THE NATIONAL BOARD
OF SURGICAL TECHNOLOGY
AND SURGICAL ASSISTING

Job Analysis Summary
Certified Surgical Technologist

prepared by

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Introduction

The job analysis described in this report was conducted in 2017-2018 at the request of the National Board of Surgical Technology and Surgical Assisting (NBSTSA). The purpose of the job analysis was to describe the surgical technologist's job in sufficient detail to provide a basis for developing a national certification examination and ensuring that the content of the examination was job-related.

The NBSTSA appointed an Advisory Committee (AC) to assist in the preparation and review of the job analysis survey instrument. The AC developed a comprehensive inventory of activities that surgical technologists may perform within the performance domain of the job. In addition, demographic variables and a rating scale were selected for use on the survey. After pilot testing, the job analysis survey was distributed to 54,516 surgical technologists throughout the United States. The survey responses were analyzed to determine the significance of each task to the surgical technologist's job.

Job analysis survey data were evaluated to determine the degree of consensus among surgical technologists on critical aspects of the job. Data were specifically analyzed to answer the following questions:

1. What percentage of surgical technologists perform each job task?

2. Which tasks are the most important tasks of the surgical technologist's job?

Advisory Committee

The AC *(Table 1)* was consulted throughout the survey development stages to ensure that expert judgment was available to PSI Services staff. The members of the AC were experienced surgical technologists, all thoroughly familiar with the skills and activities of a surgical technologist, and were chosen to represent a cross-section of surgical technologists (e.g., years of experience, geographic region, professional roles, work environment, etc.).

Table 1. Advisory Committee

Name	Location
Julie Armistead, CST	Glencoe, MO
Mona Bourbonnais, CST	Boise, ID
Keta Carter, CST	Houston, TX
Rochelle Duplechian, CST	Carencro, LA
Larry Gereau, CST	Lake Worth, FL
Julie LeBlanc, CST	Aurora, CO
Fernando Mendoza, CST	Studio City, CA
Kimberly Miller, CST	Culloden, WV

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The responsibilities of the Advisory Committee included the following:

1. Provide PSI current information about the job.
2. Develop the job analysis survey:
   A. develop a sampling plan for the survey,
   B. identify tasks for the survey instrument,
   C. determine the survey rating scales,
   D. determine the relevant demographic variables of interest, and
   E. integrate the definition, tasks, rating scales, and demographics into a survey instrument.
3. Review the final form of the job analysis survey for completeness, relevance to the profession, appropriate language, and clear instructions.
4. Interpret and review survey results, determine task exclusion criteria, and create the final detailed content outline.

Demographic Information

This section of the survey was designed to gather information about the respondents' demographic characteristics. These questions were used to help evaluate potential bias in the respondent group and to allow the AC to consider responses from relevant subgroups. Some of the key demographic variables are presented below.

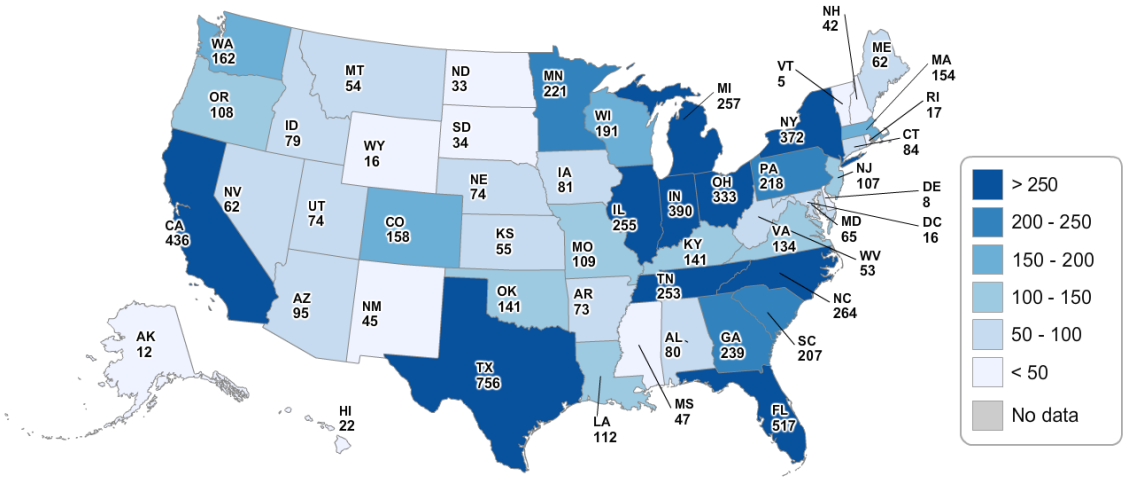

Figure 1. States where survey respondents were employed

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Table 2. States recoded into regions

