



Prescription Drug Price Discrimination in Southeastern Massachusetts:

*Drug Manufacturer Prices Are Higher for
Humans than for Animals*

By Congressman William D. Delahunt

and

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Committee on Government Reform
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Prescription Medications in Southeastern Massachusetts: Drug Manufacturer Prices Are Higher for Humans than for Animals

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Introduction
by Congressman Bill Delahunt
February 2000

Over the year since we started our first in this series of studies on the cost of prescription drugs in southeastern Massachusetts, the political landscape has changed significantly.

As the Congress reconvenes during a presidential primary season, it now seems increasingly likely that some sort of Medicare prescription drug coverage can be enacted into law this year. While the results of this new dynamic remain to be seen, this constitutes genuine progress.

During the same period, however, the number of Americans without health insurance increased to 44 million -- over 600,000 in Massachusetts. And the anecdotes about families choosing between food, medicine and heat have ripened into truisms.

Just last month, as New England dug out from the most recent snowstorm, an elderly Cape Codder was hospitalized for exposure to the cold. When asked why she had turned down her thermostat and instead huddled under an electric blanket, she said it was the only way for her to afford her prescription medications.

It was stories like this one that originally persuaded me to start work on these studies, to get a solid handle on how severe and urgent these problems really are in Southeastern Massachusetts.

Our first study, published last May, documented astonishing disparities between the prescription drug prices paid by ordinary consumers and institutional customers -- like HMOs, insurance companies or even the federal government.

The second looked across our borders. It compared drug costs for seniors locally to prices paid by their counterparts in Mexico and Canada. The results were no more comforting.

Now we offer another piece of the puzzle. This study examines the prices charged for medicines used by both people and animals. What we found, once again, are enormous disparities.

Some may roll their eyes at the proposition of juxtaposing drugs used by pets and people. I suspect that snickering will subside after reviewing this data, which add to the growing body of evidence that uninsured and underinsured Americans are victims of price discrimination by the pharmaceutical industry.

In framing the methodology for this research, we were careful to refine the analysis for relative dosages, retail/wholesale considerations and other differences in the manufacture, distribution and use of medications for humans and animals.

Also, while our first two studies focused on the five medications with highest sales to local senior citizens, this one reviews prices for a wider range of health consumers. Accordingly, its

conclusions apply as readily to uninsured children and low-income workers without coverage at the jobsite. However, the greatest impact remains on people who live on fixed incomes, who most need these medications, and who lack dependable prescription (and other) coverage -- that is, our senior population.

In fairness, we did learn that the human version of at least one medicine, an antibiotic marketed as Amoxil (which parents will recognize as the pink medicine used commonly for children's earaches), actually sold for six percent *less* than its counterpart intended for animal patients.

On the whole, however, the results were not even a close call. The first group of drugs reviewed contains popular medicines approved for use by both people and animals -- based on the cost of the active ingredient per gram. The average price differential for these drugs exceeded 100 percent. And that included Amoxil.

The study also looked at a second group of "directly comparable" medications. These are prescription drugs approved and dispensed in identical dosage and form for both humans and animals, and manufactured by the same or related company.

Again, one of the drugs sold to human patients for less. However, the average price differential was even greater than for the first group. The leading offender was an asthma drug called Medrol, whose wholesale price is 415 percent higher for people than for their pets.

Why is this?

Is the Winstrol used to treat renal disease in people better -- 256 percent better -- than the Winstrol used for dogs?

When American Home Products charges human arthritis sufferers \$71 more than pet owners for the same dosage of Lodine, does the company funnel that overage back into pharmaceutical research?

As a former prosecutor, I learned a long time ago to trust the evidence. These three studies document a pattern of price discrimination against local consumers who lack prescription drug coverage. The consequences are serious and worsening.

Our previous studies documented numerous examples of seniors on the South Shore and the Cape & Islands who dealt with the soaring cost of their prescriptions by skipping doses or forgoing medicine altogether.

It seems self-evident that, *in addition to endangering that patient's health, this leads to significant additional costs to the public* -- in the form of increased Medicare, Medicaid and emergency room treatment for the infirmities and complications that inevitably result.

With only eight months to go before the expected congressional adjournment, there is no longer any time to waste. And there is some hope in the legislative air.

For the first time in recent memory, there is now at least rhetorical support for progress from both sides of the partisan aisle. If it took a presidential election year to draw out these commitments, then we ought to embrace and nurture that political dynamic.

Without revisiting the health care reform debacle of the early Clinton years, we could make strides by November to address the cost disparities documented in our three studies.

For my part toward increasing affordable and comprehensive healthcare, I will redouble my own efforts on behalf of pending legislative proposals to:

- 1) Offer tax credits to owners of small businesses which provide health coverage to their employees.
- 2) Authorize people to buy into Medicare starting at age 62, and to further extend this authorization to displaced workers as young as 55; and,
- 3) Expand state health insurance programs to those who now fall through the cracks -- including low-income parents and workers changing jobs;
- 4) End price discrimination by ensuring seniors the same discounted drug prices offered to insurance companies and other favored customers; and, of course,
- 5) Establish a Medicare prescription drug benefit.

It is too late, by a long shot, for the Congress to lay a credible claim to having exercised “leadership” toward easing prescription drug price discrimination. At this point, I’d be just as pleased if the political process at least *followed* the clear will of the American people.

SUMMARY

This report on prescription drug pricing was prepared at the request of William D. Delahunt, who represents the 10th Congressional District in Southeastern Massachusetts. Rep. Delahunt asked the minority staff of the Committee on Government Reform to work with him to investigate two important questions relating to the pricing of human and animal drugs: (1) whether drug manufacturers who sell the same drug for both human use and animal use charge different prices for human use than for animal use; and (2) if the manufacturers are charging different prices, what impacts these pricing practices have on drug costs for consumers in Rep. Delahunt's district.

The report finds that drug manufacturers are engaging in substantial price discrimination, charging low prices for drugs when they are used by animals and high prices for the same drugs when they are used by seniors and other consumers who pay for their own drugs. The report also finds that drug prices for uninsured consumers in Southeastern Massachusetts could be significantly reduced if drug manufacturers eliminated this price discrimination.

This report investigates drug pricing at the manufacturer level. Its focus is the prices that drug manufacturers charge wholesalers of human and animal drugs rather than the prices that wholesalers charge pharmacists and veterinarians or the prices that pharmacists and veterinarians charge individual consumers. Because most animal drugs are purchased from veterinarians (who both prescribe and dispense medications) and not from pharmacists (who only dispense medications), the human and animal drug markets have substantially different characteristics at the retail level. Although retail-level price comparisons are analyzed in one part of this report, differences between the human and animal drug markets at the retail level make the two markets less comparable at the retail level than at the manufacturer level.

