

Appendix:
Detailed Results from the PhRMA
Annual Membership Survey



LIST OF TABLES

Table Number and Title	Page Number
R&D, PhRMA MEMBER COMPANIES	
1. Growth in Domestic R&D and R&D Abroad, Ethical Pharmaceuticals, PhRMA Member Companies, 1970-2001	75
2. Domestic R&D as a Percentage of Domestic Sales, Ethical Pharmaceuticals, PhRMA Member Companies, 1970-2001	76
3. Domestic R&D and R&D Abroad, Ethical Pharmaceuticals, PhRMA Member Companies, 1998-2001	77
4. Domestic R&D and R&D Abroad, Ethical Pharmaceuticals, PhRMA Member Companies, 1998-2000	78
5. Domestic R&D by Function, Ethical Pharmaceuticals, PhRMA Member Companies, 1998-2000	79
6. Domestic R&D by Product Class, Ethical Pharmaceuticals, PhRMA Member Companies, 1999-2000	80
7. R&D Abroad by Product Class, Ethical Pharmaceuticals, PhRMA Member Companies, 1999-2000	81
8. R&D Abroad by Geographic Area, Ethical Pharmaceuticals, PhRMA Member Companies, 2000	82
9. Domestic Capital Expenditures, PhRMA Member Companies, 1997-2001	83
SALES, PhRMA MEMBER COMPANIES	
10. Growth in Domestic Sales and Sales Abroad, Ethical Pharmaceuticals, PhRMA Member Companies, 1970-2001	84
11. Domestic Sales and Sales Abroad by Product Form and End Use, Ethical Pharmaceuticals, PhRMA Member Companies, 2000	85
12. Domestic Sales by Product Type, Human-Use, Dosage-Form, Ethical Pharmaceuticals, PhRMA Member Companies, 2000	86
13. Domestic Sales by Class of Customer, Human-Use, Dosage-Form, Ethical Pharmaceuticals, PhRMA Member Companies, 2000	87
14. Domestic Sales by Product Class, Human-Use, Dosage-Form, Prescription Legend, Ethical Pharmaceuticals, PhRMA Member Companies, 2000	88
15. Sales Abroad by Product Class, Human-Use, Dosage-Form, Ethical Pharmaceuticals, PhRMA Member Companies, 2000	89
16. Sales Abroad by Geographic Area, Ethical Pharmaceuticals, PhRMA Member Companies, 2000	90
EMPLOYMENT, PhRMA MEMBER COMPANIES	
17. Domestic Personnel, PhRMA Member Companies, 1990-2000	91
18. Domestic R&D Personnel by Position Level, PhRMA Member Companies, 1999-2000	91
19. Domestic Scientific and Professional R&D Personnel by R&D Function, PhRMA Member Companies, 1999-2000	92
GLOSSARY—PhRMA ANNUAL MEMBERSHIP SURVEY	93
MEMBER COMPANIES	97

R & D , P h R M A M E M B E R C O M P A N I E S

TABLE 1
GROWTH IN DOMESTIC R&D AND R&D ABROAD, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1970-2001

(dollar figures in millions)

Year	Domestic R&D	Annual Percentage Change	R&D Abroad	Annual Percentage Change	Total R&D	Annual Percentage Change
*2001	\$23,887.8	11.8%	\$6,454.9	38.3%	\$30,342.7	16.6%
2000	21,363.7	15.7%	4,667.1	10.6%	26,030.8	14.7%
1999	18,471.1	7.4%	4,219.6	9.9%	22,690.7	8.2%
1998	17,127.9	11.0%	3,839.0	9.9%	20,966.9	10.8%
1997	15,466.0	13.9%	3,492.1	6.5%	18,958.1	12.4%
1996	13,627.1	14.8%	3,278.5	-1.6%	16,905.6	11.2%
1995	11,874.0	7.0%	3,333.5	* *	15,207.4	* *
1994	11,101.6	6.0%	2,347.8	3.8%	13,449.4	5.6%
1993	10,477.1	12.5%	2,262.9	5.0%	12,740.0	11.1%
1992	9,312.1	17.4%	2,155.8	21.3%	11,467.9	18.2%
1991	7,928.6	16.5%	1,776.8	9.9%	9,705.4	15.3%
1990	6,802.9	13.0%	1,617.4	23.6%	8,420.3	14.9%
1989	6,021.4	15.0%	1,308.6	0.4%	7,330.0	12.1%
1988	5,233.9	16.2%	1,303.6	30.6%	6,537.5	18.8%
1987	4,504.1	16.2%	998.1	15.4%	5,502.2	16.1%
1986	3,875.0	14.7%	865.1	23.8%	4,740.1	16.2%
1985	3,378.7	13.3%	698.9	17.2%	4,077.6	13.9%
1984	2,982.4	11.6%	596.4	9.2%	3,578.8	11.2%
1983	2,671.3	17.7%	546.3	8.2%	3,217.6	16.0%
1982	2,268.7	21.3%	505.0	7.7%	2,773.7	18.6%
1981	1,870.4	20.7%	469.1	9.7%	2,339.5	18.4%
1980	1,549.2	16.7%	427.5	42.8%	1,976.7	21.5%
1979	1,327.4	13.8%	299.4	25.9%	1,626.8	15.9%
1978	1,166.1	9.7%	237.9	11.6%	1,404.0	10.0%
1977	1,063.0	8.1%	213.1	18.2%	1,276.1	9.7%
1976	983.4	8.8%	180.3	14.1%	1,163.7	9.6%
1975	903.5	13.9%	158.0	7.0%	1,061.5	12.8%
1974	793.1	12.0%	147.7	26.3%	940.8	14.0%
1973	708.1	8.1%	116.9	64.0%	825.0	13.6%
1972	654.8	4.5%	71.3	24.9%	726.1	6.2%
1971	626.7	10.7%	57.1	9.2%	683.8	10.6%
1970	566.2	----	52.3	----	618.5	----
Average		12.9%		16.8%		13.5%

* Estimated * * R&D Abroad affected by merger and acquisition activity.

Notes: 1. R&D expenditures for ethical pharmaceuticals only. 2. Domestic R&D includes expenditures within the United States by PhRMA member companies.
3. R&D Abroad includes expenditures outside the United States by U.S.-owned PhRMA member companies and R&D conducted abroad by U.S. divisions of foreign-owned PhRMA member companies. 4. Increases in R&D expenditures are likely due to a more rigorous data collection methodology.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 2
DOMESTIC R&D AS A PERCENTAGE OF DOMESTIC SALES, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1970-2001

(dollar figures in millions)

Year	Domestic R&D	Domestic Sales	US Exports * *	R&D as % of Sales
*2001	\$23,887.8	\$130,673.9	\$4,005.8	17.7%
2000	\$21,363.7	\$115,881.8	\$3,638.3	17.9%
1999	\$18,471.1	\$101,461.8	\$3,766.6	17.6%
1998	\$17,127.9	\$81,289.2	\$4,462.0	20.0%
1997	\$15,466.0	\$71,761.9	\$4,025.9	20.4%
1996	\$13,576.4	\$64,741.4	\$3,794.4	19.8%
1995	\$11,833.9	\$57,145.5	\$3,993.3	19.4%
1994	\$11,100.8	\$50,740.4	\$3,606.1	20.4%
1993	\$10,473.0	\$48,590.9	\$3,982.7	19.9%
1992	\$9,309.1	\$48,095.5	\$4,042.7	17.9%
1991	\$7,923.6	\$44,304.5	\$3,523.5	16.6%
1990	\$6,800.1	\$38,486.7	\$3,420.6	16.2%
1989	\$6,019.3	\$32,706.6	\$3,145.8	16.8%
1988	\$5,228.7	\$28,582.6	\$2,686.2	16.7%
1987	\$4,503.2	\$25,879.1	\$2,013.3	16.1%
1986	\$3,870.9	\$23,658.8	\$2,044.2	15.1%
1985	\$3,370.7	\$20,742.5	\$1,556.9	15.1%
1984	\$2,976.4	\$19,026.1	\$1,340.8	14.6%
1983	\$2,663.1	\$16,805.0	\$1,335.7	14.7%
1982	\$2,265.6	\$14,743.9	\$1,446.3	14.0%
1981	\$1,866.2	\$12,665.0	\$1,393.8	13.3%
1980	\$1,544.1	\$11,788.6	\$1,219.3	11.9%
1979	\$1,319.8	\$10,651.3	\$1,154.8	11.2%
1978	\$1,159.1	\$9,580.5	\$1,064.7	10.9%
1977	\$1,053.0	\$8,550.4	\$947.6	11.1%
1976	\$973.6	\$7,951.0	\$894.8	11.0%
1975	\$894.5	\$7,135.7	\$753.7	11.3%
1974	\$784.5	\$6,470.4	\$734.0	10.9%
1973	\$697.5	\$5,686.5	\$565.6	11.2%
1972	\$648.0	\$5,210.1	\$377.9	11.6%
1971	\$619.6	\$5,144.9	\$382.4	11.2%
1970	\$558.6	\$4,552.5	\$344.1	11.4%

