report. Then, the marginal cost rises to roughly 10.7 percent of the *lower* manufacturers' price. But the *dollar cost of making more pills remains unchanged*, and so—therefore—does the cost of compensating drug makers for the additional volume of medications.

[This is calculated as follows: Set today's manufacturers' price index at $91.3 (a $100 price index minus today's overall 8.7 percent discount plus rebate). Then, take 6.8 percent of $91.3. That equals $6.21. And $6.21 is 10.7 percent of $58.0 ($100 minus the FSS price reduction of 42 percent.)]

[47] PhRMA, *Pharmaceutical Industry Profile 2000,* Appendix: Detailed Results from the PhRMA Annual Survey, Table 20.

[48] PhRMA, "Do Price Controls Hurt Pharmaceutical Research? Recent History Says, 'Yes,' " PhRMA Facts & Figures, August 1999, www.phrma.org/facts/phfacts/8%5F99.html .

[49] *Fortune* 500 data, 1993 and 1994.

[50] See, for example, Li Fellers, "The Medicine Market," *Washington Post*, 31 May 1998, pp. W-10 ff; also see Merrill Goozner, "The Price Isn't Right," *The American Prospect,* Vol. 11, No. 20, 11 September 2000, http://www.americanprospect.com/archives/V11-20/goozner-m.html.

[51] Top ten U.S. pharmaceutical companies as ranked by sales in 1998. Calculated from Maura Kealey, Public Citizen's Congress Watch, testimony before the House Judiciary Subcommittee on Courts and Intellectual Property, 1 July 1999, corrected 22 July 1999, http://www.citizen.org/congress/drugs/letters/hr1598testimony.html

[52] And, as shown in Exhibit 10, the research and profit shares of revenue for six large drug makers in 1999 were very similar.

[53] As discussed in section 4, which follows.

[54] "GlaxoSmithKline CEO Promises to Invest Savings in R&D," *Pharmaceutical Executives Healthcare Marketing and Media, 20 April 2000,* www.healthcaremedia.com.

[55] PhRMA, "Facts & Figures: Backgrounders: The Pharmaceutical Industry's R&D Investment," www.phrma.org/facts/bkgrnder/invest.html.

[56] Joseph DiMasi, R.W. Hansen, H.G. Grabowski, and Louis Lasagna, "Cost of Innovation in the Pharmaceutical Industry," *Journal of Health Economics*, Vol. 10, No. 2 (1991), pp. 235-238.

[57] See, for example, the comments of Nelson Levy, former head of research and development at Abbott Laboratories, cited in Jeff Gerth and Sheryl Gay Stolberg, "Medicine Merchants: Birth of a Blockbuster: Drug Makers Reap Profits on Tax-backed Research," *New York Times,* 23 April 2000. See also the work of Jamie Love, Director, Consumer Project on Technology, www.cptech.org/ip/health/econ.

[58] Jeff Gerth and Sheryl Gay Stolberg, "Drug Companies Profit From Research Supported by Taxpayers," *The New York Times*, 23 April 2000, http://www.nytimes.com/library/national/science/health/042300hth-drugs2.html

[59] PhRMA, *Pharmaceutical Industry Profile 2000,* Appendix: Detailed Results from the PhRMA Annual Survey, Table 1, http://www.phrma.org/publications/industry/profile00/PhRMA_Tables.pdf.

[60] United States Senate Special Committee on Aging, *The Drug Manufacturing Industry: A Prescription for Profits,* Washington: Government Printing Office, September 1991, p. 5, Serial No. 102-F, http://www.house.gov/berry/prescriptiondrugs/Resources/pryor.pdf.

[61] Merrill Goozner, "The Price Isn't Right," *The American Prospect,* Vol. 11, No. 20, 11

September 2000, http://www.americanprospect.com/archives/V11-20/goozner-m.html. Goozner also reports that "FDA statistics for the 1990s suggest that about half of the industry research is aimed at developing me-too drugs."

