

# Enhancing Coordinated Care Delivery and the Healthcare Team: The Impact and Future of Athletic Trainers in Ambulatory Practice Settings

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Although the ultimate fate of the Patient Protection and Affordable Care Act remains unclear, access to efficient, effective and high quality care persists as a priority for the U.S. healthcare system. No one disputes that the traditional fee-for-service model rewarded quantity over quality, driving costs with little concern for value. As lawmakers sought to reduce the national deficit, attention was focused upon Medicare cost savings in 2010. To meet the challenges of the next decade, athletic trainers can actively engage in physician practice settings enhancing patient throughput and satisfaction in orthopedic, sports medicine and primary care practices across urban, suburban and rural settings.

**KEY WORDS:** Athletic trainers; Accountable Care Organizations; population health; primary care.

One of the ways the Affordable Care Act was designed to reduce healthcare costs was by encouraging hospitals, physicians, and other healthcare providers to form networks to coordinate and integrate care—that is, to form Accountable Care Organizations (ACOs). Both ACOs and bundled payments reflect the concerted efforts of Congress and the CMS to allow physicians and hospitals to provide coordinated, patient-centered care meeting predetermined quality benchmarks, focusing on prevention and carefully managing patients with chronic disease.<sup>1</sup>

To meet the challenges of the next decade, athletic trainers (ATs) can actively engage in physician practice settings, enhancing patient throughput and satisfaction in orthopedic, sports medicine, and primary care practices across urban, suburban, and rural settings. ATs serve a unique role in population health, supporting the Institute of Healthcare Improvement's (IHI's) Triple Aim: applying integrated approaches to simultaneously improve care, improve population health, and reduce costs per capita.<sup>2</sup>

## ATHLETIC TRAINERS IN ACCOUNTABLE CARE ORGANIZATIONS

Because ATs are experts in the evaluation and treatment of musculoskeletal disorders, ACOs can benefit from their highly efficient and effective approach to case management.<sup>3</sup> ACOs may seek sports medicine programs, providers, and healthcare professionals to enhance enrolled patient populations' quality of life. This could encourage ACOs to employ ATs, which would further establish formal affiliations with physician specialists in emerging settings and markets.<sup>4</sup> ATs working in traditional roles increasingly will see change in coordination of patient care through these new ACO systems.<sup>5</sup>

Strategic opportunities exist for ATs with bundled payments and ACOs, particularly ATs employed in orthopedic and sports medicine physician practice settings. As noted in *Becker's Spine Review* in 2010, "Orthopedic and sports medicine practices are increasingly hiring athletic trainers [as physician extenders] to take on several roles within the practice. Athletic trainers are routinely

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employed in this setting to improve overall office productivity, patient outcomes and satisfaction as well as help move patients more effectively and efficiently through the appointment, evaluation and treatment process. By providing services to more patients in the same period of time, physicians are able to increase patient throughput and revenues.”<sup>6</sup>

In addition to the sheer efficiencies, ATs can reduce bundled payment (fixed fee) and ACO practice costs by providing postoperative care, on-site (office practice) rehabilitation, and development of home exercise programs. “Having the athletic trainer on-site means patients stay at the practice for multiple steps of the [care plan] so the patients are not referred to other facilities.”<sup>6</sup>

## ATHLETIC TRAINERS WORKING IN A PHYSICIAN PRACTICE SETTING

ATs serve a valuable role in orthopedic practice settings. They can see patients concurrently with physicians, thereby allowing advanced practice providers (APPs) (e.g., physician assistants [PAs] and nurse practitioners [NPs]) to function autonomously. This staffing model maximizes patient access. ATs working as part of the primary healthcare team can relieve widespread and future workforce shortages in primary care support and outpatient rehabilitation professions and provide an unparalleled continuum of care for patients.