A. Methodology

Many drugs that are approved and sold for human use are also approved and sold for animal use. Under the applicable FDA regulations, both the human and animal versions of the drugs must meet the same standards for quality and purity. This report investigates the pricing of two groups of drugs that are approved for both human and animal use. The animals that use these drugs include horses, dogs, and cats.

First, the report analyzes the pricing of popular brand name prescription drugs that are used by both humans and animals. These are drugs that meet the following criteria: (1) they are among the 200 most popular prescription drugs used by humans in the United States during 1998; (2) they are approved by FDA for both human and animal use; (3) they are dispensed to humans and animals for consumption through the same dosage route; and (4) they are commonly available by out-patient prescription. Eight drugs meet these criteria.

Among these eight popular drugs, some are sold in a different dosage to humans than animals, and several are made by different manufacturers for the human and animal markets. To determine if these factors affected the findings, the report analyzes a second group of drugs that are directly comparable in their human and animal versions. The drugs in the second group are brand name drugs that meet the following criteria: (1) they are approved by FDA for both human and animal use; (2) they are dispensed to humans and animals in the same dosage for consumption through the same dosage route; (3) they are manufactured for human and animal use by the same (or related)

companies; and (4) they are commonly available for human use by out-patient prescription. Eight drugs also meet these criteria. Two of these eight drugs – Lodine and Vasotec – are also in the first group of popular drugs.

B. Findings

Drug manufacturers charge substantially more for popular drugs when the drugs are used by humans than when the drugs are used by animals. Eight brand name drugs among the top 200 are taken through the same dosage route by both humans and animals and are commonly obtained via out-patient prescription. For these eight popular drugs, drug manufacturers charge an average of 106% to 151% more when the drug is intended for human use than when the drug is intended for animal use. This means that the average manufacturer-level price for human use is more than twice as much as the manufacturer-level price for animal use.

Drug manufacturers charge substantially more for directly comparable drugs when the drugs are used by humans than when the drugs are used by animals. Similar results were obtained when the report examined the pricing of the eight brand name drugs that are made for the human and animal markets in the same dosages by the same (or related) companies. For this group of eight directly comparable drugs, manufacturers charge an average of 131% more when the drug is intended for human use than when the drug is intended for animal use. This price differential is similar to the price differential observed for the eight popular drugs.

In dollar terms, the price differential can be substantial. The drug with the largest price differential in dollar terms is Lodine, a popular arthritis medicine used by both humans and dogs. American Home Products charges \$108.90 for a one-month supply of Lodine when the drug is to be used by humans, but only \$37.80 when the drug is to be used by dogs. Another drug with a large price difference is Vasotec, a high blood pressure medication that was the 14th most frequently prescribed human drug in the United States in 1998. Merck charges \$78.55 for a one-month supply when the drug is to be used by humans, but only \$51.30 when the drug is to be used by dogs – an annual difference of over \$325.

Drug prices for uninsured consumers in Southeastern Massachusetts could be significantly reduced by preventing price discrimination. Based on a survey of pharmacists in Rep. Delahunt's district, the report calculates an upper-bound estimate of the potential savings to individuals who must pay for their own drugs, such as senior citizens without prescription drug coverage, from eliminating price discrimination. If the eight popular drugs analyzed in this report were sold by manufacturers at the same prices for human use that they are currently sold for animal use, the prices of these drugs for uninsured consumers in Southeastern Massachusetts could be reduced by an average of 21% to 33%.

The price differentials cannot be adequately explained by quality differences or research costs. The price differentials observed in this report appear to be directly attributable to the deliberate pricing strategies of the drug manufacturers. The report analyzes whether differences in drug quality, drug production costs, or research and development expenses are likely causes of the price differentials. None of these factors appears to account adequately for the discriminatory pricing practices found in the report.

I. THE IMPACT OF HIGH DRUG PRICES

Prescription drug costs are rising and causing increasing hardship for consumers who must pay for their own drugs. In 1990, prescription drug expenditures in the United States were \$37.7 billion dollars.¹ By 1998, prescription drug expenditures had more than doubled to \$93.4 billion, due to a combination of price increases and increased utilization.² From 1992 to 1997, prescription drug expenditures rose by more than 11% annually.³ Reducing the costs of prescription drugs has become a national issue, with numerous proposals pending in Congress.

Much of the discussion of this issue has focused on the plight of senior citizens, who make up 12% of the population, but use one-third of all prescription drugs.⁴ Although the elderly have the greatest need for prescription drugs, they often have the most inadequate insurance coverage for drugs. With the exception of drugs administered during inpatient hospital stays, Medicare generally does not cover prescription drugs. According to a recent analysis by the National Economic Council, approximately 75% of Medicare beneficiaries lack dependable, private-sector prescription drug coverage.⁵ A recent study by federal researchers found that 35% of Medicare recipients – over 13 million seniors – do not have any insurance coverage for prescription drugs.⁶

Because of the high costs of prescription drugs, uninsured consumers in general – and seniors in particular – face enormous hardships paying for the medications they need. A recent study found that prescription drug expenditures are the single largest out-of-pocket health care cost for senior

¹ Health Care Finance Administration, *National Health Expenditures* (1999) (online at www.hcfa.gov/stats/nhe-oact/tables/t10.htm).

² National Institute for Health Care Management Foundation, *Factors Affecting the Growth of Prescription Drug Expenditures* (July 9, 1999).

³ *National Health Expenditures*, *supra* note 1.

⁴ Senate Special Committee On Aging, *Developments in Aging: 1993*, 103d Cong., 2d Sess. 35 (1994) (S. Rpt. 403).

⁵ National Economic Council, Domestic Policy Council, *Disturbing Truths and Dangerous Trends: The Facts About Medicare Beneficiaries and Prescription Drug Coverage* (July 22, 1999). In this study, private sector retiree coverage was considered to be the only dependable form of private-sector prescription drug coverage for senior citizens. Other sources of coverage, such as Medigap coverage or Medicare managed care plans were not considered dependable because the plans are often expensive, inaccessible, or inadequate.

⁶ Health Affairs, *Prescription Drug Coverage, Utilization, and Spending Among Medicare Beneficiaries*, 237 (Jan./Feb. 1999).

citizens on Medicare.⁷ Approximately 4.5 million senior citizens spend over \$1,000 annually on prescription drugs, a significant burden for individuals living on a fixed income.⁸ Indeed, one study found that more than one in eight seniors are forced to choose between buying food and paying for prescription drugs.⁹ As a consequence of high drug prices, millions of senior citizens and other uninsured consumers must go without necessary medications, skip doses, or take less than their prescribed doses, thereby endangering their health.

