Hepatitis B: Community Solutions

Since hepatitis B vaccine first became available in 1981, national Centers for Disease Control and Prevention (CDC) recommendations have evolved from targeting high-risk persons to a strategy of interrupting hepatitis B virus (HBV) transmission in all age groups through prevention of perinatal HBV infection (screening all pregnant women for HBV infection and proper treatment of newborns), routine vaccination of all infants to prevent infections later in life, vaccination of all previously unimmunized 11- and 12-year-old children, and catch-up vaccination of high-risk children, adolescents, and adults. This strategy has resulted in a more than 50 percent decline in the rate of HBV infection in the United States since 1987.[1]

Perhaps the most challenging component of implementing this approach has been reaching high-risk adolescents and adults. Access to these groups is often a major problem, and those at highest risk are often those with the greatest barriers to health care services (eg, no insurance, cultural issues, no primary care provider)—problems stemming from the lack of national health policies guaranteeing universal access to health care and an inadequate supply of primary care clinicians.

Within existing constraints the experience reported by Gjerdingen for the high-risk Hmong community her practice serves provides guidance for others planning similar efforts in high-risk communities.[2] She started with a chart review of 1585 patients; 337 (21 percent) had received HBV vaccine or had a documented natural immunity, 489 (31 percent) were potentially at risk but never contacted because of a variety of logistic reasons, 325 (21 percent) refused participation, and 434 (27 percent) were subsequently screened for HBV susceptibility. Of the 174 patients Gjerdingen considered susceptible (although it is questionable whether the 66 patients with anti-HBc-positive tests were susceptible), 129 received vaccination, indicating that such practice-based endeavors can be productive.

The proportion of the group considered by members of the practice to be at risk after the chart audit who were actually screened (36 percent) is impressive for such an undertaking. It is likely that engaging a Hmong medical school graduate as the research assistant and modifying the method of obtaining consent to not require a signature were major factors leading to this response. (Both the investigator and her investigational review board are to be commended for making this latter change.) For other communities, engaging community leadership and developing local publicity, among other measures, should be planned carefully to help those persons at risk understand the potential benefits of the program and to reduce suspicions, particularly those related to cultural barriers. Multilingual camera-ready resources are available through the Internet (www.immunize.org) and might be of help.

One objective of the Gjerdingen study was to determine the cost effectiveness of serologic testing before vaccination, and she concluded that such testing was worthwhile in all groups aged 5 years or older. The vaccination costs ($255 for children and $386 for adults) were quite high compared with those in other recent reports.[1] Based on $86.52 and $178.50 wholesale vaccine costs, one report suggested preimmunization testing is worthwhile if the prevalence of previous infection exceeds 30 percent.[3] The author's costs might have been based on commercial retail vaccine rates and might have included clinic visit and administration costs as well. Working with local or state health departments to obtain vaccine at public health rates or soliciting the support of state funds might result in a marked decrease in the cost of the vaccine. An expansion of the CDC indications for HBV vaccination in 1996 makes public health supplies of vaccine available to additional groups for whom it was not available during the Gjerdingen study.

Traditional cost-effectiveness analysis of labo-

Submitted 27 May 1997.

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ratory testing, in which the trade-off is between the cost of vaccine for everyone (with no previous testing), and vaccination of only those susceptible (with testing) is not appropriate in this case, however, particularly from the perspective of family physicians responding to the health care concerns of individual patients, their families, and community. One noncost-related issue is that preimmunization testing might reduce the likelihood of patients actually receiving vaccine, because the vaccination series is not started at the initial contact. This issue appears to have been important in the Hmong community studied, leading Gjerdingen to offer vaccine to those refusing testing.

The usual cost-effectiveness analysis of testing also does not consider the added benefits of finding those with chronic hepatitis B who might be eligible for therapeutic intervention, the opportunity for interviewing contacts of patients with chronic hepatitis B, and providing public health education to the HBV-positive patients to reduce the likelihood that they will place others at risk in the future. Recently, new antiviral agents have been shown to dramatically decrease serum HBV DNA, to lead to clearance of HBeAg, and to normalize previously elevated serum aminotransferase levels in some patients with chronic and progressive HBV liver disease.[4] Unfortunately, short-term therapy is usually followed by rapid return of viral DNA and no sustained improvement in chronic liver disease. Ongoing studies of long-term antiviral therapy, with and without interferon alfa, might lead to an important breakthrough in the treatment of chronic hepatitis B infection and accompanying liver disease.[5] Should such advances occur, serologic testing in high-risk communities could lead to substantial benefits for both those susceptible to hepatitis B infection and those with chronic disease.