ATs possess comprehensive musculoskeletal knowledge and expertise, which enables them to obtain detailed histories and complete physical examinations, reporting those findings to the physician prior to his or her visit with the patient. Additionally, ATs can save valuable physician office time, enhancing postsurgical patient throughput. Although for billing purposes postoperative visits do not require the same documentation as E/M services provided outside the global fee period, because no claim is submitted, it is important for the physician to describe the medical necessity for the visit, including the patient’s recovery from the surgical procedure and continued treatment plan.<sup>7</sup>

### *Athletic trainers serve in non-autonomous roles under the direct supervision of a physician.*

The 2017 Physician Fee Schedule Final Rule requires some practitioners to report on postoperative visits made during global periods using CPT code 99024-Global Fee.<sup>8</sup> Surgeons, especially in nine states (Florida, Kentucky, Louisiana, Nevada, New Jersey, North Dakota, Ohio, Oregon, and Rhode Island, required to report beginning, July 1, 2017), would benefit from the efficiencies ATs could

provide in the postoperative visit context, performing tasks such as removing sutures, providing patient education, and others.

Although PAs and NPs work independently, and have medication prescribing authority, ATs serve in non-autonomous roles under the direct supervision of a physician.<sup>9</sup> PA 2016 median pay was \$101,480, NP 2016 median pay was \$107,460,<sup>10</sup> and AT 2014 mean salary was \$49,719 for Bachelors of Science and \$54,660 for Masters of Science ATs.<sup>11</sup> For maximum financial return, each physician extender must work to the full extent of his or her license with no overlap of potential billable time.

Ideally, an orthopedic practice would want to allow for the most efficient billing model so that two billable providers would not see the same patient during the same visit. A model that has been shown to be effective is having an AT in clinic along with the physician, whereas the APP runs an autonomous clinic. The AT then assumes a role similar to those APPs that function in a collaborative role. The AT can evaluate all new, returning, and postoperative patients and then discuss his or her findings with the physician. This would free up the APP to attend to his or her own patient load.

A 2013 study found that, when compared with a medical assistant (MA), the use of an AT in a primary care sports medicine practice increased efficiency and productivity. Physicians could see 18% to 22% more patients, adding three to four patients per clinic day.<sup>12</sup>

ATs are highly effective in this role due to their clinical accuracy, which, in one recent study, was shown to be 85% for knee and shoulder pathologies compared with surgical or advanced imaging outcomes.<sup>13</sup> This model allows for a variety of options, such as ATs seeing patients on their initial postoperative visit in a parallel clinic to the physician, thereby allowing for additional patients on the physician or APP’s schedule during the post-op day.

Additionally, integrating ATs streamlines physician-patient encounters, permitting the physician to see all the patients. Adding ATs into the clinic has been shown to increase patient throughput by 22-10%, which can result in an increase of about 1800 work relative value units (wRVUs) to the physician.

A detailed analysis of patient throughput compared orthopedic clinics employing ATs with traditional physician-MA models.<sup>14</sup> Physicians used ATs for patient documentation, orthopedic and sports injury assessment and evaluation, physician-directed diagnostic orders, procedure assistance, and patient education. Patient volumes of two primary care sports medicine physicians at St. Luke’s Sports Medicine in Boise, Idaho, were assessed over a two-year period.

This study entailed the addition of an AT to an existing clinic model that included an MD and an MA. During the first year of retrospective data collection, the clinic model included an orthopedic physician and an MA. During the

second year, an AT was added to the interprofessional medical team. Physician A increased patient throughput from 2.8 patients per hour in year one to 3.5 patients per hour in year two, i.e., 0.7 additional patients per hour, or 5.6 patients per day over a 6.5-hour clinic day (25% increase in patient visits). Physician B increased from 2.9 patients per hour in year one to 3.5 patients per hour in year two, a total increase from 18.6 to 22.5 patients per clinic day (21% increase in patient visits). Total RVU production increased by 3.23 per half day for physician A and 4.3 per full day for physician B. Both physicians saw more patients per day, yet the increased patient visit requirements had no effect on total provider clinic time.