II. OBJECTIVE OF THE STUDY

One of the root causes of high drug prices is manufacturer price discrimination. In 1998, the Congressional Budget Office (CBO) conducted a detailed examination of drug pricing. CBO found that drug manufacturers engage in price discrimination that forces uninsured consumers to pay the highest prices for drugs. According to CBO:

Different buyers pay different prices for brand-name prescription drugs. . . . In today's market for outpatient prescription drugs, purchasers that have no insurance coverage for drugs . . . pay the highest prices for brand name drugs.¹⁰

In March 1999, the Federal Trade Commission (FTC) released a comprehensive analysis of prescription drug pricing that reached a similar conclusion. As in the CBO study, the FTC study found that drug manufacturers engage in price discrimination. According to the FTC:

A notable example of differential pricing is the so-called "two tiered pricing structure" under which pharmaceutical companies set lower prices to large buyers like hospitals, HMOs, and PBMs, and charge higher prices to other buyers that include the uninsured and independent and chain retail pharmacies.¹¹

⁷ AARP Public Policy Institute, *Out-of-Pocket Health Spending by Medicare Beneficiaries Age 65 and Older: 1999 Projections* (Dec. 1999).

⁸ See National Economic Council, Domestic Policy Council, *Disturbing Truths and Dangerous Trends: The Facts About Medicare Beneficiaries and Prescription Drug Coverage*, *supra* note 5; Soumerai, Steven, *Inadequate Prescription-Drug Coverage for Medicare Enrollees – A Call to Action*, *New England Journal of Medicine* (Mar. 1999).

⁹ Families USA Foundation, *Worthless Promises: Drug Companies Keep Boosting Prices* 6 (March 1995).

¹⁰ Congressional Budget Office, *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, xi (July 1998).

¹¹ Federal Trade Commission, *The Pharmaceutical Industry: A Discussion of Competitive and Antitrust Issues in an Environment of Change*, 75 (Mar. 1999).

While these and other independent experts have concluded that drug manufacturers engage in price discrimination, there have been few analyses that quantify the extent of this discrimination. The first two reports to quantify the extent of this price discrimination in Massachusetts's 10th congressional district were released by Rep. Delahunt. These reports showed that uninsured senior citizens in Southeastern Massachusetts (1) pay over twice as much for prescription drugs as favored customers like HMOs and the federal government,¹² and (2) pay far higher prices than do purchasers in Canada and Mexico.¹³

This study seeks to quantify the extent of price discrimination in a third way. It compares the prices that drug manufacturers charge for drugs used by humans with the prices that the manufacturers charge for the same drugs when used by animals. It is the first study to estimate the effect of this type of price discrimination on drug costs for uninsured consumers, such as senior citizens who pay for their own drugs, in Rep. Delahunt's congressional district in Southeastern Massachusetts.

III. METHODOLOGY

A. Selection of Drugs

Approximately 37,000 prescription drug products in the United States are approved for human consumption.¹⁴ These 37,000 drugs contain approximately 2,500 different active ingredients.¹⁵ In 1998, drug manufacturers sold almost \$100 billion worth of these pharmaceuticals for use in the United States.¹⁶

The animal drug market is smaller, but is growing rapidly. Over 1,500 drug products in the United States are approved for animal consumption.¹⁷ These drugs contain approximately 400

¹² *Prescription Drug Pricing in the Tenth Congressional District in Massachusetts: Drug Companies Profit at the Expense of Older Americans* (May 1999).

¹³ *Prescription Drug Pricing in the 10th Congressional District in Massachusetts: An International Price Comparison* (November 1999).

¹⁴ FDA, *Approved Drug Products with Therapeutic Equivalence Evaluations* (1999).

¹⁵ *Id.*

¹⁶ *Factors Affecting the Growth of Prescription Drug Expenditures*, *supra* note 2.

¹⁷ FDA, *FDA Approved Animal Drug Products* (1999).

different active ingredients.¹⁸ Drug manufacturers are continuing to seek approval for new drugs for the animal market, particularly for companion animals.¹⁹ In 1998, drug manufacturers sold approximately \$3.1 billion worth of pharmaceuticals for animal use.²⁰

There is a substantial overlap between drugs approved for human and animal use. Of the approximately 400 active ingredients found in animal drugs, approximately 80 are approved by the Food and Drug Administration for use by both humans and animals. In total, about 400 animal drugs contain active ingredients that are also found in human drugs. In many other cases, veterinarians prescribe products that are approved for human use for use in animals.²¹

This study analyzed two sets of brand name drugs. The first set of drugs is comprised of popular brand name drugs that are manufactured for both human and animal use. The second set of drugs is comprised of brand name drugs that are directly comparable in their human and animal versions.²²

1. Popular Drugs

The first set of drugs analyzed in this report are brand name drugs that meet the following criteria: (1) the drug is among the 200 most popular drugs used by humans in the United States during 1998; (2) the drug is approved by FDA for both human and animal use; (3) the drug is dispensed to

¹⁸ *Id.*

¹⁹ See Tanouye, Elyse, Wall Street Journal, *The Ow in Bowwow: With Growing Market in Pet Drugs, Makers Revamp Clinical Trials* (Apr. 13, 1999).

²⁰ Animal Health Institute, *Press Release: Animal Health Product Sales Rise to \$4.3 Billion in 1998* (July 31, 1998).

²¹ For example, Prozac is prescribed by some veterinarians to treat anxiety disorders in dogs. See *The Ow in Bowwow: With Growing Market in Pet Drugs, Makers Revamp Clinical Trials*, *supra* note 19. FDA regulations allow veterinarians to prescribe a human-approved drug for animal use, provided that a product containing the same active ingredient has not also been approved for use in animals.

²² This report focused on brand name drugs because manufacturers of brand name drugs generally have greater control over drug pricing than manufacturers of less expensive generic drugs. Several of the drugs included in the survey, however, are also available in generic versions. Consumers who purchase these drugs in their generic version are likely to pay less than those who purchase the brand name version. The Congressional Budget Office has found that the availability of a generic drug often does not decrease the cost of the brand name product. See *How Increased Competition from Generic Drugs Has Affected Prices and Returns in the Pharmaceutical Industry*, *supra* note 10.

humans and animals for consumption through the same dosage route;²³ and (4) the drug is commonly available for human use by out-patient prescription. Drug popularity was determined based on the 1998 listings by *Pharmacy Times* of (1) the top 200 drugs ranked by dollar sales and (2) the top 200 drugs ranked by number of prescriptions filled.²⁴ Any drug on either list was considered to be one of the top 200 drugs used by humans in 1998.

