Social Marketing as a Strategy to Increase Immunization Rates

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Today in the United States, outbreaks of vaccine-preventable disease are often traced to susceptible children whose parents have claimed an exemption from school or child care immunization regulations. The origins of this immunization hesitancy and resistance have roots in the decline of the threat of vaccine-preventable disease coupled with an increase in concerns about the adverse effects of vaccines, the emergence of mass media and the Internet, and the intrinsic limitations of modern medicine. Appeals to emotion have drowned out thoughtful discussion in public forums, and overall, public trust in immunizations has declined. We present an often overlooked behavior change strategy—social marketing—as a way to improve immunization rates by addressing the important roots of immunization hesitancy and effectively engaging emotions. As an example, we provide a synopsis of a social marketing campaign that is currently in development in Washington state and that is aimed at increasing timely immunizations in children from birth to age 24 months.


Although US national immunization rates are high, outbreaks of vaccine-preventable diseases traced to children exempt from school and child care immunization requirements continue to occur in the United States. One recent measles outbreak resulted from an index case of a child in California who claimed an exemption from measles-mumps-rubella vaccine for personal beliefs. Of the 9 additional children older than 12 months who developed measles from the index case in this outbreak, 8 had claimed personal belief exemptions. Nineteen states now allow a personal belief exemption from vaccinations.

In 2000, a national survey revealed that 19% of parents had concerns about vaccine safety, and 18% opposed immunization requirements because these requirements went against freedom of choice. Another reason parents refuse vaccines is an erroneous perception of low susceptibility to vaccine-preventable disease. In 2004, 93% of pediatricians reported that there was at least one parental refusal of a recommended vaccine in the last year, and a recent analysis of data from the 2004 National Immunization Survey found that 28% of parents were unsure about, delayed, or refused vaccines. This rising tide of immunization hesitancy is also manifest by legislative initiatives to introduce personal belief or philosophical exemptions in states that have not allowed them and increased media attention to concerns about vaccine safety and immunization mandates.

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munication ignores the realities of how people are persuaded. Social marketing may hold the key. As a model for behavior change, social marketing is a process that applies traditional marketing principles and techniques to influence target audience behaviors that benefit society as well as the individual. In this article, we explain how the origins of immunization hesitancy and the psychology of persuasion provide the rationale for exploring social marketing as an innovative solution to addressing vaccine hesitancy.

ORIGINS OF IMMUNIZATION HESITANCY

Despite the incredible technical achievements of modern medicine—vaccines being near the top of the list—the boundaries of medicine, science, and technology are evident in our limited capability to address new morbidities (mental health, obesity, substance abuse) or ease the burdens of chronic disease. These relative limitations have occurred alongside a growth in consumerism, product liability, and malpractice litigation as well as an increasing number of instances where patients question the recommendations of medical authority. Consequently, some patients turn to alternative medical systems. Visits to complementary and alternative medicine providers, in fact, have recently been found to outnumber visits to primary care physicians.

The rise of mass media and the Internet has drawn vaccines into this changing sociocultural landscape. From Jenner’s era through Salk’s, medical hypotheses, such as those concerning vaccine safety, were initially vetted in scientific forums before being communicated to the general public. Today, mass media allow new theories concerning vaccine safety to become a topic of public debate before the scientific community has had the opportunity to deliberate on them. Unproven hypotheses, even unsubstantiated or erroneous accounts of vaccine reactions, can easily be promulgated and validated simply by repetition in popular media.

