

**THE VIRGINIA BOARD OF HEALTH PROFESSIONS  
THE VIRGINIA DEPARTMENT OF HEALTH PROFESSIONS**

**STUDY INTO THE NEED TO REGULATE ORTHOPEDIC  
TECHNOLOGISTS AND ORTHOPEDIC PHYSICIAN'S  
ASSISTANTS**

**December 17, 2008**

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## Executive Summary

### Background & Authority

By virtue of its statutory authority in §54.1-2510 of the *Code of Virginia* to advise the Governor, the General Assembly, and the Department Director on matters related to the regulation and level of regulation of health care occupations and professions, the Board is beginning an ongoing review of emerging health professions. The study will highlight individual professions selected by the Board for review. The Board selected *Orthopedic Technologists and Orthopedic Physician's Assistants* as emerging professions for review in 2008.

The study is governed by the methodology described in the Board's *Policies and Procedures for the Evaluation of the Need to Regulate Health Occupations and Professions, 1998*. The following seven criteria (the Criteria) collectively serve as the benchmark for its decisions.

- (1) Unregulated practice of the profession poses a recognizable harm or risk for harm to the consumer resulting from practices inherent in the occupation, the characteristics of the clients served, the setting or supervisory arrangements for the delivery of services, or any combination of these factors.
- (2) Practice requires specialized education and training, and the public needs to be assured of initial and continuing occupational competence.
- (3) Autonomous practice occurs so that the functions and responsibilities of the practitioner require independent judgment.
- (4) The scope of practice is distinguishable from other licensed, certified or registered occupations.
- (5) The economic impact due to restriction on the supply of practitioners and the cost of board operations is justified.
- (6) Alternatives to regulation have been explored and none are found which would adequately protect the public.
- (7) The least restrictive regulation that is consistent with public protection must be recommended.

The Board reviewed the relevant literature related to orthopedic technologists, orthopedic physician's assistants and related occupations, federal and state laws and regulations, information on educational accreditation and credentialing programs, licensing and disciplinary information, salary and compensation and media coverage. They held a public hearing on August 14, 2008 and solicited and received written comment.

## Findings

Orthopedic technologists and orthopedic physician's assistants assist licensed physicians and surgeons in diagnosing and treating injuries and diseases of the skeletomuscular system. Their specialist functions include applying casts, splints, braces and traction, assisting with fracture reductions (resetting broken bones) and acting as first assistants during orthopedic surgery. First assistants participate directly in surgery, including subcutaneous sutures, suctioning and other interventions. Additionally, orthopedic physician's assistants, but not orthopedic technologists, perform hematoma blocks, digital blocks and other forms of local anesthesia requiring injections.

Several professions share scopes of practice with orthopedic technologists and orthopedic physician's assistants, including athletic trainers, orthopaedic nurses, occupational and physical therapists, orthotic fitters, medical assistants, paramedics/emergency medical technicians, emergency room technicians and surgical technologists/assistants. Additionally, physician assistants employed in orthopedic settings perform the same functions as orthopedic physician's assistants, but are a distinct profession, with separate educational qualifications, scopes of practice and professional organization. Physician assistants are generalists first, but may choose to specialize. Physician assistants specializing in orthopedics refer to themselves as Physician Assistants in Orthopedics or Physician Assistants in Orthopedic Surgery.

Orthopedic technologists are represented by two national professional organizations, the National Association of Orthopedic Technologists (NAOT) and the American Society of Orthopedic Professionals (ASOP). NAOT has a Virginia chapter, the Virginia Association of Orthopedic Technologists (VAOT). Two organizations provide certifications for orthopedic technologists. ASOP provides technologist certifications to its members. The National Board for Certification of Orthopedic Technologists (NBCOT) provides technologist certifications and a surgery specialist certification. ASOP certifications require candidates to be employed in orthopedics and pass an online exam with a practical component. NBCOT certifications require candidates complete a recognized orthopedic program or have two years experience, or some combination of training and experience and complete an exam.

Orthopedic physician's assistants are represented by the American Society for Orthopedic Physician's Assistants (ASOPA). The National Board for Certification of Orthopedic Physician's Assistants provides certifications. Candidates must complete either an orthopedic physician's assistant program, a physician assistant program, a nurse practitioner program or have five years experience in orthopedics, and complete an exam.

There are no orthopedic physician's assistant educational programs currently operating. The American Medical Association (AMA) and the American Academy of Orthopedic Surgeons (AAOS) stopped accrediting programs in 1974 in favor of physician assistant programs. The last non-accredited program closed its doors in 1990.

The NAOT recognizes educational programs for orthopedic technologists. Programs must be one school year in length and include a minimum 200-hour clinical rotation. The NAOT recognizes six programs, including the military's occupational specialty training program in orthopedics. There are no recognized programs in Virginia. The nearest recognized program is in Pennsylvania. Several non-recognized programs exist at community colleges or training centers. The nearest one to Virginia is in Maryland.

Salary information for orthopedic technologists and orthopedic physician's assistants is fragmentary. The Bureau of Labor Statistics (BLS) does not collect specific information for either profession. The NAOT and ASOPA surveyed their members for salary information. The NBCOT surveyed certified technologists. These surveys indicate that orthopedic technologists earn annual salaries in the mid \$40,000s. Average annual salaries for orthopedic physician's assistants are approximately \$70,000. At these pay ranges, certifications ranging from \$150 to \$450 in cost are affordable. Additionally, the professions are attractive to entry-level technologists and allied health professionals without education past high school.

Services provided by orthopedic technologists or orthopedic physician's assistants are not reimbursable under Medicare or Medicaid. No states regulate orthopedic technologists, however a bill is in committee before the California state legislature. New York and Tennessee regulate orthopedic physician's assistants.

New York registers "specialist assistants", including orthopedic assistants. Registered orthopedic assistants must complete an orthopedic physician assistant educational program and pass the NBCOPA exam or have a combination of health-related education and experience that provides similar qualifications. Registered orthopedic assistants have the same scope of practice as physician assistants, limited to the realm of orthopedics. Orthopedic assistants, however, cannot prescribe medication.

Tennessee licenses orthopedic physician's assistants. To be licensed, candidates must complete an approved orthopedic physician's assistant educational program and pass the NBCOPA exam. Like New York's registered orthopedic assistants, licensed orthopedic physician's assistants in Tennessee cannot practice outside of the realm of orthopedics and cannot prescribe medication. Technologists, technicians and other allied health professionals are exempted from Tennessee's licensure requirement.

The potential for harm from the practice of orthopedic technologists and orthopedic physician's assistants comes from two main sources: applying casts, splints and traction and first assisting in surgery.

Improper application of casts, splints and traction can prevent fractures from healing properly, block blood flow to extremities, create sores and infections or create clots in blood. Additionally, heat released by setting plaster casts can cause burns.

First assistants in surgery participate directly in surgery, including suturing and clamping of internal tissues, suctioning and autotransfusion of blood and restraining tissue to provide exposure to surgeons. The American College of Surgeons (ACS) believes that first assistants, ideally, should be physicians or surgical residents. In cases where circumstances require the use of non-physicians, ACS recommends surgical assistants, physician assistants or registered nurses with specialized training.

The NBCOT provided written and oral comments supporting licensure of orthopedic technologists. The Virginia Occupational Therapy Association (VOTA) provided written comments. VOTA desires that any new regulations not limit the scopes of practice of occupational or physical therapists, or add additional licensing requirements. Additionally, VOTA noted that the term “OT,” often used by orthopedic technologists, is reserved by § 54.1-2956.5 of the *Code of Virginia* for occupational therapists.

### **Recommendation**

At its December 17, 2008 meeting, the Regulatory Research Committee unanimously approved a properly seconded motion to recommend no professional regulation at this time. The Committee noted the level of autonomy granted to Orthopedic Technologists and Orthopedic Physician’s Assistants was similar to that of Physician’s Assistants yet did not require the same educational background. The Committee also noted the potential for confusion between Physician Assistants and Orthopedic Physician’s Assistants and noted that the title “Physician Assistant” is protected by statute in Virginia.

The full board also met on December 17, 2008 and reviewed the Committee’s findings. The full board voted unanimously to accept the Committee’s report and recommendation to not regulate Orthopedic Technologists or Orthopedic Physician’s Assistants at this time.



## Background & Authority

By virtue of its statutory authority in §54.1-2510 of the *Code of Virginia* to advise the Governor, the General Assembly, and the Department Director on matters related to the regulation and level of regulation of health care occupations and professions, the Board is beginning an ongoing review of emerging health professions. The study will highlight individual professions selected by the Board for review. The Board selected *Orthopedic Technicians* and *Orthopedic Physician's Assistants* as emerging professions for review in 2008.

To govern evaluative reviews, the Board has developed formal criteria and policies referenced in its publication, *Policies and Procedures for the Evaluation of the Need to Regulate Health Occupations and Professions, 1998*. Among other things, the criteria assess the degree of risk from unregulated practice, the costs and benefits of the various levels of regulation, and the advantages and disadvantages of the various alternatives to regulation that might protect the public. By adopting these criteria and application policies, the Board has endorsed a consistent standard by which to judge the need to regulate any health profession. The aim of this standard is to lead decision-makers to consider the least governmental restriction possible that is consistent with the public's protection. This standard is in keeping with regulatory principles established in Virginia law and is accepted in the national community of regulators.

### *Study Scope & Methodology.*

The general scope of this study will be to provide an evaluative review of the policy literature, pertinent state and federal laws, malpractice and disciplinary data, potential economic impact, and public comment concerning the selected emerging health-related occupations and professions in Virginia. The aim is to better understand the scopes of practice of these practitioners and issues relating to the need for adequate safeguards for the public's protection.

The Committee will make recommendations to the full Board concerning the practitioner group(s) to be selected. With the approval of the full Board, the Committee will examine the competencies currently expected of the selected practitioner groups in other jurisdictions to the degree that they exist. The Committee will focus their efforts in determining the answers to the following key questions for each group:

- What is the potential risk for harm to the consumer?
- What specialized skills and training do practitioners possess?
- To what degree is independent judgment required in their practices?
- Is their scope of practice distinguishable from other regulated occupations or professions?
- What would be the economic impact to the public if this group were regulated?
- Are there alternatives other than state regulation of this occupation which would adequately protect the public?

- If the Committee determines that this occupation requires state regulation, what is the least restrictive level that is consistent with the protection of the public's health, safety and welfare?

To answer the key questions, the following steps are recommended:

1. Conduct a review of the general policy literature, if any, related to the regulation of the respective group.
2. Conduct a review of the current relevant states laws and regulations.
3. Review malpractice insurance coverage data (if it is found to exist) in conjunction with other data to address Criterion One - Risk of Harm to the Public.
4. Review available reimbursement data to develop an estimate of how regulating this group may affect costs to address Criterion Five – Economic Impact
5. Prepare an initial draft report to the Board for public comment.
6. Conduct a hearing on the issue of the state regulation of this occupation, including any public health and safety issues germane to current practices as well as the potential fiscal impact which may result from such regulation.
7. Review all public comment, apply the Board's criteria and policies, and consider recommendations for changes in Virginia statute.
8. Prepare a draft with recommendations to the full Board.
9. Review the report and recommendations by the Board, and publish a draft report for consideration by the Department Director and Secretary.
10. If required based on recommendations by the Department Director and Secretary, amend the report and prepare a final report for their approval.

## **Overview of the Profession**

### **Definitions**

Under the direction of an Orthopedic Surgeon, Orthopedic Technologists and Orthopedic Physician's Assistants assist in caring for persons suffering from illness or injury to musculoskeletal systems. The scopes of practice of Orthopedic Technologists and Orthopedic Physicians Assistants are similar but with slight differences. Both apply and remove casts and splints, apply and adjust traction, and apply some orthotics and prosthetics. Additionally, both assist Orthopedic Surgeons in the operating suite. However, while Orthopedic Technologists prepare and assist with injections, Orthopedic Physician's Assistants directly perform digital blocks and hematoma blocks, or other injection-requiring local anesthetics. Orthopedic Physician's Assistants also receive training in pharmacology, though they are not licensed to prescribe in any state. Additionally, the Orthopedic Physician's Assistant's certification has more stringent eligibility requirements than Orthopedic Technologist certifications (see Page 10).

Several professional organizations provide detailed definitions of the profession (see Page 5 for a review of professional organizations) and scopes or standards of practice. Full texts of standards of practice are provided in Appendix A.

## **Orthopedic Technologists**

### *The National Association of Orthopaedic Technologists*

The Orthopaedic Technologist (OT) is a specifically trained allied health care individual who assists the orthopaedic surgeon in the practice of medicine. An OT is an extension of the orthopaedic surgeon and assists in the care of sick and disabled persons. OTs must have the ability to relate well to other people, be considerate of their conditions and able to communicate with patients in understanding their anxieties and fears. An OT is familiar with routine office and departmental procedures and is able to perform certain basic nursing functions.

An expert in plaster and synthetic cast application, an OT is responsible for instructing patients about the dangers of this form of treatment. An OT has the skill to remove casts with care and fragility, is equipped with the general principles of traction techniques, prepares or sets up specific types of traction requested by the orthopaedic surgeon and is able to assess patients in traction, detect deficiencies in the apparatus and make adjustments as necessary.

The OT may perform as a first assistant to the orthopaedic surgeon in the operating suite. To do this, OTs must understand medical and surgical asepsis. This would include preparing for surgical procedures, assembling and preparing the fracture table to the specifications of the orthopaedic surgeon.

The OT is able to fit and adjust canes, crutches and walkers, as well as giving patient instruction on the use of these walking aids. Other important responsibilities of the OT are the ability to apply simple braces, prosthetics, perform minor adjustments and repairs, as well as fabricate splints for various conditions under the direction of the orthopaedic surgeon.

