

ASCP Board of Registry's 1999 Annual Survey of Medical Laboratory Science Programs

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Every year since 1984, the American Society of Clinical Pathologists' Board of Registry (ASCP-BOR) has conducted annual surveys of medical laboratory science programs accredited by the National Accrediting Agency for Clinical Laboratory Sciences and the Commission on Accreditation of Allied Health Education Programs. The survey monitors the following:

1. The quality and quantity of applicants to the accredited educational programs.
2. The number of program graduates and the number of graduates who find employment immediately upon graduation.
3. Changes in the structure and operation of educational programs.

Methods

Surveys were sent to program directors of NAACLS- and CAAHEP-accredited programs (both approved and pending approval) for cytotechnologists (CTs), histologic technicians (HTs)/technologists, medical laboratory technicians (MLT), medical technologists (MTs), and specialists in blood banking (SBBs). A scannable survey was used to request information

regarding the program's status (active, inactive, or discontinued), the program's institutional base (eg, hospital, university), the number of students enrolled and graduated, and how many of last year's graduates sought and found employment. Information was also collected on changes in program status (eg, changes in number of affiliates, class size, tuition). For the first time, program directors were also asked to indicate changes in the number of clinical rotation positions.

When computing the "average program enrollment" or "average number of graduates," programs with no students or graduates, respectively, were not included in the statistic. The employment rate was based solely on those graduates who were seeking employment. To aid in identifying regional differences, the programs were classified into 1 of 10 geographic regions on the basis of the first digit of their zip code.

Results

Data on the number of surveys mailed, usable surveys returned, and response rate by category are listed in Table 1. The overall survey response rate

Table 1. Survey Distribution and Response Rate

Category	Surveys Mailed	Usable Returns	Response Rate	Inactive Programs	Active Programs
Cytotechnologist	52	46	88%	2	44
Histologic technician	37	27	73%	1	26
Medical laboratory technician	267	240	89.4%	14	226
Medical technologist	296	256	86.5%	26	230
Specialist in blood banking	17	12	70%	1	11
Total	669	581	86.8%	44	537

was 87%, which is typical of the response rates of prior years (86%, 84%, 86%, and 89% in 1998, 1997, 1996, and 1995, respectively).

The figure depicts the educational settings for each type of program. Hospitals and medical centers were the most common program sites for CT, HT, and MT programs. Community colleges were the most common sites for MLT programs. Hospitals and blood centers were the most common sites for SBB programs. The program director's report of quantity and quality of applicants, number of job openings, and changes affecting the program are summarized in Table 2. Enrollment, graduation, and employment summaries broken out by geographic region are listed in Tables 3A-3E.

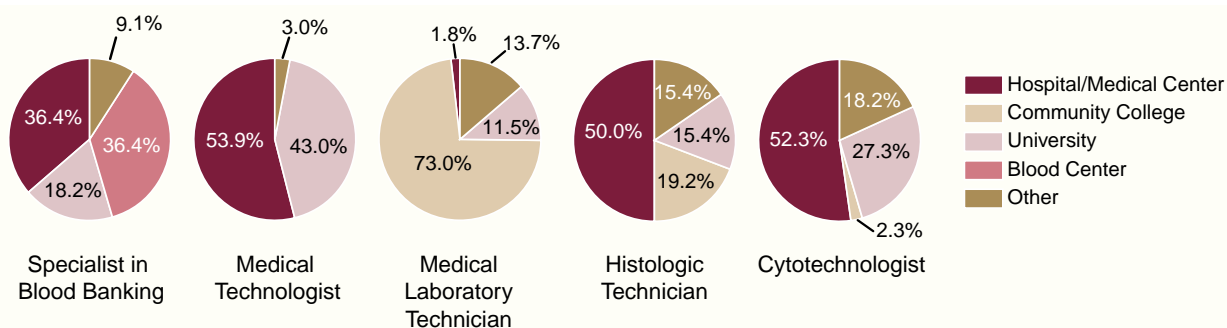
Discussion

Again, as reported in the 1997¹ and 1998² surveys, the 1999 survey of program directors revealed that both the quantity and quality of the applicant pool has declined for accredited HT, MT, and MLT programs. Conversely, SBB and CT program directors reported an increase in the number of applicants. The quality of the applicant pool is continuing to drop for all programs, except for SBB. A change from 1998 was that class size for the HT programs declined, and SBB class size increased more than 5%.

