

2022 PhRMA Annual Membership Survey

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DEFINITION OF TERMS

Research and Development (R&D) Expenditure Definitions

R&D Expenditures: Expenditures within PhRMA member companies' US and/or foreign research laboratories, plus R&D funds contracted or granted to commercial laboratories; private practitioners; consultants; educational and nonprofit research institutions; manufacturing and other companies; or other research-performing organizations located inside/outside of the United States. It includes basic and applied research, as well as developmental activities carried on or supported in the pharmaceutical, biological, chemical, medical, and related sciences (e.g., psychology and psychiatry), if the purpose of such activities is ultimately concerned with the utilization of scientific principles in understanding diseases or in improving health. It includes the total cost incurred for all pharmaceutical R&D activities (e.g., salaries, materials, supplies used, and a fair share of overhead), as well as the cost of developing quality control. However, it does not include the cost of routine quality control activities, capital expenditures, or any costs incurred for drug or medical R&D conducted under a grant or contract for other companies or organizations.

Domestic R&D: Expenditures within the United States by all PhRMA member companies.

R&D Abroad: Expenditures outside the United States by US-owned PhRMA member companies, and R&D conducted abroad by US divisions of foreign-owned PhRMA member companies. R&D performed abroad by the foreign divisions of foreign-owned PhRMA member companies is excluded.

Pre-human/Pre-clinical Testing: From synthesis, to first testing in humans.

Phase I/II/III Clinical Testing: From first testing in designated phase, to first testing in subsequent phase.

Approval Phase: From New Drug Application (NDA)/Biologic License Application (BLA) submission, to NDA/BLA decision.

Phase IV Clinical Testing: Any post-marketing R&D activities performed.

Uncategorized: Represents data for which detailed classifications were unavailable.

Sales Definitions

Sales: Product sales calculated as billed, free on board plant or warehouse less cash discounts, Medicaid rebates, returns, and allowances. These include all marketing expenses except transportation costs. Also included is the sales value of products bought and resold without further processing or repackaging, as well as the dollar value of products made from the firm's own materials for other manufacturers' resale. Excluded are all royalty payments, interest, and other income.

Domestic Sales: Sales generated within the United States by all PhRMA member companies.

Sales Abroad: Sales generated outside the United States by US-owned PhRMA member companies, and sales generated abroad by the US divisions of foreign-owned PhRMA member companies. Sales generated abroad by the foreign divisions of foreign-owned PhRMA member companies are excluded.

TABLE 1: Domestic R&D and R&D Abroad,* PhRMA Member Companies: 1983–2021

(dollar figures in millions)

Year	Domestic R&D	Annual Percentage Change	R&D Abroad*	Annual Percentage Change	Total R&D	Annual Percentage Change
2021	\$79,610.0	9.9%	\$22,678.4	21.2%	\$102,288.4	12.2%
2020	\$72,412.1	12.5%	\$18,714.2	0.6%	\$91,126.3	9.8%
2019	\$64,357.0	3.4%	\$18,599.3	7.0%	\$82,956.3	4.2%
2018	\$62,219.7	11.6%	\$17,383.1	11.1%	\$79,602.8	11.5%
2017	\$55,755.0	6.4%	\$15,644.4	19.2%	\$71,399.4	8.9%
2016	\$52,418.2	9.0%	\$13,120.1	13.8%	\$65,538.3	9.9%
2015	\$48,110.5	18.1%	\$11,531.9	-7.9%	\$59,642.4	12.0%
2014	\$40,737.3	0.8%	\$12,515.9	11.6%	\$53,253.2	3.2%
2013	\$40,396.0	7.7%	\$11,217.6	-7.1%	\$51,613.6	4.1%
2012	\$37,510.2	3.1%	\$12,077.4	-1.6%	\$49,587.6	1.9%
2011	\$36,373.6	-10.6%	\$12,271.4	22.4%	\$48,645.0	-4.1%
2010	\$40,688.1	15.1%	\$10,021.7	-9.6%	\$50,709.8	9.2%
2009	\$35,356.0	-0.6%	\$11,085.6	-6.1%	\$46,441.6	-2.0%
2008	\$35,571.1	-2.8%	\$11,812.0	4.6%	\$47,383.1	-1.1%
2007	\$36,608.4	7.8%	\$11,294.8	25.4%	\$47,903.1	11.5%
2006	\$33,967.9	9.7%	\$9,005.6	1.3%	\$42,973.5	7.8%
2005	\$30,969.0	4.8%	\$8,888.9	19.1%	\$39,857.9	7.7%
2004	\$29,555.5	9.2%	\$7,462.6	1.0%	\$37,018.1	7.4%
2003	\$27,064.9	5.5%	\$7,388.4	37.9%	\$34,453.3	11.1%
2002	\$25,655.1	9.2%	\$5,357.2	-13.9%	\$31,012.2	4.2%
2001	\$23,502.0	10.0%	\$6,220.6	33.3%	\$29,722.7	14.4%
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%
Average**		10.4%		13.0%		10.6%

* R&D Abroad includes expenditures outside the United States by U.S.-owned PhRMA member companies and R&D conducted abroad by the U.S. divisions of foreign-owned PhRMA member companies. R&D performed abroad by the foreign divisions of foreign-owned PhRMA member companies are excluded.

