OTA'S SURVEY ON CONTRIBUTIONS OF RESEARCH ON AIDS AND HIV TO OTHER FIELDS

In February 1990, OTA conducted a survey of distinguished biomedical and social scientists to examine the contribution that federally funded AIDS and HIV research has made to advances in other biomedical and social science fields. In addition, scientists were asked their opinions about Federal funding of AIDS/HIV research.

Methods

A self-administered questionnaire was mailed to 400 individuals who were randomly selected from a group of 801 scientists.[1] Thirty-seven percent of questionnaires (147/400) were returned either fully or partially completed.[2] Characteristics of the respondents are shown in table 4. The respondents' employment, professional activity, training, expertise, and age characteristics were as follows:[3]

- Employment--Over two-thirds of respondents (67 percent) were employed in non-profit organizations, including universities; 15 percent were employed by Federal or State government; and 8 percent were employed in private business.
- Professional activity--More than one-half (56 percent) of respondents were engaged in research; 40 percent in administration; 16 percent in education; and 16 percent in patient care.
- Training--Nearly three-quarters (72 percent) were physicians, and nearly one-third (30 percent) held a Ph.D. degree.
- Expertise--Forty-nine percent of respondents identified their primary field of expertise within medical disciplines; 18 percent in one of the

Table 4--Employment, Professional Activity, Training, and Age of OTA Survey Respondents

	Frequency	Percent
Primary employer		
Federal or State government	22	15.0
Non-profit organization, including university	99	67.3
Private business	12	8.2
Other	14	9.5
Total	147	100.0
Major professional activity[a]		
Research	79	56.0
Patient Care	24	16.3
Education	24	16.3
Administration	58	39.5
Other	10	6.8
Level of training		
MD only	94	64.0
PhD only	33	22.4
Other only	7	4.7
MD and PhD	9	6.1
MD and other	2	1.4
PhD and other	2	1.4
Total	147	100.0
Primay field of expertise		
Basic sciences	27	18.4
Medicine	72	49.0
Epidemiology	4	2.7
Public health and health services research	15	10.2
Other	16	10.9
Unspecified	13	8.8
Total	147	100.0
Age		
<= 35	2	1.4
36-50	29	19.7
51-65	66	44.9
>=66	50	34.0
Total	147	100.0

[a]Percentage does not sum to 100 and frequency to 147 because some respondents listed more than one activity. Frequencies are out of 147 responses, i.e., n= 147.

SOURCE: Office of Technology Assessment, 1990.

1 A copy of the questionnaire is included in app. A. Information regarding the instrument pilot testing and survey randomization techniques is included in app. B.

2 An additional 39 questionnaires were returned to OTA blank, primarily because the respondent did not feel they had the expertise needed to complete the questionnaire or because they had retired. An additional 5 questionnaires were returned, but were not included in the analysis because they had been completed by someone other than the person asked to complete the questionnaire. If these questionnaires are included, the response rate is 48 percent.

3 Percents may not sum to 100 because some respondents listed more than one response or because no opinion responses are not included (see table 4).

basic sciences; and 13 percent in public health or epidemiology.[4]

- Age--Nearly half (45 percent) of respondents were in the 51 to 65 year age range; slightly over one-third (34 percent) were 66 and older; and one-fifth (20 percent) were 36 to 50 years old.

Survey respondents included both AIDS/HIV researchers and scientists with no professional activities related to AIDS/HIV. Sixty-three percent of respondents were engaged in some AIDS/HIV professional activities, but most of these spent less than 20 percent of their time on AIDS/HIV activities (figure 1). Respondents were less likely to have received Federal funds for AIDS/HIV research than for other research areas. Only 16 percent of respondents received Federal funds to conduct AIDS/HIV research, while slightly more than one-quarter (28 percent) received Federal funds to conduct non-AIDS/HIV research (figure 2). Fewer than 10 percent of respondents received external funding from nonfederal sources for either AIDS/HIV or other research (figure 2).

Results

Contributions of AIDS/HIV Research to Other Fields

Survey respondents were asked to rate, on a scale from 1 to 10[5] the contributions of federally funded AIDS/HIV research to advances in 42 different fields that comprised five broad areas:

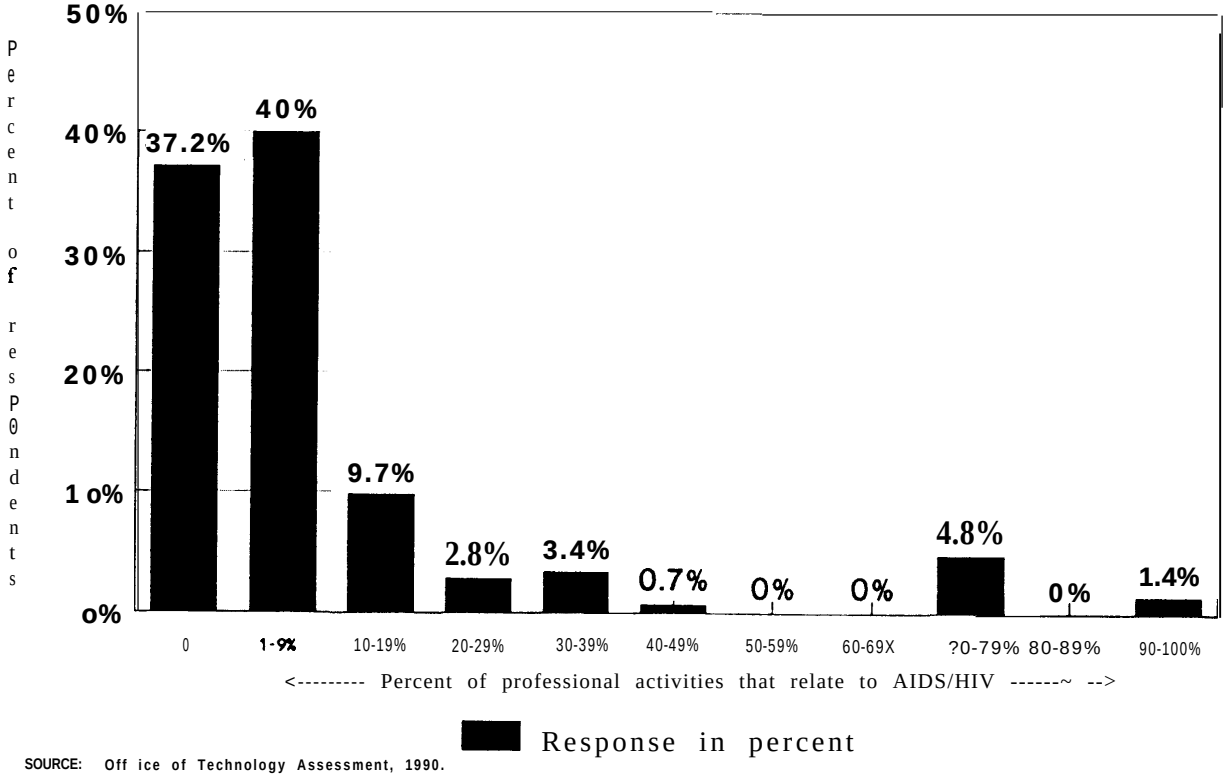
- basic sciences,
- medicine,
- applied medical sciences,
- epidemiology, and
- public health and health services research.

Respondents used the same 10-point scale to rate their levels of expertise for each area.

4Detailed responses to the expertise question are shown in app. D.

5On the 10 point scale 1 indicated "none at all," 5 and 6 indicated "somewhat," and 10 indicated "very much." Zero was used to express "no opinion."

Figure 1--OTA **Survey Respondents' Proportion of Professional Activities That Relate to AIDS/HIV (n=145)**



SOURCE: Off ice of Technology Assessment, 1990.

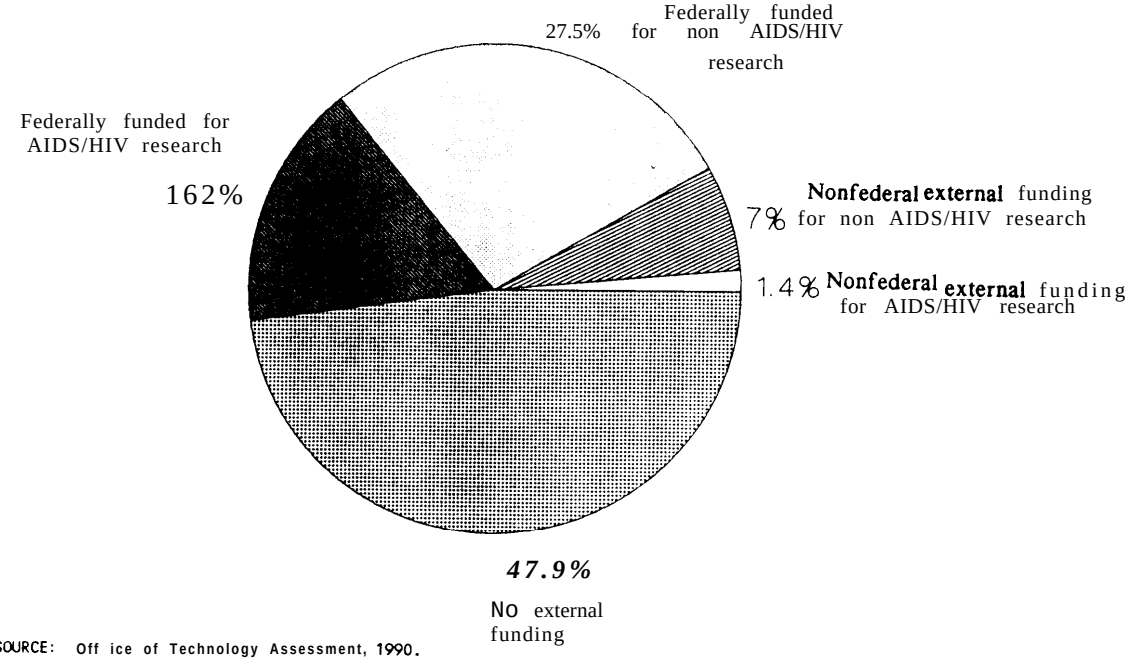
Basic Sciences

The basic science fields reported to have benefited the most from AIDS/HIV research include virology, immunology, microbiology, and molecular biology (table 5). More than one-half of respondents (irrespective of their level of expertise in the field) indicated that AIDS/HIV research had contributed to these fields substantially (i.e., a rating of 7 to 10). Among experts in the respective fields, almost all felt that virology (96 percent) and immunology (94 percent) had benefited substantially from AIDS/HIV research, and nearly three-quarters (73 percent) of microbiology experts indicated substantial benefits in their field. Fields cited most frequently with "little to no" contributions from AIDS/HIV research include genetics, pathology, and biochemistry.