* Estimated ** U.S. Exports to Affiliated Firms

Notes: 1. Sales for ethical pharmaceuticals only. 2. Domestic R&D includes expenditures within the United States, by PhRMA member companies.
3. Sales Basis: Reporting basis is net Domestic Sales plus U.S. Exports.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 3
DOMESTIC R&D AND R&D ABROAD, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1998-2001

(dollar figures in millions)

	1998	1999	2000	*2001
Company-Financed R&D Expenditures for Human-Use Pharmaceuticals				
Amount Spent in the United States	\$16,849.8	\$18,144.8	\$21,100.9	\$23,643.1
Percentage Spent in the United States	80.4%	80.0%	81.1%	77.9%
Amount Spent Abroad	\$3,714.4	\$4,096.8	\$4,561.0	\$6,336.6
Percentage Spent Abroad	17.7%	18.1%	17.5%	20.9%
TOTAL Human-Use R&D	\$20,564.2	\$22,241.6	\$25,661.9	\$29,979.7
	98.1%	98.0%	98.6%	98.8%
Company-Financed R&D Expenditures for Veterinary-Use Pharmaceuticals				
Amount Spent in the United States	\$278.1	\$326.3	\$262.8	\$244.7
Percentage Spent in the United States	1.3%	1.4%	1.0%	0.8%
Amount Spent Abroad	\$124.6	\$122.8	\$106.1	\$118.3
Percentage Spent Abroad	0.6%	0.5%	0.4%	0.4%
TOTAL Veterinary R&D	\$402.7	\$449.1	\$368.9	\$363.0
	1.9%	2.0%	1.4%	1.2%
TOTAL Company-Financed R&D for Pharmaceuticals	\$20,966.9	\$22,690.7	\$26,030.8	\$30,342.7
	100.0%	100.0%	100.0%	100.0%

* Estimated

Notes: 1. Company-financed R&D expenditures for ethical pharmaceuticals only. 2. Domestic R&D includes expenditures within the United States by PhRMA member companies. 3. R&D Abroad includes expenditures outside the United States by U.S.-owned PhRMA member companies and R&D conducted abroad by U.S. divisions of foreign-owned PhRMA member companies.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 4
DOMESTIC R&D AND R&D ABROAD, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1998-2000

Domestic R&D	1998	1999	2000
Research for the advancement of scientific knowledge and development of new products and related services	81.6%	78.5%	79.0%
Research oriented to significant improvements and/or modification of existing products	18.4%	21.5%	21.0%
TOTAL	100.0%	100.0%	100.0%
<hr/>			
R&D Abroad	1998	1999	2000
Research for the advancement of scientific knowledge and development of new products and related services	78.1%	74.8%	82.3%
Research oriented to significant improvements and/or modification of existing products	21.9%	25.2%	17.7%
TOTAL	100.0%	100.0%	100.0%

Notes: 1. Company-financed R&D expenditures for ethical pharmaceuticals only. 2. Domestic R&D includes expenditures within the United States by PhRMA member companies. 3. R&D Abroad includes expenditures outside the United States by U.S.-owned PhRMA member companies and R&D conducted abroad by U.S. divisions of foreign-owned PhRMA member companies.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 5
DOMESTIC R&D BY FUNCTION, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1998-2000

(dollar figures in millions)

Function	1998		1999		2000	
	Dollars	Share	Dollars	Share	Dollars	Share
Synthesis and Extraction	\$2,066.7	12.0%	\$1,763.1	10.0%	\$1,987.7	9.3%
Biological Screening and Pharmacological Testing	\$2,600.5	15.1%	\$2,508.1	14.2%	\$2,582.9	12.1%
Toxicology and Safety Testing	\$895.5	5.2%	\$802.1	4.5%	\$872.1	4.1%
Pharmaceutical Dosage Formulation and Stability Testing	\$1,550.0	9.0%	\$1,290.6	7.3%	\$1,081.3	5.1%
Clinical Evaluation: Phase I, II, and III	\$4,873.9	28.3%	\$5,139.5	29.1%	\$5,464.6	25.6%
Clinical Evaluation: Phase IV	\$998.9	5.8%	\$2,060.5	11.7%	\$1,882.3	8.8%
Process Development for Manufacturing and Quality Control	\$1,705.0	9.9%	\$1,463.4	8.3%	\$1,499.9	7.0%
Regulatory: IND and NDA	\$757.7	4.4%	\$730.3	4.1%	\$644.2	3.0%
Bioavailability	\$413.4	2.4%	\$321.6	1.8%	\$327.8	1.5%
Other R&D	\$1,265.9	7.9%	\$1,594.3	9.0%	\$2,693.7	12.6%
Uncategorized Ethical Pharmaceutical R&D *	\$0.4	0.0%	\$797.6	4.3%	\$2,327.2	10.9%
TOTAL	\$17,127.9	100.0%	\$18,471.1	100.0%	\$21,363.7	100.0%

* Represents companies that provided total R&D expenditure figures, but not individual details.

Notes: 1. Company-financed R&D expenditures for ethical pharmaceuticals only. 2. Domestic R&D includes expenditures within the United States by PhRMA member companies.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 6
DOMESTIC R&D BY PRODUCT CLASS, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1999-2000

(dollar figures in millions)

Census Code	Pharmaceutical Preparations	1999		2000	
		Dollars	Share	Dollars	Share
28341	Affecting neoplasms, endocrine system, and metabolic diseases	\$4,130.2	22.4%	\$3,872.0	18.1%
28342	Acting on the central nervous system and sense organs	\$4,015.0	21.7%	\$3,955.4	18.5%
28343	Acting on the cardiovascular system	\$2,518.6	13.6%	\$2,305.0	10.8%
28344	Acting on the respiratory system	\$777.3	4.2%	\$696.6	3.3%
28345	Acting on the digestive or genito-urinary system	\$734.8	4.0%	\$846.7	4.0%
28346	Acting on the skin	\$118.5	0.6%	\$182.3	0.9%
28347	Vitamins and nutrients	--	--	\$0.2	0.0%
28348	Acting on infective and parasitic diseases	\$2,508.8	13.6%	\$2,717.0	12.7%
--	Biologicals	\$805.9	4.4%	\$664.5	3.1%
--	Diagnostic agents	\$2.3	0.0%	\$107.8	0.5%
--	Other human-use	\$1,729.9	9.4%	\$1,366.8	6.4%
--	Veterinary-use pharmaceutical preparations and biologicals	\$331.2	1.8%	\$349.9	1.6%
	Uncategorized Ethical Pharmaceutical R&D *	\$798.6	4.3%	\$4,299.5	20.1%
TOTAL		\$18,471.1	100.0%	\$21,363.7	79.9%

* Represents companies that provided total R&D expenditure figures, but not individual details.