Program officials reported that the number of students admitted to their programs is continuing to decrease, and intensive student recruitment efforts are needed. In fact, some programs did not

start a new class in 1999, owing to negligible enrollments. Many program officials stated that the reason the applicant pool is shrinking is related to the low entry-level salaries for their graduates. Program directors also expressed concern about the lack of public recognition of careers in medical laboratory sciences and are hopeful that professional societies will intensify their efforts to heighten awareness of these careers. This is an important point given that a greater percentage of program officials reported an increase in the number of job openings for their students. In 1999, many graduates received multiple job offers and some received attractive sign-on bonuses. This information is consistent with the recent wage and vacancy survey of clinical laboratory managers, conducted by the ASCP BOR.³ The 1998 wage and vacancy survey revealed that from 1996 to 1998, vacancy rates for 7 of the 10 clinical laboratory positions increased. The increase in the number of job openings for program graduates may also be attributed to an increase in the number of available positions outside the traditional clinical laboratory environment.

Program directors continue to report difficulty finding and retaining hospital affiliates for clinical rotations. This has led some programs to increase the number of affiliates to maintain the same level of enrollment. Some programs decreased the training time at hospital sites and increased the training time in a simulated laboratory setting. Some program directors have modified the curriculum in response to the reduction in clinical



Educational settings of 1999 laboratory programs.

Table 2. Changes in Program Status

Change	CT (n=44)	HT (n=26)	MLT (n=226)	MT (n=231)	SBB (n=11)
Decrease in number of affiliates	7%	8% ↑	16.4%	10.4%	0%
Increase in number of affiliates	14%	27%	16.4% ↑	14.7%	0%
Decrease in clinical rotation positions*	4%	0%	19.5%	9.5%	18%
Increase in clinical rotation positions*	9%	12%	4.0%	5.2%	0.0%
Decrease in class size	2%	8% ↑	17.3%	17.3%	0.0% ↓
Increase in class size	7%	27% ↑	12.4%	11.7%	18% ↑
Discontinuation of program	7%	8%	8.0%	7.4%	18% ↑
Curriculum changes	4%	15% ↑	21.7%	19.0% ↑	9%
Other changes	9% ↑	8%	5.3%	2.2%	18% ↑
Decreased quantity of applicants	60%	50% ↑	74.8% ↑	73.2% ↑	27% ↓
Increased quantity of applicants	18% ↑	19%	13.3%	13.4%	18% ↑
Decreased quality of applicants	43% ↑	15%	51.8% ↑	37.7% ↑	9% ↓
Increased quality of applicants	18%	31%	11.9%	16.5%	9% ↑
Decreased number of job openings	16% ↓	8% ↑	13.7% ↓	11.3%	0%
Increased number of job openings	57% ↑	69% ↑	52.7% ↑	64.9% ↑	36%
Student recruitment needed	54% ↑	46% ↑	69.0% ↑	58.4% ↑	46% ↑
Tuition change	36% ↑	23%	24.8% ↑	25.1%	9%

¹CT, cytotechnologist; HT, histologic technician; MLT, medical laboratory technician; MT, medical technologist; SBB, specialist in blood banking. ↑ or ↓ indicates a 5% or greater change from 1998.
*New question for 1999.

Table 3A. Cytotechnologist Program Response, Enrollment, Graduates, and Employment Rate by Region* and Category.