Extrapolating forward, an average 22% patient throughput increase could add 1014 E/M visits per year, based on six four-hour clinic sessions, providing \$89,423.77 in potential visit revenue. Potential downstream revenue could easily reach \$122,996.83.

These findings are consistent with previous studies where ATs were used as clinical support staff within the orthopedic clinic. For example, University of Wisconsin Health Sports Medicine Clinic orthopedists saw 15% to 30% more patients and primary care providers saw 10% to 20% more patients when ATs served as clinical staff, for an additional 10 patient throughput per clinic day. ATs, under physician direction, provided services to patients including instruction in therapeutic exercise; appliance, brace, and splint fitting; and gait training or crutch training. However, the CPT codes are included with the E/M codes with the physician bill. ATs do not bill for these services, because reimbursement rates are better with the physician billing. There are also challenges with insurance when two bills are submitted for the same patient on a given day.<sup>15</sup>

A national sample of physician ambulatory practices using ATs was surveyed relative to the Triple Aim objectives of increased access, reduced costs, and improved quality of care. Patients waited fewer days for an appointment when seen in ambulatory care practices with ATs (4.2 days) compared with patients nationally.<sup>16</sup> The wait time upon arrival was lower for patients seen in ambulatory care practices with ATs (mean of 20 minutes) compared with the national average of 16 to 41 minutes.<sup>17</sup>

These data suggest that ATs may alleviate pressure on providers as newly insured patients seek care following implementation of the Affordable Care Act's insurance exchanges or Medicaid expansion. Thus ATs may advance Triple Aim efforts to enhance access by improving patient throughput at lower cost while maintaining and improving quality of care.<sup>18</sup>

ATs can accomplish their clinical efficiencies without sacrificing time to educate patients or patient satisfaction. ATs have been shown to save an average of about 5 minutes more per patient compared with medical students, residents, and fellows. ATs showed this time savings while spending about 1.5 minutes more per patient on patient

education compared with their study counterparts.<sup>19</sup> ATs' abilities to connect with and educate patients are one reason that ATs have demonstrated high patient satisfaction scores compared with orthopedic residents.<sup>20</sup>

Additionally, those physicians who have hired residency-trained ATs are highly satisfied with them. Physicians also felt residency-trained ATs had better musculoskeletal skills than entry-level PAs. Physicians reported that residency-trained AT-PEs were "very well" prepared for integration into their clinical operations ( $8.74 \pm 1.04$  on a 10-point Likert scale) and that their clinical musculoskeletal skills were "very good," compared with those of physician assistants and nurse practitioners ( $8.03 \pm 1.79$ ). They reported improved quality of life ( $8.46 \pm 1.67$ ), benefit realized from having an AT-PE in the clinic ( $8.09 \pm 1.79$ ), and a very high degree of overall satisfaction with the addition of an AT-PE to their clinical operations ( $9.06 \pm 1.08$ ).<sup>21</sup>

Additionally, researchers concluded that patients perceived ATs to possess a similar level of orthopedic knowledge and provided similar clinical care compared with orthopedic residents in the sports medicine clinic. The data ultimately suggest that ATs make a meaningful contribution to orthopedic sports medicine practice and, ultimately, to patients' lives.<sup>21</sup>

Research to identify the motivations of ambulatory care practice administrators in hiring ATs revealed a unique opportunity with healthcare reform. Interview results suggest that AT education and training in disease and injury prevention can support ambulatory practice transition toward population-based health. Based on practice administrator interview responses, researchers recommended that ATs become skilled in casting and splinting and improve their knowledge in general medical issues and pharmacology.<sup>22</sup>

## PATIENT SATISFACTION WITH ATHLETIC TRAINERS WORKING IN PHYSICIAN PRACTICE SETTINGS

Patient perception of care further supports the integration of ATs into orthopedic sports medicine practice. Over a two-year period, an eight-question survey was administered at an orthopedic sports medicine clinic. Staff included ATs completing a one-year residency program and orthopedic medical residents in their third or fourth program year during their sports medicine rotation.<sup>21</sup>