Similarly, case reports, although accorded very limited weight as scientific evidence, can have great influence on public opinion. The criteria required to establish causality in the court of public opinion are quite different than those in science or a court of law. For example, the parents of Hannah Poling sued the Department of Health and Human Services under the Vaccine Injury Compensation Program when she exhibited behavioral features seen in autism after receiving immunizations at 19 months of age. The court awarded compensation for a possible vaccine-related injury and, in doing so, appeared to strengthen the claim that vaccines cause autism despite the fact that Hannah’s autistic features were likely attributable to encephalopathy due to a mitochondrial enzyme defect and in the face of overwhelming scientific evidence that refutes any causal link between vaccinations and autism. Other nonvaccine examples abound: breast implants are seen as the cause of chronic illness by the public—and manufacturers of those products were found liable—despite an absence of valid scientific evidence linking breast implants to disease.

A fundamental reason why case reports of alleged vaccine reactions and hypotheses about adverse events associated with immunization are rapidly disseminated by the Internet and electronic media is because controversy sells. Journalists seek to achieve balance by presenting both sides of a controversy but often do so irrespective of the qualifications and scientific credibility of the proponents of either side. Even these attempts at balance may be in jeopardy as the threat of vaccine-preventable disease becomes less apparent and the risks of vaccines are perceived to be more newsworthy.

Parents are ultimately caught in the middle. As they try to decide what is best for their child, they must navigate these “controversies” in search of the truth. This is not easy, as the media portrayal of these controversies rarely provides an evaluation of the merits of the 2 conflicting viewpoints but rather propagates the notion that “multiple rationalities and truths now prevail.” When multiple “truths” carry equal weight, those who cite the authority of evidence-based recommendations from various professional groups and government agencies have no more credibility than those who cite other opinions or theories. What takes the place of evidence-based medicine is the belief that there are “many opinions based on very different views and theories of the world.”

One strategy for addressing vaccine concerns is to confront intentional misinformers in public forums. These tactics, however, are unlikely to be successful when meeting with a concerned parent. Although good science is essential in both, it is not sufficient in either. The origins of immunization hesitancy suggest that in situations where parental concern is high, medical expertise is trumped by empathy, openness, and perceived honesty. A behavior change model that embraces this is needed.

SOCIAL MARKETING AND PUBLIC HEALTH

As a discipline, social marketing was first introduced by Philip Kotler in the early 1970s. A useful definition of social marketing is the application of commercial marketing technologies to the analysis, planning, execution and evaluation of programs designed to influence the voluntary behavior of target audiences in order to improve their personal welfare and that of society.

Using marketing techniques proven in the commercial sector to address social issues in the public sector has had a profound positive impact.

Social marketing is an approach to influencing healthy behaviors and has roots in several behavior change theories familiar to public health. The Exchange Theory, the Theory of Planned Behavior, and the Health Belief Model all play an important part in social marketing. Social marketing is also informed by social psychology, marketing science, and human reaction to messages. Its campaigns seek to rigorously segment the market to target specific populations and then use the “marketing mix” (the 4 Ps of marketing: place, price, product, and promotion) to develop unique strategies for each to achieve the desired behavior change.

An illustrative example of social marketing—and why this strategy might apply to immunization hesitancy—is the Washington State Department of Health (WSDOH)
tobacco cessation program. The campaign was launched in 2000 when there were an estimated 1 million adult tobacco users in the state, about 70% of whom had some desire to quit. This 70% was chosen as the campaign’s target audience because of their interest in but reluctance to commit to quitting. This population has similarities with parents who wish to protect their children against vaccine-preventable diseases yet remain hesitant to immunization. For instance, smokers who are contemplating quitting but fail to do so may have uncertainty about the beneficial health effects of quitting or concerns about its adverse effects, such as weight gain. They also may be influenced by peer group pressures or a fear of failing or simply lack support in quitting. These concerns are analogous to vaccine-hesitant parents, who may have uncertainty about the threat of vaccine-preventable disease, concerns about vaccine safety and the number of injections required, or lack of trust in medical authorities.

