Public Health Professionals as Policy Entrepreneurs: Arkansas's Childhood Obesity Policy Experience

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In response to a nationwide rise in obesity, several states have passed legislation to improve school health environments. Among these was Arkansas's Act 1220 of 2003, the most comprehensive school-based childhood obesity legislation at that time.

We used the Multiple Streams Framework to analyze factors that brought childhood obesity to the forefront of the Arkansas legislative agenda and resulted in the passage of Act 1220. When 3 streams (problem, policy, and political) are combined, a policy window is opened and policy entrepreneurs may advance their goals. We documented factors that produced a policy window and allowed entrepreneurs to enact comprehensive legislation.

This historical analysis and the Multiple Streams Framework may serve as a roadmap for leaders seeking to influence health policy. (*Am J Public Health.* 2010;100:2047–2052. doi:10.2105/AJPH.2009.183939)

IN AN UNPRECEDENTED RISE, the prevalence of overweight among US children has more than tripled over the past 3 decades. Recent National Health and Nutrition Examination Survey data (2003 through 2006) estimated that 32% of children and adolescents had a body mass index (BMI; defined as weight in kilograms divided by height in meters squared) for age at or above the 85th percentile.[1] When Ogden et al. used the 97th percentile as an identifier of those with the greatest body mass for age, they reported that more than 11% of US children and adolescents fit into that category.[1] Overweight in childhood is likely to persist into adulthood[2,3] and obesity predisposes for a number of diseases of both childhood and adulthood.[4] Adolescents with very high BMI have also been shown to have adult mortality rates up to 40% higher than those observed in adolescents with medium BMI.[4]

Obesity interventions and prevention have, consequently, become a major priority for policymakers, health care professionals, economists, and the general public.[5] Prior to 2003, several states and the federal government had enacted limited legislation aimed at reducing and preventing childhood obesity.[6] Incremental school-based prevention efforts were largely focused on emphasizing and improving nutrition and physical education curricula, reinforcing classroom learning throughout the school environment, rewarding voluntary adoption of healthy nutrition and physical activity standards, and providing model vending policies and toolkits.[6,7] Arkansas policymakers recognized that halting the epidemic necessitated progressive steps to outpace increasing disease rates. With the passage of Act 1220 in 2003, Arkansas enacted comprehensive legislation to combat childhood obesity.

Act 1220 included 6 components aimed at combating childhood obesity. First, a 15-member Child Health Advisory Committee was created and tasked with making recommendations to the State Board of Education and State Board of Health regarding physical activity and nutrition standards in public schools. Further, Act 1220 required school districts to establish Nutrition and Physical Activity Advisory Committees to guide the development of locally specific policies and programs. With Act 1220, Arkansas became the first state to enact statewide school-based BMI screening with reports to parents for all public school children in grades K through 12. Act 1220 both restricted student access to vending machines in public elementary schools and required that schools disclose vending contracts and publicly report vending revenues. Lastly, the Arkansas Department of Health was required to employ community health promotion specialists to provide technical assistance to schools in formulating and implementing the rules and regulations.[8] Thus, Act 1220 mandated some limited immediate action while establishing the mechanisms for short- and longer-term change at both state and local levels.

In the policymaking process, incremental health policy change is the norm, as opposed to innovative, comprehensive reforms such as Act 1220. Legislators often face a multitude of issues, have little time to consider all the data they need to address them, and may have to choose from among a number of policy alternatives to address any given issue. Zahariadis observed that policymakers often "are less capable of choosing issues they would like to solve and more concerned with addressing the multitude of problems thrust upon them."[9(p75)] Arkansas is no exception. In the 2003 Arkansas legislative session in particular, a large number of bills were introduced concerning education. How, then, did the single issue of childhood obesity rise to the forefront of an overburdened legislative agenda? Who garnered political attention for this issue and formulated policy solutions? What were the key events that led the Arkansas Legislature to abandon incremental legislation and adopt a bold, comprehensive policy initiative?

