ANTI-VACCINATION MOVEMENT

Introduction

As society's experience with morbidity and mortality from many communicable diseases wanes, there is increasing focus on adverse events associated with vaccination (McPhillips & Marcuse, 2001). Concerns about vaccine safety have found their way throughout the modem world. Parents are choosing not to have their children vaccinated due to fears of adverse consequences as well as religious, philosophical, ethical and political beliefs. As vaccination rates in some areas drop, the public health concerns are increasing (Blume, 2006). Globally, vaccination has achieved almost universal benefit for very little cost. There is a growing anti-vaccine movement, especially in developed nations whose populations have been protected from many serious infectious diseases for several generations. As the cultural memory of the impact of deadly diseases (polio, pertussis, and smallpox) has dissipated, the public has become focused on the safety and side effects of the vaccines that prevent them (Poland & Jacobson, 2001).

Opposition to Vaccination Anti-vaccine groups have grown in size and influence primarily through the use of the Internet and global media outlets that allow information to spread around the world almost instantaneously. In a single search, a recent study identified over 300 anti-vaccine websites. While well meaning, many of these sites promote false or misleading information and often misinterpret scientific information (Poland & Jacobson, 2001). Through the media, anti-vaccine activists have been able to turn a few adverse events into apparent widespread calamity. The important public health message regarding the tremendous achievements of widespread vaccinations has been lost to media sensationalism (Speir, 2002). The incidence of vaccine refiisal and exemption requests has steadily increased over the past decade.

In many states, religious groups have sought exemptions based on their beliefs about medicine or the sanctity of the body. Other groups have legal, ethical and philosophical objections to state mandated vaccination. Since vaccine policy is set at the state level, there are many differing policies in place across the United States. However, state courts and the U.S. Supreme Court have generally upheld the authority of governments at the local, state and federal level to maintain or protect the health of the public through mandates (May & Silverman, 2005). In the past 25 years, there has been a massive increase in vaccine development. New products introduced to the market have included vaccines against varicella (chickenpox), rotavirus, Lyme disease, hepatitis A and B, pneumonia, and human papilloma virus (HPV) (McPhillips & Marcuse, 2001).

Recent trends include a developing erosion of the "cultural consensus" regarding the value of universal vaccinations have complicated the immunization debate. As the cultural consensus has eroded, the science of immunization development is rapidly expanding. Public policy regarding mandates is being formulated in the face of growing opposition that also includes ethical and cost considerations (Feudtner and Marcuse, 2001). The Measles-Mumps-Rubella (MMR) vaccine has been at the center of recent vaccine controversy. Many parents and autism advocacy groups have distributed information claiming that the childhood vaccines that contain the preservative thimerosal and the MMR vaccine have resulted in mercury poisoning and autism in young children.

Vaccination Beliefs Current survey research examining vaccine-related beliefs among the general public and health care workers in the U.S., Europe and Asia have revealed that a majority of both groups have concerns related to flu vaccine safety and efficacy. Both groups share the belief that flu is not a serious health threat. These surveys support earlier findings that

both groups held about flu and other recommended vaccinations. A recent survey of influenza vaccination attitudes and practices among U.S. registered nurses found that those who were most knowledgeable about vaccine safety and efficacy and reported themselves to be "very aware" of CDC recommendations about flu vaccination were far more likely to recommend vaccination to patients and to be vaccinated themselves.

Many healthcare professionals have misperceptions about the safety and efficacy of vaccination (Salmon et al., 2004). Significant examples of the dangers associated with decreased public and healthcare provider support come fi-om outbreaks of pertussis in Japan and measles in the United Kingdom. In 1974 in Japan, two children died less than 24 hours after receiving the Diphtheria-Pertussis- Tetanus (DPT) vaccine. Despite many years of successful use, the Japanese Ministry of Health and Welfare eliminated the requirement for the DPT vaccine. Rates of vaccinated children dropped fi"om 80% to 10% in two years (Uchiyama, Kurosawa, & Inaba, (2007). The reaction to the MMR scare in the U.K. resulted in significantly decreased vaccination rates and subsequent measles outbreaks among unvaccinated children.