The following eight drugs meet these four criteria:

- Amoxil, manufactured by SmithKline Beecham for sale to the human market and by A.H. Robbins for sale to the animal market under the brand name Robamox. Amoxil is an antibiotic and was the 45th most frequently prescribed human drug in the United States in 1998. The product is approved on the animal market as an antibiotic to treat dogs and cats.
- Augmentin, manufactured by SmithKline Beecham for sale to the human market and by Pfizer for sale to the animal market under the brand name Clavamox. Augmentin is an antibiotic and was the 12th best selling human drug in dollar sales in the United States in 1998. The product is approved on the animal market as an antibiotic to treat dogs and cats.
- Bactroban, manufactured by SmithKline Beecham for sale to the human market and by Pfizer for sale to the animal market under the brand name Bactoderm. Bactroban is a topical antibiotic and was the 121st most frequently prescribed human drug in the United States in 1998. The product is approved on the animal market to treat infections in dogs.
- Lanoxin, manufactured by Glaxo Wellcome for sale to the human market and by Evsco for sale to the animal market under the brand name Cardoxin LS. Lanoxin is used to treat heart failure in humans and was the 9th most frequently prescribed human drug in the United States in 1998. The product is approved on the animal market to treat heart failure in dogs.
- Lasix, manufactured by Hoechst-Marion Roussel. Lasix is used to treat high blood pressure and heart problems in humans and was the 160th most frequently prescribed human drug in the United States in 1998. The product is approved on the animal market to treat edema in dogs and cats.
- Lodine, manufactured by Wyeth-Ayerst, a subsidiary of American Home Products, for sale to the human market and by Fort Dodge, another subsidiary of American Home Products, for sale to the animal market under the brand name Etogesic. Lodine is used to treat arthritis in

²³ Sometimes, the same drug may be taken by humans and animals through different dosage routes. For example, the drug may be taken orally by humans (through a tablet or capsule) and by injection by animals. Only drugs that are taken through the same dosage route are included in this analysis to increase the comparability of the drugs.

²⁴ Pharmacy Times, *The Top 200 Drugs of 1998* (1999) (online at <http://www.pharmacytimes.com/top200.html>).

humans and was the 143rd best selling human drug in dollar sales in the United States in 1998. The product is approved on the animal market to treat arthritis in dogs.

- Stadol, manufactured by Bristol-Myers Squibb for sale to the human market and by a subsidiary of American Home Products for sale to the animal market under the brand names Torbutrol and Torbugesic. Stadol is used as a pain reliever in humans and was the 195th best selling human drug in dollar sales in the United States in 1998. The product is approved on the animal market as a pain reliever in dogs and horses.
- Vasotec, manufactured by Merck for sale to the human market and by Merial, a subsidiary, for sale to the animal market under the brand name Enacard. Vasotec is used to treat high blood pressure in humans and was the 14th most frequently prescribed human drug in the United States in 1998. The product is approved on the animal market to treat heart failure in dogs.

2. Directly Comparable Drugs

Among the eight popular drugs, three (Lasix, Amoxil, and Bactroban) are manufactured in different dosages for the two markets.²⁵ In addition, five drugs (Amoxil, Augment, Bactroban, Lanoxin, and Stadol) are made by different manufacturers for the two markets. In order to determine if these factors account for the observed price differentials, a second group of brand name drugs that are directly comparable in their human and animal versions was also analyzed in this report. These drugs were chosen based on the following criteria: (1) the drug is approved by FDA for use in both humans and animals; (2) the drug is dispensed to humans and animals in the same dosage for consumption through the same dosage route; (3) the drug is manufactured by the same company (or by affiliates, subsidiaries, or partners of the same company) for both the human and animal markets; and (4) the drug is commonly available for human use by out-patient prescription.

Eight drugs meet these four criteria. Two of these eight – Lodine and Vasotec – are also included in the list of popular drugs. The six additional drugs that meet the four criteria are:

- Cleocin, manufactured by Pharmacia and Upjohn and sold in the animal market under the brand name Antirobe. Cleocin is an antibiotic used to treat bacterial infections in humans. The product is approved on the animal market to treat bacterial infections in dogs.
- Fulvicin U/F, manufactured by Schering Plough. Fulvicin U/F is antifungal agent used to treat infections of the skin, hair, and scalp in humans. The product is approved on the animal market as an antifungal medication in dogs and cats.

²⁵ Lasix is sold in 20 mg. tablets for the human market and in 12.5 mg. tablets for the animal market. Amoxil is sold in 250 mg. capsules for the human market and 200 mg. capsules for the animal market. Bactroban is sold in 30 gram tubes for the human market and 15 gram tubes for the animal market.

- Medrol, manufactured by Pharmacia and Upjohn. Medrol is used to treat arthritis, allergies, and asthma in humans. The product is approved on the animal market as an anti-inflammatory medication in dogs and cats.
- Robaxin, manufactured by A.H. Robins. Robaxin is used as an anti-inflammatory pain reliever in humans. The product is approved on the animal market for use as a pain reliever in dogs and cats.
- Robinul, manufactured by A.H. Robins. Robinul is used in treatment of peptic ulcers in humans. The product is approved on the animal market as a pre-anaesthetic agent for use in dogs and cats.
- Winstrol, manufactured by Sanofi.²⁶ Winstrol is used to treat end stage renal disease, anemia, angioedema, and chronic weight loss following major surgery in humans. The product is approved on the animal market to treat weight loss, debility, and other symptoms associated with old age or trauma in dogs and cats.

B. Determination of Manufacturer-Level Prices for Humans

This report calculates the prices that drug manufacturers charge for human drugs based on the Wholesale Acquisition Cost (WAC) that human drug wholesalers pay to acquire drugs for sale to pharmacists. WAC prices represent the average price that drug manufacturers charge human drug wholesalers for products that are intended for resale to pharmacists. WAC prices do not include rebates or other forms of discounts that favored customers like HMOs often receive.

The prices paid by pharmacists for drugs are slightly higher than the prices charged by the drug manufacturers to wholesalers, because the prices paid by pharmacists incorporate a markup by the drug wholesaler. Typical wholesale markups are small, about 2% to 4% above WAC.²⁷

C. Determination of Manufacturer-Level Prices for Animals

To determine the prices that drug manufacturers charge for drugs used by animals, congressional staff obtained the prices that animal drug wholesalers sell the drugs investigated in this report to veterinarians. Staff obtained these prices for five major animal drug wholesalers and determined an average price that animal drug wholesalers charge veterinarians for each of the drugs.

²⁶ Although Winstrol is manufactured by Sanofi, it is sold by Pharmacia and Upjohn on the animal market. Pharmacia and Upjohn, *Animal Health Products: Winstrol-V* (1999) (online at www.pnuanimalhealth.com/product/companimal/winstf2.html).

²⁷ Patricia M. Danzon, *Price Comparisons for Pharmaceuticals: A Review of U.S. and Cross-National Studies* (April 1999).

To determine the manufacturer-level price for the drugs, these average wholesale-level prices were adjusted to eliminate the effect of the markup charged by animal drug wholesalers.²⁸

Two drugs of the drugs examined in this report are not sold to veterinarians through animal drug wholesalers, but are purchased by veterinarians directly from the drug manufacturer. The prices that the manufacturer charges for these two drugs were also obtained by congressional investigators. No adjustment was made to account for the effect of a wholesale markup since these prices were already manufacturer-level prices.