All of these important duties fall under the realm of an Orthopaedic Technologist. NAOT is dedicated to the continued education of these important health professionals.<sup>1</sup>

### *The Virginia Association of Orthopedic Technologists*

Orthopaedic technologists are trained health professionals who assist orthopaedic surgeons with preventing or correcting disorders of the locomotor structures of the body, including the skeleton, muscles, joints, ligaments, and cartilage. Working in a variety of settings, including hospitals, clinics, and private practice offices, orthopaedic technologists play a necessary role in patient care for orthopaedic conditions and anomalies.

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<sup>1</sup> See "What is an Orthopedic Technologist?" NAOT website: <http://www.naot.org/whatisanot.html>

Orthopaedic technologists apply casts, splints, and other orthopaedic appliances to patients. Orthopaedic technologists must be knowledgeable of the various kinds of casts and splints and the proper procedures for applying and removing them.

Orthopaedic technologists must also be aware of the numerous types of casting materials and when to use each one. They must know the appropriate padding, wrapping, and molding techniques to ensure proper fit and placement of all orthopaedic devices.

Orthopaedic technologists must maintain traction configurations for injured patients. This process involves obtaining the proper traction apparatuses and applying them to patient beds and patient injuries, all while complying with physicians' orders.

Orthopaedic technologists assist orthopaedic surgeons in hospitals and outpatient settings. In addition, orthopaedic technologists, position, prepare, drape patients for surgery and assist the surgeon during the procedure.

Orthopaedic technologists perform a variety of duties, some of which are not limited to the operating room. They interview patients to obtain a complete history of their injuries and abnormalities. They conduct orthopaedic assessments of patients and relay information gathered to the attending surgeon.

In short, orthopaedic technologists assist orthopaedic surgeons and do what is necessary to ensure that patients receive comfortable and successful treatment of orthopaedic injuries.<sup>2</sup>

#### *The National Board for Certification of Orthopaedic Technologists*

The Orthopaedic Technologist - Certified are those individuals that have demonstrated the knowledge and skills needed to work as an Orthopaedic Technologist and who have passed the National Board for Certification of Orthopaedic Technologist Certification Examination.

The Orthopaedic Technologist - Certified is specially trained as an extension of the Orthopaedic Surgeon and assists in the treatment of the Orthopaedic Patient.

The Orthopaedic Technologist is an expert in the application of plaster and synthetic casting and splinting. The Orthopaedic Technologist is responsible for instructing the patients of proper care of the cast and splints. The Orthopaedic Technologist also has the skills needed to remove a cast safely and is able to erect all forms of skin and skeletal traction.

The Orthopaedic Technologist has a working knowledge of aseptic techniques, and is able to prepare for surgical procedures, assembling and preparing

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<sup>2</sup> See "What is an Orthopaedic Technologist?" VAOT website: <http://www.vaot.net/>

equipment to the specifications of the Orthopaedic surgeon, the Orthopaedic Technologist may act as first assistant in the operating room according to hospital policies.

The Orthopaedic Technologist is able to fit and adjust various orthopaedic appliances, such as walkers, crutches, braces, etc. as well as giving patient instructions.<sup>3</sup>

## **Orthopedic Physician's Assistants**

### *American Society of Orthopedic Physician's Assistants*

The Certified Orthopaedic Physician's Assistant (OPA-C) shall function in practice under the authority of the supervising orthopaedic physician. Functions shall include performing skilled services and procedures within the clinical setting, out-patient and in-patient facilities where privileges have been granted accordingly. The Certified Orthopaedic Physician's Assistant may function as a part of the whole patient treatment and management team. Services may be performed by the Certified Orthopaedic Physician's Assistant in primary orthopaedic care, pre-operative care, intra-operative care, and post-operative care for the orthopaedic patient in accordance with established policies and procedures. The Certified Orthopaedic Physician's Assistant reports to the supervising orthopaedic physician the complete patient status and shall notify accordingly of any abnormal findings, problems, or complaints regarding the whole care of the patient.<sup>4</sup>

## **Professional Organization**

Two national professional organizations represent orthopaedic technologists: the National Association of Orthopedic Technologists (NAOT) and the American Society of Orthopaedic Professionals (ASOP). ASOP provides certifications directly to its members. Additionally, the National Board for Certification of Orthopedic Technologists (NBCOT) provides certifications. Virginia members of the NAOT have organized the Virginia Association of Orthopedic Technologists (VAOT), one of thirteen state and regional chapters of the NAOT.

The American Society for Orthopedic Physician's Assistants (ASOPA) represents orthopedic physician's assistants. The National Board for Certification of Orthopedic Physician's Assistants (NBCOPA) provides certifications for Orthopedic Physician's Assistants.

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<sup>3</sup> See "What is an OTC?" NBCOT website: <http://www.nbcot.net/WhatIsAnOTC.html>

<sup>4</sup> See "What is an OPA-C" ASOPA website: <http://asopa.org/aboutopas.cfm>

### *National Association of Orthopedic Technologists*

NAOT, founded in 1982, evolved from the National Federation of Orthopedic Technologists, a federation of state, regional and local groups. The NAOT maintains offices in Indianapolis, Indiana, at the same address as the ASOPA. It holds annual meetings and clinical symposiums, publishes a biannual journal and a bimonthly newsletter, and offers continuing education opportunities. The 2008 annual meeting was held jointly with ASOPA's annual meeting. It also holds traveling "Casting & Splinting Skills Workshops" throughout the country. The NAOT Review Committee for Orthopaedic Technology Education Programs recognizes educational programs that meet minimum standards (see "Education," page 12). NAOT has thirteen state and regional chapters, including the Virginia Association of Orthopedic Technologists (see next page).<sup>5</sup>

### *American Society of Orthopedic Professionals*

ASOP was founded in 1999 by former NAOT members, particularly Mr. Charles Barocas, CO, ROT, of Florida, to increase lobbying efforts for Medicare reimbursement and state licensure. These members preferred a more aggressive pursuit of government recognition than NAOT provided at that time. (See Appendix B for an ASOP forum post outlining the reasons for the ASOP's founding). While ASOP focuses on the functions of an Orthopedic Technologist, membership is open to any allied health professional working in an orthopedic setting. For six months of the year, ASOP operates out of Seminole, FL. For the rest of the year, it operates out of Las Vegas, NV. ASOP holds annual meetings, provides continuing education opportunities for members, provides certifications to members (see "Certification", page 10) and publishes a bimonthly newsletter. It holds traveling "Casting and Bracing Hands-On Workshops" and Certified Orthotic Fitter courses.

### *National Board for Certification of Orthopedic Technologists*

NAOT formed the NBCOT in 1982 to act as an independent certification board for Orthopedic Technologists. NBCOT offers the only NCCA accredited certifications for Orthopedic Technologists. It also provides continuing education opportunities. The NBCOT maintains offices in Syracuse, NY. See "Certification", page 10, for more information on certifications.

### *Virginia Association of Orthopedic Technologists*

VAOT, the Virginia Chapter of NAOT, was formed in 1980. VAOT holds biannual seminars that also provide continuing education opportunities. Their most recent meeting was held on November 8, 2008 at the University of Virginia in Charlottesville.

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<sup>5</sup> Information on the ASOP is available on their website, [www.asop.org](http://www.asop.org), and on their educational website, [www.castingworkshop.com](http://www.castingworkshop.com).

### *American Society for Orthopedic Physician's Assistants*

Founded in 1976, ASOPA is the only organization representing Orthopedic Physician's Assistants. ASOPA holds annual meetings and clinical symposia and provides continuing education opportunities and a newsletter. The 2008 annual meeting was held jointly with NAOT. ASOPA maintains offices in Indianapolis, Indiana, at the same address as NAOT.

### *National Board for Certification of Orthopedic Physician's Assistants*

The NBCOPA provides the Orthopedic Physician's Assistant-Certified (OPA-C) credential to eligible OPAs that pass a certification exam. The NBCOPA is an independent entity. It consists of six regular board members from ASOPA and advisory members.

## **Overlapping Scopes of Practice**

Several related health practitioners provide services similar to those of orthopedic technologists and orthopedic physician's assistants. Among them are Athletic Trainers, Orthopaedic Nurses, Physicians Assistants, Occupational and Physical Therapists, Orthotic Fitters, Medical Assistants, Paramedics/Emergency Medical Technicians, Emergency Room Technicians and Surgical Technologists/Assistants. Additionally, many practitioners pursue orthopedic technologist certifications to augment existing credentials. According to a recent survey by NBCOT, 68 percent of certified respondents indicated they were cross-trained in other professions.

### *Athletic Trainers*

Athletic trainers practice on physically active persons and prevent or treat injuries related to physical activity. This includes such diverse persons as athletes, performance artists, law enforcement personnel or persons working in physically demanding industries. Athletic trainers provide immediate care for injuries and, under the direction of a physician or physical therapist, provide ongoing care for persons engaged in physical activity. They may design and apply simple or prefabricated orthoses and braces.

Though athletic trainers are generally considered "in the field" practitioners, their use in clinical settings, including orthopedic settings, is becoming more prevalent. The scope of practice of Athletic trainers includes orthopedic evaluation and diagnosis, but not casting, splinting or surgical assisting. Athletic trainers often pursue specialty training and credentials, including certification as an orthopedic technologist, to apply casts and splints and to assist in surgery.<sup>6</sup>

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<sup>6</sup> See Poloncheck, Jeanna, Ed.D, ATC. 2004. "Evolution of an Athletic Trainer." National Athletic Trainers Association. <http://www.nata.org/employers/physext/evolutionofanATC.pdf> and the Emory Healthcare Sports Medicine Fellowship for Certified Athletic Trainers. [http://www.emory.org/departments/sports/certified\\_athletic\\_train.html](http://www.emory.org/departments/sports/certified_athletic_train.html), both accessed 10/29/2008

### *Orthopaedic Nurses*

Orthopaedic nursing is a specialty undertaken by RNs and LPNs. The Orthopaedic Nursing Certification Board provides three specialty certifications: Orthopaedic Nurse Certified, Orthopaedic Nurse Practitioner and Orthopaedic Clinical Nurse Specialist. Orthopaedic Nurses assist at all levels in orthopaedic settings, including first assistants to surgery following advanced training.

### *Physician Assistants*

Physician assistants (PA) work within the scope of practice of their supervising physician. Physician Assistants complete an accredited physician assistant program, including a clinical rotation, resulting in a bachelors or masters degree. Before practicing, physician assistants pass a certification exam. The National Commission on Certification of Physician Assistants, in conjunction with the National Board of Medical Examiners, develops and administers the PA certification exams. Once certified, physician assistants earn the Physician Assistant-Certified (PA-C) credential. All fifty states license physician assistants and require certification for full licensure.

Physician assistants are generalists, but may specialize in any field following certification, dependent on the scope of practice of their supervising physician. Physician assistants that specialize in orthopedics are referred to as Physician Assistants in Orthopedics or Physician Assistants in Orthopedic Surgery. Physician Assistants in Orthopaedics is a distinct profession from Orthopaedic Physician Assistants. Each profession has its own educational pathways, certifications, licensing requirements and professional organizations. Moreover, PA-Cs are generalists first, though they may add specialties. OPA-Cs only practice in Orthopaedics.<sup>7</sup> Under the supervision of a physician or surgeon, PA-Cs perform all aspects of patient care, including clinical evaluation and diagnosis and acting as first assistants to surgery.

### *Occupational Therapists*

Occupational Therapists assist injured, chronically ill, the elderly or otherwise disabled persons to engage in daily living activities. The Virginia Board of Medicine, in 18VAC85-80-100, lists “the design, fabrication, and application of orthoses (splints)” as one of the individual responsibilities of Occupational Therapists.

### *Physical Therapists*

Physical Therapists assist persons who have limited physical ability, due to injury, illness or birth defect, to gain or regain functionality. Physical therapists provide therapeutic interventions that include the design and application of braces, orthoses, prostheses and other protective or supportive devices, including some casts and splints.

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<sup>7</sup> See the American Academy of Physician Assistant’s statement on the Distinction between Physician Assistants and Orthopedic Physician Assistants: <http://www.aapa.org/gandp/opas.html> Accessed 10/29/2008.



Additionally, the American Physical Therapy Association provides advanced specialist certifications in orthopedic physical therapy, which includes some training in orthopedic medicine and orthopedic surgery.

### *Orthotic Fitters*

Orthotic fitters apply prefabricated orthoses and braces, except those used to treat bone fractures. The American Society of Orthopedic Professionals began providing training for Orthotic Fitter certification following the implementation of Centers for Medicare and Medicaid Services (CMS) rules that did not provide for reimbursement of orthopedic technicians for similar services. CMS has since suspended those rules and intends to publish new rules in 2009.

### *Medical Assistants*

Medical assistants provide administrative and clinical support to physicians. Unlike physicians assistants they do not provide direct patient diagnosis or treatment. The clinical roles of medical assistants are limited to sterilization, collection of laboratory samples, obtaining vital signs, administering medications or non-intravenous injections or other basic duties assigned and overseen by licensed practitioners. Medical assistants wishing to expand their scope of practice within orthopedic settings may seek additional training and certification as orthopedic technologists.

### *Emergency Medical Technicians and Paramedics*

Emergency Medical Technicians are trained at a variety of levels, from first responder training to advanced paramedic training. In Virginia, EMT-Basic level training is designed prepare “attendants in charge” of basic life support or rescue services.<sup>8</sup> To immobilize fractures and other traumatic injuries, EMTs often apply splints and traction. The National Highway Traffic Safety Administration manual *Emergency Medical Technician-Basic: National Standard Curriculum* includes sections on the emergency application of splints and traction.<sup>9</sup>

### *Emergency Room Technicians*

Emergency room technicians support physicians, nurses and other practitioners in emergency and urgent care settings. Emergency room technicians possess many of the same skills as EMTs. Emergency room technicians, however, work under the direct supervision of licensed practitioners within healthcare facilities. Emergency room technician are trained to apply orthopedic casts and splints as part of their regular job

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<sup>8</sup> See Virginia Department of Health, Office of Emergency Services. “EMS Training Programs Summary.” <http://www.vdh.state.va.us/OEMS/Training/tprog.htm#EMT%20-%20Basic>. Accessed 10/31/2008.