We sought to answer these questions by documenting the factors and events that influenced

the policy process allowing the passage of Arkansas's school-based childhood obesity legislation policy. This historical review and analysis of the policy process provides a roadmap for public health advocates interested in pursuing policies directed toward curbing the childhood obesity epidemic and other critical public health issues. By studying this policy process roadmap, public health advocates interested in shaping health policy can understand more fully their role in the process of setting agendas and formulating policy and can more effectively act when windows of opportunity arise.

METHODS

In our policy analysis, we used secondary data collected as part of a comprehensive evaluation of Arkansas Act 1220.[10] Specifically, key informant interviews were conducted by a research team at the University of Arkansas for Medical Sciences (UAMS) Fay W. Boozman College of Public Health with persons knowledgeable of or involved in the passage of Act 1220. Interviews were conducted in a semistructured format with 3 questions aimed at understanding the key events, policy entrepreneurs, and processes that led to the development of Act 1220: "How did Act 1220 get started?"; "Who had the initial idea, and how did it get from that idea to a piece of legislation ready for introduction into the legislature?"; and "How do you see the early processes of policy development for Act 1220?" The open-ended nature of the questions allowed respondents to relate the process of policy formation in a narrative format. When answers were abbreviated or nonspecific, probing questions were asked to clarify or to obtain greater detail.

We used John Kingdon's Multiple Streams Framework to guide the review of interview transcripts.[11] Kingdon said of the policy process:

> [T]he development of policy proposals is a little bit like biological natural selection. . . . Ideas float around in a policy primeval soup. Much like molecules . . . ideas start, combine, recombine, and through this long process of evolution, some ideas fall away, while others will survive and prosper.[12(p333)]

In the Multiple Streams Framework, the policy stream represents the ideas to which Kingdon referred (i.e., the policy alternatives and possible solutions to a problem). The political stream represents the mood, ideology, or attitudes of policymakers and the public. The problem stream represents the many issues that may require governmental action. These 3 streams flow independently until a policy window (or window of opportunity) is presented. Such windows open when changes occur in the problem or political streams, perhaps because of new problem indicators, focusing events, or changes in political parties or ideology. Feasible, acceptable, affordable proposals from the policy stream then emerge through the policy window with the help of a policy entrepreneur. Such a person will invest his or her own resources to advocate a particular policy leading to its adoption (Figure 1).[11,13]

A research team at UAMS Fay W. Boozman College of Public Health received training in the Kingdon framework (e.g., 3 streams, policy entrepreneur, and policy window) and then read the key informant interview transcripts for overall content. They then reviewed the transcripts again to identify significant factors (e.g., person, idea, event, or process) in the policy formation process and to extract potentially relevant quotes. Each transcript was assigned to a single reviewer; reviewers consulted with one another during the process to facilitate consistency among themselves.

Factors were mapped to components of the analysis framework (e.g., 3 streams, policy entrepreneur, and policy window), and all passages coded to a specific component were merged into a single framework component document. Secondary source documents were used to confirm findings and to provide greater detail and context. A total of 23 informants completed interviews, including policymakers such as Arkansas legislators (n=8), government-appointed advisors on health and education (n=11), and state agency leaders (n=4). Twelve secondary source documents salient to the Arkansas initiative or addressing childhood obesity through state education policy were reviewed. Five of these documents were papers published in peer-reviewed journals,[14–18] 3 were acts or resolutions in the Arkansas Code,[19–21] 2 were articles from the popular press,[22,23] and 2 were state task force reports.[24,25]