D. Comparison of Manufacturer-Level Prices

Drug selection for this analysis was based on criteria that were designed to minimize the differences, if any, between the human and animal versions of drugs being compared. All drugs in this analysis are sold in the same dosage route to both the human and animal markets. Whenever possible, the drug dosages that are analyzed are identical in both the human and animal markets.²⁹ This was the case with all of the drugs analyzed in this report except for Lasix, Amoxil, and Bactroban. For these drugs, the closest dosage sizes available in the two markets were chosen for comparison. The dosages used in this study are shown in Appendices A and B.

Once a dosage size was selected, price comparisons were based on the price of a typical one month supply of the product for human consumers. Information on typical quantities prescribed by physicians was obtained from the *Physicians Desk Reference* or from the *U.S. Pharmacopeia Dispensing Information*.

For drugs sold in the same dosage for human and animal use, the price comparisons could be made based on the price per tablet or capsule. For the other drugs, prices were compared based on the cost per gram of active drug ingredient for the closest dosage sizes available in the human and animal markets.

²⁸ The report adjusted for the wholesale markup by reducing the average wholesale-level price by 3%. This represents the midpoint of the markup that human wholesalers typically charge pharmacies. See *Price Comparisons for Pharmaceuticals: A Review of U.S. and Cross-National Studies*, *supra* note 27. Because the veterinary market is smaller than the human market, it is possible that wholesalers of animal drugs charge a higher markup than wholesalers of human drugs. If animal drug wholesalers charge higher markups than human drug wholesalers, the actual manufacturer-level prices for animal uses would be lower than the level reported in this study. This would make the actual level of manufacturer price discrimination higher than reported in this study.

²⁹ In some cases, the drugs analyzed in the report are sold in a range of different dosages on the human market. For example, Lodine is sold for humans in dosages of 200, 300, 400, and 500 mg. In these cases, prices were compared based on the closest dosages available in both the human and animal markets. In the case of Lodine, the drug is only available in the 300 mg. dosage for animals. Thus, for purposes of the price comparisons in this report, the price comparison is based on the 300 mg. human version of Lodine.

E. Evaluation of Impacts on Uninsured Consumers

To determine the effect that manufacturer-level price differentials could have on prices paid by uninsured consumers in the Southeastern Massachusetts, Rep. Delahunt conducted a survey of 15 drug stores -- including both independent and chain stores -- throughout the 10th Congressional District, including the South Shore, Cape Cod and the islands of Nantucket and Martha's Vineyard.

III. RESULTS OF PRICE COMPARISONS

A. Manufacturer Prices Are Over Twice as High for Humans as for Animals

1. Price Differentials for Popular Prescription Drugs

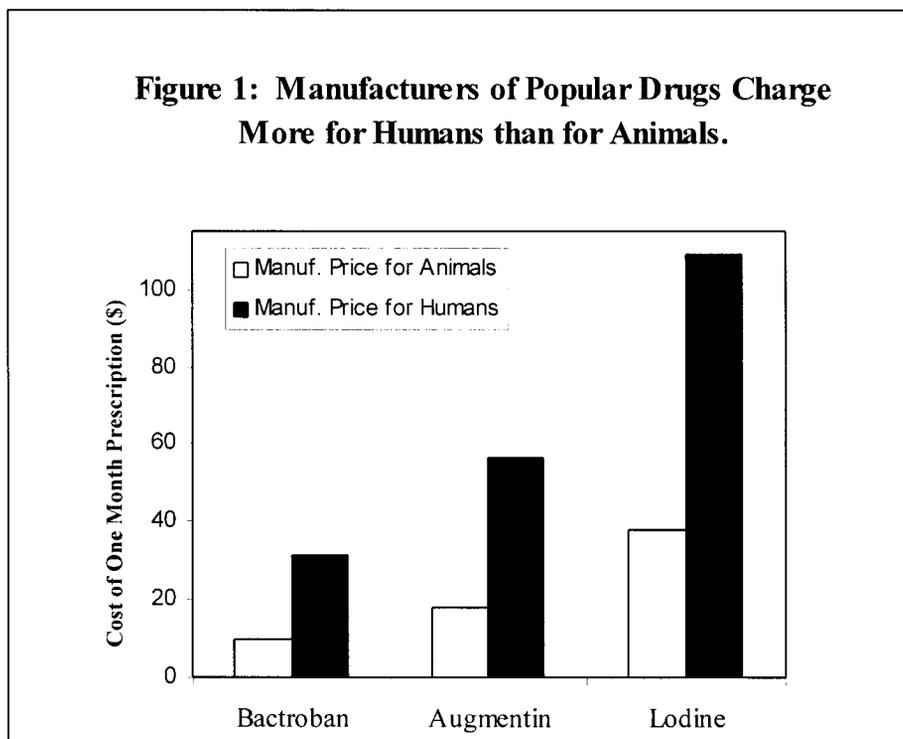
Eight brand name drugs among the top 200 human drugs are approved for use through the same dosage route for both humans and animals and are commonly obtained for human use via out-patient prescription. For these eight popular drugs, drug manufacturers charge far more when the intended end-users are humans than when the intended end-users are animals. The average differential between the price at which the drugs are sold by manufacturers for human use and the price at which the drugs are sold by manufacturers for animal use is 106% to 151%. This means that drug manufacturers charge more than twice as much for these drugs when sold for use by humans as they charge when the drugs are sold for use by animals (Table 1).

Table 1: Drug Manufacturers Charge More for Popular Drugs Used by Humans than for the Same Drugs Used by Animals.

Drug Name	Manufacturer of Human Version	Human Use	Manufacturer Price (One Month Supply)		Price Differential
			Animal Market	Human Market	
Bactroban	SmithKline Beecham	Antibiotic	\$9.98	\$31.56	216%
Augmentin	SmithKline Beecham	Antibiotic	\$18.00	\$56.40	213%
Lodine	American Home Products	Arthritis	\$37.80	\$108.90	188%
Stadol	Bristol Myers Squibb	Pain Relief	\$25.48	\$61.11	140%
Lasix	Hoechst Marion Roussel	High Blood Pressure	\$4.80	\$9.60	100%
Vasotec	Merck	High Blood Pressure	\$51.30	\$78.55	53%
Lanoxin	Glaxo Wellcome	Heart Failure	\$6.36	\$25.65 (\$4.08)	303% (-56%)
Amoxil	SmithKline Beecham	Antibiotic	\$16.20	\$15.30	-6%
Average for Eight Drugs					151% (106%)

Three drugs with high price differentials in percentage terms are Bactroban, Augmentin, and Lodine (Figure 1). Bactroban and Augmentin, which are manufactured by SmithKline Beecham for the human market, are both antibiotics. Both had price differentials of over 200%, which means that the manufacturer-level price for these drugs is over three times more expensive when the drug is intended for human use than when the drug is intended for animal use.