<sup>9</sup> Available at: <http://www.nhtsa.dot.gov/people/injury/ems/pub/emtbnsr.pdf>. Accessed 10/31/2008.

duties. There are no independent certifications for emergency room technicians, however many pursue EMT certifications.<sup>10</sup>

### *Surgical Technologists and Surgical Assistants*

Surgical Technologists and Surgical Assistants are specialists in assisting surgeons, including orthopedic surgeons. Surgical Technologists generally work in the scrub or circulating role during surgery. Surgical Assistants generally take the role of first assistant, providing direct surgical support, such as maintaining homeostasis, tying off bleeders and closing wounds at all levels. However, the profession is not tightly organized and the roles of surgical technologists and surgical assistants are not uniformly defined. Nomenclature plays a secondary role to experience, training and the discretion of the Surgeon. At least one surgical assistant professional organization/certifying body, The National Surgical Assistant's Association, lists applying and removing splints and casts as within the broader scope of practice of Surgical Assistants.<sup>11</sup>

### **Certification**

Two organizations provide certifications for orthopedic technologists. The American Society of Orthopedic Professionals (ASOP) provides certifications to its members. The National Board for the Certification of Orthopedic Technologists (NCBOT) is an independent certification board. NBCOT provides the only independently accredited certifications to orthopedic technologists. The National Board for Certification of Orthopedic Physician's Assistants (NBCOPA) certifies orthopedic physician's assistants.

### *American Society of Orthopedic Professionals*

ASOP offers two levels of certification for orthopedic professionals. The Certified Orthopedic Allied Professional [OAP(C)] credential is for practitioners, such as radiological technicians or medical assistants, that do not apply fracture casts. The Registered Orthopedic Technologist (ROT) credential is for practitioners that do apply fracture casts. ASOP only offers certifications to members, and there is no cost associated with certifications. ASOP dues are \$150 every two years.

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<sup>10</sup> There is little, if any, professional organization of ER Techs. For information, see Regional Health Occupations Resource Center, Saddleback College. 1998. "DACUM Competency Profile for The Emergency Room Technician." California. <http://www.healthoccupations.org/files/dacums/Emergency%20Room%20Technician.pdf>; Alaska Native Tribal Health Consortium, Office of Human Resources, "Emergency Room Technician," Alaska, <http://www.anthc.org/mod/jobweb/pdf/06-286.pdf>; Hennepin Technical College, Emergency Medical Education "Emergency Room Technician" Minnesota. [http://www.htcademic.mnscu.edu/CTS/mathiowetz-a/eme\\_ertech.html](http://www.htcademic.mnscu.edu/CTS/mathiowetz-a/eme_ertech.html) for examples of job descriptions and educational programs. Accessed 10/31/2008.

<sup>11</sup> See "Scope of Practice" page on the NSAA website: <http://www.nsaa.net/scopeofpractice.shtml>. Accessed 10/31/2008.

The OAP(C) certification is open to ASOP members that are employed in orthopedics that do not apply casts and are engaged in one of the following professions:

- |                           |                       |                         |
|---------------------------|-----------------------|-------------------------|
| •Medical Assistant        | •Orthopedic Physician | •Registered Nurse       |
| •Radiologic Technologist  | Assistant             | •X-ray Technologist     |
| •Orthopedic Technologist  | •Massage Therapist    | •Orthotist              |
| •Surgical Technologist    | •Emergency Medical    | •Orthotic Fitter        |
| •Licensed Practical Nurse | Technician            | •Chiropractic Assistant |
| •Athletic Trainer         | •Paramedic            | •Orthopedic Product     |
| •Physical Therapist       | •Emergency Room       | Representative          |
| •Physical Therapy         | Technician            |                         |
| Assistant                 |                       |                         |

The OAP(C) exam is an online, open book exam that encourages review of anatomy, physiology, orthopedic medicine and trauma. Exam-takers are encouraged to consult with any sources they desire, including texts, websites or fellow practitioners, while taking the online exam. OAP(C)s must complete 12 hours of continuing education annually. OAP(C)s may pursue continuing education hours in orthopedic or in their primary discipline (i.e. Radiology for Radiologic Technologists).

ROT certification is required of all ASOP members within one year of joining. ASOP provides members with a free, two-hundred page study guide for the certification exam. The exam consists of an online component and a practical component. Exam-takers may save completed sections of the online exam and return to complete other sections over the course of several days. Candidates complete the practical component at his or her place of employment. ROTs must complete 12 hours of continuing education, provided free to ASOP members by email, annually.<sup>12</sup>

#### *National Board for the Certification of Orthopedic Technologists*

The NBCOT provides two levels of certification, Orthopedic Technologist-Certified (OTC) and Orthopedic Technologist – Surgery Certified (OT-SC). The Orthopedic Technologist – Certified provides entry-level credentials for practicing orthopedic technologists. The OTC credential is the only independently accredited credential for orthopedic technologists or orthopedic physician assistants. The OTC program is accredited by the National Commission for Certifying Agencies, a national accreditation body for professional credentials. The National Organization for Competency Assurance (NOCA) created the NCCA in 1989 to act as an independent accreditation commission. The NCCA assumed the role of the National Commission for Health Certifying Agencies, which worked closely with the Federal Government to develop standards in voluntary certification programs.<sup>13</sup>

<sup>12</sup> All information is from the American Society of Orthopedic Professionals website: [www.asop.com](http://www.asop.com). Accessed 10/31/2008.

<sup>13</sup> Browning, A.H., Bugbee, A.C., & Mullins, M.A. 1996 *Certification: A NOCA Handbook*. National Organization for Competency Assurance (NOCA). USA. pg. x.

The unaccredited Orthopedic Technologist – Surgery Certified (OT-SC) is an advanced certification for orthopedic technologists that assist in surgery. (Note: Acting as a first assistant in surgery is within the scope of practice of OTCs.) The examinations are open to all qualified candidates at a cost of \$375 each.

As of January 1, 2009, candidates wishing to sit for the OTC exam must meet one of the following eligibility requirements<sup>14</sup>:

- A. Two-years of full time on the job training in Orthopedics specific to Orthopedic Technology, under the direct supervision of an Orthopedic Physician.
- B. Completion of an Orthopedic Technologist School/Program, plus 1-year full-time employment specific to Orthopaedic Technology.
- C. Completion of a currently NAOT Recognized Orthopedic Technologist School/Program, or US Military Program.
- D. Certified/Licensed as an Athletic Trainer with a minimum of six months full time employment specific to Orthopedic Technology under the direct supervision of an Orthopedic Physician.

The OTC certification exam consists of 165 questions, 15 of which are for research purposes. Exams are administered every day during the months of February, June, August and November by Schroeder Measurement Technologies at locations throughout the United States. Candidates have three hours to complete the exams. Exam content is based on a 2003 job analysis (see Table 1 for content areas).

<b>Content Area</b>	<b>%</b>
Assessment	22%
Casting, splinting and orthopaedic appliances	47%
Traction	13%
Surgery	18%

**Table 1:** OTC Exam Content Areas

OTCs must recertify every six years by either retaking the certification exam or providing documentation of 120 hours of continuing education. There are two types of continuing education hours. Category 1 continuing education hours consist of participation in seminars, conferences, grand rounds or CPR/BLS training. Alternatively, OTCs who publish or present professionally, or write questions for NBCOT exams, receive credit for Category 1 hours. Examples of Category 2 hours include attending scientific exhibits, reading orthopedic journals or completing approved online continuing education units. OTCs must complete a minimum of forty Category 1 hours within the six-year recertification period.

<sup>14</sup> Before Jan. 1st, employment in an orthopedic-related (rather than orthopedic technology specific) field is acceptable. For information on the listing, and the complete eligibility listing including documentation requirements, see: <http://www.nbcot.net/Index.html>. Accessed 10/31/2008.

The OT-SC credential is designed to demonstrate proficiency in assisting Orthopedic Surgeons during surgery. To be eligible to sit for the OT-SC certification exam, candidates must be either current OTCs or certified Orthopedic Physician's Assistants (OPA-C) with a minimum of one year experience in surgical assisting. The OT-SC exam consists of 150 multiple-choice questions and must be completed within three hours. See table 2 for an overview of assessment areas.

Content Area	%
Preoperative Management	12%
Intraoperative management	52%
Postoperative management	25%
Regulatory and ethical responsibility	11%

**Table 2:** Content area of OT-SC exam

OT-SCs must undergo the same recertifying provisions as OTCs. However, twenty Category 1 continuing education hours must relate specifically to the OT-SC's surgical role.

### *National Board for Certification of Orthopedic Physician's Assistants*

The NBCOPA provides the Orthopedic Physician's Assistant-Certified (OPA-C) credential to qualified candidates that pass a certification exam. Neither the NCCA nor any other accrediting body provides accreditation for the OPA-C program. The program is only open to US citizens. To become eligible for certification, candidates may pursue one of two paths:

1. Completion of an orthopedic physician's assistant program, a primary care physician assistant program or a nurse practitioner (NP) program or
2. At least FIVE years of experience in orthopedic work with responsibility in surgical assisting, history and physical assessment, and immobilization techniques, under the supervision of a Board-certified orthopedic surgeon.<sup>15</sup>

There are no orthopedic physician's assistant educational programs operating at this time. See page 16 for information on orthopedic physician's assistant education programs.

The certification exam consists of 250 multiple-choice questions in five content areas. Table 3 provides an overview of content areas. Professional Testing Corporation administers the four-hour exam semi-annually at 21 testing centers in 18 states. The exam is not offered in Virginia, though groups of eight or more may request a special testing site at no extra cost. The nearest testing sites are located in Washington D.C., Nashville, TN and Lexington, KY. The testing fee is \$350 for ASOPA members or \$450 for non-members.<sup>16</sup> ASOPA membership dues are \$200 annually.

Content Area	%
Anatomy and Physiology	15%
Musculoskeletal Conditions	30%
Orthopedic History, Physical Exam	10%
Imaging and Laboratory Studies	10%
Treatment of Musculoskeletal conditions	35%

**Table 3:** Content area of OPA-C exam

<sup>15</sup> See Professional Testing Corporation, *Certification Examination For Orthopedic Physician Assistants: Handbook for Candidates*, New York, NY. <http://www.ptcny.com/PDF/NBCOPA2009.pdf>. Retrieved 11/19/2008.

<sup>16</sup> Ibid.

OPA-Cs must complete 120 continuing education hours every four years or retake the certification exam. OPA-Cs may earn continuing education hours through accredited CME programs, medical teaching rounds or presentations, publication of books or papers, or independent study. ASOPA offers online CME modules in its newsletters. At least 40 continuing education hours must be earned through accredited CME programs.

Table 4 provides an overview of the certifications available to Orthopedic Technologists and Orthopedic Physician's Assistants.

	Accredited	Level	Education	Experience	Type of Test	Annual CEU	Fee
OAP(C)	No	NA	NA	Must be employed	Online	12	\$150 (2-year ASOP fee)
ROT	No	Entry	NA	Must be employed	Online, Practical Component	12	\$150 (2-year ASOP fee)
OTC	NCCA	Entry	NAOT Recognized Program or...	...or two years	Private Testing Center	20	\$375
OT-SC	No	Specialty	OTC or OPA	One year	Private Testing Center	20	\$375
OPA-C	No	Entry or Practitioner	OPA, PA or NP program or...	...or five years	Private Testing Center	30	\$350-ASOPA \$450-Other

**Table 4:** Overview of ASOP, NBCOT and NBCOPA certifications. Only the OTC certification is independently accredited.

## Education

Although many orthopedic technologists receive on-the-job training, formal educational opportunities exist. The NAOT recognizes orthopaedic educational programs that meet specific guidelines. Additionally, like many allied health professions, the orthopedic technologist profession benefits from the influence of military-trained medics, Navy Corpsman and other health practitioners. The military provides training in the occupational specialty of orthopaedics. There are currently no educational programs tailored specifically to Orthopedic Physician's Assistants.

### *National Association of Orthopedic Technologists: Recognition*

The National Association of Orthopedic Technologists (NAOT), through its Review Committee for Orthopaedic Technology Education Programs, recognizes qualified Orthopedic Technology educational programs. The NAOT is not accredited, approved, recognized or associated with any other educational accreditation board or certifying agency, including the NBCOT.

The NAOT application for program recognition lists the following curricula requirements:

- All curricula must coincide with the NBCOT Role Delineation Study for Certified Orthopaedic Technologists.
- Curricula must be one school year in length
- A clinical rotation of at least 200 hours in all of the following settings:
  - Operating room
  - Hospital
  - Office Practice
- Curricula must be in place for one year prior to applying for NAOT recognition
- Curricula must meet the minimum level established by the NAOT Education Review Committee.
- Instructors must be credentialed at the OTC level or higher.

Recognition is for two years, after which each program must reapply.

Students completing NAOT recognized programs do not need on-the-job training before taking the NBCOT's OTC examination. NAOT recognized programs award diplomas, certificates and associates degrees. Additionally, US Military training in the Orthopedic Specialty is recognized by the NAOT.

The NAOT recognizes six programs, listed in Table 5.