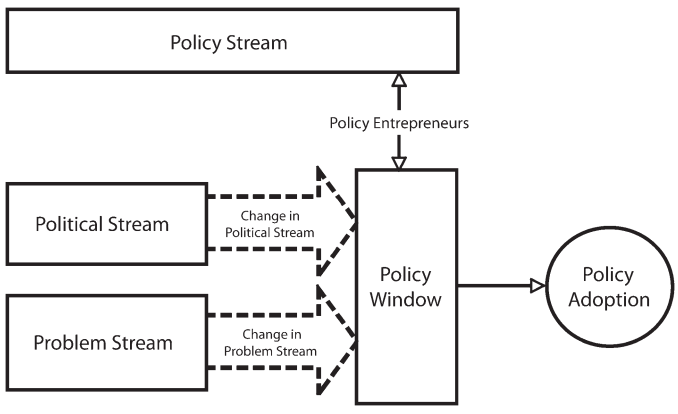


FIGURE 1—Multiple Streams Framework.

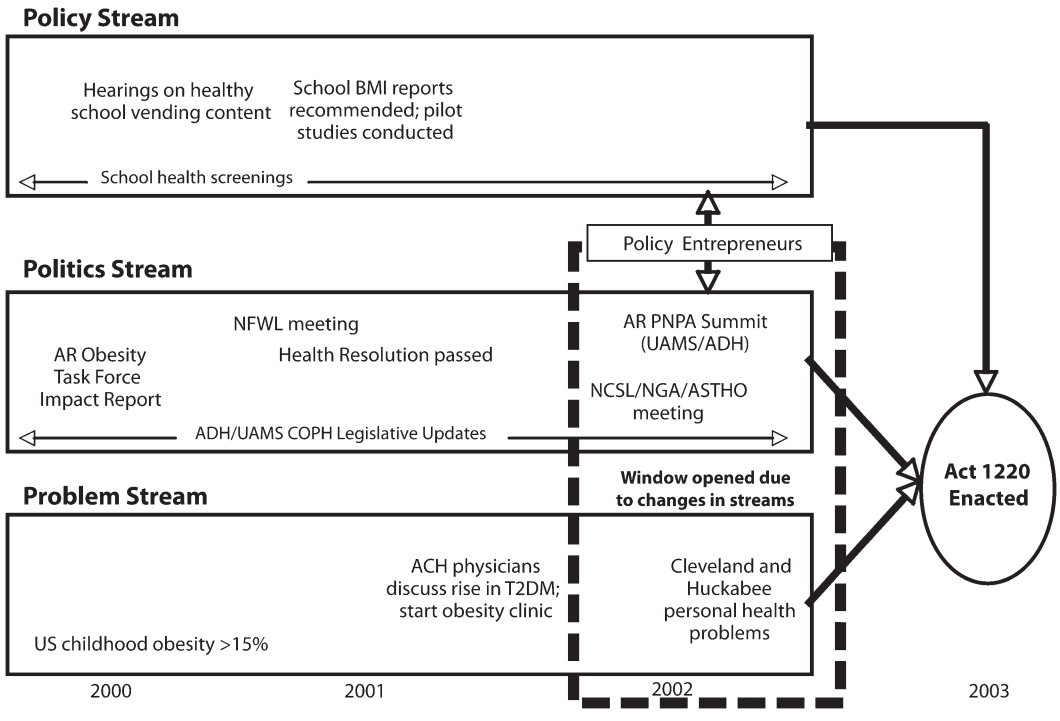
RESULTS

As complex as the Multiple Streams Framework concept may be, it can elegantly help to describe the fast-paced and muddled experience of a policy design and installation such as the Arkansas Act 1220 to combat childhood obesity.

