

Athletic Trainers' Role in Improving Efficiency in the Primary Care Setting

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Athletic trainers (ATs) have been shown to improve clinical efficiency, enhance patient throughput, and provide high physician and patient satisfaction in various physician practice settings. Limited research exists on the value of ATs in the primary care setting. Our objective was to evaluate clinical efficiencies while utilizing ATs in a primary care clinic. Over a period of six weeks, ATs assisted within a primary care practice. Physician time for patient care was compared between ATs and medical assistants (MAs) as support staff. On average, ATs saved 5.5 minutes physician time per patient, including 7 minutes per orthopedic patient. Three additional patients were seen per day, with a mean of 37.5 minutes of physician documentation saved at the conclusion of clinic. We concluded that ATs improved clinical efficiency by increasing patient throughput and decreasing nonessential physician interaction and documentation time, while maintaining overall total time spent with the patient. ATs have been demonstrated to serve a beneficial role in the primary care practice.

KEY WORDS: Primary care; athletic training; patient throughput; clinical efficiency; physician practice; orthopedic.

Athletic trainers (ATs) possess a strong musculoskeletal background and work under the direction of the supervising physician.¹ The Commission on Accreditation of Athletic Training Education (CAATE) establishes the educational requirements for athletic training programs based on knowledge, skills, foundations of practice, and clinical proficiencies.² The core principles within the medical-based education model are established by the Board of Certification and are separated into six educational domains: prevention; clinical evaluation and diagnosis; immediate care; treatment, rehabilitation, and reconditioning; organization and administration; and professional responsibility.³ ATs currently are required to complete and graduate with a bachelor's or master's degree through an athletic training education program accredited by CAATE. The profession is in the process of transitioning to requiring an entry-level master's degree as the minimum requirement for educational standards, to be fully implemented by 2022.³ In addition, a certification examination regulated

by the Board of Certification is required for the practice of athletic training, with continuing education requirements to maintain certification.⁴

Although many ATs practice in high school, collegiate, or professional sports settings, an increasing number are moving into other practice models. In fact, the traditional sports setting accounts for only about half of all AT employment.⁵ ATs are providing valuable patient care in professional areas such as military, industrial, performing arts, and various hospital and physician practice settings.⁶ The comprehensive educational standards of the profession provide ATs with a valuable knowledge base that enables them to practice in a broad array of settings. For ATs who wish to gain additional knowledge and experience in a specific practice setting, the CAATE has recognized the evolution of post-professional education within the profession and developed guidelines and standards for the accreditation of athletic training residencies. These residencies incorporate formal standards aimed to advance the knowledge of ATs within a specialized clinical area of focus.⁷

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The accredited athletic training residency program used in this study is centered on the educational domain of clinical evaluation and diagnosis and housed in the physician practice setting. As with other ATs in the physician practice setting, residents interact directly with orthopedic and sports medicine providers, performing various clinical duties, such as:

- Obtaining medical histories;
- Performing physical examinations;
- Ordering and interpreting diagnostic imaging;
- Preparing injections;
- Applying and fitting durable medical equipment (DME);
- Applying and removing casts; and
- Performing as a first assist in the operating room.

Additionally, the ATs appropriately document using an electronic medical record system. These skills are incorporated into various physician practices, including the rural primary care, public safety, and primary care family practice settings that served as the basis for this study. At this time, there has been limited research on the impact of ATs in the primary care setting.

Research on the use of ATs in other physician practice settings has increased as more ATs have been incorporated into this model. Pecha et al.⁸ found patient perception of ATs to be favorable, with mean overall satisfaction scores at 9.1 on a 10-point scale. Patients have been shown to be very satisfied with ATs, with an average score of 5.89 on a six-point Likert scale in both their interpersonal care and perceived technical care when surveyed in the physician practice setting.⁹ Physicians have expressed high satisfaction scores (9.0/10) and increased perceived quality of life (8.5/10) when adding ATs to their clinical staffing models.¹⁰ It also has been shown that ATs decreased the time physicians spent in nonessential activities compared with other extenders by a total of five minutes per patient. All clinical tasks required less time, with the exception of patient education, in which ATs spent twice as much time as other clinical staff.¹¹ ATs also may make clinics more efficient compared with traditional staffing models. In a retrospective study using an AT and a medical assistant in a primary care sports medicine clinic, Nicolello et al.¹² measured a 25% increase in patient throughput over the course of two calendar years following the addition of an AT into the existing clinical model.

As the U.S. healthcare system continues to evolve, many strategies have been proposed in an attempt to improve patient care by reaching quality benchmarks, increasing efficiency, and reducing overall cost of care. As is the case with the Affordable Care Act, the Institute for Healthcare Improvement has developed a Triple Aim in an effort to achieve high-value healthcare and improve site-specific care. The Triple Aim is to:

1. Improve the patient experience of care;
2. Improve the health of populations; and
3. Reduce per capita cost of healthcare.

Use of nurse practitioners and physician assistants⁶ or emergency medical technicians and paramedics¹³ has been incorporated as a potential solution to allowing patients better access to care without placing additional financial burden on the system. With the appropriate training, ATs could be a valuable asset in the primary care setting in achieving these goals while simultaneously improving clinical productivity and ensuring patient satisfaction.

