The Utilization of Surgical Technologists and Physician Assistants In the U.S. Health Care System

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Med dansk sammenfatning af AC-medarbejder Eva Louise Eriksen

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Forord

USA har et sundhedsvæsen, som i omsætning pr. indbygger er næsten dobbelt så stort som det danske, men USA's sundhedsvæsen har 30 % færre læger end det danske. I USA er der 2,57 professionelt aktive læger pr. 1.000 indbyggere, og i Danmark er der 3,67 pr. 1.000 indbyggere. En af grundene til dette er formentlig, at man i det amerikanske sundhedsvæsen i højere grad end det danske bruger assisterende sundhedspersonale, der kan aflaste lægerne.

Denne lille DSI publikation beskriver to af disse faggrupper i det amerikanske sundhedsvæsen, nemlig surgical technologist (operationsassistenter eller -teknikere) og physician assistants (lægeassistenter). Publikationen er kun deskriptiv, hvornår er uddannelserne kommet, lidt om hvorfor, hvordan er de uddannede, og hvilke opgaver bestrider de? Vi forholder os ikke til, om vi kan eller skal udvikle tilsvarende uddannelser og professioner i det danske sundhedsvæsen, men man kan jo altid lade sig inspirere en lille smule.

Publikationen er udarbejdet af forskningsassistent Kasey Ryan, som var på praktikantophold i Dansk Sundhedsinstitut fra University of Connecticut, hvor hun lige havde taget en bachelorgrad i health management. AC-medarbejder Eva Louise Eriksen har skrevet en dansk sammenfatning.

Jeg håber, at denne lille publikation kan inspirere lidt i både sygehussektoren og lægepraksisser. Man snakker ofte om lægemangel, og en blandt mange løsningsmuligheder kan være at få eksisterende eller nye faggrupper til at overtage nogle af de knappe lægers opgaver. Sådan tænkte de i USA!

Jes Søgaard
Direktør, professor
Dansk Sundhedsinstitut

Sammenfatning

Assisterende sundhedspersonale i det amerikanske sundhedsvæsen

Det amerikanske sundhedsvæsen har megen erfaring med brug af assisterende sundhedspersonale på hospitaler og i almen praksis. Med en kortere uddannelse, og dermed lavere lønudgift end de kirurger og praktiserende læger, som de assisterer, spiller operations- og lægeassistenterne en vigtig rolle i det amerikanske sundhedsvæsen.

Surgical Technologist (ST) / Operationsassistent

Behovet for operationsassistenter (ST'ere) opstod under Anden Verdenskrig, da lægerne havde brug for assistance som følge af manglen på sygeplejersker. Soldater blev oplært til at være ST'ere, og i mange år varetog Forsvaret uddannelsen.

Der findes i dag 400 forskellige autoriserede ST-uddannelser, som udbydes på vidt forskellige uddannelsesinstitutioner over hele USA. På nogle uddannelser er adgangskravet en studentereksamen, på andre kræves en sundhedsfaglig uddannelsesbaggrund. Uddannelserne varierer i længde fra ni måneder til to år. Selvom det ikke er påkrævet for at kunne søge arbejde, anbefales de studerende at tage den toårige uddannelse, som resulterer i en *'associates degree'.*

The Association of Surgical Technologists (AST), som blev stiftet i 1969, bestemmer det overordnede pensum for alle ST-uddannelserne. Pensum varierer betydeligt mellem de forskellige uddannelser, men skal dog holde sig inden for rammerne udstukket af AST. De obligatoriske fag fordeler sig mellem klasseundervisning, 'prøveoperationer' og rigtige operationer, superviseret af en kirurg.

På amerikanske hospitaler bliver ST'erne primært brugt i de præ-, intra- og postoperative faser. Præoperativt er ST'eren bl.a. ansvarlig for at forberede operationsrummet og forsyne det med det nødvendige operationsudstyr. Intraoperativt har ST'eren til opgave at vedligeholde det sterile område, række instrumenter til kirurgen og tage sig af vævsprøver. Postoperativt skal ST'eren bl.a. vedligeholde steriliteten, indtil patienten er kørt væk, fjerne brugte instrumenter og forberede operationsrummet til den næste patient.