Notes: 1. Company-financed R&D expenditures for ethical pharmaceuticals only. 2. Domestic R&D includes expenditures within the United States by PhRMA member companies. 3. All cholesterol-reducing products are classified as acting on the digestive and genito-urinary system. 4. Product codes correspond to those utilized by the U.S. Bureau of the Census in the *Current Industrial Reports: Pharmaceutical Preparations, Except Biologicals*. 5. Consult the glossary for a full description of product classes.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 7
R&D ABROAD BY PRODUCT CLASS, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1999-2000

(dollar figures in millions)

Census Code	Pharmaceutical Preparations	1999		2000	
		Dollars	Share	Dollars	Share
28341	Affecting neoplasms, endocrine system, and metabolic diseases	\$1,198.0	28.4%	\$1,013.9	21.7%
28342	Acting on the central nervous system and sense organs	\$1,226.8	29.1%	\$705.5	15.1%
28343	Acting on the cardiovascular system	\$345.5	8.2%	\$572.0	12.3%
28344	Acting on the respiratory system	\$110.4	2.6%	\$130.2	2.8%
28345	Acting on the digestive or genito-urinary system	\$355.8	8.4%	\$419.9	9.0%
28346	Acting on the skin	\$77.4	1.8%	\$8.8	0.2%
28347	Vitamins and nutrients	\$1.1	0.0%	\$0.7	0.0%
28348	Acting on infective and parasitic diseases	\$381.4	9.0%	\$531.0	11.4%
--	Biologicals	\$24.0	0.6%	\$76.0	1.6%
--	Diagnostic agents	--	0.0%	--	0.0%
--	Other human-use	\$267.6	6.3%	\$614.1	13.2%
--	Veterinary-use pharmaceutical preparations and biologicals	\$90.5	2.1%	\$152.0	3.3%
	Uncategorized Ethical Pharmaceutical R&D *	\$141.1	3.3%	\$443.0	9.5%
TOTAL		\$4,219.6	100.0%	\$4,667.1	100.0%

* Represents companies that provided total R&D expenditure figures, but not individual details.

Notes: 1. Company-financed R&D expenditures for ethical pharmaceuticals only. 2. R&D Abroad includes expenditures outside the United States by U.S.-owned PhRMA member companies and R&D conducted abroad by U.S. divisions of foreign-owned PhRMA member companies. 3. All cholesterol-reducing products are classified as acting on the digestive and genito-urinary system. 4. Product codes correspond to those utilized by the U.S. Bureau of the Census in the *Current Industrial Reports: Pharmaceutical Preparations, Except Biologicals*. 5. Consult the glossary for a full description of product classes.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 8
R&D ABROAD BY GEOGRAPHIC AREA, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 2000

(dollar figures in millions)

Geographic Area	Dollars	Share
Africa	\$11.1	0.2%
Asia/Pacific (from Pakistan to Southeast Asia, including China, Taiwan, and the Koreas)	\$40.3	0.9%
Australia and New Zealand	\$53.1	1.1%
Canada	\$245.7	5.3%
Central and Eastern Europe (including ex-USSR)	\$242.8	5.2%
Japan	\$564.1	12.1%
Latin America (including all Caribbean nations)	\$139.5	3.0%
Middle East (including Turkey)	\$59.1	1.3%
Western Europe (European Community, European Free Trade Association, and Switzerland)	\$2,441.2	52.3%
Uncategorized Ethical Pharmaceutical R&D Abroad *	\$870.2	18.6%
TOTAL	\$4,667.1	100.0%

* Represents companies that provided total R&D expenditure figures, but not individual details.

Notes: 1. Company-financed R&D expenditures for ethical pharmaceuticals only. 2. R&D Abroad includes expenditures outside the United States by U.S.-owned PhRMA member companies and R&D conducted abroad by U.S. divisions of foreign-owned PhRMA member companies.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 9
DOMESTIC CAPITAL EXPENDITURES,
PhRMA MEMBER COMPANIES, 1997-2001

(dollar figures in millions)

	Specific R&D Investments in Plants and Equipment Expenditures	All Other Capital Expenditures*	Depreciation Expense
1997:			
Expenditures	\$1,255.3	\$504.6	\$785.0
Number of Responding Firms	28	25	29
1998:			
Expenditures	\$1,665.5	\$649.3	\$845.3
Number of Responding Firms	28	25	29
1999:			
Expenditures	\$1,961.8	\$761.1	\$1,872.3
Number of Responding Firms	29	21	31
2000:			
Expenditures	\$1,867.8	\$487.0	\$844.8
Number of Responding Firms	29	29	29
2001: * *			
Expenditures	\$2,524.6	\$679.9	\$885.1
Number of Responding Firms	26	26	26

* Includes general upgrades of capabilities in equipment, buildings, and improvements not specifically related to a project or program.

* * Estimated

Notes: 1. No estimation has been done for nonrespondents.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

SALES, PhRMA MEMBER COMPANIES

TABLE 10
GROWTH IN DOMESTIC SALES AND SALES ABROAD, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 1970-2001

(dollar figures in millions)

Year	Domestic Sales	Annual Percentage Change	Sales Abroad	Annual Percentage Change	Total Sales	Annual Percentage Change
*2001	\$130,673.9	12.8%	\$47,916.2	6.0%	\$178,590.1	10.9%
2000	\$115,881.8	14.2%	\$45,199.5	1.6%	\$161,081.3	10.4%
1999	\$101,461.8	24.8%	\$44,496.6	2.7%	\$145,958.4	17.1%
1998	\$81,289.2	13.3%	\$43,320.1	10.8%	\$124,609.4	12.4%
1997	\$71,761.9	10.8%	\$39,086.2	6.1%	\$110,848.1	9.1%
1996	\$64,741.4	13.3%	\$36,838.7	8.7%	\$101,580.1	11.6%
1995	\$57,145.5	12.6%	\$33,893.5	* *	\$91,039.0	* *
1994	\$50,740.4	4.4%	\$26,870.7	1.5%	\$77,611.1	3.4%
1993	\$48,590.9	1.0%	\$26,467.3	2.8%	\$75,058.2	1.7%
1992	\$48,095.5	8.6%	\$25,744.2	15.8%	\$73,839.7	11.0%
1991	\$44,304.5	15.1%	\$22,231.1	12.1%	\$66,535.6	14.1%
1990	\$38,486.7	17.7%	\$19,838.3	18.0%	\$58,325.0	17.8%
1989	\$32,706.6	14.4%	\$16,817.9	-4.7%	\$49,524.5	7.1%
1988	\$28,582.6	10.4%	\$17,649.3	17.1%	\$46,231.9	12.9%
1987	\$25,879.1	9.4%	\$15,068.4	15.6%	\$40,947.5	11.6%
1986	\$23,658.8	14.1%	\$13,030.5	19.9%	\$36,689.3	16.1%
1985	\$20,742.5	9.0%	\$10,872.3	4.0%	\$31,614.8	7.3%
1984	\$19,026.1	13.2%	\$10,450.9	0.4%	\$29,477.0	8.3%
1983	\$16,805.0	14.0%	\$10,411.2	-2.4%	\$27,216.2	7.1%
1982	\$14,743.9	16.4%	\$10,667.4	0.1%	\$25,411.3	9.0%
1981	\$12,665.0	7.4%	\$10,658.3	1.4%	\$23,323.3	4.6%
1980	\$11,788.6	10.7%	\$10,515.4	26.9%	\$22,304.0	17.8%
1979	\$10,651.3	11.2%	\$8,287.8	21.0%	\$18,939.1	15.3%
1978	\$9,580.5	12.0%	\$6,850.4	22.2%	\$16,430.9	16.1%
1977	\$8,550.4	7.5%	\$5,605.0	10.2%	\$14,155.4	8.6%
1976	\$7,951.0	11.4%	\$5,084.3	9.7%	\$13,035.3	10.8%
1975	\$7,135.7	10.3%	\$4,633.3	19.1%	\$11,769.0	13.6%
1974	\$6,740.4	13.8%	\$3,891.0	23.4%	\$10,631.4	17.2%
1973	\$5,686.5	9.1%	\$3,152.5	15.9%	\$8,839.0	11.5%
1972	\$5,210.1	1.3%	\$2,720.2	10.6%	\$7,930.3	4.3%
1971	\$5,144.9	13.0%	\$2,459.7	18.0%	\$7,604.6	14.6%
1970	\$4,552.5	--	\$2,084.0	--	\$6,636.5	--
Average		11.5%		10.5%		11.1%

* Estimated

* * Sales Abroad affected by merger and acquisition activity.

