Emergy Vaccination Campaigns

These days we have an intense concern about protecting Americans from the consequences of an intentional introduction of a potent biologic agent. The federal government has requested each state to prepare and test plans to distribute vaccines and/or medications to the entire population in a ten-day period, using the support of the "Strategic National Stockpile". As the public health agency for the state of Rhode Island, we have developed plans for the emergency distribution of vaccines and prophylactic medications to very large numbers of people.

The mechanics of such a campaign are daunting. We have drawn on our experience with immunizing a quarter of a million children and youth against meningitis in 1998 to design our distribution system. Key lessons learned in that campaign have guided our decisions on the role of:

- Community physicians, nurses and pharmacists;
- Local governments;
- Hospitals;
- Volunteers, and
- Media.

The campaign to immunize our children against meningitis offers another critically important lesson: The decision-making process about whom to immunize or provide prophylactic medications and when to do so is political. Science should inform the political process, but a decision to provide or not to provide emergency mass vaccination is never going to be "purely scientific." The decisions about how to provide the service have many political dimensions, including perceptions of equity, the openness of the process, expectations for results, and the effectiveness of the solutions. The final judgment of success or failure will be made in the political arena, rather than the scientific one.

The Mechanics of Mass Immunization Campaigns

Having decided that a mass immunization campaign against meningitis was necessary on February 24, 1998, the Rhode Island Department of Health (HEALTH) put together a plan to immunize all eligible Rhode Islanders within six to eight weeks.

HEALTH implemented an intense public information campaign in an effort to reduce the level of panic. The public information campaign had three prongs:

1. Inform the public about meningitis and steps to prevent its spread.
2. Provide consistent information about eligibility to receive state-supplied immunizations.
3. Publicize the immunization clinic sites and times.

HEALTH determined that municipalities were the best entities to organize the immunization clinics, even though the state has no local health departments and little municipal involvement in public health. Each municipality was asked to plan its clinics and to involve one or more responsible physicians who would provide the medical direction for its campaign and one or more nurses to oversee clinics. HEALTH provided training on how to organize and conduct a mass immunization clinic. HEALTH provided model parental consent forms, vaccine certificates and clinic logs. HEALTH managed the purchase and distribution of vaccine to the municipalities for clinics (and to private physicians providing vaccines in their practices).

Vaccine distribution began on February 28, 1998. More than 245 community and school-based clinic sessions were approved and scheduled in the 39 cities and towns of Rhode Island. In a period of just over six weeks, nearly 200,000 were immunized.

What we learned

Municipalities were able to tailor responses to their communities with a minimum of directives (a single person in charge, a physician who assumed medical direction, a nurse who took responsibility for protecting the vaccine, and simple record-keeping requirements). The responses ranged from several small communities working together with a community hospital to multiple school-based community clinics with a volunteer workforce.

Communities struggled with multi-lingual populations, and schools provided enormous expertise in reaching them.

The out-pouring of volunteers was tremendous and very helpful, especially because the municipal staff knew the people.

Emergency immunization clinics are expensive. The vaccine costs alone exceeded $5 million. HEALTH's staff time was diverted from other programs, and the costs of overtime and compensatory time rippled through programs for the following year. Volunteer time and in-kind contributions by hospitals, clinics and schools easily doubled the $5 million in vaccine costs.

The role of the media in reducing panic, controlling the spread of disease and publicizing the availability of services is vital and not accidental. (Our experience with the media...
and the lessons we have learned from it are more fully discussed in articles in The Public Health Communicator, Second Quarter 2003 and in the American Journal of Health Communication, Winter 1999.)

**THE POLITICS OF MASS IMMUNIZATION CAMPAIGNS**

Even in the Rhode Island meningitis event, important national concerns emerged, including the implications of our chosen course of action for vaccine supply to the military and the consequences to other states choosing a different course of action. The Congressional delegation was immediately interested, and requested services and direction from federal agencies at the same time the Governor and state legislators were consulting with state agencies and experts. Local government officials caucused with their local agencies and experts, and identified their own concerns and solutions.