The tobacco cessation program used the WSDOH as the messenger of the program’s campaign elements: (1) a product strategy—a Quit Line where callers could talk with personal counselors; (2) a price strategy—free counseling and medications for those qualifying; (3) a place strategy—phone availability 7 days a week, 5 AM to 9 PM; and (4) a promotion strategy—ads appearing on television, billboards, brochures, wallet cards, bar coasters, and posters with messages that were encouraging and supportive. By the time the Quit Line received its 100 000th call in 2007, 13% of callers had quit, there were 235 000 fewer smokers in the state, and tobacco use had decreased from 22% to 17%, placing Washington state fifth in the nation. While these outcomes cannot be attributed solely to the campaign, as secular trends in smoking and (4) a promotion strategy—ads appearing on television, billboards, brochures, wallet cards, bar coasters, and posters with messages that were encouraging and supportive. By the time the Quit Line received its 100 000th call in 2007, 13% of callers had quit, there were 235 000 fewer smokers in the state, and tobacco use had decreased from 22% to 17%, placing Washington state fifth in the nation. While these outcomes cannot be attributed solely to the campaign, as secular trends in smoking undoubtedly contributed to the decline, they are nonetheless impressive.

SOCIAL PSYCHOLOGY OF PERSUASION

Social marketers focus intently on message delivery and response. With regard to immunizations, the goal of any social marketing strategy is to convince parents that their child will be better off if he or she receives vaccinations. While supporting data and a rational argument are important factors, they are not sufficient. Aristotle realized this 2000 years ago when he argued that persuasion requires not only a reasonable argument and supporting data (logos), but also a messenger who is trustworthy and attentive to the audience (ethos) and a message that resonates with the audience’s emotions (pathos). There is a rich social psychology literature that supports Aristotle’s observations.

The most effective messenger is one the audience likes and trusts and who is working toward the same goals as those in the audience. Messengers are most likely to be effective if they have established trust, made clear the fact that they share a common goal with the parent (ie, the welfare of the parent’s child), and developed a positive relationship by displaying a willingness to listen respectfully and attend to parental concerns. While pediatricians are often seen as possessing these traits, they can no longer shoulder the full burden of immunization communication. The relatively brief duration of the well- or acute care visit, the myriad topics that must be addressed (growth and development, nutrition, behavior, safety), and the increasing prevalence of vaccine safety concerns require a broader societal communication strategy.

A communication strategy that goes beyond the pediatrician’s office requires that the messengers (whether groups or individuals) be likable, trustworthy, and seen as working toward the same goal as parents. Jenny McCarthy has been an effective messenger for the anti-vaccination movement precisely because she is perceived this way. Having a child with autism helps establish all 3 of these factors, but just as important are the photos that appear in popular media of her and her boyfriend, Jim Carrey, standing elbow to elbow with other protesters in Washington, DC. Those photos further convey the sense that she is just like other concerned parents and shares a common interest with them.

Finally, the most successful communication strategies are those that recognize that in order for the message to make an impact on the audience, it must be capable of getting their attention and engaging their minds in a way that leads to action. An emotional element is essential to both of these functions. A message that can arouse the audience emotionally will be more likely to get their attention and motivate them to change their behavior.

One of the most effective strategies for arousing an audience emotionally is through the use of stories and narratives. Any communication strategy designed to increase vaccination rates will need to use powerful stories that resonate with the audience by engaging their emotions. Multiple studies have found that a compelling story about a single victim is far more likely to move an audience to action than is the use of data. For a message to be effective, the messenger and the way the message is presented are both important. The use of rational argument and data alone will not be sufficient.

COERCION, MANIPULATION, AND MISREPRESENTATION

The appeals to emotion that are often made by a social marketing campaign’s promotional strategy may leave some feeling that social marketing is coercive. And while coercion may not be all that bad—many argue that coercion is justifiable in vaccination programs when others are placed at substantial risk of serious harm or generally to control behaviors that are not only harmful but simply wrong—we would argue that social marketing is not coercive. Coercion requires that one’s choices are unfavorably narrowed using threats, force, or other forms of compulsion in another’s attempt to make that person do something he or she would not otherwise do. Social marketing does not narrow the options of its target audience; it offers new ones, and offers are not generally considered to be coercive.

