

1996-97 Information Technology Services - Medicine Annual Report Highlights

The network and major information resources

- Electronic mail and MEDLINE are the most important electronic resources at the Medical Center, from the perspective of the proportion of the Medical Center who use them *and* who consider them crucial to their work. One-half of Hospital residents and nurses and faculty, students, and M&P staff at the Schools of Medicine and Nursing use electronic mail and consider it crucial to their work and 40% use MEDLINE and rate it crucial. Approximately one-quarter (28%) use the Web and rate it crucial.
- Controlling for population increases, the number of networked computers has increased by 51% in the past year. This year one in every two computers at the Schools of Medicine and Nursing is connected to the campus network, compared to one in three last year.
- Controlling for population increases, the number of electronic mail users has increased by 32%, bringing the number of electronic mail users per computer to 1.3.
- Use of all major information resources except Biomed VAX molecular biology programs increased by at least one-third from last year. The molecular biology programs were the only resource whose use dropped, due both to migration from this fee-for-service resource to free Web and microcomputer-based resources and an effort to reduce use of student accounts by labs.
- The largest increase was for Current Contents, which increased 495% as a result of being moved from Basis, as a fee-for-service resource, to Ovid, as a resource free to users.
- Use of computers and library resources from off-campus has increased by, respectively, 20% and 42% since last year. Approximately one-third of the Medical Center community uses library resources and 72% use computers from home or an off-campus office.

The Web

- Use of the Medical Center Web service increased by 149% in the past year.
- The home pages of the following five sites accounted for 13% of all Web page requests: the Medical Center, the Medical Library, the School of Medicine, the Center for Advanced Instructional Media, and MedMenu.
- The greatest increases in use of the Web site are by the Yale community and people connecting from major network providers. Yale usage now accounts for 31% of IP addresses connecting to the site, up from 16% last year. The number of IP addresses connecting to the site from major network providers has more than tripled. With an increase of 34%, the number of US government and military IP addresses connecting showed the smallest growth.

Help Desk and Desktop Support

- Approximately half of faculty and M&P staff have used the Help Desk (48%) or Desktop Support (53%) in the past six months. On average, 953 individuals call the Help Desk each month; about half as many (467) connect to the ITS-Med Web site each month.
- The most common calls to the Help Desk are from people experiencing problems with microcomputers or printers, reporting network problems, or ordering new services. Together, these three categories account for one-half of all calls.

Library public workstations

- The following five resources account for 90% of connections from the Medical Library's public workstations: Biomed VAX sessions, the Web, MEDLINE, the Yale Library Catalog, and Pantheon/Minerva sessions. On average per workstation per day, users connect 12 times to the Biomed VAX, 9 times to the Web, 5 times to MEDLINE, 3 times to the Yale Library Catalog, and twice to Pantheon/Minerva.
- Of the seven major groupings of resources, usage increased from last year in email/news/network, word processing & utilities, and medical education.
- Approximately half (53%) of the 126 resources were used less this year than last year.

Hospital clinical workstations

- The most heavily used resources at the Hospital's clinical workstations are CCSS, the Clinical Laboratory, the Web, and Groupwise electronic mail. Together they account for 80% of usage. CCSS is used an average of 6 times per workstation per day, the Clinical Laboratory 5 times, the Web 3 times, and Groupwise once.
- The resources whose use underwent the greatest growth from at the Hospital's clinical workstations are ChartView, Surgical Pathology, EPIC, the Web, CCSS, Micromedex, Clinical laboratory, Wordperfect. Usage of each doubled or more.
- Despite the fact that the number of clinical workstations at the Hospital increased from 72 to 100 in the past year, some resources showed flat or negative growth. They were: a utility to locate Clinical Workstation, Rosen's Emergency Medicine, the Yale Library Catalog, STAT!-Reference, Little Brown Handbooks, Merck Manual, and the YNHH Physician Phone Book.