Region	Programs Responding			Programs Eliminated or on Hold			Total Enrollment			Average Enrollment			Average No. of Graduates			Graduate Employment (%)		
	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99
0	7	6	5	0	1	0	36	26	26	5	5	5	5	5	5	72	64	96
1	10	7	5	0	1	0	62	49	38	6	7	8	7	6	7	67	88	91
2	8	7	6	0	1	1	43	22	35	5	4	7	6	4	4	86	100	84
3	6	3	4	1	0	0	37	19	24	7	6	6	6	8	6	83	95	95
4	6	5	6	0	0	0	34	28	26	6	6	5	7	5	5	84	96	100
5	7	5	6	1	1	1	33	16	26	6	4	5	5	4	4	91	90	100
6	4	3	3	1	0	0	12	13	11	3	4	4	4	3	4	93	100	91
7	5	6	6	1	1	0	31	30	29	8	6	6	7	6	5	100	100	89
8	1	2	2	0	0	0	4	10	12	4	5	6	4	7	5	75	92	80
9	3	3	3	0	0	0	10	12	12	3	4	4	5	4	5	100	100	100
Total	57	47	46	4	5	2	302	225	239	6	5	6	6	5	5	84	91	94

Table 3B. Histologic Technician Program Response, Enrollment, Graduates, and Employment Rate by Region* and Category

Region	Programs Responding			Programs Eliminated or on Hold			Total Enrollment			Average Enrollment			Average No. of Graduates			Graduate Employment (%)		
	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99
0	3	2	3	2	0	1	5	25	7	5	13	4	3	15	3	100	100	100
1	4	5	5	1	0	0	15	29	34	5	6	7	6	4	4	77	100	79
2	2	1	2	0	0	0	22	4	13	11	4	7	12	3	9	81	67	100
3	5	4	1	3	2	0	4	12	15	2	6	15	3	3	3	78	100	100
4	6	7	7	2	1	0	39	42	53	8	11	8	7	6	7	97	98	100
5	3	4	3	0	0	0	15	23	26	5	6	9	4	3	5	100	91	100
6	3	2	1	2	1	0	1	0	2	1	NA	2	1	1	2	NA	100	100
7	4	4	4	0	0	0	10	11	12	3	3	3	2	2	3	100	100	88
8	1	1	1	0	0	1	2	2	1	2	2	1	2	2	2	100	100	100
9	1	0	0	1	NA	NA	NA	NA	NA	NA	NA	NA	3	NA	NA	67	NA	NA
Total	32	30	27	11	4	2	113	148	163	5	6	6	4	4	4	90	97	96

Table 3C. Medical Laboratory Technician Program Response, Enrollment, Graduates, and Employment Rate by Region* and Category

Region	Programs Responding			Programs Eliminated or on Hold			Total Enrollment			Average Enrollment			Average No. of Graduates			Graduate Employment (%)		
	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99
0	25	21	23	1	0	1	152	100	117	7	6	5	8	6	6	76	86	92
1	25	24	23	0	3	2	278	219	152	11	10	7	9	8	6	82	83	89
2	32	33	30	1	4	1	272	263	277	10	9	10	9	8	7	81	96	97
3	37	37	38	1	1	0	428	383	359	13	12	10	10	9	8	82	95	88
4	30	31	35	2	3	6	244	208	208	10	8	7	9	10	6	82	95	93
5	23	23	23	1	1	1	238	194	190	10	9	9	9	8	7	92	95	95
6	17	12	19	0	0	0	144	86	131	8	8	8	8	9	7	81	95	97
7	32	33	32	1	3	0	861	686	235	29	25	8	10	9	8	92	99	100
8	10	8	9	2	2	2	77	35	49	10	7	7	7	8	6	75	96	97
9	7	7	8	0	1	1	158	148	65	23	21	9	12	9	11	82	93	98
Total	238	229	240	9	18	14	2,852	2,322	1,783	13	12	8	9	8	7	84	94	94

training time available to the students by adding more management, molecular biology, forensics, and professional issues credit hours. Other program officials have simply lowered the number of credit hours required for the clinical practicum component of the curriculum.

The reduction in clinical training time for students has also led to additional distance learning courses and more articulation agreements among MLT and MT programs. In some states, standardized curricula are being developed.