Respondents cited many examples of contributions of AIDS/HIV research advances in basic biological sciences, especially in molecular biology and immunology. Specific examples of contributions of AIDS/HIV research were cited for all basic science fields and are summarized here. Appendix E includes a complete listing of contributions cited by survey respondents.

- Iincreased understanding of the mechanisms by which viral and cell factors control gene expression is broadly applicable to other systems.
- Increased understanding of the immune system, particularly the roles of subsets of lymphocytes and their regulation by cytokines. Knowledge of the intricate relationships among cells of the immune system has facilitated understanding of intercellular communication.
- Studies of the development of new strains of HIV has applications to genetic studies of mutation rates and viral evolution.
- Improved concepts of the pathological consequences of infectious agents, especially in the central nervous system.
- Increased understanding of opportunistic infections and the role of genetic factors that influence susceptibility to infection.
- Improved understanding of the lifecycle of the

Figure 2--OTA Survey Respondents' External Funding, 1989 (n=142)



SOURCE: Off ice of Technology Assessment, 1990.

Table 5-Contribution of AIDS and HIV Research to Advances in the Basic Sciences

Basic sciences	Respondants expertise[a] Number	No opinion	Little to none	Somewhat	Very much	Contribution of AIDS/HIV research[a] according to all respondants Number	Percent: No opinion	Little to none	Somewhat	Very much	Contribution of AIDS/HIV research according to exprts[b] in field Number	Percent: No opinion	Little to none	somewhat	Very much
Biochemistry	116	9.5	49.1	19.8	21.6	112	24.1	22.3	21.4	32.1	48	0.0	37.5	25.0	37.5
Cell biology	117	9.4	50.4	19.7	20.5	114	17.5	15.8	17.5	49.1	47	0.0	19.1	21.3	59.6
Genetics	116	9.5	53.4	19.8	17.2	113	21.2	25.7	20.4	32.7	43	0.0	34.9	20.9	44.2
Immunology	121	9.1	48.8	21.5	20.7	117	12.0	4.3	9.4	74.4	51	0.0	3.9	2.0	94.1
Microbiology	117	10.3	51.3	18.8	19.7	113	18.6	13.3	13.3	54.9	45	0.0	13.3	13.3	73.4
Molecular biology	119	10.1	48.7	23.5	17.6	115	17.4	17.4	13.0	52.2	49	0.0	20.4	18.4	61.2
Pathology	114	12.3	53.5	26.3	7.9	112	25.0	23.2	22.3	29.5	39	0.0	25.6	28.2	46.2
Pharmacology	114	9.6	49.1	29.8	11.4	112	19.6	16.1	28.6	35.7	47	2.1	21.3	44.7	31.9
Virology	115	8.7	51.3	23.5	16.5	112	17.0	0.0	8.0	75.0	46	0.0	0.0	4.3	95.7

[a]Respondents were asked to rate their expertise and contributions of AIDS/HIV research on a 10 point scale with 1 indicating none at all and 10 indicating very much. This table groups responses from 1 to 4 into "little to none," 5 and 6 into "somewhat," and 7 to 10 as "very much."
[b]Experts were those reporting "somewhat" to "very much" expertise (i.e., a rating of 5 to 10).

SOURCE: *Office of* Technology Assessment, 1990,

Table6--Contributlon of AIDS and HIV Research to Advances in the Medical Disciplines