Information Technology Services - Medicine Annual Report

July 1996-June 1997

Overall resource usage

Type of application	# of connections			% change from last year
	96-97	95-96	94-95	
Biomed Vax	756,078	610,771	473,929	24%
# of logons/user/month	36	31	29	16%
CINAHL	4,400	3,318	-	33%
Clinical Reporting System	6,588	3,829	-	72%
% of Med. Center community using	13%	-	-	-
mean rating of importance*	2.8	-	-	-
Core Biomedical Collection	9,432	-	-	-
% of Med. Center community using	51%	-	-	-
mean rating of importance*	2.7	-	-	-
Current Contents	33,824	5,684	6,927	495%
% of Med. Center community using	47%	-	-	-
mean rating of importance*	2.4	-	-	-
Electronic mail (# messages sent)	5,551,564	3,000,528	-	85%
# of messages/user/month	122	100	-	22%
% of Med. Center community using	86%	78%	70%	10%
mean rating of importance*	1.6	-	-	-
Health Planning & Administration	4,279	2,528	-	69%
Medline	194,061	142,494	101,154	36%
% of Med. Center community using	84%	76%	76%	11%
mean rating of importance*	1.8	-	-	-
Medical Center World Wide Web	5,046,538	2,028,988	-	149%
% of Med. Center community using	87%	72%	48%	21%
mean rating of importance*	2.0	-	-	-
Medical Center home page	344,245	75,491	-	356%
Hospital home page	15,646	10,367	-	51%
School of Medicine home page	74,360	42,306	-	76%
Medical Library home page	124,463	47,310	-	163%
Molecular biology programs	2,110	2,479	2,321	-15%

*importance was rated on a 5-point scale, where 1=crucial and 5=useless

Off-campus usage

	% of Medical Center community			
	96-97	95-96	94-95	last year
Use of computers	72%	60%	61%	20%
Use of library resources	34%	24%	-	42%

NetMenu workstation usage

Type of application	Medical Library NetMenu				Hospital NetMenu				Nursing NetMenu			
	# of connections	% change from last year			# of connections	% change from last year			# of connections	% change from last year		
	1996-97	1995-96	1994-95	last year	1996-97	1995-96	1994-95	last year	1995-96	1995-96	1994-95	last year
Medical Education	17,544	14,131	11,135	24%	-	-	-	-	-	-	-	-
Bibliographic databases & search tools	89,003	95,027	94,268	-6%	23,802	17,333	9,285	37%	3,039	3,173	2,753	-4%
Full text & factual databases	4,525	5,515	5,682	-18%	33,141	19,151	7,079	73%	133	133	59	0%
Grant & research information	254	1,036	1,455	-75%	-	-	-	-	29	23	6	26%
Clinical assistance	105	713	870	-85%	622	441	426	41%	27	27	7	0%
Email/news/networks	230,623	164,434	91,656	40%	128,705	50,963	2,409	153%	4,940	4,289	1,293	15%
Word processing & utilities	4,691	3,349	3,211	40%	20,941	10,932	295	92%	-	-	-	-
Hospital information systems	-	-	-	-	348,209	164,049	38,474	112%	-	-	-	-
Procedure recorders	-	-	-	-	5,311	3,748	1,530	42%	-	-	-	-
Total	346,745	284,205	208,277	22%	560,731	266,617	59,498	110%	8,168	7,645	4,118	7%
connections per workstation	12,384	13,534	9,918	-8%	6,520	4,677	1,750	39%	8,168	7,645	4,118	-

Background information

	Hospital		Schools of Medicine & Nursir	
	1996-97	1995-96	1996-97	1995-96
Personal computers	2,200	2,200	7,000	7,000
Electronic mail users	1,000	1,000	5,492	4,089
Networked computers	1,575	1,575	3,800	2,500
Full-time faculty	-	-	1,370	1,270
Medical & graduate students	-	-	1,155	907
Residents & postdocs	440	388	1,090	916
Full-time staff	3,625	4,600	2,230	2,392
Nursing staff	1,312	1,250	-	-
Number of beds	900	900	-	-

Help Desk: January 1997-June 1997

Type of call	# of calls	resolved by	
		Help Desk	resolved next day
Total calls	14,848	PC/printer	2,322 49% 83%
Calls per day	117	Network	2,302 66% 85%
% of clients using/moi	27%	New order	2,285 48% 54%
% of School using in €	48%	Transfer	1,867 98% 99%
# of callers/month	953	Email/Scheduli	1,706 91% 90%
# of Yale affiliates	467	Information req	1,362 98% 97%
using Web page/month		Status inquiry	1,271 95% 97%
% rating 'very skilled'	45%	Admin systems	551 60% 78%
on annual survey		Billing	406 83% 72%

Desktop Support

% of faculty & staff using	52%
% rating 'very skilled' on annual sur	35%
% rating specific service call 'very s	79%

Medical Center Web 1997 annual usage report

Greater than average growth

of users from Yale
 Medical Center
 MedMenu
 Diagnostic Radiology
 # of users from major online service providers
 Obstetrics & Gynecology
 Orthopaedics & Rehabilitation
 Scientific Affairs/Grant & Contract Administration
 Laboratory Medicine
 Medical Library
 Computing page

