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Introduction: Engagement, Enactment, Research, and Reform

This article advances, for the first time, a framework for situating public health law interventions as occurring in a predictable four-stage process.[1] Whether the intervention is related to mandatory seat-belt laws,[2] HIV prevention through needle-exchanges,[3] or distracted-driving laws,[4] these public health law interventions have generally been characterized by the following four stages. First, a series of publicized incidents, observances, or outcomes generate significant media attention, and are framed as public health harms. Then, a few select states evaluate such harms and proactively seek testimony or evidence designed to support a law-based intervention. After this initial public engagement, states enact legal frameworks designed to minimize or reduce the harm, often in the absence of full information about the scope of harm or potential effectiveness of the intervention. In contrast, scholars have proposed that at these early stages, lawmaking should be evidence-based and "developed through a continuous process that uses the best available quantitative and qualitative evidence."[5] Our experience evaluating youth sports traumatic brain injury (TBI) lawmaking suggests that, like other public health issues with sudden and intense media (and, therefore, constituent) attention, an evidence-based approach was lacking during these early stages.

But during the following two stages, research and reform, the interests of public health law researchers and state lawmakers substantially converge. First, following enactment of a public health law intervention, advocates (and opponents) seek to measure the impact of the intervention on the public health problem. Over time, as this research matures, evidence is gathered that can inform evaluations about the intervention's efficacy. From there, the reform stage begins. At that stage, interested parties propose modifications to existing interventions based on observations, lessons from implementation, and evidence from the field.

Below, we briefly apply this four-stage framework to youth sports TBI laws, and conclude that public health lawmaking in this area is consistent with prior high-visibility public health law interventions.

Stage One: Engagement

Similar to prior interventions, the first stage for youth sports TBI laws involved the process of engaging the public and key stakeholders and asking them to rethink the role of government intervention into a previously under-regulated space. With respect to TBIs generally, the interventions involved both law and policy responses ranging from the state statutes to proposed federal "return to play" legislation,[6] "bully pulpit" initiatives such as a White House summit and congressional hearings, and substantial tort litigation,[7] specifically high-profile individual lawsuits and class action litigation against professional leagues.

Prior to this engagement stage, prevailing public opinion was that sport participation was a private matter, and government should not take an active role in regulating game content or conduct.[8] Despite

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the presence of extensive government intervention in school related matters, including student health, sports generally were thought to be outside of a public health lawmaking framework.

Because advocates engaged the general public about the nexus between education, public health, and youth sports safety, lawmakers were able to make the case for intervention in a more comprehensive manner. Further, as states began to swiftly adopt relatively uniform TBI legislation, opposition to such bills diminished and support for these public health measures grew.[9] It became possible to question whether certain aspects of sports were essential and never subject to change. For example, it was no longer a given that playing while injured was simply "part of the game." Thus, this early engagement of a wide-variety of constituencies and their relatively unanimous support for such interventions set the stage for widespread policy enactment.

Stage Two: Enactment

Between 2009 and 2014, every state and the District of Columbia enacted some form of youth sports TBI law as a response to a long acknowledged public health problem. Lawmakers recognized that 8.8 million high school athletes, and 1.1 million youth football players were formally enrolled in school athletic programs, and additional millions of others played recreational sports.[10] The public health intervention thus was supported by a wide segment of the public, perhaps because the lawmaking centered on a relatively low-cost and non-invasive form of public health law intervention.

Nearly all of the state's initial law-based interventions focused on secondary prevention efforts to mitigate the downstream effects of concussions, including recognition of possible TBIs, management of post-concussive symptoms, and preventing severe complications.[11] Thus, over a short-period of time, public engagement and the influence of interested interest-groups helped to define the problem and shifted public opinion toward approval for such laws. Thus, the enactment of such laws (while not without dissent) was a fairly consensus-driven model of public health law intervention. Then, interested actors turned to the next stage of this process — research and evaluation of such laws — to evaluate their efficacy.