Medical disciplines	Respondents' expertise[a] Number	Percent: No opinion	Little to none	Somewhat	Very much	Contribution of AIDS/HIV research[a] according to all respondents Number	Percent: No opinion	Little to none	somewhat	Very much	Contrbution of AIDS/HIV research according to expertsm[b] in field Number	Percent: No opinion	Little to none	Somewhat	Very much
Cardiology	107	11.2	45.8	24.3	18.7	105	31.4	55.2	10.5	2.9	46	6.5	82.6	8.7	2.2
Dentistry	105	15.2	70.5	10.5	3.8	105	35.2	42.9	13.3	8.6	14	0.0	42.9	35.7	21.4
Dermatology	108	8.3	63.9	23.1	4.6	106	24.5	26.4	23.6	25.5	30	3.3	20.0	26.7	50.0
Endocrinology	106	10.4	54.7	21.7	13.2	103	29.1	47.6	14.6	8.7	37	8.1	62.2	18,9	10.8
Family practice	105	10.5	55.2	17.1	17.1	105	33.3	40.0	13.3	13,3	36	8.3	50.0	22.2	19.4
Gastroenterology	108	9.3	53.7	24.1	13.0	106	30.2	27.4	22.6	19.8	40	2.5	30.0	30.0	37.5
Hemetology	110	9.1	50.9	20.9	19.1	109	22.9	11.9	22.9	42.2	44	0.0	13.6	22.7	63.6
Infectious disease	115	7.8	40.9	21.7	29.6	114	15.8	3.5	10.5	70.2	59	1.7		1.7	93.2
Nephrology	105	10.5	58.1	23.8	7.6	104	28.8	43.3	22.1	5.8	33	0.0	57.6	33.3	9.1
Neurology	113	8.8	53.1	28.3	9.7	111	19.8	22.5	15.3	42.3	43	2.3	16.3	14.0	67.4
Obstetrics/ gynecology	105	15.2	71.4	10.5	2.9	103	32.0	38.8	16.5	12.6	14	7.1	28.6	35.7	28.6
oncology	110	9.1	56.4	18.2	16.4	107	19.6	20.6	15.0	44.9	38	0.0	7.9	18.4	73,7
Ophthalmology	103	14.6	71.8	13.6	0.0	104	39.4	30.8	15.4	14.4	14	0.0	28.6	42.9	28.6
Pathology	106	11.3	55.7	27.4	5,7	106	29.2	18.9	25.5	26.4	35	0.0	17.1	40.0	42.9
Pediatrics	112	12.5	55.4	19.6	12.5	110	25.5	23.6	20.9	30,0	36	0.0	19.4	27.8	52.8
Psychiatry	110	13.6	53.6	19.1	13.6	108	26.9	36.1	12.0	25.0	36	5.6	44.4	8.3	41.7
Pulmonary medicine	106	9.4	52.8	27.4	10.4	105	21.0	16.2	22.9	40.0	40	0.0	12.5	27.5	60.0
Rheumatology	103	11.7	59.2	19.4	9.7	102	32.4	43.1	13.7	10.8	30	0.0	53.3	30.0	16.7

[a]Respondents were asked to rate their expertise and contributions of AIDS/HIV research on a 10 point scale with 1 indicating none at all and 10 indicating very much. This table groups responses from 1 to 4 into "little to none," 5 and 6 into "somewhat," and 7 to 10 as "very much."
[b]Experts were those reporting "somewhat" to "very much" expertise (i.e., a rating of 5 to 10).

SOURCE: Office of Technology Assessment, 1990.

virus, which provides insights into the lifecycles of other viruses, especially other retroviruses.

The elucidation of particular aspects of viral structure and function has applications to studies of other viruses. These include a better understanding of virus uptake by cells, the integration of viral genetic material into the host cell genome, and the mechanism of viral latency.

The results of research on the structure and function of viral enzymes has many applications to other systems. These proteins, encoded by the viral genetic material, catalyze reactions important for the replication of the virus. These studies have been extended into the design of chemicals that inhibit the activity of the enzymes essential to the pathogenesis of the virus. Inhibitors are potential antiviral drugs. This approach to the treatment of viral disease has applications to other viral and fungal diseases and to cancer.

Research on HIV has sparked further experimentation on the treatment of viral diseases in addition to the design of enzyme inhibitors. The approaches being explored include blocking of receptors important for the cellular uptake of viruses, the use of synthetic peptides, and the use of "antisense RNA" in the treatment both of viral diseases and cancer.

Research on AIDS has led to new techniques for the growth and assay of viruses in culture, the development of a mouse model for studying immunodeficiency, and further applications of the polymerase chain reaction.

Research on AIDS has also spurred the development of retroviruses as vectors for gene transfer, the expression of active enzymes in E.coli, the development of tests for toxicity, and the development of diagnostic probes.

Medicine

Infectious disease, oncology, neurology, hematology, and pulmonary medicine were medical disciplines cited by at least 40 percent of respondents (irrespective of their level of expertise in the field) as having benefited greatly (i.e., a rating of 7 to 10) from AIDS/HIV research (table 6). More than one-half of the scientists with expertise in these five medical disciplines also indicated that contributions of AIDS/HIV research had been substantial. More than half of respondents with expertise in pediatrics and dermatology also indicated that AIDS/HIV contributions had been substantial. Cardiology and endocrinology were the medical disciplines cited most often for which AIDS/HIV research had made little to no contribution.

Specific examples of contributions of AIDS/HIV research were cited for all medical disciplines and are shown in appendix E. In general, respondents indicated that AIDS/HIV research has improved our detailed understanding of viruses, viral-induced changes in cell function, and the viral-cell interaction in induction of diseases. In addition, respondents indicated that AIDS/HIV research has 1) enhanced knowledge of the function of the immune system and autoimmune disease (e. g., lupus, rheumatoid arthritis), and 2) provided valuable insights in oncology, such as the mechanism of oncogenesis (e.g., gene control and cell proliferation and regulation), viral etiology of neoplasms, and immunodeficiency -associated cancers. Survey respondents indicated that AIDS/HIV research had improved knowledge in a variety of medical disciplines--neurology, infectious diseases, obstetrics and gynecology, pediatrics, psychiatry--and influenced the applied medical sciences with enhanced knowledge in diagnostics and drug and vaccine development. Specific examples of contributions cited most often by survey respondents were as follows:

Neurology

Increased understanding of blood-brain barrier effects;

Increased knowledge of the role of viruses in central nervous system (CNS) disorders; and

Increased insights into mechanisms of dementia, multiple sclerosis, and degenerative diseases of the CNS.