Region	Frequency	Percent
East/Mid-Atlantic	1,670	22.2
South	2,830	37.6
Midwest	1,525	20.3
West	1,498	19.9
Total	***7,523***	***100.0***

East/Mid-Atlantic: CT, DC, DE, MA, MD, ME, NH, NJ, NY, OH, PA, RI, VA, VT, WV
South: AL, AR, FL, GA, KY, LA, MS, NC, OK, SC, TN, TX
Midwest: IA, IL, IN, KS, MI, MN, MO, ND, NE, SD, WI
West: AK, AZ, CA, CO, HI, ID, MT, NM, NV, OR, UT, WA, WY

Table 3. Place of employment

Place of Employment	Frequency	Percent
Academic institution	445	5.6
Ambulatory care center	894	11.3
Hospital/Healthcare institution	5445	69.0
Medical/Surgical sales company	39	.5
Military/Government	84	1.1
Physician practice	230	2.9
Self-employed	20	.3
Specialty hospital	131	1.7
Traveling staffing agency	200	2.5
Not employed	161	2.0
Other	246	3.1
Total	***7,895***	***100.0***

Table 4. Serving solely in the role of the circulator as part of job responsibility

	Frequency	Percent
Yes	282	3.6
No	7,592	96.4
Total	***7,874***	***100.0***

Table 5. Part of job responsibilities include circulating

	Frequency	Percent
Yes	2,714	34.5
No	5,159	65.5
Total	***7,873***	***100.0***

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Table 6. Primary responsibility/job title

Primary Responsibility	Frequency	Percent
Catheterization Laboratory	7	.1
Clinical Coordinator	79	1.0
Clinical Specialist	62	.8
Endoscopy Center	100	1.3
First/Second Scrub	4,775	62.3
Labor/Delivery	459	6.0
Materials Management	49	.6
Operating Room Manager	26	.3
Operating Room Liaison	68	.9
Peri-Operative Educator	10	.1
Procurement	27	.4
Program Director/Instructor	190	2.5
Sales Representative	22	.3
Sterile Processing	178	2.3
Surgical Support Services	411	5.4
Team Leader	204	2.7
Other	1,003	13.1
Total	***7,670***	***100.0***

Table 7. Additional credentials (select all that apply variable)

Credential	Frequency	Percent
CHL	22	.3
CNOR	34	.4
CORST (NHA)	22	.3
CRCST	399	5.0
CRNFA	3	.0
CSPDT	89	1.1
LPN/LVN	79	1.0
PA-C	6	.1
RN	150	1.9
TS-C	14	.2
TS-C	14	.2
Other	1,169	14.8

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Table 8. Surgical specialties (select all that apply variable)

Specialty	Frequency	Percent
Bariatrics	1,888	23.9
Cardiovascular (open heart)	860	10.9
Cath lab	193	2.4
Endoscopy	2,264	28.6
Endovascular	1,426	18.0
ENT	4,058	51.3
General surgery	5,528	69.9
Genitourinary	3,352	42.4
Neurosurgery	2,877	36.4
OB/GYN	4,766	60.2
Ophthalmology	2,292	29.0
Oral/maxillofacial	2,476	31.3
Orthopedics	5,149	65.1
Pain	1,320	16.7
Pediatrics	1,733	21.9
Peripheral vascular	2,357	29.8
Plastic/reconstructive	3,985	50.4
Robotics	2,070	26.2
Tissue/Organ transplantation	1,106	14.0
Thoracic	1,991	25.2
Other	654	8.3

Table 9. Highest level of education

Education	Frequency	Percent
High school diploma or equivalency diploma	156	2.0
College/vocational certificate/diploma	2,212	28.0
Some college	747	9.5
Associate degree	3,621	45.8
Bachelor's degree	939	11.9
Master's degree	114	1.4
Doctoral degree	24	.3
Other	90	1.1
Total	***7,903***	***100.0***

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Table 10. Training in surgical technology (select all that apply variable)

Type of Training	Frequency	Percent
Associate degree in surgical first assisting	138	1.7
On-the-job	1,170	14.8
Military	347	4.4
Certificate/Diploma - Surgical Technologist	4,688	59.2
Associate Degree - Surgical Technologist	3,401	43

Table 11. CST required as a condition of employment

	Frequency	Percent
Yes	5,065	64.4
No	2,805	35.6
Total	***7,870***	***100.0***

Table 12. Verification of CST credential part of annual review

	Frequency	Percent
Yes	5,337	67.8
No	2,538	32.2
Total	***7,875***	***100.0***

Table 13. Compensation increase after earning the CST

	Frequency	Percent
Yes	3,720	47.4
No	4,125	52.6
Total	***7,845***	***100.0***

Table 14. Employer incorporates CST into clin. ladder system

	Frequency	Percent
Yes	2,682	34.2
No	5,166	65.8
Total	***7,848***	***100.0***

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Table 15. Survey coverage of the job of a CST

Coverage	Frequency	Percent	Cumulative Percent
Completely	3,133	46.8	46.8
Adequately	3,466	51.8	98.6
Inadequately	95	1.4	100.0
Total	***6,694***	***100.0***	

Defining the Work Domain of the Certified Surgical Technologist

The job of the Certified Surgical Technologist was defined by examining the importance ratings. Four decision rules were adopted to provide a systematic and empirical approach for the inclusion and exclusion of task statements for the content outline. To be retained for the content outline, a task statement had to meet the requirements of these rules in sequential order. These decision rules were based on various analyses performed on the importance ratings.