Notes: 1. Reporting basis for Sales is net of rebates and discounts. 2. Domestic Sales includes sales within the United States by all PhRMA member companies. Sales Abroad includes sales outside the United States by U.S.-owned PhRMA member companies.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 11
DOMESTIC SALES AND SALES ABROAD BY PRODUCT FORM AND END USE,
ETHICAL PHARMACEUTICALS, PhRMA MEMBER COMPANIES, 2000

(dollar figures in millions)

Product Form and End Use	To Private Sector	To Government	Uncategorized Domestic Sales* *	Total Domestic Sales	Exports To Other Customers	Sales Outside Of U.S.	Intrafirm Transactions	Uncategorized Sales Abroad* *	Total Sales Abroad	Total Sales
Dosage-Form, Human-Use	\$86,424.0	\$2,142.4	\$20,679.0	\$109,245.4	\$206.9	\$36,504.8	\$1,896.5	\$366.0	\$38,974.2	\$148,219.6
	58.3%	1.4%	14.0%	73.7%	0.1%	24.6%	1.3%	0.2%	26.0%	99.8%
Dosage-Form, Veterinary-Use	\$1,450.9	\$0.2	\$234.4	\$1,685.5	\$51.4	\$2,093.8	\$327.5	--	\$2,472.7	\$4,158.2
	34.9%	0.0%	5.6%	40.5%	1.2%	50.4%	7.9%	0.0%	59.5%	100.0%
Bulk Human	\$323.2	--	\$0.2	\$323.4	\$130.3	\$811.2	\$981.4	--	\$1,922.9	\$2,246.3
	14.4%	0.0%	0.0%	14.4%	5.8%	36.1%	43.7%	0.0%	85.6%	100.0%
Bulk Veterinary	\$28.3	--	--	\$28.3	\$10.8	\$46.3	\$149.7	--	\$206.8	\$235.1
	12.0%	0.0%		12.0%	4.6%	19.7%	63.7%	0.0%	88.0%	100.0%
Uncategorized Product Type *				\$4,599.2			\$283.2		\$1,622.9	\$6,222.1
				73.9%			4.6%		26.1%	100.0%
TOTAL	\$88,226.4	\$2,142.6	\$20,913.6	\$115,881.8	\$399.4	\$39,456.1	\$3,638.3	\$366.0	\$45,199.5	\$161,081.3

* Represents companies that provided total domestic sales and/or sales abroad, but not individual details.

* * Represents companies that provided total product-form and end-use sales, but not individual details.

Notes: 1. Sales are reported net of rebates and discounts. Sales figures may include marketing expenses, but not transportation costs. 2. Percentages are the share of the product-form and end-use total. 3. Export sales are f.o.b. U.S. port. Domestic sales are f.o.b. plant or warehouse. 4. Addition of Exports To Other Customers and Intrafirm Transactions will provide aggregate ethical pharmaceutical exports.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 12
DOMESTIC SALES BY PRODUCT TYPE, HUMAN-USE, DOSAGE-FORM,
ETHICAL PHARMACEUTICALS, PhRMA MEMBER COMPANIES, 2000

(dollar figures in millions)

Dosage-Form	To Private Sector	To Government	Uncategorized Customer* *	Total Domestic Sales
Prescription Legend	\$81,133.0	\$1,524.9	\$20,205.5	\$102,863.4
Over-the-Counter Ethical	\$1,178.5	\$2.9	\$195.1	\$1,376.5
Biologicals	\$3,661.2	\$534.1	\$245.2	\$4,440.5
Diagnostic Products	\$451.0	\$80.5	\$33.2	\$564.7
Other/Uncategorized Product Type *	\$0.3		--	\$0.3
TOTAL	\$86,424.0	\$2,142.4	\$20,679.0	\$109,245.4
	79.1%	2.0%	18.9%	100.0%

* Represents companies that provided total sales by customer, but not individual details.

* * Represents companies that provided total product type sales, but not individual details.

Notes: 1. Sales are reported net of rebates and discounts. 2. Domestic Sales include sales within the United States by all PhRMA member companies. 3. Prescription Legend—A drug product that by federal law is available only by prescription from a licensed physician or other licensed provider. 4. Over-the-Counter Ethical—A drug product sold over the counter but primarily promoted to the professions. This does not include proprietary drugs (i.e., OTC products on display for purchase by customers.) 5. Biologicals—Bacterial and virus vaccine, antigens, antitoxins, toxoids, and analogous products (such as allergy extracts), serums, plasmas, and other blood derivatives for human use. 6. Diagnostic products—Dosage-form, diagnostic agents for in vitro use.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 13
DOMESTIC SALES BY CLASS OF CUSTOMER, HUMAN-USE, DOSAGE-FORM,
ETHICAL PHARMACEUTICALS, PhRMA MEMBER COMPANIES, 2000

(dollar figures in millions)

Class of Customer	Sales	Market Share
Private-Sector Customers		
Wholesalers	\$58,645.6	53.7%
Retailers	\$6,889.4	6.3%
Manufacturers, Repackagers	\$4,302.6	3.9%
Practitioners	\$3,306.4	3.0%
Private Hospitals	\$630.2	0.6%
Uncategorized Private-Sector Customers *	\$12,649.8	11.6%
Public-Sector Customers		
Federal Hospitals	\$549.2	0.5%
Other Federal Government	\$997.6	0.9%
States and Local Government Hospitals	\$437.9	0.4%
Uncategorized Public-Sector Customers *	\$157.7	0.1%
Uncategorized Customers **	\$20,679.0	18.9%
TOTAL	\$109,245.4	100.0%

* Represents companies that provided total sales to public and/or private customers, but not individual details.

Notes: 1. Sales are reported net of rebates and discounts. 2. Domestic Sales include sales within the United States by all PhRMA member companies.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 14
DOMESTIC SALES BY PRODUCT CLASS, HUMAN-USE, DOSAGE-FORM,
PRESCRIPTION LEGEND, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 2000

(dollar figures in millions)

Census Code	Product Class	Prescription Legend	Share
28341	Affecting neoplasms, endocrine system, and metabolic diseases	\$14,479.4	14.1%
28342	Acting on the central nervous system and sense organs	\$23,651.3	23.0%
28343	Acting on the cardiovascular system	\$14,429.5	14.0%
28344	Acting on the respiratory system	\$7,037.6	6.8%
28345	Acting on the digestive or genito-urinary system	\$16,412.7	16.0%
28346	Acting on the skin	\$1,424.6	1.4%
28347	Vitamins and nutrients	\$441.7	0.4%
28348	Acting on infective and parasitic diseases	\$10,044.8	9.8%
	Other Human-Use/Uncategorized Ethical Pharmaceutical Sales *	\$14,941.8	14.5%
TOTAL		\$102,863.4	100.0%

* Represents companies that provided total sales figures, but not individual details.