<b>Institution</b>	<b>State</b>	<b>Degree</b>	<b>Institutional Accreditation</b>
<b>Blue Ash Education Center</b>	TX	Certificate	None
<b>Central Georgia Technical College</b>	GA	Associates or Diploma	Commission on Colleges of the Southern Association of Colleges and Schools
<b>Griffin Technical College</b>	GA	Associates or Diploma	Commission on Colleges of the Southern Association of Colleges and Schools
<b>Grossmont College</b>	CA	Associates or Certificate	Western Association of Schools and Colleges
<b>MCCS/HMD-Orthopaedic Specialty Course</b>	TX	MOS 68W ASI P1	US Military Specialty: Orthopedic Specialist
<b>Medical Careers Institute at Coordinated Health</b>	PA	Diploma	None

**Table 5:** NAOT recognized educational programs.

### *Other Educational Programs*

An internet search revealed a few programs that are not recognized by the NAOT. Students completing these programs must also complete six months of full time on-the-job training before sitting for the NCBOT.

<b>Institution</b>	<b>State</b>	<b>Degree</b>	<b>Institutional Accreditation</b>
<b>Anne Arundel Community College*</b>	MD	182 classroom hours, 240 clinical hours	Middle States Commission on Higher Education
<b>Boston Reed College*</b>	CA	182 classroom hours, 240 clinical hours	Registered with Bureau for Private Post Secondary and Vocational Education, CA
<b>Virginia College</b>	AL	Associates 96 credit 0 clinical	Accrediting Council for Independent Colleges and Schools
<b>NHTI-Concord's Community College</b>	NH	Certificate 32 credits 8 clinical	Commission on Institutions of Higher Education of the New England Association of Schools and Colleges, Inc

**Table 6:** Orthopedic Technologist programs not recognized by NAOT, discovered through an internet search.

\*Boston Reed College provides complete program modules to institutions, including course and marketing materials, externship placements and instructors. The Anne Arundel Community College uses the Boston Reed College Program.

### *Orthopedic Physician's Assistants Programs*

The American Medical Association (AMA), in conjunction with the American Academy of Orthopedic Surgeons (AAOS), accredited several OPA educational programs until 1974, when they ended accreditation in favor of physician assistant programs. The last non-accredited OPA educational program was discontinued in 1990. Orthopedic Physician's Assistants may pursue eligibility for OPA-C certification through physician assistant or nurse practitioner programs, or through on-the-job training.

## **Economic Impact**

### *Salary Information*

The Bureau of Labor Statistics does not track orthopedic technologists as an independent profession. However, the Bureau of Labor Statistics does track orthopedic technicians and technologists as part of "Healthcare Technologist or Technician, All Other" (SOC Code 292099). In addition, this section uses BLS data on Medical Assistants (SOC Code 31-9092) as an indicator of entry-level orthopedic technologist salaries. NBCOT survey data (see next page) indicate that 18 percent of OTCs are cross-trained as medical assistants. Medical assistant is also a likely classification for new orthopedic technicians pursuing on-the-job training. The same NBCOT survey indicates that 42 percent of OTC candidates achieved eligibility through on-the-job training, more than any other eligibility route.



In addition to the BLS data, the NAOT and the NBCOT have completed their own salary surveys of orthopedic technologists. Although each survey likely reflects some bias (discussed below), their compatible results support the validity of the results for the surveyed populations.

Salary information for Orthopedic Physician’s Assistants is even more difficult to obtain. Orthopedic Physician’s Assistants are difficult to classify using BLS classification systems. They are not physician assistants, however, the titles Orthopedic Physician Assistant and Physician Assistant in Orthopedics often appear to be interchangeable in job postings. Beyond BLS data, ASOPA has completed a salary survey.

## Orthopedic Technologists

### *Salary Information*

The BLS provides detailed workforce and salary information on all employed (excluding unemployed and self-employed) workers in states and metropolitan areas. The latest OES information available is from May of 2007. The “Health Technologist or Technician, All Other” classification is not defined. For a list of similar occupations *not* included in the “other” classification, see Appendix C. Table 7 provides a snapshot of OES data for “Healthcare Technologist or Technician, All Other” and “Medical Assistant” for Virginia. Medical assisting is a common route for practitioners seeking on-the-job training.

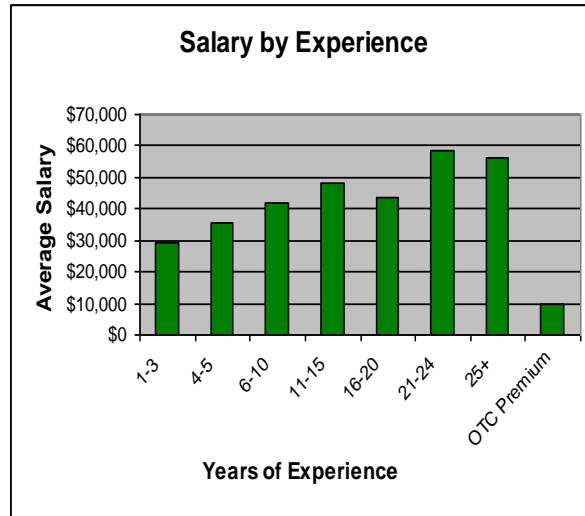
	<b>Health Tech.</b>	<b>Medical Assist.</b>
VA Work Force	1,410	7,870
10 <sup>th</sup> %-ile Hourly	\$10.36	\$9.56
10 <sup>th</sup> %-ile Annual	\$21,550	\$19,880
Median Hourly	\$14.58	\$12.98
Median Annual	\$30,330	\$26,990

**Table 7:** Earnings of Health Technologists and Medical Assistants in Virginia. BLS, OES survey data, May, 2007.

The NAOT regularly surveys its membership about salaries and compensation. Nearly 300 members responded to the 2008 survey. Due to the nature of the sample, the survey results will reflect the characteristics of NAOT members. These members are likely to be more dedicated to their profession and have more experience. Additionally, the results will likely reflect a bias towards NBCOT certifications. They likely do not reflect the characteristics of ASOP members or those with ASOP certifications.

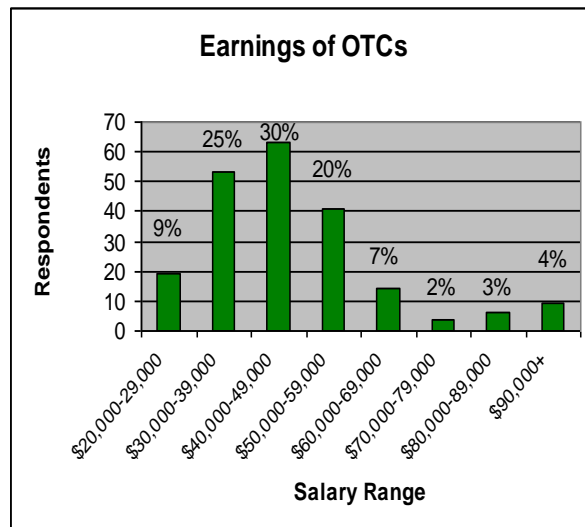
The NAOT survey found that orthopedic technologists earned, on average, \$44,458 per year in 2008. Entry-level orthopedic technologists, with one to three years of experience, earned \$29,375. The most experienced orthopedic technologists (25+ years of experience) earned an average of \$56,136. Ninety-five percent of survey respondents enjoyed full-time employment and most received health benefits. Additionally, employers provided an average of \$1,037 of educational benefits to respondents.

The survey results also indicated that employers are willing to pay a premium for OTC credentialed employees. Respondents with the OTC certification reported, on average, earning approximately \$10,000 more than non-certified respondents. Additionally, OTC salaries in 2008 increased four percent compared to the 2006 survey. Salaries of non-certified orthopedic technologists declined by four percent over the same period.<sup>17</sup>



The NBCOT sent 730 surveys by email to OTC's with a valid email-address still on file. 220 completed surveys were returned. The results of the NBCOT survey will likely display many of the same biases of the NAOT survey. However, since the survey was sent only to credentialed OTCs, these biases will likely be accentuated. Additionally, the survey was sent only to those who have either not changed email addresses or who updated email addresses with the NBCOT. Since email addresses are sometimes associated with employers, it may under represent those who have changed employers or who are unemployed.

The NBCOT survey collected salary information in ranges, resulting in less precise conclusions than the NAOT survey. Seventy-five percent of survey respondents earned between \$30,000 and \$60,000 per year. The median OTC earner took in between \$40,000 and \$49,000, along with 30 percent of his or her colleagues. A few respondents (4.3 percent) reported earnings over \$90,000. Though the NBCOT did not list earnings by experience level, 54 percent of respondents had held their OTC credentials for six or fewer years.



Thirty-eight percent of respondents reported receiving a raise following certification. Employers compensated 61 percent of respondents for the certification exam, and 57 percent for continuing education requirements.<sup>18</sup>

<sup>17</sup> A summary of the NAOT survey results at <http://www.naot.org/salarysurveyresults08.html>. Accessed 11/1/2008

<sup>18</sup> The results of the NBCOT survey are available on their website: [http://www.nbcot.net/Stat\\_Results.pdf](http://www.nbcot.net/Stat_Results.pdf). Accessed 11/1/2008.

## Earnings Incentive of Certifications

The limitations of the available survey data make it difficult to infer the economic impact of certification. There is no salary data available on ASOP members or ASOP certifications. Information on entry-level practitioners is also limited. The BLS category “Health Technologist or Technician, All Others” includes professions other than orthopedic technologists. The NAOT salary survey included some non-certified members but this data is limited and likely weighted towards more dedicated professionals.

Both the NAOT and NBCOT surveys provide information on the earning potential of orthopedic technologists. A comparison of these surveys to BLS data on health technologists and medical assistants gives some indications of the earnings incentive of certification. However, the comparison involves surveys of varying scientific rigor examining different populations. For instance, the NBCOT and NAOT surveys include practitioners that the BLS would categorize as athletic trainers, nurses or physician assistants. These specialists will tend to increase the average annual salaries reported in those surveys. While the comparison provides some indication of earnings incentives, it is not a rigorous comparison.

Table 8 provides an overview of entry-level salary information and compares it with average salaries indicated in the NAOT and NBCOT surveys. The two columns on the right list the difference between entry level and average salaries. These give some idea of what an uncertified technician or medical assistant may hope to gain by pursuing a career as an orthopedic technologist. The NBCOT survey average was estimated by using the center of salary ranges (i.e. \$25,000 for \$20,000-\$29,000, see Appendix D for a complete table). Despite the limitations of the comparison, the results suggest entry-level persons working as health technicians, medical assistants or orthopedic technicians can expect significant salary gains by pursuing OTC certifications. Additionally, the comparison lends credence to the \$10,000 OTC premium predicted by the NAOT survey.

	Salary	Difference: NAOT	Difference: NBCOT
Medical Assist. 10 <sup>th</sup> %-ile	\$19,880	\$24,578	\$27,943
Medical Assist. Ave. Annual	\$27,910	\$16,548	\$19,913
Health Tech 10 <sup>th</sup> %-ile	\$21,550	\$22,908	\$26,273
Health Tech Ave. Annual	\$35,220	\$9,238	\$12,603
NAOT Survey, 1-3 years Exp.	\$29,375	\$15,083	\$18,448
NAOT Survey Ave. Annual	\$44,458	NA	\$3,365
NBCOT Survey Ave. Annual	\$47,823	-\$3,365	NA
NAOT Survey OTC Premium		\$10,000	\$10,000

**Table 8:** Salaries predicted by various surveys compared to NAOT and NBCOT survey averages. Though the comparisons are of limited validity, they lend credence to the NAOT survey’s suggestion of a \$10,000 premium for OTCs.

Some benefits are more direct. Thirty-eight percent of respondents to the NBCOT survey indicated they received a raise along with certification. Forty-four percent were required to attain OTC certifications by their employers.

In addition to persons pursuing their first medical specialty, many persons pursue orthopedic technologist certifications to augment existing credentials. For instance, the NBCOT allows certified athletic trainers to sit for the OTC examination. NBCOT's survey indicates that about 17 percent of OTCs are also trained as athletic trainers. Other specialties identified in the survey include X-ray techs, medical assistants, nurses, orthopedic physician's assistants, orthotists, surgical technologists, emergency medical technicians and physical therapy assistants. Only 32 percent of OTCs indicated they were not cross-trained in another profession. It is impossible to predict the earnings incentive of OTC certifications for persons with other medical specialties. The fact that some practitioners pursue it, though it may not be necessary to expand their scope of practice into orthopedics, implies that there is some incentive.

### *Cost of Certification*

Initial certification costs are not excessive. ROT certification is free with a \$150 two-year membership to ASOP. OTC certification costs \$375. Both certifications are available to candidates without formal education in orthopedic technology. Only 23.5 percent of respondents to the NBCOT survey indicated they achieved eligibility through orthopedic technology education. Forty-two percent used on-the-job training. The rest achieved eligibility through either military training, or education in an orthopaedics related field.

There are no orthopaedic education programs available in Virginia. In-state tuition for diploma programs outside of Virginia cost only a few thousand dollars. Table 9 displays the costs of certification and educational programs in terms of hours worked for some of the entry-level salary levels discussed in the "earnings incentive" section. Certified technicians must also meet continuing education requirements. ROTs may complete continuing education requirements using free units provided in ASOP newsletters and online. OTCs have the opportunity to pursue some free continuing education units, however Category 1 units require participation in seminars, conferences or other events that could cost hundreds of dollars.

	Cost	Medical Assistant		Health Tech	
		10 <sup>th</sup> %-ile \$9.56	Median \$12.98	10 <sup>th</sup> %-ile \$10.36	Median \$14.58
ASOP: ROT	\$150	15.7	11.6	14.5	10.3
NBCOT: OTC	\$375	39.2	28.9	36.2	25.7
Central Georgia Technical College	\$2,900	303.3	223.4	279.9	198.9
Anne Arundel Community College	\$1,700	177.8	131.0	164.1	116.6

**Table 9:** Cost of certification in hours worked by potential entry-level practitioners.

Employers often mitigate or cover certification and continuing education costs. Respondents to the NAOT survey received an average of \$1,037 annually from employers for education. Sixty-one percent of respondents to the NBCOT survey were reimbursed for certification expenses, and 57 percent received some reimbursement for some or all of their continuing education or recertification expenses.