Infectious diseases

Increased understanding of immunodeficiency-associated infection;

Increased knowledge of opportunistic viral illness;

Detailed understanding of pneumocystis carinii pneumonia (PCP); and

Improved understanding of the transmission of sexually- transmitted diseases.

Obstetn"cs/gynecology and pediatrics

- Improved understanding of maternal-fetal Viral transmission and cell transfer;
- Improved understanding of passive immunity; and
- Improved understanding of the development of the nervous and immune systems in children.

Psychiatry

- Improved understanding of the environment and the social interactions of IV drug users;
- Improved understanding of the use and effectiveness of behavior modification;
- Improved understanding of patients' and families' reaction to terminal illness;
- Increased focus on studies of sexual behavior; and
- Improved understanding of the psycho-social-medical care of complex illness affecting mind, body, and family.

Dermatology

- Improved understanding of the nature of skin pathology in immunodeficient subjects.

Gastroenterology

- Increased knowledge of the mechanism of inflammatory bowel disease.

Dentistry

- Increased understanding of the need for improvements in infection control.

Ophthalmology

- provided new understanding of cytomegalovirus (CMV) retinitis.

Applied Medical Sciences

More than one-half of experts in each of the four applied medical sciences--diagnostics, drug development, other therapeutics, and vaccine development--indicated that AIDS/HIV research had contributed substantially to advancements in these fields (table 7). Drug development was cited most often as having benefited from AIDS/HIV research.

Specific examples of contributions cited most often by survey respondents were as follows:

Diagnostics

- Facilitated development of newer diagnostic tests (e.g., polymerase chain reaction (PCR), radioimmuno assays);
- Facilitated development of rapid diagnostic serologic tests for screening; and
- Facilitated the development of pulmonary diagnostics for viral respiratory illnesses.

Drug development

- Facilitated development of drugs to inhibit viral replication;
- Improved techniques of targeted drug development;
- Facilitated development of antibiotics including antiviral, antiparasitic, and antibacterial therapies;
- Facilitated expedited FDA approval of treatments; and
- Improved treatment of lung infections.

Vaccine development

- Improved basic understanding of vaccines;
- Improved understanding of applications of genetic engineering techniques and recombinant technologies to vaccines; and
- Improved understanding of the development of vaccines against agents that mutate rapidly.

Other

- Development of safer blood banking.

Epidemiology

More than one-half of all respondents and three-quarters of experts indicated that AIDS/HIV research had contributed substantially to disease surveillance and understanding the natural history of disease (table 7). Nearly one-half of respondents with expertise in biostatistics felt that AIDS/HIV research has made substantial contributions to their field, but more than one-third indicated that AIDS/HIV research had made little to no contribution to this field.

Specific example of contributions of AIDS/HIV research to epidemiology cited by respondents included:

- Improved epidemic-modeling techniques;
- Development of new methods for the conduct of clinical trials (e.g., community trials) and the evaluation of new drug treatments;[6]

[6]One respondent felt the advent of community trials was a negative consequence of AIDS/HIV research. He indicated that there has been a "sanctioning of uncontrolled and unsophisticated trials for drug efficacy."

Table 7--Contribution of AIDS and HIV Research to Advances in the Applied Medical Sciences, Epidemiology, and Public Health and Health Services Research

Field	Respondents' expertise[a]					Contribution of AIDS/HIV research[a] according to all respondents					Contribution of AIDS/HIV research according to experts[b] in field				
		Percent					Percent					Percent			
	Number	No opinion	Little to none	Somewhat	Very much	Number	No opinion	Little to none	Somewhat	Very much	umbe	No opinion	Little to none	Somewhat	Very much
Applied medical Sciences															
Diagnostics	109	10.1	44.0	26.6	19.3	109	22.9	14.7	22.9	39.4	50	0.0	10.0	30.0	60.0
Drug development	109	9.2	57.8	16.5	16.5	110	17.3	12.7	11.8	58.2	36	0.0	8.3	11.1	80.6
Other therapeutics	84	14.3	56.0	20.2	9.5	90	40.0	18.9	6.7	34.4	25	8.0	28.0	4.0	60.0
Vaccine development	112	10.7	57.1	14.3	17.9	113	15.9	14.2	22.1	47.8	36	0.0	5.6	19.4	75.0
Epidemiology															
Biostatistics	104	11.5	50.0	23.	5.4	110	27.3	26.4	13.6	32.7	39	5.	35.9	12.8	46.2
Clinical trial development	109	10.1	41.3	22.0	26.6	111	17.1	18.9	19.8	44.1	53	1.9	17.0	15.1	66.0
Disease surveillance	106	8.5	54.7	17.0	19.8	108	14.8	10.2	21.3	53.7	39	0.0	7.7	12.8	79.5
Natural history of disease	107	9.3	43.0	22.4	25.2	1	19.8	9.0	11.7	59.5	5	0.0	9.8	9.8	80.4
Public Health and Health Services Research															
Health behavior change	110	6.4	42.7	30.9	20.0	11	0.8	14.4	21.6	53.2	56	0.0	10.7	28.6	60.7
Health care financing	04	5.8	36.5	32.7	25.0	06	20.8	23.6	20.8	34.9	58	1.7	27.6	20.7	50.0
Health care organization and delivery	109	6.4	34.9	21.1	37.6	109	18.3	29.4	21.1	31.2	62	1.6	33.9	24.2	40.3
Health education	112	7.1	30.4	26.8	35.7	111	11.7	12.6	31.5	44.1	68	0.0	13.2	27.9	58.8
Sexually transmitted disease	110	6.4	46.4	30.0	17.3	112	10.7	3.6	17.0	68.8	52	0.0	5.8	11.5	82.7
Sociology/ anthropology	103	13.6	59.2	14.6	12.6	103	31.1	22.3	19.4	27.2	28	0.0	28.6	25.0	46.4
Substance abuse	107	7.5	60.7	15.0	16.8	110	13.6	20.0	20.9	45.5	34	0.0	8.8	32.4	58.8