[62] Calculations from PhRMA data. For share of company-financed 1997 R&D by country, see *Pharmaceutical Industry Profile 2000*, PhRMA, April 2000, Fig. 7-1, http://www.phrma.org/publications/industry/profile00/PhRMA_Chapter7b.pdf. Health expenditure data for 1997 from OECD Health Data 99; see http://www.oecdwash.org/PRESS/PRESRELS/1999/99013tb1.pdf

[63] The data were compiled from an opportunity sample of seven large drug companies (now merged into six) whose financial reports were readily on-hand. The drug makers are Merck, Pfizer plus Warner-Lambert (which have merged), Bristol-Meyers-Squibb, American Home Products, Lilly, and Schering-Plough. We are grateful to Robert DeNoble for his careful work in compiling and reducing the financial data. The firms' combined 1999 revenue was $114.8 billion. The firms are generally representative of the industry, as shown by their combined returns on equity and returns on revenue, which were very close to the industry medians for large drug makers reported in the *Fortune* 500. The six firms' 1999 weighted average returns on equity were 35.5 percent versus an industry median of 35.6 percent. The six firms' 1999 weighted average returns on revenue were 16.2 percent, slightly below the industry median of 18.6 percent . See http://www.fortune.com/fortune/fortune500/.html for the pharmaceutical industry medians.

[64] Melody Petersen, "What's Black and White and Sells Medicine," *New York Times,* 27 August 2000.

[65] See, for example, Pharmaceutical Research and Manufacturers of America (PhRMA), *Pharmaceutical Industry Profile, 1999*, www.phrma.org/publications/ industry/profile99/ , especially chapter 7. See also PhRMA, "International Price Comparisons," *Industry Issue Brief, 1994; and* Patricia Danzon, "The Uses and Abuses of International Price Comparisons," in Robert B. Helms, ed., *Competitive Strategies in the Pharmaceutical Industry*, Washington: AEI Press, 1996.

[66] Heinz Redwood, *Price Regulation and Pharmaceutical Research,* Suffolk, U.K.: Oldwicks Press, 1993; David Gross and others, "International Spending Controls: France, Germany, Sweden, and the United Kingdom," *Health Care Financing Review,* Vol. 15, No. 3 (1994), pp. 127-140; PhRMA, "International Price Comparisons," *Industry Issue Brief, 1994;* and The Boston Consulting Group, *Ensuring Cost-effective Access to Innovative Pharmaceuticals: Do Market Interventions Work?* April 1999 (Sponsored by Warner-Lambert Company*).*

[67] PhRMA, "U.S. Companies Are Doing More Than a Third of the World's Pharmaceutical R&D," PhRMA Facts and Figures, August 1997, www.phrma.org/facts/phfacts/8_97a.html.

[68] PhRMA, "40 New Medicines in 1999; $26.4 Billion Projected for R&D in 2000 to Ensure More Medicines in 21st Century, Says PhRMA," PhRMA News Release, 18 January 2000, www.phrma.org/news/1-18-00.html.

[69] See, for example, PhRMA, "Do Price Controls Hurt Pharmaceutical Research? Recent History Says 'Yes," PhRMA Facts and Figures, August 1999,

www.phrma.org/facts/phfacts/8_99.html ; Alan F. Holmer (President, PhRMA), "Another Prescription Plan," Letter to the Editor, The *Boston Globe*, 11 February 1999; and PhRMA, "Taxing the Pharmaceutical Industry," PhRMA Backgrounder, 12 January 2000, www.phrma.org/facts/bkgrndr/taxing.html.

[70] See our calculations from Fortune 500 annual data, in Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf

[71] The prescription drug industry and other industries' data are presented in http://www.fortune.com/fortune/fortune500/medians.html. We calculated the 41-industry median at the mid-point between the 20th- and 21st-ranked industries on each list of 41 industries.

[72] See our calculations from Fortune 500 annual data, in Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf

[73] Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999, http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf

[74] National Institute for Health Care Management, *Prescription Drugs and Intellectual Property Protection*, Washington: NICHM Research and Educational Foundation, 24 July 2000, p. 2, and p. 6, Figure 4, http://www.nihcm.org/prescription.pdf
Similarly, see Henry J. Kaiser Family Foundation, *Prescription Drug Trends: A Chartbook*, Menlo Park, CA: The Foundation, July 2000, p. 65, and p. 69, Exhibit 4.4, http://www.kff.org/content/2000/3019/PharmFinal.pdf

[75] "Mergers Could Kill Competition for Drugs, Spur Price Hikes," Associated Press, 28 January 2000.