A bioterrorist attack will be considered a crime and an act of war. Access to critical scientific and medical information will be balanced against law enforcement and national defense concerns. Medical and scientific information about exposure and transmission risks, alternative prevention strategies, vulnerable populations, is essential for decision-making. The rhetoric of emergency management is that all response, like all politics, is local. Our experience in the Rhode Island meningitis event suggests that national concerns will be significant in determining the mechanics of an emergency mass prophylaxis campaign. Local sensitivities alter the interpretation of the information.

Structures for deciding the distribution of scarce resources, including vaccines and prophylactic medications, are inherently political. Mounting an emergency immunization campaign is expensive. Public monies are at stake. So are private monies such as health insurance dollars and out of pocket costs. In the meningitis event, the political decisions included

- Protecting the vaccine recipients from out-of-pocket costs in order to maximize acceptance of the vaccine,
- Maximizing the revenue from health insurers to support the immunization campaign,
- Limiting the direct state general revenue financing of the campaign,
- Minimizing the liability risks accruing to the state. Municipalities and health care providers sought assurances of liability protection, which is available under the state law, and
- Preventing windfall profits to health care providers, vaccine manufacturers and families.

Science can only carry the argument so far. Scientific information can support several different strategies with only minor differences in the interpretation of underlying data. In the meningitis event, we needed to determine whether the experience of meningitis in Rhode Island was really unusual, and unusual enough to invest $5 to $10 million dollars to immunize a large number of children. The data were equivocal. Medical opinion ranged from stating that immunization against meningitis was unwarranted to stating that the harm to children, families, and medical practice from continuing panic and possible meningitis required immediate decisive action by the state. Public and political opinion covered the same range, but was more intense on the side of immediate state action. The determination that medical practices were completely overwhelmed by the demand for vaccines spurred by the deaths of three children led to a political decision by the state to provide a mass immunization campaign.

Local experts on vaccines, infectious disease specialists, our primary care physician advisory committee and the medical society all contributed to the medical decision-making process. So did the health insurance plans, the hospitals and other health care providers. The meningitis vaccine available was safe, effective against most, but not all, the strains of meningitis circulating in the state. Antibiotic regimens were only available for immediate contacts of cases. There was variable experience in other countries with mass campaigns using antibiotics. All required multiple doses, and would need to be repeated if there were a new case, since they provide protection only while being taken. A significant number of physicians had been providing meningitis vaccine to patients on request, but the price was very high. (Private practices had no access to 50-dose vials at a reduced cost. It was only being provided to the military in this format. The logistics for using 50-dose vials without wastage are significant.) Declaring a mass immunization campaign for the state provided key legal protections.

And there are the public's political concerns.

A successful mass immunization or prophylaxis campaign is dependent on the public's trust.

If people do not accept the prophylaxis strategy, they will not use it. They will also not take the other infection control steps that are essential to control the spread of infectious disease: limit exposure, seek care promptly if symptoms appear, and follow the treatment regimen. In the meningitis event, limiting exposure was critical, since the vaccine protection is limited to certain strains. (Neisseria meningitidis group B is not prevented by the current vaccine and is present in Rhode Island in most years.) Hand-washing and limiting sharing of saliva are important, and were heavily promoted. Prophylactic antibiotics for contacts to meningitis cases were promoted regardless of immunization status.

Perceived discrimination is one factor in accepting or rejecting a prophylaxis strategy. The national experience with anthrax as a weapon demonstrated the potency of perceived inequities in determining compliance with prophylaxis. While some unexposed persons hoarded ciprofloxacin, exposed postal workers
were less likely to accept and complete the prophylactic regimen. The extra effort to communicate with minority groups, low-income persons, the disabled and others likely to perceive inequity or miss the information altogether is essential. The national effort to vaccinate against smallpox provides many examples of the importance of equity in the decision whether to accept a prophylaxis strategy.

In a time when alternative medicine theories abound and the media speak with great certainty, the careful analysis of science is prone to misinterpretation. The public face of major decisions like launching an emergency mass immunization campaign is critical. Our political process is the means by which we choose among competing alternatives, sifting the data and weighing the evidence. The meningitis experience teaches us the importance of the political process, in medicine and in the state’s decision-making. It demonstrates the pitfalls and possibilities of political decision-making in public health questions.

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