ST'erne har dog også mange jobmuligheder *uden for* operationsrummet. Nogle får jobs på veterinærklinikker eller hos medicinalfirmaer. Andre søger beskæftigelse inden for forskning, udvikling og rådgivning.

For at forhindre flugten fra hospitalerne til bedre betalte jobs i det private erhvervsliv har de amerikanske hospitaler udviklet et *'klinisk rangstigesystem',* som gennem videreuddannelse og kompetenceudvikling giver ST'erne mulighed for at avancere og få øget ansvar på de forskellige afdelinger.

Physician Assistant (PA) / Lægeassistent

Uddannelsen til PA blev oprettet i starten af 1960'erne som en måde at bekæmpe manglen på og den ulige geografiske fordeling af praktiserede læger i USA.

I USA findes der i omegnen af 140 forskellige autoriserede PA-uddannelser, som alle tager cirka to år at gennemføre. Adgangskravet til de fleste af uddannelserne er, at ansøgerne har sundhedsrelateret

arbejdserfaring og har læst på universitetet et vist antal år. Ca. 30 % af de PA-studerende har en baggrund som sygeplejerske.

Eftersom PA'erne i deres arbejdsliv får et meget tæt samarbejde med lægerne, er deres uddannelse sammensat med udgangspunkt i lægeuddannelsen. The Accreditation Review Commission for the Physician Assistant (ARC-AP) dikterer retningslinjerne for det overordnede pensum på PA-uddannelsen. Alle PA-uddannelser omfatter både klasse- og laboratorieundervisning. Samtidig bliver al klasseundervisning efterfulgt af en turnusrotation på forskellige medicinske afdelinger.

En PA'er har et meget bredt arbejdsområde. Ifølge the U.S. Department of Labor yder PA'erne *"diagnostiske, terapeutiske og præventive sundhedsydelser"*. Dette dækker bl.a. over udredning af sygdomsforløb, undersøgelse og behandling af patienter, bestilling og analyse af laboratorieprøver og udskrivning af medicin. PA'ernes arbejdsområde varierer meget, alt efter hvor og i hvilken stat de arbejder og efter hvor meget erfaring de har. En PA'er har mange af de samme patienter som lægen, og i nogle land- eller storbyområder kan PA'eren optræde som den primære behandler, hvis lægen ikke er tilgængelig.

Studier foretaget af den amerikanske stat viser, at en PA'er, som arbejder under vejledning af en eller flere læger, giver en behandling, der er sammenlignelig med lægens.

The Utilization of Surgical Technologists and Physician Assistants In the U.S. Health Care System

The History of Surgical Technologists

The occupation of a surgical technologist dates back to World War II when there was a need for medical assistance due to a short supply of nurses. For this reason military men were trained to be surgical technologists and throughout the 1950s many surgical technologists were trained in the military in addition to hospitals. The Association of Operating Room Nurses (AORN) created the Association of Operating Room Technicians (AORT) in 1969. The association's name was changed to the Association of Surgical Technologists (AST) in 1978 and has been growing, changing and improving ever since (Hobbs).

The Background of the Workforce

There are certain prerequisites required for anyone looking to enter into a Commission on Accreditation of Allied Health Programs (CAAHEP) accredited surgical technology program. Some of these prerequisites may include a high school diploma, a satisfactory score on the ACT (American College Testing) or health profession preadmission exam, and payment of a nonrefundable application fee (Health Professionals Network). Specific high school courses that are recommended prior to applying to an accredited surgical technology program include health, biology, chemistry and mathematics (U.S. Department of Labor).

Education and Training of Surgical Technologists

Accredited Surgical Technology Programs

According to the U.S. Bureau of Labor Statistics, there were over 400 accredited training programs throughout the United States in 2006. Such programs are offered in various institutions which include community colleges, junior colleges, vocational schools, universities, hospitals and the military (U.S. Department of Labor). Accredited surgical technologist programs range in length from nine to twenty four months. Upon completion of a nine month program, the graduate receives a diploma or certificate of graduation while graduates of a two year program receive an associate's degree. Although an associate's degree is not required for employment, it is preferred (Health Professionals Network).