[76] See, for example, U.S. Federal Trade Commission, "FTC Charges Drug Manufacturers with Stifling Competition in Two Prescription Drug Markets," Press Release, 16 March 2000, http://www.ftc.gov/opa/2000/03/hoechst.htm ; John Martin, "Conspiracy to Fix Drug Prices: Drug Makers Keep Generic Drugs Off the Market," 16 March 2000, http://abcnews.go.com/onair/CloserLook/wnt_000315_CL_genericdrugs_feature.html; Ronald Rosenberg, "Drug Makers Seeks Curb on Sale of Generic Cyclosporin," *Boston Globe*, 7 April 2000; Michael F. Cannon, "Suppressing Generic Drugs Fleeces Consumers," Citizens for a Sound Economy Foundation *Issue Analysis*, No. 86, 25 February 1999; "The High Price of Drugs," ABC News, *20/20*, 23 July 1999, www.abcnews.go.com/onair/2020/transcripts/2020_990723_drugs_trans.html; and Sheryl Gay Stolberg and Jeff Gerth, "How Companies Stall Generics and Keep Themselves Healthy," *The New York Times*, 23 July *2000*, http://www.nytimes.com/library/national/science/health/072300hth-generic-drugs.html

[77] Cited in Deborah Baker (Associated Press), "Many in Southwest Lack Drug Benefits," *Albuquerque Journal,* 7 September 2000. Ms. Baroni was testifying before the New Mexico legislature's Health and Human Services Committee.

[78] See, for example, Robert Pear, "Ominous Start for Program to Insure Drugs for Elderly," *New York Times,* 8 July 2000.

[79] Alan Sager and Deborah Socolar, "Flaws in Governor Cellucci's Prescription Drug Plan," letter to the editor, *Boston Globe,* 31 May 1999; Paul Krugman, "Prescription for Failure," *New York Times,* op-ed, 26 July 2000.

[80] Pharmaceutical Research and Manufacturers of America, "The Market Is Working," PhRMA Policy Papers, www.phrma.org/issues/market.html. See pages 5-6, Saving Money on Prescription Drugs.

[81] For PhRMA's opposition, see Pharmaceutical Research and Manufacturers of America, "Access Restrictions Hurt Patients and Health Care's Bottom Line," *PhRMA Facts & Figures, Backgrounder*, 20 August 1999, www.phrma.org/facts/bkgrndr/access.html. One example is the recent campaign against a Massachusetts program to combine state employees and retirees, Medicaid patients, and Medicare recipients to win lower prices by combining purchasing power and by restricting choice through a formulary.

[82] Please see the Appendix for a discussion of this point.

[83] Susan Warner, "A New Bid to Lower U.S. Drug Prices," *Philadelphia Inquirer,* 17 September 2000; "Push in Congress for Law on Re-importing US Drugs," Dow Jones Newswires, 22 September 2000, citing PhRMA's Jeff Trewhitt.

[84] See, for example, Kenneth E. Thorpe, "A Preliminary Analysis of Outpatient Prescription Drug Proposals Proposed by Vice-President Gore and Governor Bush," Emory University, September 2000.

[85] See the Bush campaign's materials on prescription drug subsidies at www.bush2000.com/News, particularly "Modernizing Medicare and Offering an Immediate Helping Hand," 5 September 2000.

[86] Mathematica Policy Research has evaluated the net costs of serving a share of Medicare patients in HMOs and has found that a substantial rise in cost results.

[87] Marsha Gold, "Trends Reflect Fewer Choices," *Monitoring Medicare + Choice*, No. 4 (September 2000), Mathematica Policy Research.

[88] Very substantial numbers of Medicare HMO members have been dropped because their plans are no longer being offered in the counties where they reside. Marsha Gold and Natalie Justh, "Forced Exit: Beneficiaries in Plans Terminating in 2000, *Monitoring Medicare + Choice*, No. 3 (September 2000), Mathematica Policy Research.

[89] The last tactic would be useful only when drug prices are negotiated rather than regulated. We are indebted to John McDonough for mentioning this tactic, one that was apparently

employed when a U.S. state was considering obtaining medications from a Canadian province.

[90] Generic Pharmaceutical Industry Association, *Facts & Figures.* See www.gpia.org/edu.