** Average since 1970.

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

Notes: All figures include company-financed R&D only. Total values may be affected by rounding.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2022.

TABLE 2: R&D as a Percentage of Sales, PhRMA Member Companies: 1983–2021

Year	Domestic R&D as a % of Domestic Sales	Total R&D as a % of Total Sales
2021	23.8%	21.2%
2020	23.6%	21.4%
2019	21.3%	19.3%
2018	22.2%	19.5%
2017	24.8%	21.4%
2016	24.0%	20.4%
2015	23.8%	19.7%
2014	22.8%	18.6%
2013	23.0%	18.3%
2012	21.0%	17.3%
2011	19.4%	15.9%
2010	22.0%	17.4%
2009	19.5%	16.8%
2008	19.4%	16.6%
2007	19.8%	17.5%
2006	19.4%	17.1%
2005	18.6%	16.9%
2004	18.4%	16.1%*
2003	18.3%	16.5%*
2002	18.4%	16.1%
2001	18.0%	16.7%
2000	18.4%	16.2%
1999	18.2%	15.5%
1998	21.1%	16.8%
1997	21.6%	17.1%
1996	21.0%	16.6%
1995	20.8%	16.7%
1994	21.9%	17.3%
1993	21.6%	17.0%
1992	19.4%	15.5%
1991	17.9%	14.6%
1990	17.7%	14.4%
1989	18.4%	14.8%
1988	18.3%	14.1%
1987	17.4%	13.4%
1986	16.4%	12.9%
1985	16.3%	12.9%
1984	15.7%	12.1%
1983	15.9%	11.8%

*Revised in 2007 to reflect updated data.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2022.

TABLE 3: R&D by Function, PhRMA Member Companies: 2021

(dollar figures in millions)

Function	Dollars	Share
Pre-Human/Pre-Clinical	\$15,079.0	14.7%
Phase I	\$9,234.9	9.0%
Phase II	\$11,760.5	11.5%
Phase III	\$29,401.0	28.7%
Approval	\$4,963.5	4.9%
Phase IV	\$13,200.9	12.9%
Uncategorized	\$18,648.7	18.2%
TOTAL R&D	\$102,288.4	100.0%

Notes: All figures include company-financed R&D only. Total values may be affected by rounding.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2022



TABLE 4: Domestic Sales and Sales Abroad,* PhRMA Member Companies: 1983–2021

(dollar figures in millions)

Year	Domestic Sales	Annual Percentage Change	Sales Abroad*	Annual Percentage Change	Total Sales	Annual Percentage Change
2021	\$333,957.5	8.7%	\$148,870.8	26.5%	\$482,828.3	13.6%
2020	\$307,234.0	1.5%	\$117,724.0	-6.9%	\$424,958.0	-1.0%
2019	\$302,776.4	7.8%	\$126,394.2	-0.1%	\$429,170.6	5.4%
2018	\$280,790.0	24.9%	\$126,577.1	15.6%	\$407,367.1	21.8%
2017	\$224,889.2	3.0%	\$109,510.6	5.9%	\$334,399.8	3.9%
2016	\$218,401.4	7.9%	\$103,456.8	3.4%	\$321,858.1	6.4%
2015	\$202,370.8	13.3%	\$100,012.5	-6.9%	\$302,383.3	5.7%
2014	\$178,645.6	1.6%	\$107,438.2	0.5%	\$286,083.9	1.2%
2013	\$175,759.6	-1.5%	\$106,880.1	-0.7%	\$282,639.7	-1.2%
2012	\$178,437.6	-5.0%	\$107,677.8	-8.1%	\$286,115.4	-6.2%
2011	\$187,870.7	1.7%	\$117,138.5	9.9%	\$305,009.2	4.7%
2010	\$184,660.3	2.0%	\$106,593.2	12.0%	\$291,253.5	5.4%
2009	\$181,116.8	-1.1%	\$95,162.5	-7.5%	\$276,279.3	-3.4%
2008	\$183,167.2	-1.1%	\$102,842.4	16.6%	\$286,009.6	4.6%
2007	\$185,209.2	4.2%	\$88,213.4	14.8%	\$273,422.6	7.4%
2006	\$177,736.3	7.0%	\$76,870.2	10.0%	\$254,606.4	7.9%
2005	\$166,155.5	3.4%	\$69,881.0	0.1%	\$236,036.5	2.4%
2004**	\$160,751.0	8.6%	\$69,806.9	14.6%	\$230,557.9	10.3%
2003**	\$148,038.6	6.4%	\$60,914.4	13.4%	\$208,953.0	8.4%
2002	\$139,136.4	6.4%	\$53,697.4	12.1%	\$192,833.8	8.0%
2001	\$130,715.9	12.8%	\$47,886.9	5.9%	\$178,602.8	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%

*Sales Abroad includes sales generated outside the United States by U.S.-owned PhRMA member companies, and sales generated abroad by the U.S. divisions of foreign-owned PhRMA member companies. Sales generated abroad by the foreign divisions of foreign-owned PhRMA member companies are excluded. Domestic sales, however, includes sales generated within the United States by all PhRMA member companies.

**Revised in 2007 to reflect updated data.

****Sales Abroad affected by merger and acquisition activity.

Notes: Total values may be affected by rounding.

Source: Pharmaceutical Research and Manufacturers of America, PhRMA Annual Membership Survey, 2022.



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