Slow growth

School of Medicine application
 # of users from US government & military
 Psychiatry
 Ophthalmology
 Cell Biology
 Biomedical Communications
 C/AIM (7% less usage)
 School's organizational chart (39% less usage)

	<u>1996-97</u>	<u>1995-96</u>	<u>% change</u>		<u>1996-97</u>	<u>1995-96</u>	<u>% change</u>
Server total*	5,046,538	2,028,988	149%				
Who connected				Academic Departments**			
Yale	1,282,683	261,510	390%	Anesthesiology	4,007	2,467	62%
other US educational institutions	593,207	382,378	55%	BBS	1,853	-	-
US government & military	53,631	39,894	34%	Boyer Center for Molecular B	5,821	2,408	142%
US commercial institutions	923,039	452,677	104%	Cancer Center	5,603	2,504	124%
US non-profit organizations	48,572	24,182	101%	Cell Biology	6,059	5,203	16%
Major online service providers	526,977	172,287	206%	Cellular & Molecular Physiol	2,787	1,558	79%
International	722,470	314,305	130%	Child Study Center	2,920	-	-
# of unique hosts connecting	584,553	297,398	97%	Comparative Medicine	858	372	131%
				Dermatology	5,814	3,079	89%
Medical Center	344,245	75,491	356%	Diagnostic Radiology	7,105	2,315	207%
Yale-New Haven Hospital	15,646	10,367	51%	Epidemiology & Public Heal	16,371	9,765	68%
School of Medicine	74,360	42,306	76%	Genetics	5,230	3,451	52%
School of Nursing	6,758	3,270	107%	History of Medicine	1,223	796	54%
Major resources				Immunobiology	1,820	-	-
School's organizational chart	809	1,266	-36%	Internal Medicine	3,544	2,012	76%
Computing page	4,443	1,718	159%	Laboratory Medicine	2,075	776	167%
Core research facilities page	2,329	1,264	84%	Neurobiology	6,394	2,828	126%
Education page	3,925	2,594	51%	Neurology	3,714	2,452	51%
Emerging Infections Information	20,462	12,125	69%	Neuroscience Program	1,732	744	133%
Medical Library	124,463	47,310	163%	Neurosurgery	772	-	-
MedMenu	38,477	11,849	225%	Obstetrics & Gynecology	3,295	1,152	186%
Scientific Affairs/Grant & Contra	9,926	3,620	174%	Ophthalmology	5,576	4,643	20%
School of Medicine application	6,162	4,499	37%	Orthopaedics & Rehabilitatic	1,572	558	182%
Yale Faculty Practice	3,035	-	-	Pathology	6,914	3,314	109%
Service departments				Pediatrics	2,355	-	-
Academic Computing	660	-	-	Pharmacology	3,050	1,683	81%
Biomedical Communications	4,258	3,839	11%	Physician Associate Program	3,509	-	-
C/AIM	52,821	56,836	-7%	Psychiatry	8,944	7,320	22%
Center for Cell Imaging	3,832	2,334	64%	Surgery	3,328	1,760	89%
Copy Center	72	-	-	Therapeutic Radiology	299	-	-
Desktop Support	12,964	-	-				
Systems Support	1,613	-	-				
Technology Operations	513	-	-				

*The server total reflects all html requests made of the server, including images that are part of Web pages.

The departmental totals reported are requests for home pages and do not include requests for other pages within each of these sites.

**Molecular Biochemistry and Biophysics and the Center for Medical Informatics are nto listed because they reside on other servers.