The specific decision rules adopted by the AC and their impact on inclusion of tasks are discussed in detail in the following section. The first two decision rules are general, and include an analysis of all respondents. The third and fourth decision rules were utilized to compare mean ratings by various subgroups.

Decision Rule 1. The task had to be performed by at least 75% of the survey respondents for inclusion on the content outline

By consensus, the AC decided that for a task to be included on the content outline, it had to be performed by **at least 75% of the respondents**. Stated differently, if more than 25% of the respondents rated a task as zero ("not performed" on the importance scale), then it would not be retained for the content outline. The application of this rule resulted in the exclusion of the following nine task statements.

T15 Transport the patient to and from operating room.
T39 Assemble, test, operate, and disassemble specialty equipment: robotic technology.
T69 Transport laboratory specimens.
T84 Participate in organ and tissue procurement.
T86 Operate cleaning and sterilizing devices (e.g., ultrasonic washers, autoclave, cart washer).
T87 Perform quality assurance functions (e.g., biological monitoring of sterilization methods).
T88 Maintain equipment records and logs (e.g., Sterrad, biological, laser log, sterilizers).
T92 Package and sterilize instruments and equipment.
T93 Sterilize instruments for immediate use (e.g., short cycle).

Although all of these task statements were excluded by decision rule no. 1, it was determined that the following four statements were essential to practice and were therefore retained for the content outline by unanimous AC vote.

T15 Transport the patient to and from operating room.
T84 Participate in organ and tissue procurement.

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T92 Package and sterilize instruments and equipment.
T93 Sterilize instruments for immediate use (e.g., short cycle).

Decision Rule 2. The task had to have an overall mean importance rating of 3.50 or higher for inclusion on the content outline.

There were no task statements deleted by the application of decision rule no. 2.

Decision Rule 3. The task had to have a mean importance rating of 3.50 or higher across all geographic regions.

There were no task statements deleted by the application of decision rule no. 3.

Decision Rule 4. The task had to have a mean importance rating of 3.50 or higher across all levels of experience working as a surgical technologist.

There were no task statements deleted by the application of decision rule no. 4.

Summary

The job analysis described in this report was conducted to serve as the basis for the continuing development and content validity of a certification examination program for the Certified Surgical Technologist. An Advisory Committee (AC) was assembled to provide the content expertise and guidance throughout the project. In an effort to develop a comprehensive survey of tasks performed by the surgical technologist, background materials such as the current content outline, job descriptions, performance appraisal forms, training materials, and job logs containing duties performed by surgical technologist were collected. These materials were compiled by PSI, and a master draft task list prepared. This master draft task list was reviewed and discussed with members of the AC.

Upon compiling the meeting results, a draft survey was prepared. This document went through several reviews and revisions that eventually led to the development of a final survey instrument. A nationwide sample of surgical technologists was then surveyed, in an effort to determine the importance of these tasks to the effective performance of the surgical technologist.

A total of 54,516 links to a web-based survey were distributed by electronic mail for completion. After determining the number of undeliverable e-mails, “opt outs” and various exclusions, 8,041 usable survey responses were received.

The AC reconvened for a second meeting to review the results of the survey analysis. During this meeting, all data collected from the survey were reviewed, including the demographics, the percent of survey respondents performing a given task, the overall mean importance level of the tasks, the mean task importance level based on geographic region, and the mean task importance level based on the number of years working as a surgical technologist. This decision rule process enabled the AC to determine which task statements to be included on the content outline of the examination. They concluded that the results of the job analysis survey data adequately defined the surgical technologist’s job on a national basis. Moreover, the AC judged the results sufficient for the purpose of delineating the structure and content of a national certification examination.

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To determine the complexity levels at which the items should be written for the examination, the AC assigned ratings to the retained tasks. This process helps to ensure that the level of complexity of the examination will mirror the complexity level of the job, and that the content of the examination will be reflective of the job. An examination that is developed in accordance with job-related specifications and so documented will possess strong evidence of content validity. These results were therefore used to develop examination specifications directly related to the tasks that the Certified Surgical Technologist performs, and are of direct importance to the objectives of the job.

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