[a]Respondents were asked to rate their expertise and contributions of AIDS/HIV research on a 10 point scale with 1 ind cating none at al and 10 indicating very much. This table groups responses from 1 to 4 into "little to none," 5 and 6 into "somewhat," and 7 to 10 as "very much."
[b]Experts were those reporting "somewhat" to "very much" expertise (i.e., a rating of 5 to 10).

SOURCE: Off ce of Technology Assessment, 990.

- Improved methods for evaluating health risks and studying unique populations and risk groups;
- Improved disease surveillance methods and disease reporting; and
- Improved understanding of behaviors that put people at risk for disease.

Public Health and Health Services Research

The fields of sexually transmitted disease, health behavior change, health education, and substance abuse were cited as having benefited substantially from AIDS/HIV research by more than one-half of experts in these areas (table 7). The category of health care organization and delivery was cited most often as having benefited the least from AIDS/HIV research.

Specific example of contributions of AIDS/HIV research to public health and health services research included:

Health Behavior Change

- Stimulated research on the relationship between lifestyle changes, such as alcohol/drug abuse, and high-risk health behaviors;
- Stimulated research into the relationship among knowledge, attitudes, and health practices. Has provided confirmation that increased knowledge of disease and prevention leads to changes in risk behaviors among some risk groups;
- Increased understanding of safe sex practices; and
- Provided prototype programs for targeting health education to high-risk populations.

Health Care Financing

- AIDS/HIV has illustrated the financial ramifications of catastrophic illness and problems in health care financing (e.g., gaps in Medicare/Medicaid funding);
- AIDS/HIV has focused attention on the cost of drugs and drug development; and
- AIDS/HIV has raised issues regarding reimbursement for experimental therapies.

Health Care Organization and Delivery

- Stimulated research on community-based models of care (e.g., home care, hospice care, case management, community supports);
- Stimulated research on long-term care issues; and
- Has focused attention on primary prevention (e.g., research on prevention of substance abuse) and early intervention and treatment.

Health Education

- Stimulated research on the effectiveness of health education in preventing high-risk behaviors and disease;
- Facilitated public understanding of communicable disease and infection control (e.g., sexually transmitted disease);
- Has provided clear connection between lifestyle practices and disease; and
- Stimulated research into the design and conduct of health education programs (e.g., use of television and mail health education campaigns).

Sexually-Transmitted Disease

- Clarified routes and mechanisms of sexually transmitted disease (STDs);
- Facilitated an understanding of other STDs (e.g., herpes, chlamydia) and the role of co-infection;
- Improved knowledge of sexual behavior, especially within groups at high risk of STDs; and
- Lessons regarding the control of AIDS/HIV are broadly applicable to control of other STDs.[7]

Sociology/Anthropology

- Improved understanding of social stigma and prejudice;
- Revealed our lack of knowledge of sexual attitudes and customs; and
- Furthered understanding of risk-taking behaviors, social organizatin, and decision-making processes.

Substance Abuse

- Improved understanding of behavioral patterns and modification;
- Improved understanding of factors leading to substance abuse, patterns of illicit drug use, and the "drug culture;" and
- Provided insights into the effectiveness of drug treatment programs.

[7]One respondent reported that AIDS/HIV has led to the gross compromise of principles for the control of communicable disease.

Opinions Regarding Federal Spending for AIDS/HIV Research

Current Level of Federal Funding for AIDS/HIV Research-Nearly one-half of survey respondents felt that the current level of federally funded AIDS/HIV research was about right. A greater proportion of respondents felt that funding was too low (31 percent), rather than too high (18 percent) (figure 3).8 ***Scientists with*** some professional activity related to AIDS/HIV were more likely to perceive AIDS/HIV funding as too low or about right than those not engaged in AIDS/HIV activities (table 8).9

8Five percent expressed no opinion regarding federal spending on AIDS/HIV research.

9The difference in opinion on AIDS/HIV funding by professional activity related to AIDS/HIV was statistically significant as determined by the chi-square test (p=.01).

