

Opportunities for Advancing Health: Athletic Training in a Public Health Framework

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Abstract: Through clinical practice, athletic trainers have been involved in the protection and promotion of public health. Athletic trainers assess and monitor health through injury surveillance, create evidence-based policies (eg, environmental health and safety), and enable equitable access to care, which are critical to communities beyond their patient populations. While the relationship between athletic training and public health has been explored in the past, the need for collaboration grows as both professions evolve. Collaboration between these fields will encourage more robust data surveillance and data analysis, as well as evidence-based health policy, benefiting athletic training patient populations and communities at large.

Key Words: Population health, interprofessional, health promotion, workforce development

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KEY POINTS

- Athletic trainers demonstrate clinical skills that affect communities beyond their patient population by contributing to the core functions of public health: assessment, policy development, and assurance.
- Building on their clinical skills, athletic trainers and public health practitioners can collaborate to protect and promote public health through intentional partnerships.
- Athletic trainers have the potential to fill deficits and enhance practices that are present in public health by using their unique position and relationship with their patient population.

INTRODUCTION

Public health (PH) has been a longstanding pillar of society that protects communities through 3 core functions: assessment, policy development, and assurance—all of which focus on equity (Figure).¹ The goal of equity is to promote the creation of policies, systems, and services that reduce systemic and structural barriers and allow for a fair and just opportunity for everyone to achieve good health and well-being.¹ Public health services include assessing and monitoring population health and investigating, diagnosing, and addressing health hazards and root causes.¹ Public health practitioners educate, strengthen, support, and mobilize communities and

partnerships; create, champion, and implement policies, plans, and laws; and use legal and regulatory actions.¹ The services also include ensuring equitable access, building a diverse and skilled workforce, and evaluation, research, and quality improvement.¹ The core activities of PH practice have advanced the nation's health.² While this framework is geared toward PH professionals, considerable overlap and applicability to athletic trainers (ATs) in advancing health exist.

Public health grew out of medicine, which was largely focused on treating individuals, and has evolved to focus on prevention, protection, and promotion of the health of the population.³ Public health considers individual health in the context of family, community, the broader environment, and society. Ensuring population health requires a multidisciplinary approach among sectors like PH, academia, health care systems, agencies, and organizations.⁴ As health care professionals, ATs play a key role in promoting and protecting individual and population health. Athletic trainers work in a variety of settings, including outside of traditional clinical institutions. Interacting with patients in settings such as schools or workplaces helps ATs to better understand their patients' holistic environment. They are also working within communities, which can provide exposure to nonmedical factors, such as socioeconomic status, environment, and education (ie, social determinants of health) that may affect the patient beyond just the clinical perspectives.

The connection between athletic training and PH has previously been explored.^{5–7} As the profession continues to evolve, it is important to identify new partnerships, knowledge bases, and skills that can enhance ATs' ability to care for their patients. This includes the opportunity to collaborate with PH practitioners in areas where we overlap and learn from each other when we differ. The purpose of this paper is to expand the commentary on ATs in PH by directly connecting the core functions of PH to the role of an AT and identify ways to further develop the interdisciplinary relationship.

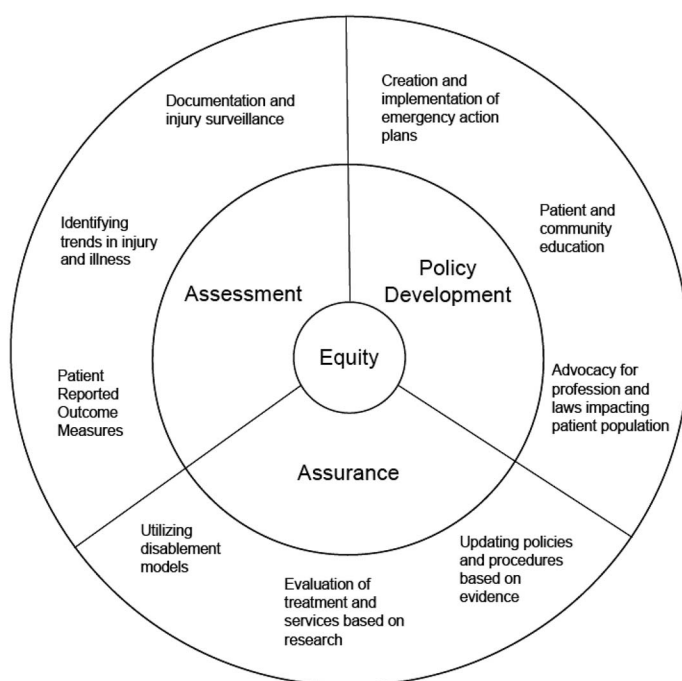
ATHLETIC TRAINERS IN PUBLIC HEALTH CONTEXTS