[91] Emphasis supplied. See George W. Bush, "Modernizing Medicare and Offering and Immediate Helping Hand," speech, Allentown, Pennsylvania, 5 September 2000. This text appears on p. 5 of Governor Bush's speech, as printed from the campaign's web site.

[92] http://janus.state.me.us/legis/billtexts/LD259901-1asp.

[93] "IMS Says Spending More on Rx Could Mean Less Total Health Costs," IMS Press Release, 31 March 1998, http://ims-america.com/communications/pr_LessHealthCost. htm; Louis Lasagna, "Rx: A Heftier Share for Prescription Drugs: Giving Medicine More of the Health Care Pie Could Cut Costs and Aid Patients," *Boston Sunday Globe* Focus, 29 November 1998.

[94] On 25 September 1998, Rep. Tom Allen and others introduced the Prescription Drug Fairness for Seniors Act of 1998. This has been re-introduced as the Prescription Drug Fairness for Seniors Act, H.R. 664, 106th Congress, First Session, 10 February 1999. Sen. Edward M. Kennedy and others filed a parallel Senate bill, S. 731, in May 1999.

[95] For one recent comparison of the Medicare options, see Health Policy Alternatives, *Prescription Drug Coverage for Medicare Beneficiaries: A Side-by-side Comparison of Selected Proposals*, March 2000, Commissioned by the Henry J. Kaiser Family Foundation, www.kff.org/content/2000/1541 .

[96] Rep. Major Owens' H. 4772, "The Pharmaceutical Products Price Equity Act."

[97] http://janus.state.me.us/legis/billtexts/LD259901-1asp.

[98] For a useful recent summary, see Richard Cauchi, "Prescription Drug Discount, Rebate, Price Control, and Bulk Purchasing Legislation," National Conference of State Legislatures, updated 18 August 2000, www.ncsl.org/programs/health/drugdisc.htm.

[99] Center for Policy Alternatives, "Multi-state Effort Building Momentum to Lower Prescription Drug Prices," 22 June 2000.

[100] U.S. pharmaceutical spending per person reported by OECD was $319 in 1997. This made it fourth-highest in the world in 1997, according to OECD estimates. Organization for Economic Cooperation and Development, *OECD Health Data, 1998*, reported by Pharmaceutical Research and Manufacturers Association, 1999, www.phrma.org/publications/industry/profile99/figures99/7-7.html . Taking into account the United States' much-higher-than-average rise in drug spending, we have estimated that drug spending per person in the United States vaulted into first place by 1999. In doing so, we relied on spending increases from 1997 to 1998 from IMS Health, "Market Report," in www.ims-global.com/insight/report/world_market/report.htm and trended those rates of increase forward to 1999 and 2000.

[101] By one estimate, Americans bought 39.6 percent of the world's drugs in 1998, as measured in manufacturers' revenues, not in use of medications. See PhRMA Industry Profile, 2000, citing IMS Health data, 2000, www.phrma.org/publications/industry/profile00/figure/7-2.htm.

[102] This rests on our own estimates and on conversations with industry sources.

[103] Pharmaceutical Research and Manufacturers of America, *Annual Member Survey,* Detailed Results, Table 12, "Sales, Research-based Pharmaceutical Companies," http://www.phrma.org/publications/industry/profile00/PhRMA_Tables.pdf. These are sales net of rebates and discounts.

[104] This $102.1 billion figure rests on our estimate of total U.S. prescription drug spending of $120 billion in 1999. (Alan Sager and Deborah Socolar, *Affordable Medications for Americans*, Report for the Prescription Drug Task Force, United States House of Representatives, 27 July 1999,http://www.house.gov/berry/prescriptiondrugs/Resources/sager.pdf.)

We updated the $120 billion 1999 estimate to 2000, and then calculated the manufacturer's share. The underlying $120 billion figure was calculated in this way:

a) We estimated 1999 U.S. retail spending on prescription drugs. (Retail spending excludes spending in hospitals and most spending in nursing homes.) To do so, we began with reported actual 1997 retail prescription drug spending and increased it by 14.2 percent annually to estimate the 1999 level. Retail prescription drug spending rose by 14.2 percent from 1996 to 1997. (It actually rose by 15.4 percent from 1997 to 1998, and appears to have risen even more rapidly from 1998 to 1999. For example, IMS Health reports a 16.1 percent rise in drug sales through U.S. retail pharmacies from January 1999 to January 2000. See IMS Health, *Drug Monitor, 12 Months to January 2000,* www.imshealth. com. This factor tends to make our estimate of $120 billion too low.)