Details for NetMenu Hospital usage

Application	total # of connections % change				Application	total # of connections % change			
	1996-97	1995-96	1994-95	from last year		1996-97	1995-96	1994-95	from last year
Hospital information systems	348,209	164,049	38,474	112%	Full text and factual databases	33,141	19,151	7,079	73%
CCSS	179,996	83,855	19,226	115%	Accreditation Manuals (6/96)*	374	21	-	1681%
ChartView (7/95)*	4,596	1,566	-	193%	Delineation of Clinical Privileges (6/96)*	757	30	-	2423%
Clinical laboratory	155,301	74,613	17,866	108%	Harrison's (12/95)*	4,926	2,369	-	108%
Diagnostic Imaging	2,317	1,597	202	45%	Little Brown Handbooks	2,635	2,654	1,623	-1%
EPIC	2,983	1,206	3	147%	Merck Manual	1,416	1,534	1,229	-8%
Surgical Pathology	3,016	1,212	1,177	149%	Micromedex	16,246	7,683	4,176	111%
					New England Journal of Medicine	2,931	2,071	-	42%
Bibliographic databases and search tools	23,802	17,333	9,285	37%	Red Book on Pediatric Infections	535	367	51	46%
CINAHL	1,968	1,305	593	51%	Rosen's Emergency Medicine (12/95)*	803	439	-	83%
Health Planning and Administration	678	540	4	26%	STAT!-Reference (12/95)*	1,545	907	-	70%
MEDLINE	19,956	14,299	7,991	40%	YNHH Physician Phone Book (12/95)*	973	1,076	-	-10%
Yale Library Catalog (OPAC)	1,200	1,189	681	1%					
					Email/news/networks	128,705	50,963	2,409	153%
Procedure recorders	5,311	3,748	1,530	42%	Biomed Email	12,570	7,610	1,394	65%
Emergency (6/97)*	35	-	-	-	GroupWise Email (12/95)*	24,144	3,992	-	505%
Medicine	1,349	883	792	53%	Internet access	91,991	39,361	1,015	134%
OB/GYN (7/95)*	2,244	1,764	-	27%					
Surgery	1,683	1,101	738	53%	Word processing & utilities	20,941	10,932	295	92%
					Clinical Workstation locations (12/95)*	1,033	555	-	86%
Clinical assistance	622	441	426	41%	Format disk	597	283	4	111%
Coag Advisor	622	441	265	41%	Virus scan	572	357	4	60%
					Wordperfect	18,739	9,737	287	92%