Notes: 1. Sales are reported net of rebates and discounts. 2. Domestic Sales include sales within the United States by all PhRMA member companies. 3. All cholesterol-reducing products are classified as acting on the digestive and genito-urinary system. 4. Product codes correspond to those utilized by the U.S. Bureau of the Census in the *Current Industrial Reports: Pharmaceutical Preparations, Except Biologicals*. 5. Consult the glossary for a full description of product classes. 6. The sales figures reported by PhRMA differ from the value of product shipments as reported by the government. See the glossary for a full definition of the sales basis used by PhRMA.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 15
SALES ABROAD BY PRODUCT CLASS, HUMAN-USE,
DOSAGE-FORM, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 2000

(dollar figures in millions)

Census Code	Product Class	Prescription Legend	Share
28341	Affecting neoplasms, endocrine system, and metabolic diseases	\$5,847.0	16.8%
28342	Acting on the central nervous system and sense organs	\$8,234.3	23.6%
28343	Acting on the cardiovascular system	\$6,045.6	17.4%
28344	Acting on the respiratory system	\$1,124.2	3.2%
28345	Acting on the digestive or genito-urinary system	\$5,585.2	16.0%
28346	Acting on the skin	\$723.0	2.1%
28347	Vitamins and nutrients	\$267.1	0.8%
28348	Acting on infective and parasitic diseases	\$5,967.2	17.1%
	Other Human-Use/Uncategorized Ethical Pharmaceutical Sales *	\$1,046.5	3.0%
TOTAL		\$34,840.1	100.0%

* Represents companies that provided total sales figures, but not individual details.

Notes: 1. Sales are reported net of rebates and discounts. 2. Sales Abroad includes sales outside the United States by U.S.-owned PhRMA member companies. 3. All cholesterol-reducing products are classified as acting on the digestive and genito-urinary system. 4. Product codes correspond to those utilized by the U.S. Bureau of the Census in the *Current Industrial Reports: Pharmaceutical Preparations, Except Biologicals*. 5. Consult the glossary for a full description of product classes. 6. The sales figures reported by PhRMA differ from the value of product shipments as reported by the government. See the glossary for a full definition of the sales basis used by PhRMA.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

TABLE 16
SALES ABROAD BY GEOGRAPHIC AREA, ETHICAL PHARMACEUTICALS,
PhRMA MEMBER COMPANIES, 2000

(dollar figures in millions)

Geographic Area	Dollars	Share
Africa	\$415.4	0.9%
Asia/Pacific (from Pakistan to Southeast Asia, including China, Taiwan, and the Koreas)	\$2,142.0	4.7%
Australia and New Zealand	\$1,122.9	2.5%
Canada	\$2,165.8	4.8%
Central and Eastern Europe (including ex-USSR)	\$896.0	2.0%
Japan	\$5,311.0	11.8%
Latin America (including all Caribbean nations)	\$3,814.4	8.4%
Middle East (including Turkey)	\$921.2	2.0%
Western Europe (European Community, European Free Trade Association, and Switzerland)	\$19,058.7	42.2%
Uncategorized Ethical Pharmaceutical Sales Abroad *	\$9,352.1	20.7%
TOTAL	\$45,199.5	100.0%

* Represents companies that provided total sales figures, but not individual details.

Notes: 1. Sales are reported net of rebates and discounts. 2. Sales Abroad includes sales outside the United States by U.S.-owned PhRMA member companies.

Source: *Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.*

EMPLOYMENT, PhRMA MEMBER COMPANIES

TABLE 17
DOMESTIC PERSONNEL,
PhRMA MEMBER COMPANIES, 1990-2000

Employment Function	1990	1995	1999	2000
Production, Quality Control	59,546	59,541	57,962	54,001
Medical R&D	43,952	49,409	45,192	51,588
Marketing	56,014	55,348	81,296	86,226
Administration	21,915	28,810	22,499	29,448
Distribution and Others	7,384	5,611	4,722	16,273
Uncategorized Personnel *				9,797
TOTAL	188,811	198,719	211,671	247,333

* Represents companies that provided total employee figures, but not individual details.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 18
DOMESTIC R&D PERSONNEL BY POSITION LEVEL,
PhRMA MEMBER COMPANIES, 1999-2000

Category	1999		2000	
	Personnel	Share	Personnel	Share
Scientific and Professional	57,149	82.2%	57,488	81.8%
Technical	5,293	7.6%	5,579	7.9%
Supporting Staff	6,897	9.9%	6,988	9.9%
Uncategorized Technical and Supporting Staff *	188	0.3%	243	0.3%
TOTAL	69,527	100.0%	70,298	100.0%

* Represents companies that provided total personnel figures, but not individual details.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

TABLE 19
DOMESTIC SCIENTIFIC AND PROFESSIONAL R&D PERSONNEL BY R&D FUNCTION,
PhRMA MEMBER COMPANIES, 1999-2000

Function	1999		2000	
	Personnel	Share	Personnel	Share
Synthesis and Extraction	7,544	13.2%	7,821	13.6%
Biological Screening and Pharmacological Testing	9,658	16.9%	10,014	17.4%
Toxicology and Safety Testing	3,886	6.8%	3,899	6.8%
Pharmaceutical Dosage Formulation and Stability Testing	5,086	8.9%	5,151	9.0%
Clinical Evaluation: Phase I, II, and III	14,402	25.2%	11,999	20.9%
Clinical Evaluation: Phase IV	3,543	6.2%	3,609	6.3%
Process Development for Manufacturing and Quality Control	4,686	8.2%	4,907	8.5%
Regulatory: IND and NDA	3,143	5.5%	3,221	5.6%
Bioavailability	1,543	2.7%	1,661	2.9%
Other	3,658	6.4%	5,206	9.1%
TOTAL	57,149	100.0%	57,488	100.0%

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2002.

GLOSSARY— PhRMA ANNUAL MEMBERSHIP SURVEY

General Definitions

Biologicals: Bacterial and virus vaccine, antigens, anti-toxins, toxoids and analogous products (such as allergenic extracts), serums, plasmas, and other blood derivatives for human use. Products obtained from living materials (eggs, cells, tissues, plants).

Bulk: Reflects a quantity of material for use as a pharmaceutical or medicinal product in further manufacture or in packaging by another company, or for processing in animal feeds (but not as nutritional ingredients), or in prescription compounding, etc.

Company or Firm: Manufacturers, including parent, affiliated, and subsidiary companies, engaged in production of ethical pharmaceuticals, biologicals, and diagnostic products.

Diagnostic Agents (in vivo): Products used in a living body to help determine a diagnosis as opposed to a treatment for a known disorder.

Ethical Pharmaceuticals: Products, including biological and medicinal chemicals, used for the cure, alleviation, mitigation, treatment, prevention, or diagnosis of disease in humans or animals and promoted primarily to the medical, pharmacy, and allied professions; includes products for over-the-counter (OTC) ethical sales as well as for ultimate dispensing by prescription only.

Over-the-Counter Ethical: A drug product sold over the counter but primarily promoted to the health professions. This does not include proprietary drug, (i.e., OTC products on display for purchase by consumers).

Prescription Legend: A drug product that by federal law is available only by prescription from a licensed physician or other licensed prescriber.

Product Class: Classification scheme used by the U.S. Department of Commerce, Bureau of the Census. Human-use product groups include:

- **Neoplasms and Endocrine (code 28341):** Pharmaceutical preparations affecting neoplasms, endocrine system, and metabolic diseases. Examples include antidiabetics, antineoplastic agents, corticoids, estrogens, and oral contraceptives.
- **Central Nervous System (code 28342):** Pharmaceutical preparations acting on the central nervous system and the sense organs. Examples include anticonvulsants, eye and ear preparations, internal analgesics, psychotherapeutics, and sedatives.
- **Cardiovasculars (code 28343):** Pharmaceutical preparations acting on the cardiovascular system. Examples include anticoagulants, hemostatics, hypotensives, and vasodilators.
- **Respiratory System (code 28344):** Pharmaceutical preparations acting on the respiratory system. Examples include antiasthmatics, antihistamines, and cough and cold preparations.
- **Gastrointestinal and Genito-urinary (code 28345):** Pharmaceutical preparations acting on the digestive or the genito-urinary systems. Examples include anti-diarrheals, antinauseants, and antispasmodic.
- **Dermatologicals (code 28346):**—Pharmaceutical preparations acting on the skin. Examples include antiacne preparations, emollients, and external analgesics.
- **Vitamins and Nutrients (code 28347):** Vitamin, nutrient, and hematinic preparations.
- **Anti-infectives (code 28348):** Pharmaceutical preparations affecting parasitic and infective diseases. Examples include antibiotics and antivirals.