The core functions of PH help define the services provided by practitioners in the field. Numerous examples from peer-reviewed literature have demonstrated how ATs incorporate PH services into practice, including assessing trends, facilitating policy creation, and assuring the effectiveness of practices and policies in clinical practice.^{8–12} Some of this literature will be discussed throughout this paper and will highlight ATs contributions to PH.

Assessment

The assessment function of PH includes assessing and monitoring population health and investigating, diagnosing, and addressing health hazards and root causes through data collection. Athletic trainers have engaged in ongoing monitoring of the health and well-being of their patients and have created large datasets of real-time injury surveillance. These datasets,

Figure. Three core public health functions surrounded by services provided by athletic trainers related to these public health functions. Adapted from the CDC 10 Essential Public Health Services.¹



such as High School Reporting Information Online (RIO), National Collegiate Athletic Association (NCAA) Injury Surveillance Program, and High School National Athletic Treatment, Injury and Outcomes Network-Surveillance Program (NATION-SP), gather information on rates of injuries, athletes' exposures, treatments, and patient outcomes at the secondary school and collegiate levels across various individual and team sports.¹³ The data have been used by PH researchers like Bunstine et al, who analyzed RIO data to compare overuse injuries in gender-comparable sports.⁸ This provides an example of an opportunity for ATs who support the clinical needs of their populations to enhance the understanding of acute and chronic injury for PH practitioners evaluating emerging trends.

Data aid in the identification of emerging health trends in acute and chronic injuries but also provide an objective view of issues presented in other PH surveillance, such as the Youth Risk Behavioral System (YRBS). The benefit of surveillance systems like RIO or NCAA Injury Surveillance is that they record actual injuries as opposed to the YRBS, which is a self-report of injuries by secondary school students. The use of surveillance systems in conjunction with other PH data to track players' health and injuries creates the opportunity for ongoing assessment and generation of evidence-based practices and policies from both the clinician and student perspectives. Challenges to implementing rigorous surveillance systems may include resource limitations, needed training for proper measurement and structured data systems, and time for documentation. Investments in these types of collaborative efforts could be the foundation for better policies and practices to prevent or minimize injuries.

Policy Development

The policy development function includes communicating to inform and educate, strengthen, support, and mobilize communities and partnerships; create, champion, and implement plans, policies, and laws; and use legal and regulatory actions. Athletic trainers are actively and routinely engaged in policy discussions and procedural decision-making that enhances the health and well-being of their patients and communities. For example, ATs in Georgia evaluated and implemented evidence-based heat policies in Georgia secondary schools to prevent athletes from being exposed to extreme heat, resulting in cardiac and respiratory illness.⁹ Cooper et al performed a longitudinal study using AT experiences and data to demonstrate the effect of evidence-based policies on cases of heat illness.⁹ The authors found that, with the evidence-based policy at schools with ATs, heat stroke and heat exhaustion illness rates decreased anywhere from 35% to 100% when comparing the rates 3 years before and after implementation.⁹ While such approaches may be focused on student-athletes, it is possible that schools may cancel other after-school activities based on such heat policies, applying protective benefits to the entire school community. Researchers have also demonstrated that having an AT present and a state mandate may facilitate the adoption of a comprehensive heat policy at the secondary school level.¹⁰ Athletic trainer expertise is needed to pass new laws, such as state-mandated environmental policies, but may also include laws related to scope of practice, concussions, and automatic external defibrillators. Using their knowledge, communication skills, and collaborative nature, ATs should advocate for population health through legislative action in collaboration with PH professionals.