The Association of Surgical Technologists (AST) publishes the Core Curriculum for Surgical Technology which CAAHEP accredited surgical technology programs and programs that wish to be accredited are required to base their curriculum on in order to remain compliant with accreditation (*AST, Standards of Practice).* The curriculum of these courses includes didactic (classroom), mock surgery, and actual operating room experience supervised by a professional (Health Professionals Network).

Classroom courses included in the curriculum include anatomy and physiology, microbiology, pharmacology and anesthesia, medical terminology, and biomedical sciences which include the basics of physics, electricity, computers, and robotics in the operating room, surgical techniques, surgical procedures, and professionalism *(AST, Standards of Practice).* Other courses may include legal, moral and ethical issues, physical environment and safety standards, wound classifications and healings, and postoperative considerations (Health Professionals Network).

Guidelines for mock operating room experience as well as surgical rotations in real life surgical settings are also presented in the Core Curriculum for Surgical Technology. The core curriculum sets specific procedures that must be completed and a specific number of hours one must perform these procedures for in order to earn their degree. “For example, the minimum number of procedures that a surgical technology student must first scrub without assistance is 80 and the rotation must reflect first scrubbing procedures in various surgical specialties” *(AST, Standards of Practice).*

Certification

As of March 1, 2000, it has been established that graduation from an accredited surgical technology program is required before an individual is qualified to take the surgical technologist credentialing exam While becoming certified is still a voluntary process in the U.S., it is strongly recommended by AST and many employers require certification in order to be considered for hire (Health Professionals Network). Once an individual passes the national certification exam they are entitled to use the designation CST (Certified Surgical Technologist). The individual is required to renew their certification every four years through continuing education or reexamination (U.S. Department of Labor).

In the event that an employer does not require their staff to be certified, there is strong evidence which shows that employers use monetary incentives to keep their staff certified. In a 2002 survey conducted by the National Board of Surgical Technology and Surgical Assisting, 46% of Certified Surgical Technologists (CSTs) reported being compensated by their employer for maintain certification. In addition, hourly wage differences between certified and uncertified surgical technologists ranged from 50 cents to 5 or more dollars per hour *(AST, About Professionals).*

Although certification is still a voluntary process, states such as Massachusetts, Kentucky and Missouri are in the process of passing a “surgical technologist entry to practice” legislation which will not only require surgical technologists to graduate from an accredited program, but also to hold and maintain CST certification “as a prerequisite to employment as a surgical technologist” *(AST, Legislation).*

Tasks and Responsibilities of a Surgical Technologist

The very basic role of a surgical technologist can be divided into three stages of “surgical case management” as defined by The Association of Surgical Technologists. These three phases include Preoperative Case Management, Intraoperative Case Management and Postoperative Case Management.

Preoperative Case Management

In the preoperative case management phase, a surgical technologist may be responsible for such tasks as donning operating room attire and personal protective equipment, preparing the operating room, gathering necessary equipment and supplies, creating and maintaining a sterile field, organizing the sterile field for use, counting necessary items, assisting surgical team members during entry into the sterile field and exposing the operative site with sterile drapes.

Intraoperative Case Management

Once the intraoperative case management phase has begun, a surgical technologist may be responsible for such tasks as maintaining the sterile field, passing instruments, equipment and supplies to the surgeon and surgical assistant as needed, assessing and predicting the needs of the patient and surgeon in order to provide the necessary items in order of need, preparing and handling medication, counting necessary items, taking care of specimen, and applying needed dressings.

Postoperative Case Management

In the final phase of case management known as postoperative case management, a surgical technologist may be responsible for such tasks as maintaining the sterile field until the patient in transported, removing used instruments, equipment and supplies from the operating room, caring for and maintaining instruments, equipment and supplies following use, and preparing the operating room for the next patient (Health Professionals Network).