### **Orthopaedic Physician's Assistants**

The BLS and ASOPA provide limited salary information for orthopedic physician assistants. The BLS does not offer a separate classification for orthopedic physician's assistants. OPAs, however, may be grouped with physician assistants. The BLS reports, using May 2007 data, that physician assistants earn, on average, \$77,800. Fewer than 10 percent of physician assistants earned less than \$45,000.

A 2008 salary survey performed by ASOPA indicated that OPAs earned, on average, \$73,131 annually, up from \$66,707 in 2006. Additionally, employers provided approximately \$1,700 to cover educational and professional expenses.<sup>19</sup> At these reimbursement levels, certification costs are negligible. The educational routes available to OPA-Cs (physician assistant or nurse practitioner) provide their own, separate licensing requirements and earnings incentives.

### **Existing Regulations**

#### *Federal*

Services provided by orthopedic technologists or orthopedic physician's assistants are not reimbursable under Medicare or Medicaid.

#### *States*

No states specifically regulate orthopedic technologists or technicians. California is considering a bill to regulate orthopedic technologists. The bill is currently in committee. The draft language of the bill is as follows:

#### **Chapter 7.8. Orthopaedic Technologists**

3570. (a) No person, other than one who is currently certified as an orthopaedic technologist by the National Board for Certification of Orthopaedic Technologists, shall practice as an orthopaedic technologist or in a similar capacity or hold himself or herself out as an "orthopaedic technologist," or shall use any other term indicating or implying that he or she is an orthopaedic technologist.

(b) an orthopaedic technologist certified by the National Board for Certification of Orthopaedic Technologists may perform the following medical services under the supervision of a physician and surgeon:

(1) Patient assessment for purposes of orthopedic procedures.

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<sup>19</sup> See ASOPA News "ASOPA 2008 Salary Survey Results." <http://www.asopa.org/>, retrieved 11/19/2008

- (2) Applying and removing casts.
- (3) Measuring and fitting patents for orthopedic braces, devices, and ambulatory aides.
- (4) Assisting in the application, maintenance, and adjustment of skeletal traction.
- (5) Fabricating and applying splints and bandages.
- (6) Removing sutures, staples, and pins related to orthopedic procedures.
- (7) Instructing patients in the care of casts, splints, braces, or orthopedic devices and related skin care.
- (8) Assisting a physician and surgeon in orthopedic surgical procedures.
- (c) For purposes of this section, “supervision” means that a licensed physician and surgeon oversees the activities of, and accepts responsibility for, the medical services rendered by the orthopaedic technologist.

Important things to note in the draft bill are the acceptance of only the NCBOT orthopedic technologist certification (OTC), the prohibition against acting in a “similar capacity” to an orthopedic technologist and the mandate to assist in surgery. Additionally, the draft legislation makes no provision for on-the-job training of technologists.<sup>20</sup>

Two states regulate professions that act in a similar capacity to orthopedic technologists or orthopedic physician assistants, New York and Tennessee. New York provides for registration of “specialist assistants,” including orthopedic assistants. Specialist Assistants enjoy the same scope of practice as Physician Assistants, but only within their specialty area. Additionally, specialist assistants cannot prescribe drugs.

Practitioners seeking licensure as orthopaedic assistants in New York may pursue three options:

1. Complete an approved orthopedic training program *and* pass the certification exam for Orthopedic Physician’s Assistants given by the National Board Certification Examination for Orthopedic Physician Assistants (NBCOPA).
2. Complete a military training program, with a minimum of two years experience as an orthopedic assistant. Experience requirements vary by type and extent of the training program. Up to five years experience is required for non-specialists (corpsman)
3. Complete extensive health related education, and a minimum of five years of experience as an orthopedic assistant.<sup>21</sup>

The first eligibility route uses the Orthopedic Physician’s Assistant (OPA-C) certification, provided by the NBCOPA. Despite attaining these credentials, licensed practitioners may use only the title “Registered Specialist Assistant.” They may not use

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<sup>20</sup> The language was included in written comments provided by the NBCOT. The language is dated 2/11/2008.

<sup>21</sup> See <http://www.op.nysed.gov/rsa.htm>

the designation Orthopedic Physician's Assistant or OPA-C as this might cause confusion with Registered Physician Assistants, also regulated by New York. Certified Physician Assistants use the PA-C designation (see Overlapping Scopes of Practice, pg. 7). There has been at least one disciplinary incident in New York involving a registered orthopedic assistant practicing as a physician assistant outside the scope of orthopedics.<sup>22</sup>

Tennessee also requires that Orthopedic Physician's Assistants be licensed. Orthopedic Physician's Assistants must graduate from an approved orthopedic physician's assistant training program and complete the certification exam for Orthopedic Physician's Assistants (OPA-C) given by the NBCOPA. Tennessee's Committee on Physicians Assistants has not currently approved any specific orthopedic physician's assistant training programs. Licensed Orthopedic Physician Assistants may not prescribe medication. Tennessee law specifically exempts technologists, technicians, and other assistants, or employees that perform delegated services for physicians, from this requirement.<sup>23</sup>

### **Potential for Harm**

The potential for orthopedic technologists and orthopedic physician's assistants to cause harm comes from two main sources: the application of casts, splints, braces, orthoses and traction and from assisting in surgery.

#### *Casts, splints, braces, orthoses and traction*

Casts and splints immobilize fractures, other injuries or skeletal abnormalities to prevent further damage and to allow reduced injuries to heal. Splints are often prefabricated and allow more movement than casts. Casts, either fiberglass or plaster, are custom-fitted and completely immobilize affected areas. Traction aligns, protects or increases the mobility of injured or abnormal bones and limbs. In addition to skeletal traction, involving pins, slings and pulleys, skin traction is occasionally applied by using special tape attached to the skin. Braces and orthoses are applied to provide increased functionality to injured or abnormal skeletomuscular structures. Several complications may arise from the improper application of these treatments, including:

- Delayed or improper healing of injuries
- Pressure sores and infection
- Compression resulting in nerve or tissue damage
- Deep vein thrombosis (internal blood clots)
- Burns from plaster setting
- Pulmonary or urinary infections (improper traction)

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<sup>22</sup> See New York Board for Professional Medical Conduct Order # BPMC 04-07: <http://w3.health.state.ny.us/opmc/factions.nsf/0522fed2dd2160ff852568c0004e894a/03431d7633681bad85256c700062bee7?OpenDocument> Accessed 11/10/08.

<sup>23</sup> See <http://health.state.tn.us/Boards/PA/>

Additionally, practitioners use a vibrating saw to remove casts. Though safer than rotating saws, these saws can still cause lacerations or burns.

### *Surgery*

Definitions and scopes of practice of orthopedic technologists provided by NAOT, VAOT, NCBOT and ASOPA indicate that orthopedic technologists act as first assistants during orthopedic surgery. Under the supervision of surgeons, first assistants provide direct surgical care to patients, including subcutaneous closure, clamping or cauterizing of vessels and tissue, suctioning, and autotransfusion.<sup>24</sup> First assistant roles in surgery differ from “first scrub” or “circulator” support roles that do not involve direct participation in surgery.

The American College of Surgeons offers the following statement regarding the scope and qualifications of first assistants:

The first assistant during a surgical operation should be a trained individual who is able to participate in and actively assist the surgeon in completing the operation safely and expeditiously by helping to provide exposure, maintain hemostasis, and serve other technical functions. The qualifications of the person in this role may vary with the nature of the operation, the surgical specialty, and the type of hospital or ambulatory surgical facility.

The American College of Surgeons supports the concept that, ideally, the first assistant at the operating table should be a qualified surgeon or a resident in an approved surgical education program. Residents at appropriate levels of training should be provided with opportunities to assist and participate in operations. If such assistants are not available, other physicians who are experienced in assisting may participate.

It may be necessary to utilize nonphysicians as first assistants. Surgeon's Assistants (SAs) or physician's assistants (PAs) with additional surgical training should meet national standards and be credentialed by the appropriate local authority. These individuals are not authorized to operate independently. Formal application for appointment to a hospital as a PA or SA should include:

#### Qualifications and Credentials of Assistants

- Specification of which surgeon the applicant will assist and what duties will be performed.

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<sup>24</sup> See Commission on the Accreditation of Allied Health Education Programs “Standards and Guidelines for the Profession of Surgical Assisting.  
[http://www.arcst.org/pdfs/surgical\\_assist\\_standards\\_guidelines.pdf](http://www.arcst.org/pdfs/surgical_assist_standards_guidelines.pdf) Accessed 11/12/2008



- Indication of which surgeon will be responsible for the supervision and performance of the SA or PA.
- The application should be reviewed and approved by the hospital's board.
- Registered nurses with specialized training may also function as first assistants. If such a situation should occur, the size of the operating room team should not be reduced; the nurse assistant should not simultaneously function as the scrub nurse and instrument nurse when serving as the first assistant. Nurse assistant practice privileges should be granted based upon the hospital board's review and approval of credentials. Registered nurses who act as first assistants must not have responsibility beyond the level defined in their state nursing practice act.

Surgeons are encouraged to participate in the training of allied health personnel. Such individuals perform their duties under the supervision of the surgeon.<sup>25</sup>

Recommended educational and experience requirements for surgical assistants or RN first assistants tend to be multiple-level and require advanced training. For instance, to qualify as first assistants, the Association of Perioperative Registered Nurses (AORN) believes registered nurses should first obtain certification and experience as a scrub or circulator in perioperative nursing (CNOR). CNORs wishing to first assist should then complete a one-year specialization course before seeking Certified Registered Nurse First Assistant (CRNFA) credentials.<sup>26</sup> To certify, CNORs must possess a bachelors degree and have 2000 hours of clinical experience as an RNFA.<sup>27</sup> Likewise, the National Board of Surgical Technology and Surgical Assisting (NBSTSA) requires that candidates for Certified First Assistant (CFA) credentials complete a CAAHEP accredited program or be a Certified Surgical Technologist (CST) with two full years of first assistant experience.<sup>28</sup> At this time, Virginia does not regulate the role of first assistant.

### *Malpractice*

Insurance providers often provide professional liability insurance to non-physician healthcare practitioners. An internet search revealed two companies that provide professional liability insurance tailored to orthopedic technologists and orthopedic physician assistants practicing in Virginia: Healthcare Providers Service Organization (HPSO) of Pennsylvania and American Professional Agency, Inc. (APAI) of New York. The following chart details the base annual insurance premiums for

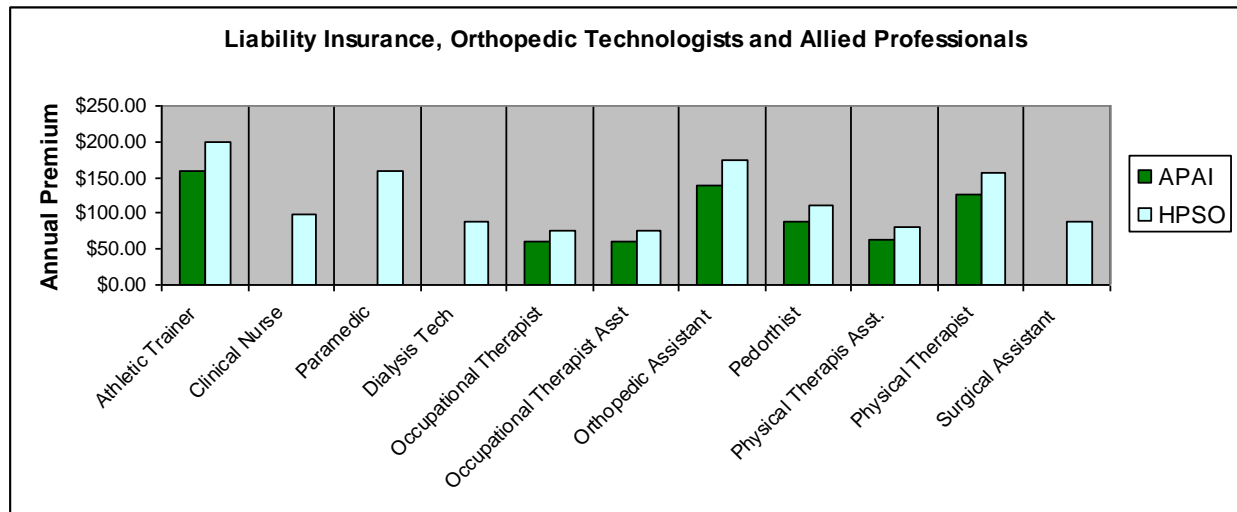
<sup>25</sup> See American College on Surgeons. "Statement of Principles" [http://www.facs.org/fellows\\_info/statements/stonprin.html#anchor129977](http://www.facs.org/fellows_info/statements/stonprin.html#anchor129977)

<sup>26</sup> See AORN Official Statement on RN First Assistants: [http://www.aorn.org/PracticeResources/AORNPositionStatements/Position\\_RNFA/](http://www.aorn.org/PracticeResources/AORNPositionStatements/Position_RNFA/). Accessed 11/12/2008.

<sup>27</sup> See Competency and Credential Institute "Eligibility for CRNFA® Certification": [http://www.cc-institute.org/cert\\_crnf\\_abou\\_elig.aspx](http://www.cc-institute.org/cert_crnf_abou_elig.aspx). Accessed 11/12/2008.