With respect to youth sports TBI laws, the initial stage of engaging diverse constituencies allowed stakeholders to reframe the nexus between sports and public health. The rapid enactment of such laws allowed for a more rigorous evaluation process. The research and evaluation process suggested that such laws were sub-optimal, in need of further evaluation or reform. And, the reform process suggests that states have taken their roles seriously, thus providing encouragement for those who believe in the value of public health law research as part of the policymaking process.

Stage Three: Research

As with prior public health law interventions, the swift enactment of youth sports TBI laws prompted a variety of research inquiries into their actual and potential effectiveness. Some of this research focused on evaluating the direct impact of such laws,[12] while other research focused on evaluating the engagement of key stakeholders prior to enactment[13] and the experiences of those charged with implementation at the state level.[14] Most recently, this journal devoted an entire symposium issue to evaluating multiple dimensions of such laws, and pointing to future uncertainties.[15] At the same time, advances in medical research,[16] and even the acknowledgment of sports associations,[17] suggested that, at a minimum, the initial interventions were a good place to start — with opportunity for reform to follow. While it is difficult to say that any one area of research led to particular reforms, it is fair to say that the focus of an array of interested parties led states to reconsider key portions of such laws, and revise them to incorporate this new evidence. This engagement with research has historically led to law reform in other areas of public health law, and did so with respect to youth sports TBI laws as well.

Stage Four: Reform

Now that all states have engaged and enacted statewide public health law interventions, and researchers have presented initial analyses of the consequences of such interventions, we would expect to see a new stage begin — that of substantive law reform.

Consistent with cycles in other public health areas, youth sports TBI lawmaking is now centered in its reform stage. Now that many of these laws have been in effect for a few years, legislatures are revisiting and revising them, most likely in response to evolving knowledge and lessons from implementation. Twenty-two states have made substantive changes to their laws since original enactment, six states more than once, and more states are likely to follow suit.[18]

These changes fall into three main categories: (1) expanding coverage of the law to include younger grades or recreational sports leagues, (2) tightening or clarifying existing requirements, and (3) introducing efforts at primary prevention (preventing concussions from occurring in the first place) and improved early detection.[19] Such amendments may have come about in response to experience with implementation of the original law or new developments in knowledge.[20] Perhaps most promising is states' recent emphasis on primary prevention, such as mandated limits on contact in practices and scrimmages, as well as safer rules of play.[21] Further reform initiatives, as research suggests, might focus on race and gender outcome differences, or segment by sport and by region, and could offer more micro-targeted reforms within a state to reduce group-based disparities.[22]

Most agree that youth TBI laws will not change sports culture by themselves.[23] Nonetheless, each of the four stages of this intervention has allowed for increasing awareness and an evolving set of responses to a large-scale public health problem. As the stages continue to evolve, we believe further reforms will be both desirable and inevitable.

Conclusion

Public health law interventions have generally followed a four-stage process: public engagement, law enactment, research about the law's efficacy, and then law reform focused on optimizing implementation and outcomes. We expect that future reforms, such as marijuana liberalization, will mirror this process, though perhaps not at the same pace.[24] With respect to youth sports TBI laws, the initial stage of engaging diverse constituencies allowed stakeholders to reframe the nexus between sports and public health. The rapid enactment of such laws allowed for a more rigorous evaluation process. The research and evaluation process suggested that such laws were sub-optimal, in need of further evaluation or reform. And, the reform process suggests that states have taken their roles seriously, thus providing encouragement for those who believe in the value of public health law research as part of the policymaking process.

Note

The authors are listed in alphabetical order.

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19. *Id.*
20. These changes included changing definitions of qualified health providers (Alaska), gathering more outcome data (Connecticut, Vermont), and "return to learn" programs (Nebraska, Virginia).

21. Massachusetts was a leader in this effort, but other states soon followed. Mass. Gen. Laws Ann. ch. 111, § 222. For example, California, Connecticut, and Vermont have amended their laws to add similar primary prevention strategies.
22. N.J. Stat. Ann. § 18A:40-41.2 (focused on cheerleading TBIs).
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