The Policy Stream

As an informant commented, "the Act represented the culmination of a longer developmental process around the policy options available to the legislature." In the policy stream we found that a policymaker was motivated to action by concern about the amount of caffeine and sugar in foods and beverages available to children in school vending machines. Determined to uncover possible solutions, the respondent led legislative hearings to raise awareness of the issue and generate policy alternatives during the 1999 and 2001 legislative sessions (Figure 2). Respondents were also familiar with the use of schools as a venue for child health screenings. Knowledge of Arkansas's long-standing history of providing school health services—including screening for scoliosis, vision, and hearing—and reporting adverse outcomes to parents was evident among policymakers.[19,20] Additionally, some schools in Arkansas routinely measured student height and weight as part of health, physical education, and other curricula. This practice is not uncommon among schools nationwide. For example, Florida public schools began collecting height and weight for students in 3 grades in 1973.[14] Story et al. reported that, as of 2000, 26% of states had requirements that schools measure students' height and weight and 61% of those states required parental notification of results.[18]

Policymakers nationwide recognized that only 1 additional step would be necessary for schools to convert those measurements into reportable BMI surveillance data. As early as 1995, California implemented collection of BMI measurements for public school students in 3 grades.[14] During the 2000 to 2001 academic year, Cambridge Public Schools and the Institute for Community Health, both in Massachusetts, conducted a pilot study of school-based BMI screening with



Note. ACH = Arkansas Children's Hospital; ADH = Arkansas Department of Health; AR PNPA = Arkansas Preventive Nutrition and Physical Activity Summit; ASTHO = Association of State and Territorial Health Officials; BMI = body mass index; NCSL = National Conference of State Legislatures; NFWL = National Foundation for Women Legislators; NGA = National Governors Association; UAMS COPH = University of Arkansas for Medical Sciences Fay W. Boozman College of Public Health.
Source. Felix HC.[13]

FIGURE 2—Application of Multiple Streams Framework to the enactment process for Arkansas Act 1220.

parental notification of results.[15] In the same year, the Tennessee legislature authorized optional BMI surveillance for all public school students.[14] The Michigan Department of Education recommended BMI screening in 2001 and about half of school districts elected to screen some or all of their students.[22,24]

The Political Stream

Prior to the passage of Act 1220, several significant actions occurred in the political stream to influence the attitudes of Arkansas's policymakers. In 1999, the Arkansas Legislature commissioned the Arkansas Department of Health to establish an Obesity Task Force to study the effects of obesity on children and adults and to make recommendations for future state action to reduce obesity.[21] The task force findings were reported publicly and to the legislature in 2000. Regarding childhood obesity, the task force recommended legislation to enact a comprehensive statewide program with 14 specific aims to raise public awareness and enhance school policies and practices for nutrition and physical activity.[25]

Soon after, Arkansas legislators attended the 2001 National Foundation for Women Legislators Conference where public health advocates made quite an impact. Their tactics of raising awareness of state-specific childhood obesity indicators influenced a respondent to support efforts to combat the epidemic. This respondent noted,

> All across the whole wall was plastered 'Little Rock, Arkansas—number 1 in the nation for childhood obesity and type 2 diabetes.' That really woke me up and was one reason that I spoke out.

Subsequently, legislators were presented with a health resolution calling on them to take personal action and serve as role models in the state's efforts to combat childhood obesity.

Further support for state policy efforts to combat childhood obesity was garnered in January 2002 when Arkansas legislators and other policymakers, including representatives from the Governor's Office and the Arkansas Department of Health, attended a meeting sponsored by the National Conference of State Legislatures, National Governors Association, and Association of State and Territorial Health Officials. At the meeting, attendees from 6 contiguous states considered different approaches to addressing health issues in their states, including childhood obesity.[23] Respondents noted interventions for childhood obesity as a primary topic of discussion within the Arkansas delegation.

Public health professionals from the Arkansas Department of Health's Cardiovascular Health Program and the UAMS hosted the first Arkansas Preventive Nutrition and Physical Activity Summit in March 2002. Leaders who were thought "most able to initiate and implement change" were invited to attend the 1-day conference.[16] Attendees were divided into work groups, 1 of which was tasked with devising practical, achievable policy alternatives for education, including school environment. A respondent from the health community summarized the Summit's impact: "The [Arkansas Preventive Nutrition and Physical Activity Summit] set the framework for thinking about what the problems are, the scope of the problem, and possible interventions." The Summit's working recommendations included school-based BMI surveillance with parental notification for all public school students and creation of an office devoted to nutrition and physical activity.[16]