The distribution of serologic markers for hepatitis B found in the Hmong refugee population studied by Gjerdingen raises a number of issues for the family physician working with other high-risk communities and caring for individual patients. Gjerdingen found that 66 of the 434 patients (15 percent) tested anti-HBc positive, but their test results were negative for both HBsAg and anti-HBs. In American blood bank experience 80 percent of the time this pattern represents a false-positive anti-HBc positivity. In this Hmong population, however, it is highly likely to reflect distant immunity with very low levels of anti-HBs. Although some recommend revaccinating at-risk patients whose anti-HBs titers have fallen below 10 mIU/μL, this recommendation applies only to those whose immunity is due to vaccination and not to those whose immunity is a result of a previous infection.

The diagnostic value of the immunization challenge administered by Gjerdingen, while informative from a research perspective, is probably not warranted clinically (at least in adults) in this population. The distant immunity interpretation is supported by the 94 percent of these 66 patients being 20 years old or older compared with 63 percent of the entire population. A reasonable approach in future community programs for similar populations would be to screen by testing only for HBsAg and anti-HBs, with the laboratory instructed to test for anti-HBc only for adults whose initial test results were both negative. Adults likely to have incurred infection years earlier whose test results are positive only for anti-HBc might reasonably be considered immune and not in need of vaccine or further evaluation unless actively engaging in high-risk behaviors.

Finally, of note, the yield in the proportion of patients found to be susceptible was substantially less in those aged 20 years or more compared with younger groups (12 percent versus 37 to 54 percent, respectively). This finding is in keeping with the national targeting of infants, children, and adolescents for hepatitis B vaccination. In the United States, however, 84 percent of acute HBV infections and 58 percent of chronic infections are acquired during adulthood, with the majority occurring in those persons 20 to 39 years old, and those 25 to 29 years being at highest risk.[1] Given that in Gjerdingen's Hmong community 18 percent of those aged 10 to 14 years, 28 percent of those 15 to 19 years, and 17 percent of those 20 years old or older have chronic HBV, the peer group of young adults still susceptible are likely to present a constant threat. Searching out susceptible young adults is likely to result in both individual and public health benefits. At the same time, doing the same for older adults, except through questioning regarding current practice of risk behaviors, might be omitted (a cutoff of 40 years is reasonable, given national data).

Unfortunately, even when risk behaviors have led to sexually transmitted diseases or human im-

munodeficiency virus infection, all too often HBV screening and vaccination are not done, in part because of the cost involved, as reflected in a recent report of the experience of 14 Boston community health centers. In these centers only 2 (1.1 percent) of 178 such susceptible patients received vaccine.[6] Gjerdingen has shown that a practice-based community intervention can make a real difference. I hope that others in similar settings will take the leadership to do the same.

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The Case for Hospitalists: Effectiveness or Expediency?

Consumer demand for lower cost and higher quality care is rapidly transforming the health care system and profoundly changing physician practice.[1] Managed care, in which providers, payors, and purchasers agree to provide health services within a fixed budget, places a premium on coordinating care efficiently and cost effectively while improving health outcomes and patient satisfaction. In general, managed care has increased substantially the value of primary care physicians because of their ability not only to diagnose and treat the vast majority of common health problems but also to coordinate patient care.

At the same time, managed care has brought changes in the delivery of services traditionally managed by primary care physicians alone. For example, treatment of mental health problems, diabetes, cancer, and other chronic conditions is now either directed by health teams coordinated by primary care physicians or managed entirely by specialty physicians.[2] Some argue these health care delivery changes represent genuine efforts to improve efficiency and health outcomes in the current managed care environment. Others contend that these changes simply reflect turf battles among generalists, specialists, and other health professionals, with decisions about the division of labor based on political expediency.

The question of effectiveness versus expediency can also be posed regarding the recent emergence of the full-time "hospitalist," physicians whose only responsibility is caring for inpatients.[3] Today, an estimated 1500 physicians are full-time hospitalists in the United States.[4] Managed care is, in part, fueling this division of hospital and outpatient care. As a strategy to manage inpatient care and costs more efficiently, some health maintenance organizations (HMOs) are paying for hospital-admitting panels of physicians to care for their members who become hospitalized. These HMOs employ hospitalists, typically internal medicine generalists and specialists, as well as family physicians, who are usually paid a set fee per patient. Some of these hospitalists work full time, although most probably split their time between their own office and the hospital. The primary care physicians can visit their patients in the hospital, although they may not receive additional reimbursement beyond their regular capitation payment. The hospital admitting physician is responsible for communicating with the patient's primary care physician upon the patient's discharge.

Three years ago Humana Health Plan started such a program, called their Hospital Inpatient Management System, which now serves more than 2 million plan members. A growing number of large multispecialty groups, group-staff model

Submitted 16 June 1997.

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