Lodine is an arthritis medication. A common prescription for Lodine is ninety 300 mg. capsules. Fort Dodge, a subsidiary of American Home Products, sells this quantity of Lodine for only \$37.80 when the intended end-users are dogs or cats. But when the intended end-users are humans, Wyeth-Ayerst, another subsidiary of American Home Products, sells the same quantity of the drug for \$108.90 -- a price differential of 188%.



Two different price differentials are presented in this report for Lanoxin, a medication used to treat heart failure in both humans and dogs. For the animal market, Lanoxin is manufactured in a liquid form. For the human market, it is manufactured in both a liquid form and a tablet form. For this drug, the most direct price comparison is a liquid-to-liquid comparison between the manufacturer-level price for the liquid version of the drug for animals (\$6.36) and the manufacturer-level price for the liquid version of the drug for humans (\$25.65). This “apples to apples” comparison results in a price differential of 303%, the highest price differential in percentage terms among the popular drugs analyzed in this report.

It is also possible, however, to compare the price of the liquid version of the drug for animals with the price of the tablet version for humans by calculating costs per gram of active drug ingredient. Although this approach can be criticized as an “apples to oranges” comparison, it is also included in this analysis in an effort to be conservative. The manufacturer-level price for the human version of the same quantity of the drug in tablet form (\$4.08) is less than the manufacturer-level price of either the liquid version of the drug for animals or the liquid version of the drug for humans, producing a human to animal price differential of -56%.³⁰

The only popular drug for which the manufacturer-level price is less expensive for humans than for animals in a direct “apples to apples” comparison is Amoxil. For this drug, which is manufactured by SmithKline Beecham for the human market, the manufacturer-level price is 6% lower for the human market than for the animal market.

2. Price Differentials for Directly Comparable Prescription Drugs

This report found similar results when analyzing the pricing of directly comparable drugs: manufacturers charge significantly more for directly comparable brand name drugs when the drugs are used by humans than when the drugs are used by animals. There are eight brand name drugs that are approved for use in the same dosage in both humans and animals, are manufactured for both markets by the same (or related) companies, and are commonly obtained for human use via out-patient prescription. For these eight products, the average differential between the price at which the drug is sold by the manufacturer for human use and the price at which the drug is sold by the manufacturer for animal use is 131% (Table 2). This price differential is similar to the average price differential observed for the eight popular drugs. For both sets of drugs, manufacturers charge an average of more than twice as much when a drug is sold for use by humans than they charge when the same drug is sold for use by animals.

Among the directly comparable drugs, Medrol, which is manufactured by Pharmacia and Upjohn, has the highest price differential: 415%. This drug is used to treat arthritis, asthma, and allergies in humans and is used as an anti-inflammatory agent in dogs and cats. Pharmacia and Upjohn charges \$20.10 for a one month supply of Medrol when the end-user is a person seeking treatment for arthritis, but only \$3.90 for the same quantity of Medrol when the end-user is a dog. Winstrol, which is manufactured by Sanofi, has the second highest price differential: 256%. This drug is used to treat end-stage renal disease and anemia in humans and weight loss, debility, and other symptoms associated with old age in dogs and cats. Sanofi sells this drug for \$19.20 when the end-users are humans, but only \$5.40 when the end-users are animals.

³⁰ A similar cost-per-gram analysis comparing the price of the tablet form of a drug to the price of the liquid form could also be done in the case of Lasix, which is sold in tablet form for animals and in both tablet form and liquid form for humans. In the case of Lasix, including this “apples to oranges” comparison would have the opposite effect: it would substantially increase the price differential between the animal and human versions of the drug. This analysis was not included in the report.

Table 2: Drug Manufacturers Charge More for Directly Comparable Drugs When the Drugs Are Used by Humans than When the Drugs Are Used by Animals.

Drug Name	Manufacturer	Human Use	Manufacturer Price (Monthly Supply)		Price Differential
			Animal Market	Human Market	
Medrol	Pharmacia and Upjohn	Arthritis; Allergies; Asthma	\$3.90	\$20.10	415%
Winstrol	Sanofi	Anemia; Renal Disease	\$5.40	\$19.20	256%
Lodine	American Home Products	Arthritis	\$37.80	\$108.90	188%
Robaxin	A.H. Robins	Pain Relief	\$15.00	\$31.20	108%
Vasotec	Merck/Merial	High Blood Pressure	\$51.30	\$78.55	53%
Cleocin	Pharmacia and Upjohn	Antibiotic	\$17.10	\$22.20	30%
Robinul	A.H. Robins	Ulcers	\$29.40	\$29.98	2%
Fulvicin U/F	Schering	Antifungal	\$38.40	\$36.60	-5%
Average for Eight Drugs					131%

Overall, manufacturers charge more for seven of the eight directly comparable drugs when the end users are humans than they charge when the end users are animals. The only drug that was less expensive at the manufacturer-level for humans than for animals was Fulvicin U/F, which is manufactured by Schering.

B. Price Differentials Can Be Substantial in Dollar Terms

These price differences can translate into large differences in dollar terms. Two of the drugs surveyed in this report, Lodine and Vasotec, are both popular (among the top 200 human drugs in 1998) and directly comparable (manufactured in the same dosage route and dosage by the same or related companies in both the human and animal markets). Both have large price differentials in dollar terms.

Lodine, the arthritis medication made by subsidiaries of American Home Products, has the largest price differential in dollar terms observed in this report. The manufacturer sells a monthly prescription of this drug for \$108.90 for human use -- more than \$70 more than the manufacturer charges when selling the same quantity of the drug for use by dogs or cats.

Similarly, Vasotec, the 14th most prescribed human drug in 1998, has a large dollar value price differential. Merck sells a one-month supply of Vasotec for \$78.55 when the intended users are human, while Merial, a Merck subsidiary, charges only \$51.30 – over \$25 less – when the intended users are animals. Vasotec treats a chronic condition (high blood pressure) and is often taken over long periods by senior citizens and others. On an annual basis, the manufacturer-level price differential for Vasotec is over \$325.

C. **Retail-Level Price Differentials Between Human and Animal Drugs Can Be Significant**

This analysis focuses primarily on the prices that drug manufacturers charge wholesalers of human and animal drugs, not the prices that wholesalers charge pharmacists and veterinarians or the prices that pharmacists and veterinarians charge individual consumers. In the case of comparisons of human and animal drugs, a manufacturer-level price comparison provides a more direct comparison than a retail-level price comparison because of the differing nature of the retail market for human and animal drugs. Human drugs are prescribed by a doctor and dispensed by a pharmacist. In contrast, most animal drugs are both prescribed and dispensed by the veterinarian. Because they serve both functions, veterinarians often incorporate some of the costs of practicing veterinary medicine into their prices for prescription drugs, resulting in markups that are many times higher than pharmacists charge.