The Problem Stream

Throughout that time, public health leaders from the UAMS Fay W. Boozman College of Public Health and the Arkansas Department of Health presented annual updates to legislators about the burden of obesity in Arkansas. Multiple policymakers interviewed recounted health information they learned during those updates. Evidence of obesity's consequences for the state made a strong impression on legislators. One respondent, whose remark is representative of several others, recalled learning that because of earlier onset of obesity and diabetes, "40-year-old people are getting their feet and legs cut off." The information helped focus the attention of policymakers on the obesity issue.

Annual updates to the Arkansas Legislature often included indicators of the severity of childhood obesity. By 2002, for example, an estimated 31% of American children aged 6 to 19 years were overweight or obese, and physicians at the Arkansas Children's Hospital began discussing the sharp rise in the number of cases of child and adolescent onset of type 2 diabetes seen in their clinics.[17] A fitness clinic was planned at Arkansas Children's Hospital to provide behavioral and surgical weight-loss interventions for children with a BMI measurement greater than the 95th percentile.

Prior to the Arkansas 2003 legislative session, then-Speaker of the House Herschel Cleveland, a Democrat, and then-Arkansas Governor Mike Huckabee, a Republican, each experienced serious obesity-related personal health problems. Those experiences, made public because of their offices, served as focusing events that brought attention to the seriousness of the issue and made it clear that the battle against obesity was bipartisan.

The Policy Window and Policy Entrepreneurs

Because of these changes in the political and problem streams, a temporary policy window opened, providing the opportunity for comprehensive policy changes to combat childhood obesity. After summarizing some events in the 3 streams, a respondent aptly described this phenomenon:

> It just happened to be that the legislators were interested in hearing about ways to improve child health and were willing to stick their neck out with a bill that was really different from anything that had been done in the rest of the United States.

Speaker Cleveland was broadly credited by respondents as the primary policy entrepreneur. One policymaker remarked, "I think [Speaker Cleveland] had a personal experience, professional interest, and a legislative responsibility that came together." Speaker Cleveland

requested that the Arkansas Department of Health draft potential legislation for school-based policy changes to reduce childhood obesity and then invested himself personally in advocating the bill's passage.

Public health professionals acted as secondary policy entrepreneurs by coupling the problem with viable alternatives from the policy stream. Several of those individuals had been involved in the events noted in the political and problem streams and were ready with practical, achievable policy options generated at the Arkansas Preventive Nutrition and Physical Activity Summit and other venues. The timely coupling of streams by policy entrepreneurs led to the passage of Arkansas Act 1220 of 2003.

DISCUSSION

In the political stream, advocacy by public health professionals at national legislative conferences and state-level meetings influenced policymakers' beliefs about childhood obesity. In the problem stream, focusing events, namely the personal health problems of 2 policymakers, paired with the changes in indicators presented at local and national meetings, turned attention and focus to the issue. Arkansas Speaker of the House Herschel Cleveland and Arkansas's public health professionals were most frequently noted by key informants to be the primary policy entrepreneurs. Public health advocates who participated in the Arkansas Obesity Task Force and the Arkansas Preventive Nutrition and Physical Activity Summit generated policy alternatives and formulated the legislation, which was then sponsored by colleagues of Speaker Cleveland, at his urging.

Kingdon's Multiple Streams Framework continues to be a useful model for understanding many cases of health policy reform, particularly comprehensive reforms such as Arkansas Act 1220. It is notable that during the policy process in Arkansas, some public health leaders advocated an incremental approach to addressing school-based obesity policy. Several respondents remarked about the many versions drafted before the bill was filed. Key elements that were feared to diminish political feasibility, such as vending restrictions and the BMI initiative, were debated, eliminated, and then added back into the proposal as key public health professionals tirelessly advocated comprehensive legislation.