A statistically significant difference was found between orthopedic medical residents and ATs in the question asking the "highest level of education you think this clinician attained." Although a statistically significant difference was found, both averages fell under the survey rating of a masters' degree. The level of education (mean result) for Residents was 8.1636; for ATs, 7.4615; and total 7.7750. Trends showed higher scores for the orthopedic medical residents in patient-perceived orthopedic knowledge, with Residents

(mean result) 8.1818; ATs, 8.1385; and total 8.1583, whereas trends for ATs were higher for patient-perceived clinical care, with Residents (mean result) 8.6727; ATs, 8.8308; and total, 8.7583.<sup>21</sup>

### ***Athletic trainers are a viable answer to the resource gap in the musculoskeletal workforce***

A separate pilot study was conducted to measure patient satisfaction with care provided by ATs in the domains of perceived interpersonal care, perceived technical care, and global satisfaction in a sports medicine physician practice. The pilot survey was offered to new patients presenting for care during a four-week period when a participating AT (n = 6) was involved in the initial encounter. Items were scored as Strongly Disagree = 1, Disagree = 2, Somewhat Disagree = 3, Somewhat Agree = 4, Agree = 5, and Strongly Agree = 6.

Nineteen participants gave consent, four did not meet inclusion criteria and were excluded, and a total of 15 completed surveys were analyzed. Five questions addressed the perceived interpersonal care domain:

1. AT explained injury/condition in terms the patient could understand;
2. AT clearly explained the treatment recommendations of the physician;
3. AT provided patient with information to prevent further injury;
4. AT adequately answered all patient questions; and
5. AT demonstrated appropriate knowledge regarding the patient's injury.

Survey results revealed a mean score of 5.89 for the perceived interpersonal care domain. Mean scores were as follows: Question 1, 5.92; Question 2, 5.85; Question 3, 5.83; Question 4, 6.0; and Question 5, 5.936.

The perceived technical care domain consisted of two questions:

6. AT demonstrated appropriate knowledge regarding the patient's injury; and
7. Patient believed the assessment process used by the AT to evaluate his/her injury properly addressed his/her injury/condition.

Survey results revealed a mean score of 5.89 for the perceived technical care domain. Mean scores were as follows: Question 6, 6.2; and Question 7, 5.79.

Three questions comprised the global satisfaction domain:

8. Patient was satisfied with his/her experience in the clinic [that day];
9. Patient was satisfied with the quality of care he/she received from the AT; and

10. The AT played an integral role in his/her experience at the clinic [that day].

Survey results revealed a mean score of 5.96 for the global satisfaction domain. Mean scores were as follows: Question 8, 6.0; Question 9, 6.0; and Question 10, 5.87.

High satisfaction was reported for each item and domain with low variability, indicating ATs to be knowledgeable, skilled, and personable in the delivery of musculoskeletal care. This pilot study provides evidence ATs are a viable answer to the resource gap in the musculoskeletal workforce. These preliminary data point to the AT being a valuable addition to ACOs and practices that value patient-centered care.<sup>23</sup>

### **Athletic Trainers in the Rural Setting**

ATs also demonstrate an increase in patient throughput with both orthopedic-related injuries and general medicine patients in rural settings. A rural practice rotation was added to St. Luke's Sports Medicine's Post-Professional Athletic Training Residency in 2014. The six-week rotation was completed at a designated Rural Health Clinic consisting of 10 providers: seven physicians (MDs), two PAs, and one NP using a team approach to patient care. One care team consisted of two MDs and one PA or NP. The Athletic Training Resident (ATR) was added to the patient care team scheduled with one provider daily. The ATR provided clinical care for all patients presenting to the clinic during this time.