<sup>28</sup> See NBSTSA "Eligibility and Fees" <http://www.nbstsa.org/certifyingexam/eligibility.html>: Accessed 11/12/2008.

orthopedic assistants, employed full-time, seeking protection of \$1 million per claim and \$3 million aggregate insurance. For comparison, the chart includes several allied professions.<sup>29</sup>



In both plans, Orthopedic Assistant premiums are 12.5 percent lower than premiums for athletic trainers, and approximately 11 percent higher than physical therapist premiums. HPSO premiums for surgical assistants are almost half those of orthopedic assistants. For the complete table, see Appendix E.

### Public Comment

The National Board for Certification of Orthopedic Technologists, Inc, provided extensive written comments in support of licensure. NBCOT's comments include a detailed job analysis, standards of practice and a code of ethics for certified technicians, a candidate handbook, draft language of California's pending "Orthopaedic Technologist Certified Bill" and other information on NBCOT's certification. NBCOT members also provided oral comments at a public hearing held on August 14<sup>th</sup>, 2008.

The Virginia Occupational Therapy Association (VOTA) also offered written comments. VOTA noted that § 54.1-2956.5 of the *Code of Virginia* restricts the use of the "O.T." credential to licensed Occupational Therapists. VOTA does not support licensure of activities already included in the scopes of practice of occupational and physical therapy, or any regulation that would limit the existing scopes of practice for occupational or physical therapists or require additional licenses.

<sup>29</sup> For HPSO, rates were retrieved using the online "quick quotes" service available here: <https://www.hpso.com/quick-quote/page1.jsf>. Selections were 1.Virginia 3.No (for work in prison) 4. Employed, 5. Yes/Full Time and 6. No (not a recent graduate) For certain professions, prescription writing authority was not selected. APAI provides a premium rate table, available at: <http://www.americanprofessional.com/allied/index.htm>

## Policy Options

When examining other health professions regulated within the Department of Health Professions' health regulatory boards, the key factors that are associated with each form of professional regulation are: educational requirements, examination requirements, scope of practice, discipline, and continuing education. To assist the Committee in its review, Table 9, below, provided an essential overview of each factor in relation to the form of traditional state regulation. It indicates whether the factor is necessarily required or associated with the form of regulation (Y), is optional (O), or is not required (N).

Form of Regulation	Educational Requirement	Examination Requirement	Discipline	Standards of Practice	Continuing Education
Licensure	O	O	Y	Y	O
Voluntary Certification	O	Y	Y	Y	O
Registration	N	N	Y	Y	O

### Option 1-Licensure

Licensure is the most restrictive level of state regulation and largely confers a monopoly to the group in question. Licensure ensures that the scope-of-practice and the professional title are reserved to individuals who meet certain minimal competencies to safely practice. To select this option for Orthopedic Technicians and Orthopaedic Physician's Assistants, all six Criteria must be met.

- (1) There must be a high risk of harm to the consumer that results from the practices inherent in the profession, the characteristics of the clients served, and/or the setting or supervisory arrangements for health service delivery.
- (2) The profession must be viewed as requiring special skills and training.
- (3) Practitioners must generally practice autonomously.
- (4) The scope of practice is distinguishable from other health professions and occupations.
- (5) The economic costs to the public of regulation and the potential reduction of supply are justified.
- (6) Alternatives such as strengthening inspections and injunctions, disclosure requirements and consumer protection laws and regulations are insufficient to address the risk of harm to the public from the unregulated practice of the profession.

### Option 2 – Voluntary Certification

This is the second most restrictive level of regulation. It presumes a moderate potential for risk of harm to the public that is attributable to the nature of the practice, client vulnerability, or practice setting and level of supervision. It requires that all of the Criteria listed above be met, except #3 (Autonomous Practice). Voluntary certification provides assurances for the public that the individual practitioner who obtains

certification has at least a minimal level of competency to safely practice. It affords discipline of the certificate holder. The scope-of-practice is not restricted, but the use of the professional titles or credentials would be reserved to those meeting the certification requirements. This method affords consumers and employers with a means of identifying competent practitioners but does not restrict the performance of their duties only to those certified.

### **Option 3 – Registration**

Registration simply requires that all practitioners be registered as individual practitioners. Discipline could be taken against the registrant and not simply the facility. There is no test of minimal competency. This option provides accountability of the individual without the potential economic impact of restricting the supply of practitioners. Clients, supervisors, and others would be able to track disciplinary history of the individual which should preclude incompetent or unscrupulous practitioners from leaving one area in Virginia only to go to another. Criteria #1, #4, #5 and #6 must be met.

For Options #1, #2 or #3, the regulation of practitioners should be housed within a recognized board that can assure competency, set appropriate standards of care, and take disciplinary action when necessary.

### **Option 4 – No Professional Regulation**

To select this option, the work of practitioners must be considered safe, ordinary work, with no special, distinguishable knowledge or skill required to adequately protect the public's health, safety and welfare.

**Note:** The Board may also wish to consider the proper qualifications for first assistants in orthopedic surgery.

## **Recommendations**

At its December 17, 2008 meeting, the Regulatory Research Committee unanimously approved a properly seconded motion to recommend no professional regulation at this time. The Committee noted the level of autonomy granted to Orthopedic Technologists and Orthopedic Physician's Assistants was similar to that of Physician's Assistants yet did not require the same educational background. The Committee also noted the potential for confusion between Physician Assistants and Orthopedic Physician's Assistants and noted that the title "Physician Assistant" is protected by statute in Virginia.

The full board also met on December 17, 2008 and reviewed the Committee's findings. The full board voted unanimously to accept the Committee's report and recommendation to not regulate Orthopedic Technologists or Orthopedic Physician's Assistants at this time.

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### Websites

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- American College of Surgeons: [www.facs.org](http://www.facs.org)
- Association of PeriOperative Registered Nurses: [www.aorn.org](http://www.aorn.org)
- American Physical Therapy Association: [www.apta.org](http://www.apta.org)
- American Professional Agency, Inc.: [www.americanprofessional.com](http://www.americanprofessional.com)
- Association of Surgical Technologists: [www.ast.org](http://www.ast.org)
- American Society of Orthopedic Professionals: [www.asop.org](http://www.asop.org),  
ASOP's Casting Workshops: [www.castingworkshop.com](http://www.castingworkshop.com)
- Bone and Spine Health, Orthopedic Consultation and Care (India):  
[www.boneandspine.com](http://www.boneandspine.com)
- Bureau of Labor Statistics: [www.bls.gov](http://www.bls.gov)

Competency and Credentialing Institute: [www.cc-institute.org](http://www.cc-institute.org)

Healthcare Providers Service Organization: [www.hpso.com](http://www.hpso.com)

Healthcare Sports Medicine Fellowship for Certified Athletic Trainers:  
[http://www.emory.org/departments/sports/certified\\_athletic\\_train.html](http://www.emory.org/departments/sports/certified_athletic_train.html)

National Association of Orthopedic Nurses: [www.orthonurse.org](http://www.orthonurse.org)

National Association of Orthopedic Technologists: [www.naot.org](http://www.naot.org)

National Athletic Trainers Association: [www.nata.org](http://www.nata.org)

National Board for Certification of Orthopedic Technologists: [www.nbcot.net](http://www.nbcot.net)

National Board of Surgical Technology and Surgical Assisting: [www.nbstsa.org](http://www.nbstsa.org)

New York State Department of Health, Professional Misconduct and Physician  
Discipline: <http://www.health.state.ny.us/nysdoh/opmc/main.htm>

New York State Office of the Professions: [www.op.nysed.gov](http://www.op.nysed.gov)

Orthopaedic Nurses Certification Board: [www.oncb.org](http://www.oncb.org)

Physician Assistants in Orthopedic Surgery: [www.paos.org](http://www.paos.org)

Tennessee State Committee on Physicians Assistants: <http://health.state.tn.us/Boards/PA/>

Virginia Association of Orthopedic Technologists: [www.vaot.net](http://www.vaot.net)

Virginia Department of Health, EMS Training Programs Summary:  
<http://www.vdh.state.va.us/OEMS/Training/tprog.htm#EMT%20-%20Basic>

## **Appendices**

### **Appendix A**

#### **The National Board for Certification of Orthopaedic Technologists Standards of Practice**

For the Orthopaedic Technologist – Certified (OTC®)

Disclaimer:

The intent of these Standards of Practice is to provide a summary of the duties and responsibilities that may be performed by the Orthopaedic Technologist-Certified (OTC®). It is not intended to be a complete text of all job related duties, responsibilities, limitations, or skills that an Orthopaedic Technologist-Certified (OTC®) may be required to perform.

Definition:

The Orthopaedic Technologist - Certified is specially trained as an extension of recognized physicians that are involved in the musculoskeletal care of patients and assists in the treatment of the orthopaedic patient.

The Orthopaedic Technologist - Certified are those individuals that have demonstrated the knowledge and skills needed to work as an Orthopaedic Technologist and who have passed the National Board for Certification of Orthopaedic Technologist Certification Examination. The Orthopaedic Technologist - Certified maintains certification by complying with the rules and policies of the NBCOT. The Orthopaedic Technologists-Certified may use the acronym OTC®.

Standards:

The standards are not intended as a complete list of abilities, but are designed to guide the OTC in assisting the Physician that is involved in the musculoskeletal care of patients in assessment of signs, symptoms, analysis, treatment and the care of the orthopaedic patient. Passage of the NBCOT Certification Examination signifies an entry level of knowledge of the following categories in the specialty of Orthopaedic Technology.

- Assessment
- Casting, Splinting and Orthopaedic Appliances
- Traction
- Surgery

Functions and Responsibilities:

The OTC shall practice in accordance with any existing state rules or regulations.

1. The OTC shall function under the supervision of the Physician that is involved in the musculoskeletal care of patients. Supervision shall be continuous but shall not be construed as necessarily requiring the physical presence of the supervising physician at the time and place where such services are performed.
2. The OTC shall function as a part of the orthopaedic team in the care and management of the orthopaedic patient.

3. The OTC shall be responsible for the accurate recording and reporting of facts, including evaluation and treatment of the orthopaedic patient.
4. The OTC may assist with patient education involving the care and plan of treatment of the orthopaedic patient.
5. The OTC may assist with application and execution of orthopaedic procedures and services and execute legal orders of the supervising Physician concerning the care of the orthopaedic patient.
6. The OTC may render follow up care and services commensurate with education and experience.
7. The OTC may perform the following duties after proficiency has been demonstrated and in accordance with established policies and procedures.
  - a. In the event of emergency situations, administration of all recognized first aid procedures.
  - b. Performance of history and physical assessment of the orthopaedic patient.
  - c. Assist with aspirations and prepare injections.
  - d. Application and removal of all types of casts, splints, immobilization devices and traction as well as wound closure materials (suture/staples).
  - e. Assist with the reduction of fractures and dislocations.
  - f. Assist with and perform the removal of orthopaedic hardware.
8. The OTC may perform the following surgical responsibilities.
  - a. Position, prep and drape patients by using accepted practices and techniques in order to prepare the patient for surgery.
  - b. Assist the surgeon by using accepted surgical practices and techniques.
  - c. Assist the surgeon during reductions by supplying and applying the appropriate materials.
  - d. Apply and manage post-operative dressings on wounds following aseptic techniques.

Adopted 6-25-08

(Available at: [http://www.nbcot.net/Standards\\_of\\_Practice\\_OTC.pdf](http://www.nbcot.net/Standards_of_Practice_OTC.pdf))

## **National Association of Orthopaedic Technologists**

### **STANDARDS OF PRACTICE**

This document is intended to serve Orthopaedic Technologists (OTs) who are members of the National Association of Orthopaedic Technologists (NAOT) in interpreting the standards of practice and matters of professional conduct. These guidelines are subject to change as the dynamics of the profession change, and as new patterns of health care delivery are developed and accepted by the professional community and the public. The Standards of Practice are subject to monitoring and revision by the Executive Board of the Association.

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### **INTERPRETING ETHICAL PRINCIPLES**



The interpretations expressed herein are not to be considered all inclusive of situations that could evolve under specific Articles of the Standards of Practice, but reflect the opinions, decisions, and advice of the Executive Board of the Association. While the statements of ethical principles apply universally, specific circumstances determine their appropriate application. Input related to current interpretations or situations requiring interpretation is encouraged from Association members.

## Article I

### Principle

Orthopaedic Technologists respect the rights and dignity of all individuals.

#### IA. Attitudes of Orthopaedic Technologists

1. The Orthopaedic Technologist (OT) shall recognize that each individual is different from other individuals and shall respect and be responsive to those differences.
2. OTs are to be guided at all times by concern for the physical, psychological, socio-economic welfare of those individuals entrusted to their care.
3. OTs shall be responsive to and mutually supportive of colleagues and associates.

#### IB. Confidential Information

1. Information relating to the Orthopaedic Technologists/Patient relationship is confidential and may not be communicated to a third party not involved in that patient's care without the prior written consent of the subject, according to applicable law.
2. Information derived from a competent-sponsored peer review shall be held confidential by the reviewer unless written permission to release the information is obtained from the Orthopaedic Technologist who was reviewed.
3. Information derived from the working relationships of Orthopaedic Technologists shall be held confidential by all parties.
4. Information may be disclosed to appropriate authorities when it is necessary to protect the welfare of an individual or the community. Such disclosures shall be in accordance with applicable law.

## Article II

### Compliance with Rules and Regulations

The Orthopaedic Technologist is to comply with the laws and regulations governing the practice of orthopaedic technology.

#### IIA. Professional Practice

1. The Orthopaedic Technologist shall provide consultation, evaluation, treatment, and preventative care in accordance with the laws and regulations of the jurisdiction (s) in which they practice.

## Article III.

## Responsibility

Orthopaedic Technologists accept the responsibility for exercise of sound judgment.