Because of these complexities, the most direct comparison of retail-level prices can be obtained by comparing the prices that pharmacists charge human consumers with the prices that specialized veterinary pharmacies charge animal owners. Through the Internet and mail order, congressional investigators identified three veterinary pharmacies that resemble human pharmacies in that they dispense, but do not prescribe, medications.³¹ These veterinary pharmacies sell seven of the eight popular drugs investigated in this report. The report compared the average prices that these veterinary pharmacies charge for the drugs with the average retail prices that consumers in Rep. Delahunt's district must pay for the same drugs.

This analysis showed that there is a substantial difference between what consumers in Southeastern Massachusetts must pay for these seven drugs and the prices that animal owners can pay to acquire the drugs from veterinary pharmacies.³² On average, it costs consumers in Rep. Delahunt's district 139% to 238% more for these drugs than animal owners (Table 3). This means that uninsured consumers in Southeastern Massachusetts, such as senior citizens without prescription drug coverage, are being forced to pay on average two to three times as much as animal owners to acquire these drugs.

³¹ The three veterinary pharmacists were KV Vet Supply, Vet Warehouse, and Lambriar Animal Health.

³² Average retail prices for the tablet human version of Lanoxin were not collected in Rep. Delahunt's district. As a substitute, the report uses the price at which the tablet version of Lanoxin is available through a major Internet pharmacy. Generally, prices in Rep. Delahunt's district are slightly higher than prices available at this Internet pharmacy.

Table 3: Retail-Level Prices Are More Expensive for Human Consumers in Rep. Delahunt's District than for Animal Owners.

Drug	Average Retail Price (Monthly Supply)		Price Differential (%)
	Price at Veterinary Pharmacy	Retail Price for Humans	
Augmentin	\$25.84	\$92.48	258%
Bactroban	\$14.50	\$49.11	239%
Lasix	\$5.37	\$17.65	229%
Lodine	\$65.25	\$153.39	135%
Amoxil	\$15.29	\$33.48	119%
Lanoxin	\$5.41	\$41.76 (\$4.39)	672% (-23%)
Vasotec	\$91.41	\$104.88	15%
Average Price Differential			238% (139%)

IV. DRUG PRICES FOR UNINSURED CONSUMERS IN SOUTHEASTERN MASSACHUSETTS COULD BE SIGNIFICANTLY REDUCED BY PREVENTING PRICE DISCRIMINATION

The price comparisons described in part III show that drug manufacturers charge different prices for drugs intended for human use than for drugs intended for animal use. This part assesses the impact that this manufacturer-level price discrimination has on human drug prices for consumers in Rep. Delahunt's district.

To make this assessment, the report estimates the potential cost savings for consumers in Southeastern Massachusetts if drug manufacturers did not engage in price discrimination and instead charged the same price for human drugs that they now charge for animal drugs. Experts state that drug wholesalers and retail pharmacies are highly competitive and are likely to pass any cost savings on to consumers. According to Professor Stephen W. Schondelmeyer, "[a]ny discounts passed on to community pharmacies will be passed on to the consumer, or payor, of the prescription because of the competitive retail environment."³³ For this reason, the analysis assumes that the reductions in the manufacturer-level price will be passed on to the pharmacist by the human drug wholesaler and to the consumer by the pharmacist.

Under these circumstances, the potential savings would be substantial for consumers in Rep. Delahunt's district who purchase their own drugs, such as senior citizens without prescription drug insurance. For example, the average retail cost of purchasing a one month supply of the blood pressure

³³ Schondelmeyer, Stephen W., PRIME Institute, University of Minnesota, *Competition and Pricing Issues in the Pharmaceutical Market*, University of Minnesota, 12 (Aug. 1994).

medication Vasotec in Southeastern Massachusetts is \$104.88. If this price were reduced by \$27.25, which is the difference between the manufacturer-level price for human use and the manufacturer-level price for animal use, a consumer in Rep. Delahunt’s district would pay only \$77.63 for a one-month supply. On an annual basis, this consumer would save over \$325.

In dollar terms, consumers in Rep. Delahunt’s district who purchase Lodine would realize the greatest savings. Their drug costs would drop by over \$70 for a one-month supply. Table 4 summarizes the potential savings for each of the eight popular drugs analyzed in this report. The average savings for the eight popular drugs would be 21% to 33%.

Table 4: Consumers in Southeastern Massachusetts Could Save Hundreds of Dollars if Drug Manufacturers Did Not Engage in Price Discrimination.

Drug	Average Retail Price in the Massachusetts (Monthly Supply)	Potential Savings (Dollars)	Potential Savings (%)
Lodine	\$153.39	\$71.10	46%
Bactroban	\$49.11	\$21.58	44%
Augmentin	\$92.48	\$38.40	42%
Stadol	\$104.51	\$35.63	34%
Lasix	\$17.65	\$4.80	27%
Vasotec	\$104.88	\$27.25	26%
Lanoxin	\$41.76 (\$4.39)	\$19.29 (-\$2.28)	46% (-52%)
Amoxil	\$33.48	-\$0.90	-3%
Average Savings			33% (21%)

These estimates of the potential savings for uninsured consumers in Rep. Delahunt’s district should be considered upper-bound estimates. The estimates assume that drug manufacturers sell their products to human drug wholesalers at the same price that they are now selling their products to animal drug wholesalers. In reality, drug manufacturers could choose to sell to both markets at a price between their current animal and human prices. Moreover, representatives of the drug manufacturers have argued that pharmacists would not pass along all of the cost savings to uninsured consumers. These factors could reduce the potential savings.

V. QUALITY DIFFERENCES AND RESEARCH COSTS DO NOT APPEAR TO EXPLAIN THE PRICE DIFFERENTIALS

This report examined several possible explanations for the substantial manufacturer-level price differences observed between the drugs intended for human use and the drugs intended for animal use. The most probable explanation appears to be that price discrimination is a central component of the drug manufacturers’ pricing strategies.

A. Drug Quality and Production Costs

It appears unlikely that differences in drug quality can explain the results observed in this study. The Food and Drug Administration regulations governing drug quality and production, the so-called “good manufacturing practice” (GMP) requirements, are codified in 21 C.F.R. part 211. These requirements, which are designed to ensure drug quality and consistency, apply equally to both human and animal drugs. According to FDA:

The methods, facilities, and controls under which animal drugs are manufactured, processed, packaged, or held for sale must conform to the requirements of the regulations for Current Good Manufacturing Practices in the drug industry generally.³⁴

Differences in production costs are also unlikely to be the cause of the high price differentials because production costs are only a small part of the final cost of a prescription drug. The typical marginal cost of manufacturing additional volumes of a medication has been estimated to be only 5% of the retail cost.³⁵ Thus, even large differences in drug production costs would be unlikely to result in the differences in drug prices observed in this study.

B. Research and Development Costs

Drug manufacturers frequently point to the costs of research and development as a justification for high prices. However, differences in research and development costs do not appear to explain the differences in cost between identical human and animal drugs.