Sales Definitions

Sales: Sales figures are reported as billed, F.O.B. plant or warehouse, less cash discounts, Medicaid rebates, and returns and allowances. Sales figures include all marketing expenses, but not transportation costs. Includes sales value of products bought and resold without further processing or repackaging as well as the dollar value of products made from own materials for other manufac-

turers' resale. Excluded are all royalty payments, interest, and other income.

U.S.-Affiliated Foreign Sales: Actual sales consummated in foreign countries by U.S.-owned PhRMA member companies. Category excludes U.S. Exports to Other Firms and Intrafirm Transactions. Sales by affiliates and subsidiaries or other operations abroad are reported in dollars, computed at December 31 rate of exchange (when possible) for the year shown. Where a partially owned subsidiary is involved, the firm's share is determined on a proportionate profit-sharing basis.

U.S. Exports: Sales reported as "F.O.B. U.S. port."

1. To Other Firms: Excludes intracompany transactions, includes sales to third parties only.

2. For Intracompany Transactions: Includes sales and shipments to subsidiaries or affiliates for further handling, processing, or finishing by them. Reported as net billed value, not end sales values.

Sales Abroad: U.S.-Affiliated Foreign Sales plus U.S. Exports to Other Firms and Intrafirm Transactions.

Sales by Product Class: Estimated distribution of domestic sales of ethical pharmaceutical and biological dosage-form preparations in accordance with the classification system used in the annual *Current Industrial Reports: Pharmaceutical Preparations, Except Biologicals*, available from the U.S. Bureau of the Census.

Sales to Governments: Sales or shipments made directly to federal, state, or local government agencies, hospitals, and clinics.

Sales to Private Sector: Sales through regular marketing channels for end-use other than by government agency administration or distribution.

Research and Development Definitions

Research and Development: The term includes basic and applied research as well as development activities carried on or supported in the pharmaceutical, biological, chemical, medical, and related sciences, including psychology and psychiatry, if the purpose of such activities is concerned ultimately with the utilization of scientific

principles in understanding diseases or in improving health.

Research and Development Expenditures: The total cost incurred for all pharmaceutical research and development activity, including cost of salaries, other direct costs, service, routine supplies, and supporting costs, plus a fair share of overhead (administration, depreciation, space charges, rent, etc.). Costs of drugs or medical research and development conducted on grant or contract for other companies are excluded. Conversely, total outlays for all research and development work contracted to others (manufacturers, independent research laboratories, academic institutions, etc.) are included.

Synthesis and Extraction: The processes involved in the chemical syntheses of compounds and/or their extraction from various natural sources.

Biological Screening and Pharmacological Testing: Studies conducted using various systems designed to explore the pharmacological activity of compounds. These may involve the use of whole animals, isolated cell cultures and tissues, enzymes, and cloned receptor sites, as well as computer models.

Toxicology and Safety Testing: The various tests conducted in whole animals and other test systems, such as cell cultures, to determine the relative toxicity of the compound to living systems. These are referred to as pre-clinical studies—whether conducted and evaluated prior to or after the administration of the compound to humans. This category includes carcinogenicity assays, which typically are interloped after the clinical phase has begun.

Pharmaceutical Dosage Formulation and Stability Testing: Those technical operations involved in incorporating an active compound into a dosage form suitable for administration to the patient; the development of analytical methodology to measure the active compound; and the techniques used to ensure that the compound is stable over the shelf life of the dosage form.

Clinical Evaluation Phase I—Safety Studies and Pharmacological Profiling: This phase determines the drug's safety, i.e., its safe dosage range, how it is absorbed,

distributed, metabolized and excreted, and the duration of its action. These tests involve a small number of normal healthy subjects (not patients). Phase I clinical testing can usually be conducted in less than one year.

Clinical Evaluation Phase II—Pilot Efficacy Studies: This phase consists of controlled studies in approximately 200 or 300 volunteer patients to assess the drug's effectiveness. Simultaneous animal and human studies continue to determine the drug's safety. Phase II clinical trials usually last about two years.

Clinical Evaluation Phase III—Extensive Clinical Trials: Here the testing moves to larger numbers of volunteer patients, usually 1,000 to 3,000, in clinics and hospitals. The drug is administered by practicing physicians to those suffering from the condition the drug is intended to treat. These studies must confirm earlier efficacy studies and identify low-incidence adverse reactions. Phase III clinical trials usually last about three years.

Clinical Evaluation Phase IV: Those studies conducted after approval, during general use of the drug by medical practitioners. Also referred to as post marketing studies.

Process Development for Manufacturing and Quality Control: The scale-up of production of bulk chemical and finished dosage forms from small research quantities to large quantities required for marketing. This includes the attendant quality control procedures required to maintain the safety and efficacy of the product for the duration of its shelf life.

Bioavailability Studies: *In vivo* studies conducted in healthy human volunteers required to ensure that the final marketed dosage formulation is bioequivalent to the dosage formulation used in Phase I, II, and III clinical tests. Bioavailability is the rate and extent to which an active drug ingredient or therapeutic moiety is absorbed from the drug product and becomes available at the site of drug action.

Research and Development Expenditures within Firm: Includes research and development expenditures in the United States and foreign countries in the firm's own research laboratories.

Research and Development Expenditures outside Firm:

Research and development funds contracted or granted to such organizations as commercial laboratories, private practitioners, consultants, educational institutions, nonprofit research institutions, manufacturing and other companies, or other research-performing organizations.

Employment Definitions

Employees: All full-time production workers as well as officers of the company, including employees engaged in the following activities: factory supervision above the working foreman level, sales, advertising, financial, clerical, executive, purchasing, legal, personnel, professional, and technical.

Research and Development Personnel: Company employees engaged in research, research administration, clinical evaluation, and development (excludes personnel in promotion, sales, market research, business administration, production, and quality control).

Research and Development Scientific and Professional Staff: Includes all persons whose work requires the application for research and development of knowledge, skills, and scientific techniques, in the life, physical, engineering, or mathematical sciences, acquired through the completion of college and possibly graduate courses with a major in these fields or in medicine or other health professions. Excludes persons who have formal training in the sciences but who are not actively engaged in R&D.

Research and Development Support Staff: Includes persons who provide literature, clinical, statistical, or other services specifically for R&D staff and technicians.

Research and Development Technicians: Includes persons actually engaged in technical work at a level that requires knowledge of the life, physical engineering, or mathematical sciences comparable at least to that acquired through technical institutes, junior colleges, or other formal post-high school training or experience. Persons with an academic degree at the bachelor's level or above are also included.

Production Workers: Employees up through the working foreman level engaged in fabricating, processing, assembling, receiving, inspection, quality control, handling, packing, warehousing and storage, shipping, maintenance, repair, production development, record keeping, and other services associated with the production operations.

Medical Research and Development Employees: Personnel engaged in research, research administration, clinical evaluation, and development; excludes personnel in

promotion, sales, market research, business administration, production, and quality control.

Marketing Employees: Personnel in sales, advertising, sales promotion, market research, etc.

Administrative Employees: Personnel responsible for general management, accounting, finance, planning, personnel, purchasing, office services, legal, secretarial, etc.

Distribution Employees: Personnel responsible for distribution, including transportation and warehousing.

MEMBER COMPANIES

MEMBERS

Abbott Laboratories
Abbott Park, IL

Allergan, Inc.
Irvine, CA

American Home Products
Corporation
Madison, NJ
Wyeth-Ayerst
Pharmaceuticals
Wyeth-Ayerst Research

Amersham Health
Princeton, NJ

Amgen Inc.
Thousand Oaks, CA

AstraZeneca LP
Wilmington, DE

Aventis Pharma AG
Bridgewater, NJ
Aventis Pasteur
Aventis Pharmaceuticals, Inc.