Details for NetMenu Medical Library usage

Application	total # of connections				Application	total # of connections				Application	total # of connections			
	1996-97	1995-96	1994-95	% change		1996-97	1995-96	1994-95	% change		1996-97	1995-96	1994-95	% change
Bibliographic databases and search tools	89,003	95,027	94,268	-6%	Full text and factual databases	4,525	5,452	5,570	-17%	Medical Education	17,544	14,131	11,135	24%
AIDSLINE	224	607	1,011	-63%	Academic Press Journals (11/96)*	67	-	-	-	Abdomen Quiz	1,198	497	-	141%
Biosis	566	1,766	2,850	-68%	American Journal of Medicine (3/96)*	162	46	-	252%	Anatomic Explorer	638	769	1,099	-17%
Books in Print (4/96)*	171	48	-	256%	American Journal of Obstetrics (11/96)*	13	-	-	-	Anatomic Explorer CT	422	451	931	-6%
CINAHL	232	715	1,026	-68%	American Journal of Surgery (3/96)*	44	26	-	69%	Animated Embryo	461	653	569	-29%
Current Contents	728	1,965	3,951	-63%	Annals of Internal Medicine (3/96)*	72	19	-	279%	Brainstem	318	334	228	-5%
ERIC (4/96)*	83	8	-	938%	Archives of General Psychiatry (3/96)*	91	21	-	333%	Brainstem Quiz (4/97)*	55	-	-	-
Eureka (3/96)*	75	33	-	127%	BMJ (3/96)*	51	28	-	82%	Brainstorm	577	655	581	-12%
Expanded Academic Index	249	725	1,490	-66%	Britannica Online (4/96)*	120	6	-	1900%	Breath sounds	195	179	304	9%
Health Planning and Administration	120	416	23	-71%	Canadian Medical Association Journal (3/96)*	29	4	-	625%	Cardiac Angio	179	107	90	67%
MEDLINE	53,402	56,187	53,810	-5%	Circulation (3/96)*	20	21	-	-5%	Cardiac Auscultation	362	380	562	-5%
NLM Locator (3/96)*	6	11	-	-45%	Electronic Journals (11/96)*	69	-	-	-	Cardiac Echo	144	162	192	-11%
PsycINFO	1,363	2,332	3,216	-42%	Faculty Research Interests database (6/96)*	188	8	-	2250%	Cardiac MRI	130	143	257	-9%
Science Citation Index	1,401	2,168	2,070	-35%	FREIDA	792	974	844	-19%	Cardiac Perfusion Imaging: SP	45	37	44	22%
Search term lookup	51	254	708	-80%	GenBank	139	211	320	-34%	Cardiac Perfusion Imaging: PI	50	80	55	-38%
Yale Information Sources Directory	1,663	1,871	1,282	-11%	History of Science & Technology (4/96)*	155	18	-	761%	Cardiothoracic Image Quiz	452	357	152	27%
Yale Library Catalog (OPAC)	28,669	25,921	22,831	11%	Journal of Biological Chemistry (1/96)*	124	59	-	110%	Cardiothoracic Imaging	238	364	558	-35%
					Journal of Bone & Joint Surgery (3/96)*	18	4	-	350%	Concise Atlas - Cardiothoracic (2/96)*	126	22	-	473%
					Journal of Clinical Investigation (3/96)*	21	13	-	62%	Concise Atlas - Chest (2/96)*	159	20	-	695%
					Journal of Molecular Biology (8/97)*	34	-	-	-	Concise Atlas - Extremities (11/96)*	269	-	-	-
Email/news/networks	230,623	164,434	91,656	40%	JAMA (3/96)*	115	35	-	229%	Concise Head & Neck (2/97)*	197	-	-	-
Biomed Email	122,837	103,964	69,532	18%	Lancet (3/96)*	68	22	-	209%	Cranial Nerves - Multi Choice (5/97)*	22	-	-	-
Bulldog Access (1/96)*	540	375	-	44%	Legislate	22	171	191	-87%	Embryo images	814	1,051	318	-23%
MEDINFO (Yale-New Haven gopher)	-	3,969	8,441	-	Micromedex	99	137	26	-28%	EPS Review	108	117	109	-8%
NIH gopher	18	748	1,710	-98%	MMWR	71	281	375	-75%	Extremities Quiz	829	344	-	141%
Pantheon/Minerva (3/96)*	20,937	1,043	-	1907%	Network Entrez	79	70	1	13%	Forebrain (Syracuse)	58	78	62	-26%
World Wide Web	86,095	45,151	623	91%	New England Journal of Medicine (8/95)*	151	402	-	-62%	Gross Anatomy Review	1,471	1,133	1,493	30%
YaleInfo	196	9,184	11,350	-98%	NEXIS	954	2,058	2,681	-54%	HARP (Histological Anatomy Review)	239	225	298	6%
					Nucleic Acids Research (8/97)*	26	-	-	-	Head Quiz (2/96)*	594	309	-	92%
word processing & utilities (CRL)	4691	3349	3,211	40%	OMIM/GDB	100	293	364	-66%	Head & Neuroanatomy Quiz (4/97)*	43	-	-	-
Epi Info	133	114	216	17%	Pediatrics (3/96)*	102	36	-	183%	Histology Quizbank	294	120	-	145%
Excel for Windows (2/96)*	348	124	-	181%	Phone Books (4/96)*	262	144	-	82%	Histology Video Review	185	201	330	-8%
Format disk	95	117	151	-19%	Science (3/96)*	198	58	-	241%	HyperCELL	60	124	158	-52%
FTP for Windows (2/96)*	161	6	-	2583%	Scientific American Medicine Consult	46	184	571	-75%	Hyperheart	122	221	159	-45%
Health Risk Appraisal	9	25	45	-64%	YNHH Nursing Manual (2/97)*	16	-	-	-	Interactive Brain Atlas	192	184	-	4%
Virus Scanner (F-PROT) (2/96)*	131	67	-	96%						Interactive Respiratory Physiology	59	20	-	195%
Wordperfect for Windows	3814	2752	2,799	39%	Grant and research information	254	1,036	1,455	-75%	KINEMAGE	61	109	98	-44%
					Annual grant deadlines	30	220	344	-86%	Lazy Eye	135	139	181	-3%
					Community of Science (11/96)*	14	-	-	-	MacBaby	651	785	532	-17%
					CT CRISP	123	457	570	-73%	Microbiology Quizbank	561	297	-	89%
					IRIS (1/96)*	79	67	-	18%	Neuroanatomy Review	218	193	189	13%
					NIH Guide to Grants & Contracts	8	292	541	-97%	Neuron Model: Tutorial	55	60	45	-8%
										Neuron Model: Current Clamp	45	54	48	-17%
					Clinical assistance	105	713	870	-85%	Neuron Model: Voltage Clamp	60	50	40	20%
					Coag Advisor	11	215	232	-95%	Pathology Quizbank	1,442	1,681	656	-14%
					DXplain (1/96)* (11/96)**	14	105	-	-87%	Perineum Quiz (2/96)*	379	224	-	69%
					NIH Consensus Development Statements	2	119	152	-98%	PreTest (11 different fields)	382	107	-	257%
					Physician Data Query (PDQ)	78	274	349	-72%	Superhead	267	280	276	-5%
										Thorax Quiz	640	313	-	104%
										USMLE Step 1 (4/96)*	694	88	-	689%
										USMLE Step 2 (4/96)*	599	42	-	1326%
										Wheater's Interactive Histology (9/97)*	50	-	-	-

* Application was added in the month shown
 ** Application was removed in the month shown