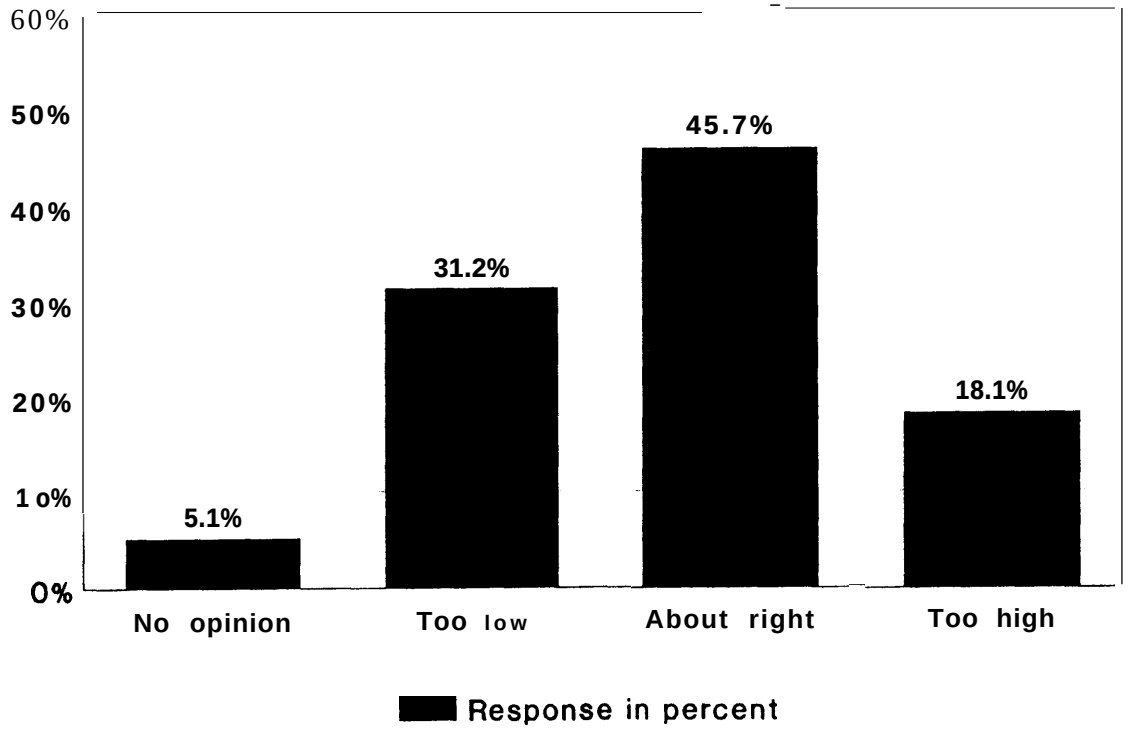
Table 8--OTA **Survey Respondents' Opinions About the Level of Federally Funded AIDS/HIV Research by Whether They Are Engaged in AIDS/HIV Professional Activities**[a]

Opinion about level of Federal AIDS/HIV funding	Professional activities related to AIDS/HIV (n=49)	(n=87)
Too low	26.5%	33.3%
About right	34.7	51.7
Too high	32.7	10.3
No opinion	6.1	4.6

[a]These differences in opinion are statistically significant as determined by the chi-square test (p=.01).

SOURCE: Office of Technology Assessment, 1990.

Figure **3--OTA Survey Respondents' Opinion About Level of Federally Funded AIDS/HIV Research (n=138)**



SOURCE: Office of Technology Assessment, 1990.

Statistically significant differences in opinion about levels of Federal funding for AIDS/HIV research are evident according to whether respondents received external funding in 1989, and whether that funding was from the Federal Government for AIDS/HIV research. Of the respondents that received no external funding, more than one-half felt that Federal AIDS/HIV funding was about right, and nearly one-third indicated that it was too low. Of those who received Federal funds for AIDS/HIV research, one-half felt that funding levels were too low, and the other one-half felt that funding was about right. By contrast, 38 percent of respondents who had received external funding for ***non***-AIDS/HIV research felt that AIDS/HIV funding was too high (table 9).