b) We then added estimated non-retail spending. In 1997, Pharmaceutical Research and Manufacturers of America reported total sales for human use in the U.S. market, net of discounts and rebates, of $65.9 billion.

c) We assumed that this figure of $65.9 billion for actual manufacturers' revenue comprised 74 percent of retail sales, so we divided $65.9 billion by 0.74 to reach estimated actual total drug costs to patients and other payors. This assumes that hospital and nursing home mark-ups were not different from retail mark-ups.

d) In 1997, retail prescription drug spending of $78.9 billion, as reported by Levit and others (Katharine Levit and others, "National Health Expenditures in 1997: More Slow Growth," *Health Affairs,* Vol. 17, No. 6 (November/December 1998), pp. 99-110, Exhibit 1) was 88.6 percent of the total drug spending (including spending in hospitals and nursing homes) that was estimated by steps b and c. We applied that ratio to estimated 1999 retail prescription drug spending in order to estimate 1999 total drug spending. The $120 billion figure resulted.

We then projected total U.S. prescription drug spending for 2000 by adding 15 percent to the 1999 estimate, yielding projected 2000 total spending of $138 billion nationally. This seems reasonable in light of the 15.4 percent rise in U.S. retail spending on prescription drugs between 1997 and 1998 (though it may be somewhat conservative, as spending may have risen even faster between 1998 and 2000).

[105] Interestingly, our own base estimate of $120 billion for 1999 may well be conservative, in part because it employs a modest estimate of the spending increase between 1998 and 1999, and in part because it does not include either generics or brand name drugs sold by non-PhRMA members or their subsidiaries. Schondelmeyer has estimated total spending in the "consumer pharmacy market for prescription drugs" in 1998 at $102 billion. Adding hospital and nursing home spending for 1998 yields an estimate of total drug spending in 1998 of $115.1 billion. Increasing the total by an estimated 15.4 percent spending rise between 1998 and 1999 yields an estimate of $132.9 billion in total prescription drug spending in the U.S. in 1999. Raising this figure by 15 percent yields an estimate of $152.8 billion for 2000.

PhRMA's own base estimate of $105.6 billion also excludes U.S. sales of generic and brand name drugs by non-PhRMA members. These are mainly generic drugs.

[106] This is strongly suggested by the list of PhRMA members. See www.phrma.org/membership/memlist.html.

[107] These were sales in the retail base used for the CBO's study. See Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry,* Washington: The Office, July 1998, chapter 3, p. 17, www.cbo.gov/showdoc.cfm?index=655&sequence=4.

[108] Generic Pharmaceutical Industry Association, *Facts & Figures,* "Brand vs. Generic Prescription Sales, % Dollars Spent (Retail)." These are 1998 data. See www.gpia.org/edu_genshare1.html.

[109] Data on retail sales from IMS Market View, as reported in Ciba Geneva Pharmacy Report. Published in National Association of Chain Drug Stores, *The Chain Pharmacy Industry Profile*, Alexandria, Virginia: The Association, 1999, table 23, pp. 22-23.

[110] Data from IMS suggest that the non-retail sector is slightly larger, about 14 percent of the market. See Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, *Prescription Drug Coverage, Spending, Utilization, and Prices,* Washington: The Office, 11 April 2000, chapter 3, pp. 106-107, http://aspe.hhs.gov/health/reports/drugstudy/.

[111] IMS Market View, as reported in Ciba Geneva Pharmacy Report. Published in National Association of Chain Drug Stores, *The Chain Pharmacy Industry Profile*, Alexandria, Virginia: The Association, 1999, table 23, pp. 22-23.

[112] United States General Accounting Office, *Pharmacy Benefit Managers: FEHBP Plans Satisfied with Savings and Services, but Retail Pharmacies Have Concerns,* Washington: The Office, February 1997, GAO/HEHS-97-47, pp. 9-11.

[113] United States General Accounting Office, *Pharmacy Benefit Managers: FEHBP Plans Satisfied with Savings and Services, but Retail Pharmacies Have Concerns,* Washington: The Office, February 1997, GAO/HEHS-97-47, pp. 12-15.