Research costs are fixed or sunk and do not directly account for the pricing strategy of the cost of a product to consumers. Manufacturers set their prices in order to maximize revenue, not to recover fixed costs such as research. For example, Lanoxin, the drug with the highest price differential among the 200 most popular drugs in a direct price comparison, has been on the market since 1952. The research costs for this drug have long since been recovered. Debra Stern, vice president of Rxperts, a drug-benefit consulting company, explains, “Drug companies are ... pricing whatever the market will bear.”³⁶

Moreover, according to industry analysts, pharmaceutical manufacturers are “investing heavily” in research and development of animal drugs.³⁷ Relative to the size of the markets, drug manufacturers

³⁴ U.S. Food and Drug Administration, *Requirements of Laws and Regulations Enforced by the U.S. Food and Drug Administration* (1999) (online at <http://www.fda.gov/opacom/morechoices/smallbusiness/blubook.htm#animalprod.html>).

³⁵ Alan Sager and Deborah Socolar, *Affordable Medications for Americans* (July 27, 1999).

³⁶ *Relief for the Rx Blues*, Consumer Reports, 41 (Oct. 1999).

³⁷ Newsweek, *When Pets Pop Pills* (Oct. 11, 1999).

appear to spend approximately as much on research and development of animal drugs as they do on research and development of human drugs. Pfizer, an industry leader in animal drug sales, had revenues of \$1.3 billion from animal drugs in 1998, and spent approximately \$200 million – over 15% of total sales – on research of animal drugs.³⁸ Pfizer also spent approximately the same proportion of revenues, 17%, on its drug products intended for sale to humans.³⁹

The high research investment in animal drugs is confirmed by the pharmaceutical industry, which states:

All animal health products go through a stringent seven-step process that involves testing to discover a product, testing to approve the product, and testing to monitor the product once it's been approved....Bringing an animal health product to market is a complex process. Only one in 20,000 discovered chemicals ever makes it from the laboratory to the farm. And only one in 200 potential drugs makes it through pre-clinical testing and approval.⁴⁰

VI. CONCLUSION

The findings in this report are consistent with the results of Rep. Delahunt's two earlier drug pricing studies. The first study found that uninsured seniors in Southeastern Massachusetts pay 134% more for the five most popular prescription drugs used by seniors than favored purchasers such as HMOs and the federal government.⁴¹ The second study found that uninsured seniors in Rep. Delahunt's district pay 98% more for these prescription drugs than individual purchasers in Canada, and 95% more than individual purchasers in Mexico.⁴² All three studies thus reach the same basic finding: drug manufacturers are engaged in systematic price discrimination that adversely affects millions of senior citizens and other consumers who lack prescription drug coverage.

³⁸ Pfizer, Inc., *1998 Annual Report* (1999); Los Angeles Times, *Animal Drugs Become Big Pet Project for Industry* (Oct. 12, 1999).

³⁹ Pfizer, Inc., *1998 Annual Report* (1999).

⁴⁰ Animal Health Institute, *Testing...testing....testing: Food Safety and Animal Drugs* (May 1999).

⁴¹ *Prescription Drug Pricing in the Tenth Congressional District in Massachusetts: Drug Companies Profit at the Expense of Older Americans*, *supra* note 12.

⁴² *Prescription Drug Pricing in the 10th Congressional District in Massachusetts: An International Price Comparison*, *supra* note 13.

Appendix A: Information on Popular Prescription Drugs in this Survey

Human Brand Name	Animal Brand Name	Dosage	Average Manufacturer Charge per Dosage		Typical One Month Prescription	Average Manufacturer Charge per Monthly Prescription	
			Animal	Human		Animal	Human
Amoxil	Robamox	250 mg. cap. (human); 200 mg. cap. (animal)	\$0.14/cap.	\$0.17/cap.	90 cap.	\$16.20	\$15.30
Augmentin	Clavamox	125 mg. tab.	\$0.30/tab.	\$0.94/tab.	60 tab.	\$18.00	\$56.40
Bactroban	Bactoderm	2%, 30 gm. (human); 2%, 15 gm. (animal)	\$4.99/15 gm.	\$31.56/30 gm.	30 gm.	\$9.98	\$31.56
Lanoxin (liquid)	Cardoxin LS	50 µg./ml., 2 oz.	\$6.36	\$25.65	3 gm. active ingredient 30 tab.	\$6.36	\$25.65
Lanoxin (tab.)	NA	0.125 mg	NA	\$0.17/tab.		NA	\$5.10 ⁴³
Lasix	Lasix	20 mg. tab. (human); 12.5 mg. tab. (animal)	\$0.05/cap.	\$0.16/cap.	60 cap.	\$4.80	\$9.60
Lodine	Etogesic	300 mg. cap./tab.	\$0.42/tab.	\$1.21/cap.	90 cap.	\$37.80	\$108.90
Stadol	Torbugesic	2 mg./ml., 10 ml.	\$25.48	\$61.11	10 ml.	\$25.48	\$61.11
Vasotec	Enacard	5 mg. tab.	\$0.57/tab.	\$0.88/tab.	90 tab.	\$51.30	\$78.55

⁴³ The manufacturer-level price for thirty 0.125 mg Lanoxin tablets is \$5.10. These 30 tablets contain a total of 3.75 grams of active ingredient. The liquid version of the product contains 3 grams of active ingredient. In order to obtain a direct comparison of prices for these products, the analysis determined the cost of 3 grams of active ingredient in the tablet form. This cost is (3/3.75)*(\$5.10) = \$4.08.

Appendix B: Information on Directly Comparable Prescription Drugs in this Survey

Human Brand Name	Animal Brand Name	Dosage (Tablet or Capsule)	Average Manufacturer Charge per Dosage		Typical One Month Prescription	Average Manufacturer Charge per Monthly Prescription	
			Animal	Human		Animal	Human
Cleocin	Antirobe	75 mg.	\$0.57	\$0.74	30 cap.	\$17.10	\$22.20
Fulvicin U/F	Fulvicin U/F	500 mg.	\$1.28	\$1.22	30 cap.	\$38.40	\$36.60
Lodine	Etogesic	300 mg.	\$0.42	\$1.20	90 cap.	\$37.80	\$108.90
Medrol	Medrol	4 mg.	\$0.13	\$0.67	30 tab.	\$3.90	\$20.10
Robaxin	Robaxin	500 mg.	\$0.25	\$0.51	60 tab.	\$15.00	\$31.20
Robinul	Robinul-V	1 mg.	\$0.49	\$0.50	60 tab.	\$29.40	\$29.98
Vasotec	Enacard	5 mg.	\$0.57	\$0.87	90 tab.	\$51.30	\$78.55
Winstrol	Winstrol-V	2 mg.	\$0.18	\$0.64	30 tab.	\$5.40	\$19.20