Kingdon asserted that although generation of policy alternatives may be incremental, as was the case for Act 1220, agenda change is nonincremental and occurs when a combination of the 3 streams opens a policy window.[11] During that short window of time "there is often sufficient ambiguity in the nature of the problem or what can be done about it so that a leader can offer his or her proposal as a plausible solution."[26(p216)] Speaker Cleveland was a policy entrepreneur; thus, his experience, interests, and responsibility to the state of Arkansas poised him to advocate policy change when he was presented with a window of opportunity. Public health professionals, armed with policy alternatives, found that legislators were willing to take bold steps toward eliminating childhood obesity in Arkansas. The process was described, even by a proponent of incrementalism, as "a wonderful progression of compromise, of discussion, of very thoughtful people being passionate about it and it's turned out to be an outstanding piece of legislation."

The Arkansas law known as Act 1220 of 2003 provides an illustrative example of comprehensive public health policy on a state level. When Act 1220 is viewed through the lens of the Multiple Streams Framework, the influence of public health professionals is clearly seen in raising awareness and proactively generating policy alternatives. The Multiple Streams Framework incorporates the important role of chance in the policymaking process. Policy windows are short and often unpredictable. Whether at the federal, state, local, or agency level, public health professionals must understand their policy environment and not lose a moment in recognizing the convergence of the 3 streams and "champion" policy entrepreneurs. With the correct balance of strategic planning and timely responses to policy windows, public health professionals can use Kingdon's Multiple Streams Framework as a roadmap for improving the health and well-being of the population. ■

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This article was accepted on April 5, 2010.

Contributors

R.L. Craig synthesized concepts, integrated research findings, and led the writing. H.C. Felix assisted with the policy theory specifics and analyses. J.F. Walker assisted with the research and envisioned the policy implications. M.M. Phillips originated the research and supervised all aspects of its implementation. All authors helped to conceptualize ideas, interpret findings, and review drafts of the article.

Acknowledgments

This work was supported by the Robert Wood Johnson Foundation (grants 051737, 60284, and 30930).

The authors thank James M. Raczynski, PhD, for his support, as well as Britni Mitchell and Matilda Louvring for assistance in preparation of this article.

Human Participant Protection

This study was approved by the University of Arkansas for Medical Sciences institutional review board.

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Utilization of Research in Policymaking for Graduated Driver Licensing

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Young drivers are overrepresented in road trauma and vehicle-related deaths, and there is substantial evidence for the effectiveness of graduated driver licensing (GDL) policies that minimize young drivers' exposure to high-risk driving situations. However, it is unclear what role research plays in the process of making GDL policies.

To understand how research is utilized in this context, we interviewed influential GDL policy actors in Australia and the United States. We found that GDL policy actors generally believed that research evidence informed GDL policy development, but they also believed that research was used to justify politically determined policy positions that were not based on evidence.

Further efforts, including more effective research dissemination strategies, are required to increase research utilization in policy. (*Am J Public Health.* 2010;100:2052–2058. doi:10.2105/AJPH.2009.184713)

YOUNG DRIVERS (AGED 17-25 years) are overrepresented in road trauma, and vehicle-related crashes are a leading cause of death among young people.[1,2] Governments in many high-income countries, including Australia and the United States, have addressed this problem by developing graduated driver licensing (GDL) systems.[1] GDL systems minimize young drivers' exposure to high-risk driving situations and may use any of a variety of policies, such as minimum age of licensing and speed limitations. Research has shown that such systems can be very effective in reducing crashes and injuries, although their effectiveness depends on the inclusion of several key factors.[3]

Restrictions on night driving and on the ages of passengers are among the most effective ways to reduce crash involvement.[4] However, policymakers in many states and jurisdictions have opposed these restrictions for a number of political (e.g., electoral support) and ideological reasons, and because of concerns regarding the legitimacy of using evaluations from other jurisdictions to determine appropriate policies.[5] Such widespread governmental opposition to these restrictions indicates that, despite the