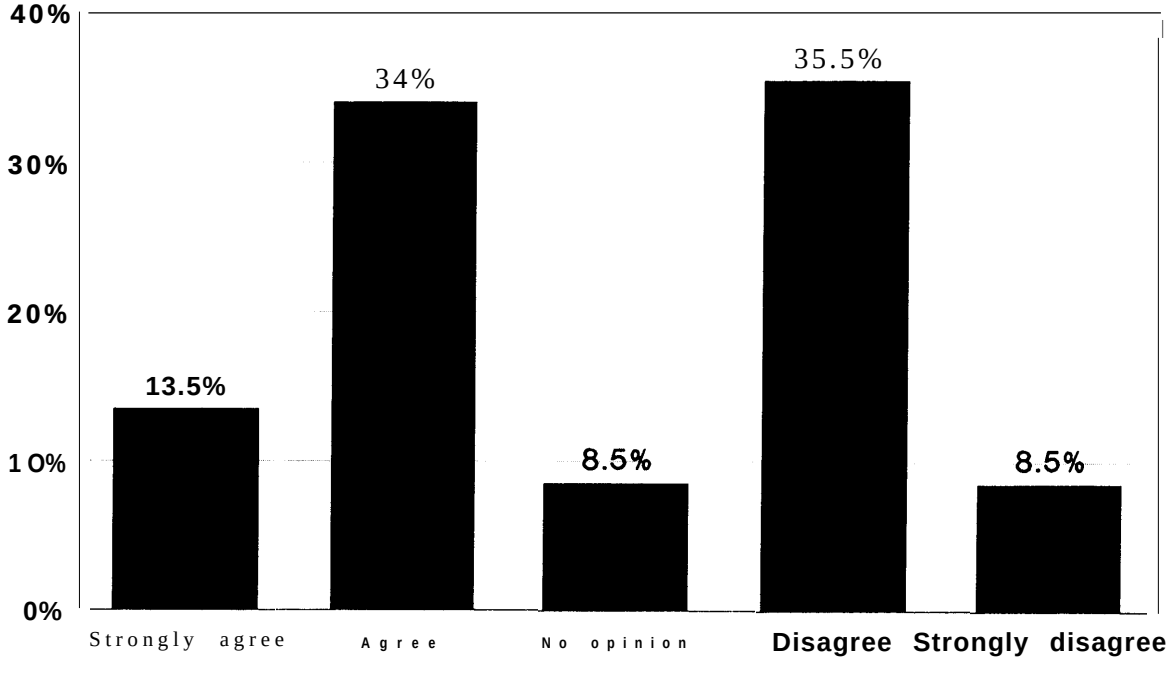
Table 9--OTA Survey Respondents' Opinions About the Level of Federally Funded AIDS/HIV Research by Whether They Receive External Funding or Federal Funds for AIDS/HIV Research[a]

		External funding	
Opinion about level of Federal AIDS/HIV funding	No external funding (n=62)	For non-AIDS/ HIV research (n=48)	For AIDS/HIV Federally funded research (n=24)
Too low 32.3%		22.9%	50.070
About right 51.6		35.4	50.0
Too high 8.1		37.5	0.0
No opinion 8.1		4.2	0.0

[a]These differences in opinion are statistically significant as determined by the chi-square test ($p < .01$).

SOURCE: Office of Technology Assessment, 1990.

Figure 4--OTA Survey Respondents' Agreement with the Statement:
"Too much research funding has been diverted toAIDS/HIV research from other fields"
(n=141)



SOUCE: Office of Technology Assessment, 1990.

Diversion of Research Funds to AIDS/HIV From Other Fields

Nearly half (48 percent) of all survey respondents agreed or strongly agreed that "Too much research funding has been diverted to AIDS/HIV research from other fields." A nearly equal proportion (44 percent) disagreed or strongly disagreed with this statement (figure 4).[10] Respondents engaged in some AIDS/HIV professional activities are less likely to feel that too much research funding has been diverted than those without such activities, but these differences are not statistically significant (table 10).

There were statistically significant differences in opinion about diversion of research funds according to whether respondents received external funding in 1989, and whether that funding was from the Federal Government for AIDS/HIV research. Thirty percent of scientists that received no external funding in 1989 agreed or strongly agreed that too much research funding had been diverted to AIDS/HIV research from other fields. Scientists receiving external funds for ***non*** AIDS/HIV research were more than twice as likely to feel that research funds had been diverted. More than one-third (38 percent) of scientists receiving Federal AIDS/HIV funds felt that too much research funding had been diverted to AIDS/HIV, but 58 percent disagreed or strongly disagreed that funds had been diverted (table 11).

10Almost all (% percent) respondents who felt that Federal funding for AIDS/HIV research is too high agreed that "too much research funding has been diverted to AIDS/HIV research from other fields," Slightly more than two-thirds (65 percent) of those who felt that Federal funding for AIDS/HIV research is too low disagreed, but 30 percent agreed that too much funds had been diverted from other fields. Among those indicating that Federal AIDS/HIV research funding is about right, 44 percent agreed and 49 percent disagreed that too much diversion had occurred.

Table IO-OTA Survey Respondents' Extent of Agreement/Disagreement with the Statement, "Too Much Research Funding Has Been Diverted to AIDS/HIV From Other Fields," by Respondents' Involvement in AIDS/HIV Professional Activities[a]

Extent of agreement with statement	Respondents' professional involvement in AIDS/HIV activities	
	(n=49)	Yes (n=90)
Strongly Agree	20.4%	10.0%
Agree	34.7	32.2
No opinion	10.2	7.8
Disagree	26.5	41.1
Strongly disagree	8.2	8.9

[a]These differences in opinion are not statistically significant as determined by the chi-square test (p= .32).

SOURCE: Office of Technology Assessment, 1990.

Table 1 l--OTA Survey Respondents' Extent of Agreement/Disagreement with the Statement, "Too Much Research Funding Has Been Diverted to AIDS/HIV From Other Fields," by Whether They Receive External Funding or Federal Funds for AIDS/HIV Research[a]

Extent of agreement with statement	No external funding (n=64)	External funding	
		Non-Federally funded and non-AIDS/HIV research (n=49)	AIDS/HIV Federally funded research (n=24)
Strongly agree	6.3%	30.6%	0.0%
Agree	23.4	42.9	37.5
No opinion	14.1	4.1	4.2
Disagree	46.9	14.3	50.0
Strongly disagree	9.4	8.2	8.3

[a]These differences in opinion are statistically significant as determined by the chi-square test (p< .01).

SOURCE: Office of Technology Assessment, 1990.