Tasks and Responsibilities beyond the Basics

Beyond the basic tasks performed by a surgical technologist on a daily basis, there are many opportunities for surgical technologists to increase their skill set and broaden their capabilities. According to the U.S. Bureau of Labor Statistics, "Certified surgical technologists with additional specialized education or training may act in the role of surgical first assistant or circulator". Some tasks performed by a surgical first assistant include providing aid in exposure as well as hemostasis. A circulator performs more unsterile tasks for the surgical team which include such things as interviewing the patient prior to surgery, preparing the patient for surgery, helping with anesthesia and keeping a written account of the surgical procedure (U.S. Department of Labor).

In addition to furthering one's skills within a hospital setting, there are many other employment opportunities available for surgical technologists beyond the operating room. For example, a surgical technologist may choose to seek employment at a veterinary facility or at a medical corporation to represent their products. Surgical technologists may also choose to gain employment in research and development, as a surgical technology educator or as a consultant among many other professions (Health Professionals Network).

The Clinical Ladder Program

Because there are so many employment opportunities for surgical technologists (STs), hospitals in the U.S. have found themselves competing for employees who are given better paying opportunities elsewhere. In order to reduce turnover of surgical technologists on their operating room staffs, many hospitals have implemented clinical ladder programs as a way to retain employees while improving their skills and the quality of patient care at the same time.

According to The Association of Surgical Technologists (AST), "A clinical ladder serves as an incentive for surgical technologists to continually improve their knowledge, skills, and competency… and gives new staff a clear picture of how to advance in the organization" *(AST, Clinical Ladder, 2).* Within a clinical ladder program, specific guidelines for advancement are provided to surgical technologists who are looking to move progress their career while also providing managers with a means through which they can measure a surgical technologist's professional progression. According to AST, "Clinical Ladders present a long-term strategy to decrease attrition, increase the skill levels of the ST, and enhance department morale" *(AST, Clinical Ladder, 3).*

The clinical ladder program divides surgical technologists into three levels according to their skill set and experience. The three levels include Entry Level Practitioner, Proficient Practitioner and Expert Practitioner. First level STs have been employed for one year or less and the program places an emphasis on their ability to perform basic, intermediate and advanced surgical procedures in various specialties which are laid out for the ST. Once an ST has been employed for over one year and are able to take on greater responsibility, display higher levels of critical thinking and express more advanced problem solving skills they are considered to have advanced from Level I to Level II. Once an ST has accomplished all the criteria laid out in Level II of the clinical ladder and is able to think on

more of a global scale with an ability to set goals outside of the surgery department they are considered to have reached Level III, the top rung of the clinical ladder. Through this specific career development procedure, hospitals allow their staff to grow professionally, assist other STs in career development while developing on their own, and consequently increase the quality of patient care while decreasing turnover *(AST, Clinical Ladder, 3-5)*.

The Relationship between Surgical Technologists and Surgeons

According to the U.S. Bureau of Labor Statistics, surgical technologists are members of an operating room staff which includes surgeons, anesthesiologists and circulating nurses. Surgical technologists are generally employed by hospitals for tasks performed in the operating and delivery room, but some surgeons hire STs directly to work on specialized surgical teams for surgeries such as liver transplants (U.S. Department of Labor).

The key difference between surgical technologists and the surgeons whom they assist is the amount of education and training each profession requires. While a surgical technologist can complete their education directly out of high school and become certified within two years, almost all surgeons receive their Bachelor's Degree through a four year college before they are even eligible to enter Medical School. In all, most surgeons receive eight years of education beyond high school and three to eight years of residency beyond that (U.S. Department of Labor).

This great discrepancy in the amount of training the two professions receive prior to entering into the work force is quite drastically displayed in the difference in salaries among surgeons and surgical technologists. According to the U.S. Bureau of Labor Statistics, a general surgeon who has been in practice for over one year makes a median salary of $282,504 compared to a surgical technician working in a General medical and surgical hospital who makes a median annual salary of $35,840 (U.S. Department of Labor).