METHODS

The purpose of this pilot study was to evaluate the impact of an AT on physician efficiency in the primary care setting. The study was conducted over a six-week period, with two AT residents assisting the physician in a primary care clinic. Duties included rooming patients, taking vitals, obtaining a thorough history, ordering imaging or labs, collaborating with the physician on the determination of treatment plan, and documentation. The AT performed a thorough musculoskeletal exam of the patient when indicated, and subsequently presented his or her findings to the physician. The main outcome measures included:

- Patient total time (PTT), defined as the time spent with the patient plus documentation;
- The number of patients seen in a clinic day; and
- The number of charts and time spent documenting after clinic.

Time measurements were compared to control recordings with solely medical assistants acting as support staff. The control data were collected during clinics prior to, and following, the AT residents' rotations.

RESULTS

Mean AT time with orthopedic patients was found to be 12.9 minutes per patient, compared with 10.7 minutes for general medicine patients and 12.2 minutes overall regardless of patient type. Mean PTT for the physician without an AT in clinic was 19 minutes for orthopedic patients, 13.3 minutes for general medicine patients, and 16.1 minutes overall (Table 1). During orthopedic patient visits with an AT in clinic, total time spent with a patient was 24.8 minutes (Table 1), compared with 24.5 minutes without an AT. Although the total time spent with the patient was nearly identical, the physician was able to save seven minutes of their time per patient, allowing the provider to see additional patients and complete other required tasks such as chart review and documentation.

Although AT education focuses on developing a strong musculoskeletal background, the ATs were still able to assist the physician with general medicine patients other than those with orthopedic injuries. General medicine patient PTT while utilizing an AT in clinic was 20.4 minutes, compared to 18.8 minutes with the normal clinic model.

Table 1. Patient Total Time

	MA Time (min)	AT Time (min)	Physician Time (min)	Overall Time (min)
Orthopedic				
AT with physician	N/A	12.9	11.9	24.8
Physician with MA	5.5	N/A	19	24.5
General Medicine				
AT with physician	N/A	10.7	9.7	20.4
Physician with MA	5.5	N/A	13.3	18.8
Overall				
AT with physician	N/A	12.2	10.7	22.9
Physician with MA	5.5	N/A	16.1	21.6

AT, athletic trainer; MA, medical assistant; N/A, not applicable.

Overall, regardless of patient type, PTT with and without an AT was 22.9 minutes and 21.6 minutes, respectively, so physicians saved an average of 5.5 minutes of face-to-face time per patient (see Table 1).

In terms of documentation time, the physician in the study had an average of 21 charts requiring documentation following clinic, requiring a mean of 67 minutes to complete. When an AT was used, a mean of only seven charts remained at the end of each clinic day, resulting in just 28.5 minutes of documentation. An average of 40 minutes of chart documentation per day was saved when the AT was incorporated as clinical support staff. Along with time savings in both patient care-related duties and documentation duties, the physician was able to see an additional three patients per full clinic day with the AT present (Table 2).

DISCUSSION

ATs can assist physicians with an array of clinic duties, and have been shown to increase both clinical efficiency and physician satisfaction.^{8,10-12} Throughout the six-week period of this pilot study, an AT was able to decrease physician time spent on nonessential duties and documentation, subsequently increasing patient throughput. With the physician spending more efficient time per patient with an AT in clinic, the provider managed to see three more patients per full clinic day. This increase in patients would equate to 15 additional patients in a five-day work week, increasing billable charges for both the physician and institution, as well as additional ancillary revenue.

Many physicians are faced with challenges such as timely charting and documentation following patient visits. During our pilot study, the physician averaged 21 charts requiring dictation after clinic, which accounted for 66

Table 2. Patients Seen Per Day and Time Spent After Clinic

Medical Professionals	No. Patients Seen per Clinic Day	Time Documenting (min)	No. Charts Left to Dictate
AT with physician	24.2	28.5	7
Physician with MA	21.2	66	21

AT, athletic trainer; MA, medical assistant.

minutes without the presence of an AT. With the support of the AT and his or her ability to assist in documentation throughout the day, a mean of only seven charts remained at the end of the day, equivalent to a total of 28.5 minutes. This 37.5-minute savings could be utilized for a variety of needs, including administrative time, adding more patients to the existing schedule, or allowing for more family or personal time at the end of the work day.

Through this pilot study, ATs were able to demonstrate their value and potential impact in the primary care setting by increasing clinic and physician efficiency. Previous studies have found that ATs increase patient quality of life outcomes,¹⁴ physician satisfaction¹⁰ and physician clinic efficiency by up to 30%.^{15,16} Using these concepts, ATs can improve a clinic's role in the concept of the Triple Aim by increasing patient satisfaction and physician efficiency. ATs are healthcare professionals capable of supporting a physician at a fixed cost, similar to other clinicians who work as an extension to the physician such as nurses and medical assistants. Previous studies have shown increased patient throughput when using an AT,¹⁵ thereby providing better patient access and quality musculoskeletal care. Increasing the number of patients per clinic day can assist in rationalizing the salary of an AT through increased reimbursement on patient visits alone. Previous studies found that adding just one patient per clinic day for three days per week may increase revenue by approximately \$12,000 annually based on Medicare rates for E/M codes, not including additional ancillary revenues.¹⁵ Based on this model, 10 additional patients per week would equal the salary of an AT; in this study we were able to demonstrate the ability to add 15 patients per clinic week.

CONCLUSION

Results from this pilot study reveal the potential impact ATs offer as healthcare providers in improving the clinical model within the primary care setting.² Through this pilot study, we were able to effectively quantify the various ways in which ATs improve the patient and physician clinical experience. Incorporating an AT was shown to be effective in increasing both physician and clinic productivity and efficiency within the primary care setting. Implementation of this model may be a beneficial and feasible means in which

to improve the productivity and patient care provided by a primary care practice. ■■

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