It would be more reasonable to ask, rather, whether social marketing constitutes an inappropriate manipulation by public authorities that undermines individual freedom and autonomy. Because many social marketing
efforts use advertising to communicate the benefits of a desired behavior change, and advertising "hardly aims to make [us] more autonomous,"44 social marketing could be considered to be a manipulative attempt to change behavior. We would argue, however, that social marketing falls short of inappropriate manipulation on 3 counts. First, it is not harmful. Its aim is to protect both individual and public health. Second, since the behavior change social marketing seeks is voluntary, it respects autonomy at least to some degree. Finally, it presents truthful information that has been validated using evidence-based methods.

This last aspect draws attention to the fact that a social marketing campaign must not be misrepresented. Amidst its attempt to leverage the emotional components of decision making, a campaign's messages and promotional strategy must ultimately be honest and backed by credible science. Given the current context of misinformation and fear surrounding vaccines, accurate representation seems paramount. On achieving this, though, social marketing, with its own appeal to emotions, seems to be an appropriate and justifiable method to address immunization hesitancy.

**A SOCIAL MARKETING PLAN TO INCREASE TIMELY IMMUNIZATION FROM BIRTH TO AGE 24 MONTHS: THE WASHINGTON STATE CAMPAIGN**

Washington state ranks 46th among US states in immunization rates for the 15-dose series42 and is not on track to meet its goal, based on the Healthy People 2010 objective,43 for 80% of children aged 19 to 35 months to have received all recommended vaccines. Consequently, Washington state is in the process of developing a social marketing campaign to increase timely immunization in children. To accomplish this, the market has been segmented both demographically, to accommodate the fact that immunization schedules vary considerably with age, as well as behaviorally, since the basis of knowledge, attitudes, and behaviors relative to vaccination differ greatly among parents. The intent is to focus on parents who are expecting or currently have a child up to the age of 24 months (to reflect that vaccination against most vaccine-preventable disease occurs by the age of 24 months) and who might be categorized as hesitant toward immunizations. Hesitant parents are defined as being unsure whether to immunize their children or are intentionally delaying 1 or more immunizations for nonmedical reasons. Hesitant parents, rather than parents who refuse vaccinations, will be targeted because they are a larger group,13 more likely to be open to considering vaccination, and likely to proceed to vaccination if perceived barriers are addressed.

Background characteristics of this target market in Washington state show that hesitant parents tend to be older than 30 years, have an income more than $70,000, and have a college degree. The planning team will conduct research with this market to determine their specific and unique perceived barriers and benefits related to timely immunizations. A positioning and marketing mix strategy will then be carefully designed to decrease these barriers and to highlight these benefits. Outcome measures of the proposed campaign include rates of timely immunization and exemptions from the Washington state immunization requirement to attend licensed child care centers.

The message of the campaign will likely have to work to dispel myths that impede adoption of a new behavior. An example of such a myth is that propagated by the "Green Our Vaccines" message that childhood vaccines are toxic.44 To do so, the campaign will have to consider whether to adopt a 2-sided message that both praises vaccination and identifies its shortcomings at the same time. Two-sided messages have been shown to be more effective when the audience is inclined to be suspicious about the product and when the audience is better educated,14 as is the case with the target audience in the proposed campaign. An example of such a message might be: “Although 30% of parents don’t get their kids the right shots at the right time, most parents do.”