The Quality of Patient Care Provided by Surgical Technologists

When implementing lesser educated personnel into a medical environment such as an operating room, those who are not accustomed to the practice may be skeptical of a surgical technologist's competencies and the quality associated with the care which they provide. However, when Anne Marie Thomas, RN MS, the Administrative Director for Surgical Services at Waterbury Hospital in Waterbury, CT was asked, "Are there any quality concern issues when utilizing assisting personnel rather than physicians and surgeons for specific tasks?" she stated that quality is not an issue so long as surgical technologists are "trained and competent to practice" (Thomas, Sept. 15, 2008). Due to the many standards, guidelines, regulations and curriculum set forth by various surgical institutions, and the strict accrediting and certification process through which surgical technology programs and surgical technicians gain recognition there is no need for concern in the U.S. when it comes to the services provided by surgical technologists.

The History of Physician Assistants

The physician assistant (PA) occupation came to be in the 1960s as a means of combating the shortage and uneven geographic distribution of primary care physicians, predominantly in the rural and inner-city areas of the United States. The first class of PA students was formed in 1965 at the Duke University Medical Center in North Carolina by the name of Dr. Eugene Stead (AAPA, *General Information*). Once these roles were viewed as successful and acceptable in the medical field, legislation

was passed for the funding of PA education and the profession grew. The PA profession saw even more growth in the mid-1990s when another shortage of physicians was identified, enabling patients to enjoy improved access to quality care in places where they otherwise may not have had access to services (Health Affairs).

The Background of the Workforce

There are certain prerequisites which are required to gain admission into most medical programs which are accredited by the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA). According to the American Academy of Physician Assistants (AAPA), "Most physician assistant programs require applicants to have previous health care experience and some college education. The typical applicant already has a bachelor's degree and approximately four years of health care experience" (AAPA, *General Information*). The prerequisites of each program differ slightly depending on how selective they are and how much health care experience they require prior to entry.

The background of PAs varies among the workforce. According to Roderick S. Hooker and Linda E. Berlin, "only 30 percent of PAs have a nursing background while other PA backgrounds are military corpsmen/medics and allied health professional" (Hooker and Berlin). In addition to having diverse medical backgrounds, Hooker and Berlin also point out that, with regards to race and ethnicity or the PA workforce, "the trend has been toward greater diversity and increasing visibility of underrepresented minorities" (Hooker and Berlin).

Education and Training of Physician Assistants

Accredited Physician Assistants Programs

According to the AAPA there are approximately 140 accredited PA programs throughout the United States (AAPA, *General Information*). Such programs are offered in various institutions which include schools of allied health, academic health centers, medical schools, four-year colleges, and some are offered in community colleges, hospitals or the military (U.S. Department of Labor). Accredited physician assistants programs usually last at least two years, with an average of about twenty six months. Due to the fact that PAs work so closely with Physicians, the way in which they are educated is designed based on the physician training model as a means of balancing the two professions (AAPA, *General Information*).

All accredited programs must comply with the minimum ARC-PA publicly published standards in order to gain and maintain accreditation. Generally, all PA programs consist of classroom and laboratory courses which include anatomy, pharmacology, pathophysiology, clinical medicine, and physical diagnosis. In addition, all programs follow classroom experience with clinical rotations in various fields of medicine such as family medicine, internal medicine, surgery, pediatrics, gynecology, emergency medicine, and geriatric medicine (AAPA, *General Information*).

In addition to providing standards to which an institution must comply in order to gain accreditation, ARC-PA also publishes the basis of a core curriculum that programs must also follow to remain compliant. Key components to the curriculum which are outlined by ARC-PA include Basic Medical Sciences, Clinical Preparatory Sciences, Behavioral and Social Sciences, Information Literacy, Health Policy and Professional Practice. In addition, ARC-PA publishes standards for the clinical practice portion of the PA program in which students must perform tasks while being supervised by a residency trained health professional in specific settings such as outpatient care, emergency room, inpatient care, operating room and long-term care (ARC-PA, *Standards*).

Certification

Once an individual has graduated from an ARC-PA accredited program, they are then required to take the Physician Assistant National Certifying Examination (PANCE) which is administered by the National Commission on Certification of Physician Assistants (NCCPA) (U.S. Department of Labor). Every U.S. state requires a passing grade on the PANCE prior to granting licensure to PA program graduates (Hooker and Berlin).