[114] The 10 percent average is intended to reflect the experience of both traditional insurors and managed care organizations. It covers the range of existing discounts and rebates—from very low percentages to the higher ones achieved through tight formularies that channel business to some drug makers in exchange for lower prices, and through other means. The Federal Supply Schedule prices are intended to be equal to the lowest prices received by private purchasers. The average FSS reduction from manufacturers' prices is 42 percent.

[115] Haiden A. Huskamp, Meredith B. Rosenthal, Richard G. Frank, and Joseph P. Newhouse, "The Medicare Prescription Drug Benefit: How Will the Game Be Played?" *Health Affairs,* Vol. 19, No. 2 (March – April 2000), pp. 8-23.

[116] United States General Accounting Office, *Pharmacy Benefit Managers: FEHBP Plans Satisfied with Savings and Services, but Retail Pharmacies Have Concerns,* Washington: The Office, February 1997, GAO/HEHS-97-47, pp. 9-11.

[117] Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected prices and Returns in the Pharmaceutical Industry,* Washington: The Office, July 1998. Cited in Office of the Assistant Secretary for Planning and Evaluation, Department of Health and Human Services, *Prescription Drug Coverage, Spending, Utilization, and Prices,* Washington: The Office, 11 April 2000, chapter 3, pp. 106-107, http://aspe.hhs.gov/health/reports/drugstudy/.

[118] This categorization draws in part on distinctions set out in Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry,* Washington: The Office, July 1998, chapter 1, p. 2, www.cbo.gov/showdoc.cfm?index=655&sequence=2.

[119] Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry,* Washington: The Office, July 1998, summary, p.4, www.cbo.gov/showdoc.cfm?index=655&sequence=1.

[120] Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry,* Washington: The Office, July 1998, chapter 3, p. 14, www.cbo.gov/showdoc.cfm?index=655&sequence=4.

[121] Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry,* Washington: The Office, July 1998, summary, p.4, www.cbo.gov/showdoc.cfm?index=655&sequence=1.

[122] For the 1997 price data, see Patented Medicine Prices Review Board, *Trends in Patented Drug Prices,* Ottawa: The Board, September 1998, PMPRB Study Series S-9811, http://www.pmprb-cepmb.gc.ca/pdf/rm-pat-e.pdf. For the 1998 data, see Patented Medicine Prices Review Board, *Eleventh Annual Report,* Year Ending December 21, 1998, Ottawa: The Board, 1999, p. 21, figure 9, http://www.pmprb-cepmb.gc.ca/.

Those reports present other nations' average prices as a percentage of Canadian prices. We converted those to ratios of other nations' prices to U.S. prices.

That Canadian Board confirmed its data on prescription drug prices charged by manufacturers in six other countries by comparing information from two separate sources—figures filed by the manufacturers with the Board, and figures calculated from publicly available data in each country—as described in another report. See Patented Medicine Prices Review Board, *Verification of Foreign Patented Drug Prices,* Ottawa: The Board, September 1998, PMPRB Study Series S-9812, http://www.pmprb-cepmb.gc.ca/pdf/rm-vere.pdf

In 1998, the Board concluded, however, that the data which manufacturers were filing on their prices in the U.S. were overestimates, because they did not report on the discounted prices provided to the Veterans Administration and some other federal programs under the "Federal Supply Schedule." See Patented Medicine Prices Review Board, *U.S. Prices: Department of Veterans Affairs Formulary*: The Board, September 1998 (attachment to PMPRB report, *Road Map for the Next Decade*). http://www.pmprb-cepmb.gc.ca/pdf/rm-us-dvae.pdf .

In its new report for 1999, the PMPRB presented U.S. price data excluding and including FSS prices from the averages reported. (See Patented Medicine Prices Review Board, *Twelfth Annual Report*, 14 June 2000, figure 8, p. 23.) Including FSS prices drops the reported U.S. prices from 174.1 percent of the Canadian level down to 161.9 percent. This is surprising, given the relatively small share of U.S. drugs now purchased under the FSS, principally for the Department of Veterans Affairs and the military. We are reviewing these new data and may incorporate them in our next report on international price comparisons.

[123] Since this portion of our analysis was completed, the PMPRB released 1999 data. See Patented Medicine Prices Review Board, *Twelfth Annual Report*, 14 June 2000.