Bayer Corporation
Pharmaceutical Division
West Haven, CT

Berlex Laboratories, Inc.
Montville, NJ (effective 4/02)

Biogen, Inc.
Cambridge, MA

Bio-Technology General Corp.
Iselin, NJ

Boehringer Ingelheim
Pharmaceuticals, Inc.
Ridgefield, CT

Bristol-Myers Squibb Company
New York, NY
Bristol-Myers Squibb Company
Worldwide Medicines Group

Elan Pharmaceuticals, Inc.
South San Francisco, CA

Fujisawa Healthcare, Inc.
Deerfield, IL

Genzyme Corporation
Cambridge, MA

Gilead Sciences, Inc.
Foster City, CA

GlaxoSmithKline
Research Triangle Park, NC

Hoffmann-La Roche Inc.
Nutley, NJ

Johnson & Johnson
New Brunswick, NJ
Advanced Sterilization Products
ALZA Corporation
Centocor, Inc.
Cordis Corporation
DePuy Inc.
Ethicon Endo-Surgery, Inc.
Ethicon, Inc.

- Ethicon Products
- Gynecare
- Johnson & Johnson Wound Management

Janssen Pharmaceutica Inc.
Janssen Research Foundation
and The R.W. Johnson
Pharmaceutical Research
Institute

Johnson & Johnson Health
Care Systems, Inc.

Mitek
Ortho Biotech Products, L.P.
Ortho-Clinical Diagnostics
Ortho Dermatological
Ortho-McNeil
Pharmaceutical, Inc.
Therakos, Inc.
Vistakon

Eli Lilly and Company
Indianapolis, IN

Merck & Co., Inc.
Whitehouse Station, NJ
Merck Human Health Division
Merck Research Laboratories
Merck Vaccine Division

Novartis Pharmaceuticals
Corporation
E. Hanover, NJ

Organon Inc.
West Orange, NJ

Otsuka America
Pharmaceutical, Inc.
Rockville, MD

Pfizer Inc
New York, NY

Pharmacia Corporation
Peapack, NJ

The Procter & Gamble Company
Procter & Gamble
Pharmaceuticals, Inc.
Mason, OH

Purdue Pharma L.P.
Stamford, CT
The P.F. Laboratories, Inc.
The Purdue Frederick Company

Sanofi-Synthelabo Inc.
New York, NY

Schering-Plough Corporation
Kenilworth, NJ

SCHWARZ PHARMA, INC.
Mequon, WI

Serono, Inc.
Norwell, MA

Solvay Pharmaceuticals, Inc.
Marietta, GA
Unimed Pharmaceuticals, Inc.

3M Pharmaceuticals
St. Paul, MN

PHARMACEUTICAL AFFILIATES

(none at this time)

INTERNATIONAL AFFILIATES

Daiichi Pharmaceutical Corporation
Montvale, NJ

Eisai Inc.
Teaneck, NJ

Sankyo Pharma Inc.
Parsippany, NJ

Sigma-Tau Pharmaceuticals, Inc.
Gaithersburg, MD

Takeda Pharmaceuticals North America, Inc
Lincolnshire, IL

Yamanouchi Pharma America, Inc.
Paramus, NJ

ASSOCIATE (1)

(Researchers)

(this was old Research Affiliates)

aaiPharma Inc.
Wilmington, NC

AAI International Inc.
NeoSan Pharmaceuticals Inc.

Advanced Medicine, Inc.
South San Francisco, CA

Alkermes, Inc.
Cambridge, MA

Aviron
Mountain View, CA

Celera Genomics Group
Rockville, MD

Celgene Corporation
Warren, NJ

Cephalon, Inc.
West Chester, PA

CIMA Labs Inc.
Eden Prairie, MN

DNA Sciences, Inc.
Fremont, CA

Enzon, Inc.
Piscataway, NJ

Eurand
New York, NY

Guilford Pharmaceuticals Inc.
Baltimore, MD

Human Genome Sciences, Inc.
Rockville, MD

ICOS CORPORATION
Bothell, WA

Inhale Therapeutic Systems, Inc.
San Carlos, CA

The Institutes for Pharmaceutical Discovery
Branford, CT

InterMune Pharmaceuticals, Inc.
Burlingame, CA

Isis Pharmaceuticals, Inc.
Carlsbad, CA

Ligand Pharmaceuticals Inc.
San Diego, CA

Maxim Pharmaceuticals, Inc.
San Diego, CA

MGI PHARMA, INC.
Bloomington, MN

Penwest Pharmaceuticals Co.
Patterson, NY

SCIOS Inc.
Sunnyvale, CA

Sepracor, Inc.
Marlborough, MA

Vela Pharmaceuticals Inc.
Lawrenceville, NJ

Vertex Pharmaceuticals Incorporated
Cambridge, MA

ASSOCIATE (2)

(CROs)

MDS Pharma Services
Lincoln, NE

Millennium Pharmaceuticals, Inc.
Cambridge, MA

Quintiles Transnational Corp.
Research Triangle Park, NC

ASSOCIATE (3)

(CMOs)

(no CMOs at this time)

ASSOCIATE (4)

(Advertising & Communication Services)
(formerly old Associate category)

Accenture
Philadelphia, PA

Aerojet Fine Chemicals
Rancho Cordova, CA

American Academy of Family Physicians
Leawood, KS

American Medical Association Publishing
Chicago, IL

Robert A. Becker Euro RSCG
New York, NY

Cap Gemini Ernst & Young
New York, NY

CommonHealth, L.P.
Parsippany, NJ

Computer Sciences Corporation Healthcare Group
Berwyn, PA

The Corbett Healthcare Group
Chicago, IL

Easton Associates, LLC
New York, NY

Ernst & Young
New York, NY

FCB Healthcare
New York, NY

IMS HEALTH
Plymouth Meeting, PA

KPMG LLP
Short Hills, NJ

Lally McFarland Pantello
New York, NY

Lowe Healthcare Worldwide
New York, NY

Lowe McAdams Healthcare
Integrated Communications
Corporation

Lyons Lavey Nickel Swift, Inc.
New York, NY

McGraw-Hill Healthcare
Information Group
Minneapolis, MN

McKesson Corporation
San Francisco, CA

Medi-Promotions, Inc.
Hasbrouck Heights, NJ

Medicus Group International
New York, NY

MediMedia USA, Inc.
Teterboro, NJ

Medscape
New York, NY

NDCHealth
Atlanta, GA

Nelson Communications
Worldwide
New York, NY

Healthcare Resources Group, Inc.

PDI, Inc.
Upper Saddle River, NJ

Quest Diagnostics Incorporated
Teterboro, NJ

R. P. Scherer Inc.
Basking Ridge, NJ

SYNAVANT Inc.
Fairview, NJ

Thomson Healthcare/
Medical Economics
Montvale, NJ

Ventiv Health, Inc.
Somerset, NJ

ASSOCIATE (5)

(Consultants & Drug Discovery
Software Firms)