In order to maintain this certification, PAs must continue their education even once they are working in the medical field. Every two years, a PA is responsible for completing one hundred hours of continued education and training as well as passing a recertification examination every six years in order to remain certified (U.S. Department of Labor).

Tasks and Responsibilities of a Physician Assistant

A Physician Assistant has a broad scope of tasks which they are responsible for. PAs "provide diagnostic, therapeutic, and preventative health care services" (U.S. Department of Labor) which encompass a great deal of tasks and responsibilities. Some of these tasks include, taking medical histories, examining and treating patients, ordering and interpreting laboratory tests and x rays, diagnosing patients, treating minor injuries by suturing, splinting and casting, instructing and counseling patients, and in almost all states writing out prescriptions (U.S. Department of Labor).

A PA's duties vary depending on the setting where they work, the amount of experience they have and the state which they work in. The PA's official responsibilities are defined by their supervising physician and the laws of the state in which they are employed. According to the AAPA, "a physician assistant will see many of the same types of patients as a physician" (AAPA, *General Information*), and in some rural or inner city cases the PA may even act as the principal care provider because a physician is only available a on some days of the week (U.S. Department of Labor). Although PAs are given a great deal of autonomy within their practice, the AAPA stresses that a crucial part of a PA's education has to do with knowing their limitations and knowing when to refer a patient to a physician (AAPA, *General Information*).

The Relationship between Physician Assistants and Physicians

Because a PA's role and responsibilities are mostly defined by their supervising physician, they can also be seen as a representative of the physician as well. For this reason, a PA is expected to provide patients with care using the same method and approach as the physician. There are nine suggested guidelines which were created in 1995 by the American Medical Association which aid physicians and their assistants in working cooperatively and effectively as a team. These guidelines can be found at the end of this document (AAPA, *General Information*).

The key difference between physicians and physician assistants is the amount of time they spend receiving a formal education in medicine. Unlike physicians, PAs are not required to carry out an internship or residency which usually takes a physician between three and eight years to complete (U.S. Department of Labor). Another key difference is the amount of responsibility placed on each professional. A PA shares responsibility with the supervising physician, but a physician takes on all the responsibility on their own.

Although not as drastically as the difference in salaries of surgeons and surgical technologists, the discrepancy in the amount of training the two professions receive prior to entering into the work force is displayed in the difference in salaries among physicians and physician assistants. According to the

U.S. Bureau of Labor Statistics, a Family Practice physician with more than a year in their specialty earns a median salary of $156,000 compared to a physician assistant who works in the office of a physician and makes a median salary of $74,160 (U.S. Department of Labor).

The Quality of Patient Care Provided by Physician Assistants

As mentioned earlier, when implementing lesser educated personnel into a medical environment such as a physician's office, those who are not accustomed to the practice may be skeptical of a physician assistant's competencies and the quality associated with the care which they provide. As previously mentioned when discussing the quality of care provided by surgical technologists, however, the many standards, guidelines, accreditations and examinations which an institution and individual must adhere to in order to practice in the medical profession of a physician assistant prove that there is no need for concern. In fact, as stated by the AAPA, "Studies done by the Federal Government have shown that PAs, working with the supervision of physicians, provide care that is comparable to physician care" (AAPA, *General Information*). Due to the shortage of physicians, especially in inner city and rural areas, and the amount of tasks which PAs are capable of performing for a much smaller salary with the same quality of care, utilizing this workforce is an extremely efficient use of the population.

Suggested Guidelines for Physician-Physician Assistant Practice

Adopted by the AMA House of Delegates, June 1995

(http://www.aapa.org/geninfo1.html)

Reflecting the comments from the American Academy of Physician Assistants, separate model guidelines for Physician/Physician Assistants practice have been developed. These are based on the unique relationship of Physician Assistants who recognize themselves as agents of physicians with respect to delegated medical acts, and legal responsibilities. They are consistent with the existing AMA policies concerning Physician Assistants cited in this report. In all settings, Physician Assistants recognize physician supervision in the delivery of patient care. The suggested guidelines reflect those as follows:

1. Health care services delivered by physicians and Physician Assistants must be within the scope of each practitioners authorized practice as defined by state law.
2. The physician is ultimately responsible for coordinating and managing the care of patients and, with the appropriate input of the Physician Assistant, ensuring the quality of health care provided to patients.
3. The physician is responsible for the supervision of the Physician Assistant in all settings.
4. The role of the Physician Assistant(s) in the delivery of care should be defined through mutually agreed upon guidelines that are developed by the physician and the Physician Assistant and based on the physician's delegatory style.
5. The physician must be available for consultation with the Physician Assistant at all times either in person or through telecommunication systems or other means.
6. The extent of the involvement by the Physician Assistant in the assessment and implementation of treatment will depend on the complexity and acuity of the patient's condition and the training and experience and preparation of the Physician Assistant as adjudged by the physician.
7. Patients should be made clearly aware at all times whether they are being cared for by a physician or a Physician Assistant.
8. The physician and Physician Assistant together should review all delegated patient services on a regular basis, as well as the mutually agreed upon guidelines for practice.
9. The physician is responsible for clarifying and familiarizing the Physician Assistant with his supervising methods and style of delegating patient care.

References

Accreditation Review Commission on Education for the Physician Assistant, Inc. Accreditation Standards for Physician Assistant Education. PublicationNo. Accreditation Review Commission on Education for the Physician Assistant, Inc. Third Edition ed. Duluth, GA, 2008. 4+. Standards. 2008. Accreditation Review Commission on Education for the Physician Assistant, Inc. 23 Nov. 2008 <http://www.arc-pa.org/standards>.

American Academy of Physician Assistants. “General Information.” Information about PAs and the PA Profession. 2008. American Academy of Physician Assistants. 23 Nov. 2008 <http://www.aapa.org/geninfo1.html>.

Association of Surgical Technologists. “AST: Legislation.” AST: Legislation. 2008. Association of Surgical Technologists. 23 Nov. 2008 <http://capwiz.com/ast/issues/bills/>.

Association of Surgical Technologists. AST Recommended Clinical Ladder for the Surgical Technologist. Brochure. Centennial, CO: Author, 2005. AST.org. 2008. Association of Surgical Technologists. 23 Nov. 2008 <http://www.ast.org/pdf/recclinlad_st.pdf>.

Association of Surgical Technologists. “AST Standards of Practice.” Association of Surgical Technologists. 23 Nov. 2008 <http://www.ast.org/pdf/standards_of_practice/brief%20overview_of_education_%20cst_and_cfa.pdf>.

Association of Surgical Technologists. “Surgical Technology Statistics.” AST: About Professionals Stats. 2008. Association of Surgical Technologists. 23 Nov. 2008 <http://www.ast.org/professionals/professionals_about_prof_stats.aspx>.

Health Professions Network. “Surgical Technology: A Growing Career.” Health Pronet. Sept. 2004. Health Professionals Network. 23 Nov. 2008 <http://www.healthpronet.org/ahp_month/09_04.html>.

Hobbs, Farrell. “Surgical Technologist Program.” Surgical Technologist Program. 10 Mar. 2004. Chipewa Valley Technical College. 23 Nov. 2008 <http://www.cvtc.edu/programs/deptpages/surgtech/history.htm>.

Hooker, Roderick S., and Linda E. Berlin. “Trends In The Supply Of Physician Assistants And Nurse Practitioners In The United States.” Health Affairs, The Policy Journal of the Health Sphere. 2002. Health Affairs. 23 Nov. 2008 <http://content.healthaffairs.org/cgi/content/full/21/5/174>.

Thomas, Anne Marie. “Assisting Healthcare Personnel.” E-mail interview. 15 Sept. 2008.

U.S. Department of Labor. “Occupational Outlook Handbook 2008-09.” Bureau of Labor Statistics. 18 Dec. 2007. U.S. Department of Labor. 23 Nov. 2008 <http://www.bls.gov/oco/ocos081.htm>.

U.S. Department of Labor. “Occupational Outlook Handbook 2008-09.” Bureau of Labor Statistics. 17 Dec. 2007. U.S. Department of Labor. 23 Nov. 2008 <http://www.bls.gov/oco/ocos106.htm>.