The combination of low enrollments, difficulty in finding clinical training sites, and budget constraints in the academic and laboratory environments has

led to an increase in the number of program closures both for hospital-based and university-based programs. Keeping programs open is vital to address future staffing needs. ☹

References

1. Castleberry BC, Simpson P, O'Neill T. 1997 Annual survey of medical laboratory science programs. *Lab Med.* 1998;29:598-601.
2. Ward-Cook K, Simpson P, O'Neill T. 1998 Annual survey of medical laboratory science programs. *Lab Med.* 1999;30:652-655.
3. Castleberry BC, Wargelin LL. 1998 Wage and vacancy survey of medical laboratories: wages up slightly, vacancies on the upswing. *Lab Med.* 1999;30:174-178.

Table 3D. Medical Technologist Program Response, Enrollment, Graduates, and Employment Rate by Region* and Category

Region	Programs Responding			Programs Eliminated or on Hold			Total Enrollment			Average Enrollment			Average No. of Graduates			Graduate Employment (%)		
	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99
0	28	27	28	2	1	3	279	309	314	11	12	13	10	11	11	91	93	93
1	29	34	29	1	4	3	271	269	173	9	9	7	9	9	8	77	85	95
2	26	29	25	3	2	0	248	265	241	11	10	10	11	10	9	93	94	96
3	33	30	30	3	2	6	318	287	239	11	10	9	9	8	7	94	94	95
4	38	34	34	7	5	4	331	296	235	10	10	8	8	9	8	92	97	96
5	24	27	23	1	3	2	210	208	174	9	8	8	8	8	8	93	99	99
6	27	26	28	1	0	4	236	244	205	9	9	8	9	9	8	96	99	100
7	36	38	35	4	4	1	356	359	362	11	11	11	10	10	8	89	65	99
8	9	13	8	1	2	0	70	133	93	10	12	12	10	9	9	94	99	97
9	20	16	16	6	8	3	93	100	112	7	9	9	7	7	7	86	91	100
Total	270	274	256	29	31	26	2,412	2,470	2,148	10	10	8	9	9	8	90	94	97

Table 3E. Specialist in Blood Banking Program Response, Enrollment, Graduates, and Employment Rate by Region* and Category

Region	Programs Responding			Programs Eliminated or on Hold			Total Enrollment			Average Enrollment			Average No. of Graduates			Graduate Employment (%)		
	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99	97	98	99
0	1	0	NA	0	NA	NA	1	NA	NA	1	NA	NA	1	NA	NA	100	NA	NA
1	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	3	3	2	1	1	0	7	9	5	4	5	3	4	3	4	100	100	100
3	4	4	2	0	1	1	4	4	1	1	2	1	2	1	1	100	100	100
4	3	2	2	1	0	0	6	4	1	3	4	1	2	3	4	100	100	100
5	2	0	NA	1	NA	NA	2	NA	NA	2	NA	NA	1	NA	NA	100	NA	NA
6	2	1	1	1	0	0	3	3	5	2	3	5	2	3	3	100	100	100
7	5	5	5	1	1	0	9	4	5	2	1	2	2	2	2	100	100	88
8	0	0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
9	1	1	NA	0	0	NA	2	2	NA	2	2	NA	2	2	NA	100	100	NA
Total	21	16	12	5	3	1	34	26	17	2	3	3	2	2	2	100	100	95

*Regions: 0, PR, ME, VT, MA, NH, CT, RI, and NJ; 1, PA, NY, and DE; 2, NC, SC, VA, WV, MD, and DC; 3, TN, MS, AL, GA, and FL; 4, MI, IN, OH, and KY; 5, MT, ND, SD, MN, WI, and IA; 6, IL, MO, KS, and NE; 7, TX, OK, AR, and LA; 8, ID, WY, CO, NM, AZ, UT, and NV; 9, AK, HI, CA, OR, and WA.

NA (not applicable) indicates that there were no responses from that region.