The campaign will need spokespersons to convey its message who can, like McCarthy, provide a warm and sympathetic face for vaccine advocacy and tell an emotional story that resonates with parents. Two types of individuals might fit these criteria: a formerly hesitant parent who has come to realize the importance of vaccinations after their unvaccinated child became seriously ill with a vaccine-preventable disease and/or a recognizable, respected public figure who has personal life experience with vaccine-preventable disease and is willing to advocate for immunization. The parent might relay his or her struggle with the decision of whether to vaccinate, concerns about vaccination risks, and harrowing story about the vaccine-preventable disease, sequelae, and economic burdens he or she endured. Alternatively, a celebrity with directly applicable personal experience can both draw attention to the value of vaccination and help shape public discourse on immunizations. While the actress Amanda Peet’s advice for parents to “take medical advice about immunizations from medical experts, not celebrities”45 is a welcome counterweight to McCarthy, a celebrity with an emotionally compelling personal provaccination story can capture the attention of vaccine-hesitant parents.

Along with the campaign spokesperson(s), trusted local health care providers will serve as credible messengers to the campaign by giving voice to fact-oriented messages and illustrating the value of vaccination through the use of real stories about real people who have been affected by vaccine-preventable disease. Local media channels, such as talk shows and television news commentaries, and presentations at moms’ groups and birthing classes are a couple of possible venues for local providers to advocate for vaccination as part of the campaign. Providers will also be integral to a place strategy that will include counseling of hesitant parents at prenatal visits and postdelivery.

The messenger for the campaign will also include some of the many sponsors that have already been assembled for the development phase of the social marketing campaign. These groups include the WSDOH, Community Pediatric Foundation of Washington, Seattle Children’s Hospital, Group Health Foundation, and Within Reach, a private nonprofit organization whose mission is to serve as the foremost catalyst for improvements in maternal,
Although the development phase of the Washington state social marketing campaign to increase timely immunizations in children from birth to age 24 months is being funded by the aforementioned sponsors, the preliminary budget will only become clear after fully formulating a marketing mix strategy and determining how this strategy will be monitored and evaluated. Social marketing campaign costs differ depending on the size and geographic location of the target audience, the product and any incentives that are offered, how often the product is offered, how the product is communicated to the target audience, and how the impact is assessed. The Washington state tobacco cessation program, however, provides an example of the cost of a social marketing campaign. It is estimated that $830 in promotional and operating costs are needed for each person who stops smoking as a result of calling the Quit Line. The state savings per person who quits smoking is estimated at $1800 per year, a payback of less than 6 months. In 2007-2008, the budget for the Tobacco Quit Line and its promotion was $2.8 million.

CONCLUSIONS

Immunization hesitancy has complex social and cultural origins yet clear consequences. More parents are refusing vaccines, and outbreaks of vaccine-preventable disease due to exemptions remain a problem. Social marketing is a behavior change strategy that offers a promising, nuanced population-level approach toward maintaining the societal consensus for immunizations and potentially increasing vaccination rates. Its use of proven commercial marketing techniques, behavior change theory, and social psychology is designed to capture attention and motivate change. A social marketing strategy's appeal to emotion is an appropriate way to persuade the target audience to voluntarily achieve the desired goal and may be an effective response to the antivaccination movement. The Washington state campaign to increase timely immunization among children from birth to age 24 months offers an example of such a strategy in development.

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REFERENCES


**Announcement**

**Trial Registration Required.** In concert with the International Committee of Medical Journal Editors (ICMJE), *Archives of Pediatrics and Adolescent Medicine* will require, as a condition of consideration for publication, registration of all trials in a public trials registry (such as http://ClinicalTrials.gov). Trials must be registered at or before the onset of patient enrollment. This policy applies to any clinical trial starting enrollment after July 1, 2005. For trials that began enrollment before this date, registration will be required by September 13, 2005, before considering the trial for publication. The trial registration number should be supplied at the time of submission.

For details about this new policy, and for information on how the ICMJE defines a clinical trial, see the editorials by DeAngelis et al in the September 8, 2004 (2004; 292:1363-1364) and June 15, 2005 (2005;293:2927-2929) issues of JAMA. Also see the Instructions to Authors on our Web site: www.archpediatrics.com.