Health Belief Model

The Health Belief Model (HBM) is a theory that may be used to explain the reluctance of healthcare providers and parents to seek or recommend vaccination for young children. This conceptual model was developed in the 1950s by social psychologists employed by the U.S. Health Services. The HBM attempts to explain why individuals do or do not practice positive health behaviors and what influences their decision making. Four major components are included in the HBM model: perceived barriers to recommended health actions, perceived benefits of recommended health actions, perceived susceptibility to the disease, and perceived severity of

the disease. Other modifying factors may include media, health professionals, personal relationships and incentives for carrying out the recommended behavior.

Misperceptions Regarding Vaccination

Gellin, et al., (2000), found a large number of misconceptions regarding vaccination among the general public. The result of the public's misconceptions associated with the MMR vaccine and with thimerosal has been a general decrease in childhood vaccination rates, significant litigation, and several outbreaks of vaccine preventable disease. In 2005, Salmon et al. found that rates of non-medical vaccination exemptions were increasing on a yearly basis. Current rates of childhood vaccination in the United States should be enough to provide herd immunity and protect the unvaccinated. However, disease outbreaks that have occurred in communities with large groups of unvaccinated children have caused great concern in the public health community (Downs, 2008).

Previous studies that evaluated the beliefs of healthcare workers (HCWs) regarding influenza vaccination have indicated that they have some of the same of the same misperceptions as the general public. Average yearly rates of HCW immunization are about 38% in most US based studies. The main barriers to HCW vaccination was fear of adverse reactions, doubt that flu was a serious disease, fear of injections, doubts about efficacy, and the misconception that the flu vaccination can cause the flu (Hofman, Ferracin, Marsh, & Dumas, 2006).

Media Influence on Vaccination Beliefs

A 2008 study of the cognitive frameworks used by parents in the U.S. to evaluate the safety and necessity of vaccination found that most parents used the Internet to locate information about vaccinations. Anti-vaccination websites provided a much more emotionally appealing case than the information provided by the CDC and other official government and

industry sources. Although the parents reported that they trusted the CDC, their decisions were found to be influenced the most by the compelling stories found in anti-vaccination websites. Downs et al. (2008) reported that statements made by public figures, such as those made by presidential candidate John McCain, Don Imus and former model Jennie McCarthy that connected vaccines and autism, have significant influence on public perceptions of vaccine safety.

The researchers concluded that there was a need for health care professionals and official sources of evidence based information to tailor their message to respond to the specific beliefs and concerns of the public. Healthcare Provider Influence on Vaccination Behaviors Knowledgeable health care providers can have a significant positive effect on a parent's decision to vaccinate their children. Parents who reported that a health care provider was influential in their decision to vaccinate were twice as likely to believe that vaccines were safe for children. Of parents who believed vaccination was unsafe, those who made the decision to proceed with vaccination despite their concerns reported that their decision was influenced by a trusted health care professional. This group had a 24% higher vaccination rate than the group who reported that their health care provider did not attempt to influence their decision (Smith, Kennedy, Wooten, Gust, & Pickering, 2006).

References

Blume, S.(2006). Anti-vaccination movements and their interpretations. Social Science and Medicine, 62, 628-642

Downs, J.S., Bruine de Bruin, W. & Fischhoff, B., (2008). Parents vaccination comprehension and decisions. Vaccine, 26(12), 1595-1607.

Feudtner, Chris., and Marcuse, Edgar K., Ethics and immunization policy: Promoting dialogue to sustain consensus. Pediatrics, 107(5), 1158-1164.

Hofmann, F., Ferracin, C., Dumas, R., (2006). Influenza Vaccination of healthcare workers: a literature review of attitudes and beliefs. Infection 34: 142-147.

May, T., and Silverman R.D. (2005). Free-riding, fairness and the rights of minority groups in exemption from mandatory childhood vaccination. Human Vaccines. (1), 12-15.

McPhillips, H., and Marcuse, E.K. (2001). Vaccine safety. Current Problems in Pediatrics, 31, 95-121.

Poland, G.A. & Jacobson, R.M. (2001). Understanding those who do not understand: a brief review of the anti-vaccine movement. Vaccine (19), 2440-2445.

Smith, P.J., Kemiedy, A.M., Wooten, K., Gust, D.A., Pickering, C.K. (2006). Association between healthcare providers influence on parents who have concerns about vaccine safety and vaccination coverage. Pediatrics,(5), 1287-1292.

Speir, R E. (2002). Perception of risk of vaccine adverse events; a historical perspective. Vaccine 20, S78-S84.