### IIIA. Acceptance of Responsibility

1. Upon accepting an individual for orthopaedic services, the Orthopaedic Technologist shall assume the responsibility of evaluating that individual; planning, implementing, and supervising the treatment; reevaluating and changing that treatment; and maintaining adequate records of the case, including progress notes.
2. When the individual's needs are beyond the scope of the Orthopaedic Technologist's expertise, the individual shall be so informed and assisted in identifying a qualified person to provide the necessary services.
3. When the Orthopaedic Technologist judges that benefit can no longer be obtained by their services, they shall so inform the individual receiving the service. It is unethical to initiate or continue services that, in the technologist's judgment, either cannot result in a beneficial outcome or are contradicted.

### IIIB. Delegation of Responsibility

1. The Orthopaedic Technologist shall not delegate to a less qualified person any activity, which requires the unique skill, knowledge, and judgment of the Orthopaedic Technologist.
2. The primary responsibility for orthopaedic care rendered by supportive personnel rests with the Supervising Orthopaedic Technologist. Adequate supervision requires, at a minimum, that a Supervising Orthopaedic Technologist perform the following activities:
  - a. Designate or establish channels of written and oral communication.
  - b. Interpret available information concerning the individual under care.
  - c. Provide initial evaluation
  - d. Develop a plan of care, including short and long term goal.
  - e. Assess competence of supportive personnel to perform assigned tasks.
  - f. Direct and supervise supportive personnel in delegated tasks
  - g. Identify and document pre-cautions, special problems, contradiction, goals and plans for re-evaluation.
  - h. Reevaluate and adjust plan of care when necessary; perform final evaluation and establish a follow up plan.

### IIIC. Provision of Services

1. The Orthopaedic Technologist's professional practices and their adherence to ethical principles of the Association shall take preference over individual business interests. Provision of services for personal financial gain, rather than the need of the individual receiving the services, is unethical.
2. If the Orthopaedic Technologist's services are misused, the technologist(s) involved must accept responsibility for the misuse.

### IIID. Practice Arrangements

1. Participation in a business, partnership, corporation, or other entity shall not exempt the Orthopaedic Technologist, whether employer, partner, or stockholder, either individually or collectively, from the obligation of promoting and maintaining the ethical principles of the Association.

#### Article IV

##### Promotion of High Standards

Orthopaedic Technologists maintain and promote high standards in the provision of Orthopaedic Technology services.

##### IVA. Continued Education

1. The Orthopaedic Technologist shall participate in educational activities, which enhance their basic knowledge and provide new knowledge.

##### IVB. Review and Self-Assessment

1. The Orthopaedic Technologist shall provide for utilization review of their services.
2. The Orthopaedic Technologist shall demonstrate their commitment to quality assurance by peer review and self-assessment.

##### IVC. Research and Education

1. Whenever possible, Orthopaedic Technologists shall participate and support others in the conduct and communication of research and in educational activities that may contribute knowledge for improved patient care and patient or student education and for the growth of Orthopaedic Technology as a profession.
2. When Orthopaedic Technologists are researchers or educators, they are responsible to the research subjects, students, colleges, institutions, facilities, funding agencies, the profession, and society for maintaining and promoting ethical conduct in research and educational activities.

#### Article V

##### Endorsement of Equipment

VA. The Orthopaedic Technologist shall not influence upon individuals under their care or their families for utilization of products and equipment based upon the direct or indirect financial interest of the Orthopaedic Technologist(s). While it cannot be considered unethical for Orthopaedic Technologists to own or have financial interest in products or equipment companies, they must act in accordance with law and make full disclosure of their interest whenever such companies become the source of products or equipment for individuals under their care.

VB. In endorsing or advertising products or equipment, the Orthopaedic Technologist shall use sound professional judgment and shall not give the appearance of an Association endorsement.

#### Article VI.

##### Provide Accurate Information

Orthopaedic Technologists shall endeavor to educate the public to an awareness of the Orthopaedic Technology profession through such means as publication of articles and participation in seminars, lectures, and civic programs.

#### Article VII.

##### Protection of Profession

Orthopaedic Technologists shall accept responsibility to protect the public and the profession from unethical, incompetent, or illegal acts.

#### VIIA. Consumer Protection

1. The Orthopaedic Technologist shall report any conduct, which appears to be unethical, incompetent or illegal.

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### CODE OF ETHICS

#### PREAMBLE

This Code of Ethics sets forth ethical principles for the Orthopaedic Technology profession. Members of this profession are responsible for maintaining and promoting ethical practices. This Code of Ethics, adopted by the National Association of Orthopaedic Technologists, shall be binding on the Orthopaedic Technologists who are members of the Association.

#### Principle I

Orthopaedic Technologists respect the right and dignity of all individuals.

#### Principle II

Orthopaedic Technologists comply with the laws and regulations governing the practice of Orthopaedic Technology.

#### Principle III

Orthopaedic Technologists accept responsibility for the exercise of sound judgment.

#### Principles IV

Orthopaedic Technologists maintain and promote high standards in the provision of Orthopaedic Technology services.

#### Principles V

Orthopaedic Technologists provide accurate information to the consumer about the profession and about services they provide.

#### Principles VI

Orthopaedic Technologists accept the responsibility to protect the public and profession from unethical, incompetent or illegal acts.

#### Principles VII

Orthopaedic Technologists participate in efforts to address the health needs of the public.

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### JOB DESCRIPTION

#### I. Definition

The Orthopaedic Technologist is a paramedically trained member of the orthopaedic team who works with all health care professionals in delivering patient care and assuming appropriate responsibilities concerning all surgical and non-surgical procedures.

#### II. Education

Minimum requirements: high school graduate or equivalent.

#### III. Credentials

##### A. Entry Level (Level I)

##### 1. Training in one or all of the items listed below:

- a. At least one year full-time work experience in either a hospital, clinic or office setting, working directly in the treatment of the orthopaedic patient(s).
- b. High school graduate or equivalent.

##### 2. Skills

- a. Ability to articulate descriptions of orthopaedic conditions based upon a basic understanding of anatomical structures and their relationship with one another.
- b. Ability to apply upper and remove upper and lower extremity casts.
- c. Understanding of theory and application of skin and skeletal traction.
- d. Understanding of the proper application of aseptic techniques in dressing change and in setting up surgical fields.

##### B. Certified Level (Level II)

##### 1. Training in at least one of the following categories must be met:

- a. At least two (2) years full-time work experience in a hospital, clinic, or office, or as an independent contractor working directly in the care of the orthopaedic patient, and certification by The National Board of Certification for Orthopaedic Technologists (NBCOT).

- b. Completion of an orthopaedic technology training program and certification by NBCOT.
- c. Completion of a related allied health program (i.e. RN, PA, LVN, LPN, Surgical Technologist, Radiology Technologist) with at least one-year full-time work in either a hospital, clinic, office setting, or as an independent contractor, working directly in the treatment of the orthopaedic patient, and certification by NBCOT.

## 2. Skills

- a. Ability to articulate descriptions of orthopaedic conditions based on the understanding of anatomical structures and their relationship with one another.
- b. Ability to apply, adjust, and remove all common orthopaedic devices, using a manual or standard practice as a guide.
- c. Knowledge of theory and application of skin or skeletal traction.
- d. Knowledge of the proper application of aseptic techniques in dressing change, removal of sutures or staples and in setting up surgical fields.
- e. Ability to interpret simple fractures and dislocations on X-ray films.
- f. Ability to perform in an operating room environment as first and second assistant or scrub technician under the direct supervision of a surgeon.
- g. Ability to supervise and train other certified, eligible Orthopaedic Technologists.

## C. Advanced Certified Level (Level III)

### 1. Training in at least one of the following categories must be met:

- a. At least eight (8) years full-time work experience in a hospital, clinic or office setting, or as an independent contractor working directly in the care of orthopaedic patients and certification by NBCOT for no fewer than three (3) years.
- b. Completion of an orthopaedic technology training program, and at least eight (8) years full-time work experience in a hospital, clinic or office setting, or as an independent contractor working directly in the care of the orthopaedic patient, and certification by NBCOT for no fewer than three (3) years.
- c. Completion of a related allied health program with at least four (4) years full-time work in either a hospital, clinic or office setting, or as an independent contractor working directly in the care of the orthopaedic patient, and certification by NBCOT for no fewer than three (3) years.

## 2. Skills

- a. Ability to articulate descriptions of orthopaedic conditions based on advanced understanding of anatomical structures and their relationships with one another.
- b. Ability to apply, adjust, and remove all common and difficult orthopaedic devices.
- c. Advanced knowledge of theory and application of skin, skeletal and manual tractions.

- d. Expert knowledge of the proper application of aseptic techniques in dressing change, removal of sutures, staples, Steinman pins, K-wires, and in setting up surgical fields and draping in the operating room.
- e. Ability to interpret most fractures and dislocations on X-ray films.
- f. Ability to perform in an operating room environment in an expert manner as a first and second assistant or scrub technician under the direct supervision of a surgeon.
- g. Ability to supervise and train other no-certified Orthopaedic Technologists.

#### IV. Goals

- 1. Application of knowledge of the basic concepts necessary for the performance of the duties expected of certified Orthopaedic Technologists.
- 2. Development of ideas and professional attitude that will promote responsibility as an individual health care professional and as a member of the health care team.
- 3. Coordination of team efforts to offer the most qualified support team to the patient, physician and other allied health care professionals.
- 4. Awareness of the patient as an individual, with specific physical, psychological and spiritual needs.
- 5. Adherence to the Standards of Practice and Code of Ethics of the National Association of Orthopaedic Technologists that will reflect the ethical, legal and moral responsibilities of the Orthopaedic Technologist.
- 6. Education of the general public regarding the Orthopaedic Technologist and what his/her specific duties on the health care team entail.

#### V. Objectives

- 1. Respect the patient's inherent right to privacy, dignity and confidentiality.
- 2. Recognize the importance of teamwork, consideration and cooperation.
- 3. Function efficiently and in a professional manner in all aspects of patient treatment.
- 4. Apply the principles of asepsis in a knowledgeable manner to provide optimum patient care.
- 5. Prepare and know the specific uses of all equipment and supplies used for orthopaedic procedures.
- 6. Differentiate sterilization materials and techniques required for specific instruments and procedures.
- 7. Demonstrate knowledge of the step-by-step progress of specific orthopaedic procedures and display dexterity in the use of the required instrumentation and equipment.
- 8. Develop and improve skills in the organization of work and in assisting the physician for economy in time, motion and materials.
- 9. Identify emergency situations and use sound judgment in instituting established procedures to respond to emergencies in a calm and efficient manner.
- 10. Understand that each Orthopaedic Technologist is individually responsible for his or her own actions and recognizes legal and policy limits of individual responsibility.
- 11. Understand and establish policy and procedure directives.

## VI. Job Knowledge

### A. General

1. Anatomy, physiology and medical terminology
2. Fracture healing and complications
3. Wound healing and complications
4. Principles of aseptic techniques
5. Environmental safety and precautions
6. Application and use of orthopaedic equipment and supplies
7. Maintenance and ordering of orthopaedic equipment and supplies
8. Legal, moral and ethical responsibilities of an Orthopaedic Technologist.
9. Effective communication skills.
10. Implementation of cost containment measures.
11. Adherence to and implementation of established hospital policies and procedures of the work place.

### B. Hospital Orthopaedic Technologists

1. Fabricate, adjust and remove orthopaedic devices.
2. Apply mobilization and immobilization devices.
3. Apply skin, skeletal and manual traction.
4. Make rounds on all orthopaedic patients
5. Serve as technical advisor to the hospital personnel in matters pertaining to orthopaedic devices and equipment.
6. Assist orthopaedic surgeons in operating room as first and second assistants or scrub technician.
7. Represent the Orthopaedic Technologists at medical, nursing and administrative meetings.
8. Record in patient's chart, condition, progress and assessment for review by the Orthopaedic Surgeon.
9. Adhere to and implement established hospital policies and procedures of the work place.

### C. Clinic/Office Technologists

1. Order orthopaedic equipment and supplies
2. Take necessary measurements (i.e. grip strength, leg lengths).
3. Remove sutures, staples, Steinman pins and K-wires
4. Change dressing and care for wounds.
5. Apply, adjust and remove casts.
6. Draw up injections
7. Record patient's blood pressure, pulse and weight.
8. Phone and chart medication ordered by the physician.
9. Assist Orthopaedic Surgeon in reduction of fractures.



10. Write standard admitting and pre-op instructions for patients having surgery.
11. Assist in making follow-up appointments and consultation appointments with other specialists for patients.
12. Measure and fit patients for braces and other orthopaedic devices.
13. Instruct patient in pre and post-operative care.
14. Instruct patient in proper care of cast.
15. Clean and stock patient exam and treatment rooms.
16. Adhere to established clinic/office policy and procedure directives.

#### **D. Health Care Agency/ Independent Contractor**

1. Perform all of the duties of a hospital-based Orthopaedic Technologist.
2. Perform all of the duties of a clinic/office-based Orthopaedic Technologist.
3. Serve as a technical expert to hospitals, orthopaedic surgeons and other Orthopaedic Technologists in matters pertaining to orthopaedic devices and techniques.
4. Set up and fit patients at home with orthopaedic devices and equipment.
5. Instruct others in the practice of orthopaedic technology.
6. Educate the public about the role of an Orthopaedic Technologist on a team of health care providers.

#### **Disclaimer**

This information is made available by the Standards of Practice/Job Description Committee of the National Association of Orthopaedic Technologists for reference purposes only. This information is not intended to represent the only, nor necessarily the best information on the Standards of Practice or Job Description for Orthopaedic Technologists.

