with men, and 70% of persons with multiple sex partners with reported acute hepatitis B had been previously incarcerated or treated for an STD. Both STD clinics and correctional facilities are settings in which hepatitis B vaccination services are recommended.

Programmatic Success in High Risk Settings

In August 1999, Denver Public Health (DPH) began offering hepatitis B vaccine to adults at high risk in the public STD clinic. Initial funding for the vaccine was first allocated by the Denver City Council. Patients were asked if they had a history of hepatitis B vaccination or disease and questioned about risk behavior; no serologic screening was done. The selective vaccination process was cumbersome, and clinicians required frequent reminders to implement it. Of clients seen in the STD clinic, 58% accepted the vaccine and were directed to receive it in the immunization clinic in the same building. Of clients who agreed to the free vaccine, 29% left before receiving it. Procedures changed when additional funding was secured in January 2002. Client selection was discontinued, and all clients of the STD and HIV Counseling and Testing clinics were offered vaccine, which increased its initial acceptance to 77%. Vaccination rates were further improved by having personnel available to vaccinate clients on site, before they left the clinic.

DPH used a vaccine registry, adapted from one implemented to track pediatric vaccinations, to assess clients' vaccination status before doses were given. The results indicated that clients were not differentiating between vaccinations and various other tests or medications in self-reporting of immunization status. Use of the vaccine registry was crucial for evaluating completion rates and eliminating revaccination of persons already immunized.

A highly successful hepatitis B vaccination program can be established within another public health infrastructure. The process requires commitment from all involved programs because changes in service delivery are needed to accommodate vaccination. The largest issue confronting programs is continued funding for vaccine.

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Refugees, Forced Displacement, and War

Women make up high proportions of refugee and internally displaced populations, and they suffer unique consequences of war and conflict because of gender-based violence, discrimination, and caretaking roles. Refugee women are especially vulnerable to infectious disease, as well as threats to their mental health and physical safety.

Infectious Causes of Maternal Death in Refugee Populations in Afghanistan

The Reproductive Age Mortality Survey (RAMOS) in Afghanistan consisted of death identification followed by death investigation. The study identified 357 deaths of women of reproductive age (15–49 years) among residents of 16,000 Afghani households and investigated 80% of these deaths through the verbal autopsy method. The maternal death rate is extremely high (1,600–2,200 deaths per 100,000 live births) in Afghanistan as a whole, and the estimate in one study site was the highest ever recorded (6,500/100,000 live births in Ragh, Badakshan). The vast majority of maternal deaths were attributed to direct obstetric causes. Infectious causes, primarily tuberculosis, malaria, and postpartum sepsis, accounted for 12% of deaths. Tetanus, tuberculosis, and malaria often claimed women's lives while they were pregnant.

Women faced substantial barriers to care, and very few accessed preventive or curative services. In a country of very low resources and conflict such as Afghanistan, policy development and program implementation to reduce maternal deaths are challenging. Causes of maternal death are multifactorial and cannot be resolved simply by increasing the percentage of deliveries by skilled birth attendants. Infectious causes of death identified in this study illustrate the need for comprehensive maternity care, including preconceptional, prenatal, and postnatal care, integrated with other reproductive health and primary care services.

Impact of War on Women's Health: Refugees from Liberia and Sierra Leone in Nigeria

A study carried out between January and March 2004 with Liberian refugee women residing in the United Nations refugee camp at Oru village in Ogun State, Nigeria, shows how forced migration contributes to increased incidence of both communicable and noncommunicable diseases in women. Liberia's civil war resulted in approximately 215,000 refugees at the end of 2001; 50% to 80% of these refugees were women. During the civil war, an estimated 40% of all Liberian women were raped. Loss of family forces women to depend on men and may lead to rape, forced marriage, prostitution, domestic

abuse, and increasing risk of HIV and other sexually transmitted infections. Lack of postwar shelter compounds other problems and increases exposure to mosquitoborne diseases. Lack of clean drinking water introduces risks of bacillary dysentery, cholera, diarrheal disease, typhoid, hepatitis A, and other diseases.

Researchers concluded that solutions to the negative impact of war on women's health should be based in education, empowerment, efficient publicity, and effective policies. A sub-ministry devoted to women's affairs and maternal and child health was recommended, with funding specifically earmarked for women's health. Regular screening for preventable or treatable disease should be done in the home country and continued after the safety period ends.

Violations of International Women's Rights: Effects on the Overall Health of Women

Findings from a study by Physicians for Human Rights indicate that nearly half of all households in three southern cities in Iraq experienced human rights abuses among household members between 1991 and 2003. Such abuses represent considerable challenges for justice and accountability and emphasize the need to address individual and community mental health needs on a large scale. The prevalence of mental illness represents a challenge to the Iraqi health system, since <100 psychiatrists are reported to practice in the country, and therapeutic medications and social support systems are lacking.

Households surveyed expressed support for a government that would protect and promote human rights, including the rights of women. However, the lack of support for certain women's rights by both men and women may make the full range of women's human rights difficult to achieve. Consequently, restrictions on women's rights or ineffective representation of women may have substantial, adverse health consequences for women and girls. This study suggests the need for a gender- and rights-based approach for reconstruction and community health and development in Iraq.

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Prevention of Hepatitis C in Women

Hepatitis C is a major public health problem in the United States. Although the incidence of new infections declined substantially in the past decade, approximately 25,000 persons are infected each year. In total, an estimated 2.7 million Americans have chronic hepatitis C virus (HCV) infection and are at risk for HCV-related chronic liver disease and hepatocellular carcinoma (HCC).

The most common exposure associated with HCV infection is use of injection drugs. Other less commonly identified risk factors include sexual contact; transfusions before blood screening was implemented; and occupational, nosocomial, and perinatal exposures. Although sources of HCV infection are the same for men and women, the overall prevalence of HCV infection is lower among women than men, which is likely related to the lower prevalence of injection-drug use among women.

The risk for HCV transmission from mother to infant is about 5%–6%; transmission occurs only from women who are HCV RNA positive and is higher among those coinfected with HIV (≈18.7%) than among women not infected with HIV (≈5.4%). The influence of factors such as maternal viral titer and interventions at the time of delivery is unclear. Studies indicate that breastfeeding is not a risk factor for perinatal transmission.

Most hepatitis C prevention strategies are gender neutral and include screening and testing donors of blood, plasma, organ, tissue, and semen; virus inactivation of plasma-derived products; effective infection control practices; identification, counseling, and testing of at-risk persons; and medical management of infected persons. Pregnant women with risk factors for infection should be identified, screened, and counseled regarding the risk for perinatal transmission.

Clinical Reports

Although risk factors for HCV acquisition are similar among men and women, women are at higher risk of acquiring HCV from sexual contact with an HCV-infected partner and more likely to be initiated into drug use, share needles, or be injected by a sexual partner. Among HCV-infected women, pregnancy may lead to worsening of histologic disease. Other gender differences in the natural history of hepatitis C are that the rate of spontaneous HCV clearance may be higher among women than men, the risk for fibrosis progression and HCC are lower in women than men, and alcohol use by women with hepatitis C is likely to have more pronounced negative effects on the liver than is observed among HCV-infected men. There do not appear to be substantial gender differences in response to currently available therapy.