Assurance

The assurance function focuses on enabling equitable access, building a diverse and skilled workforce, innovating through research and quality improvement, and building and maintaining a strong PH infrastructure. As the athletic training profession evolves, so do the educational standards. Athletic trainers use disablement models to reflect on the whole patient, not just the injury. The International Classification of Functioning, Disability and Health (ICF) model organizes patient needs into categories, such as body functions, activity, participation, environmental factors, and personal factors.¹¹ These components view the effect of injury or illness from various nonmedical perspectives (eg, living conditions, occupational situations, social participation).¹¹ These nonmedical factors are very similar to how health is viewed through social determinants of health. By understanding the patient's nonmedical factors, barriers and limitations of care can be identified and addressed to improve patient outcomes. This idea is reflected in a clinical commentary written by Ingram et al in which health disparities in sport-related concussions are identified at the individual, interpersonal, community, and societal levels.¹² Increased collaboration between PH and ATs can help to address disparities, particularly in settings such as schools where an AT may be the only clinician present.

DISCUSSION

Athletic trainers and their role in PH have been re-established in this paper, but to fully protect the health of the population, we need an integrated and interprofessional approach. When considering the spectrum of population health, health care providers who evaluate and treat the individual patient and bill for their services through a third-party payer are at one end. At the other end would be PH professionals who do not provide medical care for individuals but improve population health through the Ten Essential Public Health Services.¹ Somewhere in the middle are ATs. They are health care professionals working with individuals within communities to improve health, educate communities, and create and implement policies but do not universally bill through insurance. It is also possible for ATs to move along the spectrum depending on their employment settings and patient population. For example, according to the National Athletic Trainers' Association, about 50% of ATs work in traditional settings with secondary school and collegiate athletes, 16% work in clinics and hospitals, and 6% work in emerging settings (ie, performing arts, public safety, military and occupational health).¹⁴ Each of these settings and populations have different needs and meanings of health and safety. Since PH professionals do not regularly access schools, clinics, and industrial settings, ATs are well positioned to advance the health and well-being of populations outside of routine clinical care settings and bridge the gap between health care and PH.

To improve communication between ATs and PH professionals, a difference in language or terminology used across these fields should be acknowledged. For example, while in PH terms like *epidemiology* are used, ATs perform similar practices but with terms like *injury rate*, *injury surveillance*, and *athlete-exposures*. Public health professionals refer to *informatics*, while ATs use *electronic health records*. Public health uses *emergency preparedness*, while ATs use *emergency action plans*. By recognizing the differences in language and finding common ground, tremendous opportunities exist for more

robust data collection and surveillance as well as integration of treatment and prevention strategies.

One example of opportunities for collaboration includes opioid use, which is an ongoing PH priority. Athletic trainers are trained to educate patients about the effects, participation consequences, and risks of misuse and abuse of drugs based on the updated 2020 education competencies provided by the Commission on Accreditation of Athletic Training Education.¹⁵ When patients have pain or surgical operations, they receive treatment and potentially a prescription for an opioid to aid in recovery. In working with the patient frequently, the AT would assist in education, pain management, and therapeutic rehabilitation, while a PH professional monitors the opioid use at the population level. In terms of mental health, ATs often function as the first line of health care defense for their patients. While interacting with them frequently, they encounter and recognize mental health issues in their patients. In PH, mental health issues are often identified through subjective surveillance provided through surveys (eg, YBRS), but in conjunction with the objective observations provided by ATs, monitoring of these patients could be improved.

Two approaches can enhance the relationship between ATs and PH. One is implementing meaningful interactions and activities for students, and the second is to provide educational and collaborative opportunities for working athletic training professionals. At the student level, especially in educational programs associated with schools and colleges of PH, athletic training students can learn from PH students and teach PH students about athletic training. Activities in which they can find commonalities between professions or engage in round table discussions would better prepare them for collaboration in the field. At the professional level, continuing education workshops or sessions are needed regarding how to think about population health in athletic training. Identifying where objectives between fields align, collaborative research can be done to benefit both professions. The first athletic training and PH summit in 2015 was a great step forward, and with the changes that have occurred for both professions since then, this may be a perfect opportunity to introduce another collaborative event.

Looking to the future, both athletic training and PH can further capitalize on the skills and information held by each other. Similarities in practice and education can strengthen each field. Athletic trainers can potentially fill deficits that are present in PH based on their unique position and relationship to their patient population. As both professions grow, the benefits of collaboration should be considered for both the patients of ATs and the health of the population.

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