Clinic productivity increased during the ATR rotation. Providers allowed for patient schedule add-ons during the time ATRs were in the clinic. Three hundred forty-two patients were seen during the five-week ATR clinic rotation. Two hundred fifty-two were regularly scheduled patients and 90 additional patients were same-day or next-day add-ons. Of the 90 additional patients, 53 were acute orthopedic patient add-ons. Patients were added to the schedule within 24 hours of initial contact. Thirty-seven add-on patients were seen for various primary care conditions. Patient throughput increased 26.3% for the entire five-week period.

Additional downstream revenue was generated via clinical ancillary services including x-ray, durable medical equipment, casting, injections, and laboratory tests for 29 of the 90 patients. Twenty-three of the 90 patients were referred for advanced imaging, physical therapy, or surgery. These data suggest that if patient add-on rates remained consistent over one year, the clinic would generate over \$77,000 more in physician office visits or E/M charges based on Medicare rates. This does not include additional ancillary services, identified earlier, and demonstrates a positive return on investment for the cost of hiring an AT for the clinic.

Further, and perhaps more importantly, is that the ATRs were able to improve patient access to the Rural



Health Clinic (RHC) via same-day or next-day patient add-ons. This suggests ATs working in RHCs can increase access to primary care.<sup>24</sup> Arguably, this AT clinic practice care model could also be applied to Federally Qualified Health Centers.

## THE ROLE OF ATHLETIC TRAINERS IN POPULATION HEALTH AS PART OF THE TRIPLE AIM

ATs are uniquely qualified and positioned to address population health across the health continuum from childhood to old age. AT educators and policy-makers recognize the benefits of applying a population-based approach to injury and illness prevention. To advance that cause, an Athletic Training and Public Health Summit (ATPHS) was convened in August of 2015 to introduce ATs to population health and explore collaborative opportunities with public health professionals.

### *Athletic trainers can be active members of primary care interprofessional teams.*

Attendees identified several areas in which athletic training intersects with and furthers the objectives of public health. These include osteoarthritis (OA) in general and chronic management of posttraumatic OA in particular; concussion management and return-to-participation guidelines; sudden cardiac death prevention relating to emergency action plans and screening initiatives; heat-illness prevention related to heat-acclimatization and environmental policies; prevention of overuse injuries (e.g., ulnar collateral ligament and shoulder injuries in youth baseball players); disaster relief efforts; and shifting to models of wellness, optimal performance, and disease and injury prevention rather than treatment of injury and illness.<sup>25</sup>

Furthermore, ATs can facilitate achievement of the aforementioned public health objectives via the IHI's five Triple Aim design components.<sup>26</sup> Specifically, ATs can focus on individuals and families, designing care at the level of the individual and actively learning from individuals and families to inform designs for the population. As demonstrated earlier, ATs can be active members of primary care interprofessional teams. The definition of primary care includes health-related social services, behavioral health-care services, and the broad spectrum of supports that help people attain and maintain health. They serve a valuable role with practice efficiency and access to care.<sup>27</sup>

ATs improve patient functional and physical outcomes. Physicians, hospitals, clinics, and other employers demand ATs for their versatile wellness services and injury and illness prevention skills. Employers seek out ATs for

their knowledge and skills in manual therapy and similar treatments for musculoskeletal conditions, including back pain. ATs commonly supervise obese clients and patients to safely improve their health and fitness. ATs commonly work with patients diagnosed with asthma, diabetes, heart disease, and other health conditions.<sup>28</sup>

ATs advance the IHI's prevention and health promotion through multisector partnerships, including public health, the social sector, and community-based resources, leading to better outcomes and lower cost. ATs' clinical efforts can facilitate per capita cost reduction, aligning with population needs to reduce health and healthcare inequalities.<sup>27</sup> They do so by providing care that is safe, effective, patient-centered, timely, efficient, and equitable, consistent with the Institute of Medicine's (IOM) six aims for quality improvement set forth in the 2001 report, *Crossing the Quality Chasm: A New Health System for the 21<sup>st</sup> Century*.<sup>29</sup>