### **American Society of Orthopedic Physician's Assistants**

#### **ASOPA WHITE PAPER**

##### **What is an Orthopaedic Physician's Assistant?**

The certified Orthopaedic Physician's Assistant is a professional, mid-level physician extender who works strictly in the field of orthopaedic medicine under the supervision of an orthopaedic surgeon(s). The title, Orthopaedic Physician's Assistant – Certified (OPA-C) can be used only after an individual has successfully passed the certification examination set forth by the National Board for Certification of Orthopaedic Physician's Assistants (NBCOPA).

The Orthopaedic Physician's Assistant roles and uses cannot be fully understood without a review of its history. The Orthopaedic Physician's Assistant or OPA was initially established in the late 1960's at about the same time the Physician Assistant programs arose. Originally the OPA and PA were an off-shoot of the need for orthopaedic surgeons and physicians in general to hire trained help to extend their ability to reach more patients

in a time when physician shortages were being predicted and coincided with the return of military corpsmen and medics from Vietnam and stateside service.

Utilizing these returning health care providers and offering them additional training was a logical step. The OPA originally had 10 training programs they could attend. At that time these programs were supported by the American Academy of Orthopaedic Surgeons and accredited by them. In 1971 a letter from John J. Niebauer, MD, the Chairman of the subcommittee on Orthopaedic Physician's Assistants of the American Academy of Orthopaedic Surgeons to Dr Maurice Schnell stated; "The Council on Health Manpower of the AMA approved the recommendation of its committee on Emerging Health Manpower that a change be encouraged from the titles "Orthopaedic Assistant" and "Urological Assistant" to "Orthopaedic Physician's Assistant" and "Urological Physician's Assistant." "This terminology should be encouraged in generating titles of similar level of assistants in other occupations. This recommendation was made at the January 30, 1971 meeting.

In the May 1971 meeting of the executive committee of the American Academy of Orthopaedic Surgeons, it was adopted that the term "Orthopaedic Assistant" be changed to "Orthopaedic Physician's Assistant". The AMA (American Medical Association) at that time was accrediting the Physician Assistant programs. In the early 1970's the AAOS felt that it was a violation of their bylaws to accredit educational programs and withdrew its accreditation of the OPA programs causing many of the programs to close because the AMA felt that it already accredited the Physician Assistant programs and to accredit a specialist program was not in its best interest. The OPA continued with educational programs until 1990 when the last program was closed because it was unable to secure a program coordinator. Today there are still many colleges and universities that are interested in reopening OPA programs but lack of funding is a limiting factor. The OPA still has voice with the AAOS through its organization the American Society of Orthopaedic Physician's Assistants (ASOPA) on the Allied Health Committee of the American Academy of Orthopaedic Surgeons.

Today the National Board of Certification of Orthopaedic Physician's Assistants (NBCOPA) administers the examination for OPA's. The National Board of Certification for Orthopaedic Physician's Assistants (NBCOPA) was established in 1976. This board was and is comprised of orthopaedic surgeons and OPAs who work with a cyclomatrician from the Professional Testing Corporation to establish the certification examination and continually update the examination for relevance to the changes in orthopedic medicine. This board enjoys a relationship with the ASOPA similar to the relationship between the American Board of Orthopaedic Surgery and the AAOS. For individuals to become Fellow Members (full) of the ASOPA they must attain certification from the NBCOPA and maintain certification by recertifying every four years.

The NBCOPA continues to administer the examination on a semiannual basis. This examination was established under its current form in 1976 and is administered and managed by the Professional Testing Corporation in New York. The Professional testing Corporation oversees the validity statistics and weighting of this examination by doing

periodic duty and task analysis surveys of the profession. The National Board for Certification of Orthopedic Physician's Assistants does annual line item reviews to assure that the test questions remain current with current concepts in the field of orthopedic medicine. To be eligible to sit for the examination, candidates must have a solid background with a minimum of five years in orthopaedic medicine encompassing anatomy, physiology, pharmacology and knowledge of musculoskeletal disease process and treatment. Furthermore, candidates to become an OPAC must have demonstrated proficiency with technical skills related to patient care, casting, bracing, splinting, and surgical assisting.

Candidacy to becoming a certified OPA can be achieved through completion of a formal, recognized OPA-C program or in some cases through cross-training of other health care personnel who are already certified or licensed. In a study commissioned by the American Society of Orthopaedic Physician's Assistants (ASOPA) most certified OPA's have a bachelor's or more advanced educational degree and have formal training such as an orthopaedic nurse, certified orthopaedic technologist, or military corpsman/corpswomen.

An OPA-C works within the scope of practice as defined by his or her supervising physician. The employing physician takes into account the OPA's experience and expertise in delegating duties to the OPA-C. The American Society of Orthopaedic Physician's Assistants in conjunction with the National Board for Certification of Orthopedic Physician's Assistants has drafted a Standardized Guidelines of Practice for OPAs, which lists duties the OPA-C should be competent performing based on the areas covered by the certifying examination.

Currently, the scope of an OPA-C's practice is governed by the medical staff and credential committees of the hospitals where they perform many of their duties and by applicable state laws. However, due to the high demand for these individuals, some states such as Tennessee, California, and New York have adapted practice guidelines for these physician extenders. Many more states are currently reviewing these guidelines and establishing uniform criteria with the help of the orthopaedic community and the OPA.

Today many orthopedic surgeons would prefer to hire a trained assistant with solid orthopedic background that would require less time to assimilate into the surgeons practice; however, the limiting factor is that the OPA is not reimbursable under Medicare or Medicaid guidelines. This is largely a political issue but it is one that still needs to be resolved. Currently there are many third party payers that will reimburse for OPA services but the Medicare / Medicaid issue remains at the forefront.

Updated July 2007.

Available at:

<http://asopa.org/aboutopas.cfm>

## Appendix B

Available at: <http://www.asop.org/forum/thread.asp?m=1154>

Accessed 10/29/2008

**Note:** CMS has temporarily suspended rules on reimbursement for fitting of orthotic braces. The CMS is developing new rules and expects to have them in place in 2009.

Re: Ortho Tech by Charles Barocas, 23. Aug 2007 19:29

[Reply](#)

[Reply w. quote](#)

[Back to normal view](#)

[New message](#)



I think its about time I answer some of these posts. First, its great you guys are using this forum. The NAOT forum has about 2 posts.

A little history

ASOP was started by former NAOT members because NAOT did nothing about obtaining state licensure. Xray techs, Athletic Trainers and others won state licensure because their national organization lobbied. In 1993-6 when I was calling for NAOT to lobby for state licensure for orthotechs they refused. I also asked NAOT to attend the Medicare hearings on certification requirements for fitting and billing braces. Again NAOT refused. Now Orthotechs are in a jam because they are not recognized by Medicare to fit braces.

As I see it, state licensure is the only way to protect your job and increase pay. Even the chairpersons of the NBCOT saw the future of orthotechs and became OPA's. I also beleived that the NBCOT test leaned towards hospital techs and the growth was in office techs. ASOP was designed to fill that niche. Too many office techs were failing the exam due to the 17 questions on traction. The ASOP exam has two traction questions. Its designed for the office tech.

In NYS the OPA exam is used to become a Orthopedic Specialist Asst under the law, not the NBCOT exam. Jeff Virgo, the former(?) chairman of the NBCOT lived and worked in NY when this happened. Now the window of opportunity in closed for Orthotech licensure. The Docs are against it. I tried in Florida and we lost. The orthotists are also against it. I tried to piggyback on the orthotist and prosthetist licensure law in Florida in 1994 but the orthotists would not go for it. If I had the backing of NAOT at that time it might have passed. Now its a dead issue.

I also feel if you are not cross trained as an xray tech or ATC, etc, you are asking to be replaced. That's why on the ASOP patch there is a cast, a radiograph and a brace. A orthotech should be able to do everything. I tell young kids not to bother with a 1 or 2 year program that won't get you a state license. Go to school for xray and learn casting and bracing at short courses.

You can even get a "bracing license" in 8 states now. In fact, ASOP has joined with the Board of Orthotist Certification in a program that allows ROT's the right to become Certified Orthotic Fitters, COF's. Medicare will require this certification in the future to bill orthotics on your own. This fills one of ASOP's main mission,,,,to help you make more money. This just happened last week. A joint press release will go

out in about 10 days about this program.

ASOP now has 2300 members and certifies about 500/yr. That's about three times NAOT and NBCOT. Last year over 900 people attended our "short courses" More will attend this year. Our courses have been approved for PA-C, ATC, RT's and COF's and the State of Florida. Our new permanent school in Tampa has opened and will have courses in Xray, Casting and Bracing. We will have special courses for retired professional athletes and paramedic firemen/police officers. In a couple of months the new ASOP casting manual written by Dr. Augusto Sarmiento will be published by ASOP with a 2 hr DVD.

ASOP is a happening organization. Join it! We also accept the OTC exam for ROT status. About a 100 OTC's have decided to join ASOP and convert to ROT.

Charlie

Sorry about the rambling....taking codine for a root canal.

[Reply](#)

[Reply w. quote](#)

[Back to normal view](#)

[New message](#)  

## **Appendix C**

Occupations near “Health Technologist and Technician, All Other” in the Bureau of Labor Statistics’ Standard Occupational Classification:

### **29-2000 Health Technologists and Technicians**

29-2010 Clinical Laboratory Technologists and Technicians

29-2011 Medical and Clinical Laboratory Technologists

29-2012 Medical and Clinical Laboratory Technicians

29-2020 Dental Hygienists

29-2021 Dental Hygienists

29-2030 Diagnostic Related Technologists and Technicians

29-2031 Cardiovascular Technologists and Technicians

29-2032 Diagnostic Medical Sonographers

29-2033 Nuclear Medicine Technologists

29-2034 Radiologic Technologists and Technicians

29-2040 Emergency Medical Technicians and Paramedics

29-2041 Emergency Medical Technicians and Paramedics

29-2050 Health Diagnosing and Treating Practitioner Support Technicians

29-2051 Dietetic Technicians

29-2052 Pharmacy Technicians

29-2053 Psychiatric Technicians

29-2054 Respiratory Therapy Technicians

29-2055 Surgical Technologists

29-2056 Veterinary Technologists and Technicians

29-2060 Licensed Practical and Licensed Vocational Nurses

29-2061 Licensed Practical and Licensed Vocational Nurses

29-2070 Medical Records and Health Information Technicians

29-2071 Medical Records and Health Information Technicians

29-2080 Opticians, Dispensing

29-2081 Opticians, Dispensing

29-2090 Miscellaneous Health Technologists and Technicians

29-2091 Orthotists and Prosthetists

**29-2099 Health Technologists and Technicians, All Other**

**29-9000 Other Healthcare Practitioners and Technical Occupations**

29-9010 Occupational Health and Safety Specialists and Technicians

29-9011 Occupational Health and Safety Specialists

29-9012 Occupational Health and Safety Technicians

29-9090 Miscellaneous Health Practitioners and Technical Workers

29-9091 Athletic Trainers

29-9099 Healthcare Practitioners and Technical Workers, All Other

**31-0000 Healthcare Support Occupations**

**31-1000 Nursing, Psychiatric, and Home Health Aides**

31-1010 Nursing, Psychiatric, and Home Health Aides

31-1011 Home Health Aides

31-1012 Nursing Aides, Orderlies, and Attendants

31-1013 Psychiatric Aides

**31-2000 Occupational and Physical Therapist Assistants and Aides**

31-2010 Occupational Therapist Assistants and Aides

- 31-2011 Occupational Therapist Assistants
- 31-2012 Occupational Therapist Aides
- 31-2020 Physical Therapist Assistants and Aides
- 31-2021 Physical Therapist Assistants
- 31-2022 Physical Therapist Aides
- 31-9000 Other Healthcare Support Occupations**
- 31-9010 Massage Therapists
  - 31-9011 Massage Therapists
- 31-9090 Miscellaneous Healthcare Support Occupations
  - 31-9091 Dental Assistants
  - 31-9092 Medical Assistants
  - 31-9093 Medical Equipment Preparers
  - 31-9094 Medical Transcriptionists
  - 31-9095 Pharmacy Aides
  - 31-9096 Veterinary Assistants and Laboratory Animal Caretakers
- 31-9099 Healthcare Support Workers, All Other



## Appendix D

The NBCOT survey salary average was estimated by using the median of the salary range. The survey used ranges ending in 9,000, rather than 9,999. This syntax error was ignored. Additionally, the \$90,000+ range was modeled using \$95,000. Though this necessity may decrease accuracy, it also minimizes the effects of potential outliers, rendering the final number more meaningful.

Salary Range	Number of Respondents	Median Salary	Total Salary for Range
\$20,000-29,000	19	\$25,000	475000
\$30,000-39,000	53	\$35,000	1855000
\$40,000-49,000	63	\$45,000	2835000
\$50,000-59,000	41	\$55,000	2255000
\$60,000-69,000	14	\$65,000	910000
\$70,000-79,000	4	\$75,000	300000
\$80,000-89,000	6	\$85,000	510000
\$90,000+	9	\$95,000	855000
sum	209		9995000
average		\$47,823	

## Appendix E

### 2008 Annual Premiums for Virginia, Allied Health Professions.

American Professional Agency, Inc. & Healthcare Providers Service Organization

Profession	APAI	HPSO
Athletic Trainer	\$160.00	\$200.00
Clinical Nurse	\$0.00	\$98.00
Paramedic	\$0.00	\$159.00
Dialysis Tech	\$0.00	\$89.00
Occupational Therapist	\$61.00	\$76.00
Occupational Therapist Asst	\$61.00	\$76.00
<b>Orthopedic Assistant</b>	<b>\$140.00</b>	<b>\$175.00</b>
Pedorthist	\$88.00	\$110.00
Physical Therapis Asst.	\$64.00	\$80.00
Physical Therapist	\$126.00	\$157.00
Surgical Assistant	\$0.00	\$89.00