Arthur Andersen LLP
Chicago, IL

INDEX

- Abbreviated New Drug Application (ANDA), 30
- Africa, viii, x, 7-9, 35-36, 40, 82, 90
- AIDS, ix-x, 2-3, 7, 9, 14, 33-36, 40, 48, 63, 68-70
- Allergies, 4-5, 10, 33
- Alzheimer's disease, 2-4, 67-70
- Antibiotics, 2, 6, 66, 69-70, 93
- Approval process, 35
- Arthritis, 2-3, 33, 67-68
- Asthma, viii, 2-5, 9-10, 63, 68
- Biotechnology, 15, 66-70
- Bioterrorism, viii, 65-66
- Bayh-Dole Act, 15
- Canada, 24, 37-38, 46-47, 50, 82, 90
- Cancer, ix, 2-5, 42, 68-70
- Capital expenditures, 83
- Cardiovascular diseases (see heart disease)
- Centers for Medicare & Medicaid Services (CMS), x, 42-43, 50, 59-60, 64
- Children, ix, 3-4, 7-9, 17, 38
- Clinical evaluation, 79, 92, 95-96
- Clinical trials, viii-ix, 2, 4, 7, 12, 18, 20, 22-25, 95
- Compliance, 25
- Compulsory licensing, 35, 37
- Congestive heart failure, 2-3
- Cooperative Research and Development Agreements (CRADAs), 15
- Cost containment, 39, 48, 54-55, 57, 63
- Cost-effectiveness, viii, 4, 23
- Counterfeit drugs, 38, 40
- Deoxyribonucleic acid (DNA), 66, 67
- Depression, viii, 2-3, 33, 42
- Developing world, 7-8, 36-37
- Development, iii, viii-x, 2-3, 11, 13, 15-27, 30-31, 34, 36-37, 44, 48, 50, 66-70, 78-79, 92, 94-96
- costs, iii, viii-ix, 2, 4-5, 20-23, 27, 39, 41-43, 47-48, 50, 53-55, 85, 93-94 58, 61-64, 69-70
- process, iii, viii, 6, 12, 16-18, 20, 25-26, 35, 68, 73, 79, 92, 95
- times, 2-3, 9-10, 15, 19, 22, 46, 50, 64, 66, 70
- Diabetes, 67-68
- DiMasi, Joseph A., viii-x, 19-22, 27
- Direct-to-consumer advertising (DTC), 18
- Discovery, iii, 22, 25, 27, 34, 48, 66, 70, 73
- Drug approval, 18, 19
- Drug discovery, iii, 27, 48, 73
- Embryonic stem cells, 67
- Employers, 4-5, 55, 57
- Employment, 4, 91, 96
- abroad, 12, 48, 75, 77-78, 81-82, 84-85, 89-90, 94, 96
- domestic, viii, 4, 12, 16, 42, 45-46, 64, 75-80, 83-88, 91-92, 94
- Europe, viii, 16, 46, 48, 82, 90
- European Federation of Pharmaceutical Industries and Associations (EFPIA), viii, x, 16, 27, 47-48, 50-51
- Food and Drug Administration (FDA), ix, 2, 7, 12, 17-19, 24-26, 30, 38, 46, 70
- approval process, 35
- review, 17-18, 24-25, 30, 47-48, 50-51, 63-64
- Modernization Act (FDAMA), 17
- Formularies, 47, 54-55, 62-63
- France, 46, 48, 50
- Gene therapy, 68
- General Agreement on Tariffs and Trade (GATT), 34
- Generic drugs, ix, 31-33
- market share, 32, 87
- Genomics, ix, 66
- Germany, 48
- Gross domestic product (GDP), viii, 4, 42, 44-46, 50, 64
- Hatch-Waxman Act, ix, 30
- Health Care Financing Administration, (HCFA) (see Centers for Medicare & Medicaid Services)
- Health expenditures, 43, 45, 54, 64
- Health maintenance organizations (HMO), 54-55, 57, 61
- Enrollment, 54-55, 59, 61, 64
- Heart disease, ix, 2-3, 43, 56, 63, 67-68
- Human Genome Project, 66
- Innovation, iii, viii-ix, 2, 9, 11-12, 14-16, 18-20, 22, 24, 26, 48-50, 53, 57, 64, 65-66, 68-70
- Insurance coverage, 44, 54-57
- health care, iii, viii-ix, 2, 4, 9, 15, 24-25, 39, 41-44, 47, 50, 54-55, 59, 63, 70
- prescription drugs, viii, x, 2, 4, 9, 14, 16, 37, 43-44, 48, 50, 54-60, 62-64, 70
- Intellectual property, iii, 29-32, 34-40, 53, 69-70
- International price comparisons, 49
- Investigational New Drug (IND), 79, 92
- Italy, 47
- Japan, 10, 17, 44, 48, 82, 90
- Latin America, 82, 90
- Lichtenberg, Frank R., 2, 9, 43, 50, 64
- Life expectancy, 8, 15, 54
- Malaria, 8, 35
- Managed care, 23, 55, 61, 64 (see also Health maintenance organization, Preferred provider organization)
- Market exclusivity, 17, 30, 33

- Marketing, 17-18, 24-25, 30, 37, 85, 91, 93-96
- Medicaid, x, 42-43, 50, 54-55, 57, 59-64, 93
- best price, 60
 - disease management, 55, 63
 - Drug Utilization Review (DUR), 63
 - managed care, 23, 55, 61, 64
 - rebates, 49, 54, 59-60, 62-63, 84-90, 93
 - state pharmaceutical assistance programs, 60, 62
 - waivers, 61
- Medicare, x, 37-38, 42-43, 50, 54-60, 62, 64, 70
- Medicare+Choice, 59
 - Medigap, 57-58
 - prescription drug benefit, 58
- Medicines in development, ix, 3, 68
- Multiple sclerosis, 3, 68
- National Institutes of Health (NIH), 2, 9, 12, 14-15, 23, 27, 69-71
- Neurological disease, 3
- New Drug Application (NDA), 24-25, 30, 79, 92
- New drugs, iii, ix, 3, 13, 17-19, 23, 25, 27, 30, 36, 46-47, 53, 64, 70
- approval times, 19
 - cost of developing, 12, 20-21, 23
 - FDA review, 24
 - patents, ix-x, 15, 30-31, 33-34, 36, 40, 48, 69
- New medicines, i, iii, viii-ix, 2-3, 9, 18, 23, 25, 30, 37, 42, 46-48, 66-67, 69-70
- North American Free Trade Agreement (NAFTA), 35
- Orphan drug, 17
- Osteoporosis, 3
- Parallel importation, 38-39
- Parkinson's disease, 2-3, 67-68
- Patents, ix-x, 15, 30-31, 33-34, 36, 40, 48, 69
- exclusivity, 17, 30-31, 33-34
 - piracy, 36
 - protection, iii, ix, 29-30, 34-38, 49, 53, 58-59, 69-70
- Patient-assistance programs, 6
- Pediatric, 7, 17
- Pharmaceutical expenditures, 43-46, 55, 58
- daily consumption expenditures per capita, 43-44
- Philanthropy, 6-8
- Preferred provider organization (PPO), 54-55
- Prescription Drug User Fee Act of 1992 (PDUFA), 17
- Price controls, ix, 42, 46-50, 57, 59, 70
- R&D, iii, viii-ix, 2, 9, 12-14, 16-22, 24-27, 30, 36-37, 46, 48-49, 64, 69, 75-83, 91-92, 95
- as percentage of sales, 13
 - bioavailability, 79, 92, 95
 - expenditures abroad, 12
 - process development, 79, 92, 95
 - tax credit, 17
- Reimportation, iii, 37-38
- Retailers, 87
- Returns, 9, 20-21, 93
- Safety, 15, 17, 24-25, 30, 32, 37-39, 63-64, 67, 79, 92, 94-95
- Sales, ix, 12-14, 16, 36-37, 66, 76, 84-90, 93-96
- Schizophrenia, 62-64
- September 11th, viii, 6, 7, 66
- Social Security Act, 61
- Spain, 46, 48
- Stem cell research (see embryonic stem cells)
- Stroke, ix, 2-4, 9, 67-68
- Switzerland, 40, 48, 82, 90
- Technology transfer, 15
- Trade-Related Aspects of Intellectual Property Rights (TRIPS), 30, 34-35, 37, 39
- Trypanosomiasis, 8
- Tuberculosis (TB), 2, 8, 35, 68
- United Kingdom, 48
- Vaccines, 2-3, 8, 34, 66, 68-69
- Value, iii, viii, 1-2, 4, 6, 8-10, 15, 34, 47, 49, 53, 55, 70, 88-89, 93-94
- World Trade Organization (WTO), ix, 30, 34-35, 37