A 2008 survey by the National Athletic Trainers' Association revealed that ATs working in occupational and industrial settings provide employers positive return on investment for each dollar spent on AT programs. Per survey respondents, 45% reported that the AT made an impact on healthcare costs within six months, and 100% reported that the AT made an impact on healthcare costs within one year. ATs provided a broad array of services, including injury prevention, stretching and ergonomic programs, rehabilitation services, educational programs, fitness, nutrition, work hardening, first aid, and first responder services for acute injuries and illnesses. Ninety-seven percent of companies used ATs to provide educational programs, and 90% used them to provide health and wellness programs.<sup>30</sup>

Although ATs have the skill set perfectly suited to treat older patients who are having mobility-related health problems and limitations, ATs are not currently recognized as billable providers under CMS. ATs demonstrate competency to treat older patients; however, limitations are in the billable service rather than the treatment provided.<sup>18</sup> The policy constraints shaping the balance sought by the Triple Aim are not automatic or inherent in the idea. Rather, they derive from the processes of decision-making, politics, and social contracting relevant to the population involved.<sup>31</sup> This frustrates the purpose and ability of ambulatory care practices to fully meet the Triple Aim's goal of improving population health and ensuring a higher level of improved quality of life.

Nevertheless, ATs must continue efforts to advance their practice within a population health model by partnering with and leading in public health initiatives (e.g., concussions, sudden cardiac arrest, external health stroke), preparticipation physical exams, psychosocial intervention in high school and collegiate athletes). As identified by attendees of the Public Health Summit, much of AT practice constitutes population-level health. Participation in physical examinations, planning for emergencies, tracking injuries, and providing patients with guidelines to prevent

the spread of contact disease represent population-level concerns.<sup>32</sup> Studying the population of physically active females with respect to anterior cruciate ligament injury, understanding a methicillin-resistant *Staphylococcus aureus* outbreak, promoting a tobacco-free sport environment, or assessing a concussion policy are further evidence of AT population health activities.

The athletic training profession should assist ATs in understanding public health and differentiating public/population health from personal health. ATs should seek collaborative opportunities with public health researchers and practitioners to identify and address population-level problems affecting athletes.<sup>25</sup> The profession must broaden its focus from individual health and well-being to all individuals, both those physically active and also individuals presenting with or at risk for developing chronic health conditions.<sup>32</sup>

To that end, the Commission on Accreditation of Athletic Training Education proposed several new curricular content standards including [proposed] Standard 27 to the Standards for Accreditation of Professional Athletic Training Programs. Standard 27 provides that the professional program content incorporates foundational knowledge in statistics, research design, epidemiology, pathophysiology, biomechanics and pathomechanics, exercise physiology, human anatomy, and public health.<sup>33</sup>

Furthermore, AT education is moving toward a Master of Science Degree. Baccalaureate programs may not admit, enroll, or matriculate students into the athletic training program after the start of the fall term 2022. The Masters' Program will expand AT core cognitive and psychomotor competencies while better integrating the Institute of Medicine Core Competencies for Health Professionals. IOM Core Competencies include delivering patient-centered care; working as part of interdisciplinary teams; practicing evidence-based medicine; focusing on quality improvement; and using information technology. The graduate-level professional education will better accommodate the expanding body of knowledge and associated changes in clinical practice expected in outcomes-oriented healthcare.<sup>34</sup>

## CONCLUSION

The future of healthcare, under either the Affordable Care Act or American Health Care Act of 2017, will require all healthcare professionals to practice to the full extent of their license, providing access to safe, effective, patient-centered, timely, efficient, and equitable care. This applies to ATs in the physician practice setting, both traditional orthopedic and sports medicine environments and primary care, especially rural practices where severe provider shortages persist.

The addition of ATs to orthopedic, sports medicine, and primary care physician models has demonstrated

dramatically increased practice efficiency, patient throughput, and patient and physician satisfaction. ATs possess an ideal musculoskeletal evaluation and treatment skill set to enhance the productivity of physician practices and advance population health objectives through ACO systems. ■■

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