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Incentives and barriers regarding immunization against influenza and hepatitis of health care workers

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ABSTRACT

A meeting of the Viral Hepatitis Prevention Board in Barcelona in November 2012 brought together health care professionals concerned with viral hepatitis and those concerned with other vaccine-preventable diseases (especially influenza) in order to share experiences and find ways to increase the protection of health care workers through vaccination. Despite the existence of numerous intergovernmental and national resolutions, recommendations or published guidelines, vaccine uptake rates in health care workers are often shockingly low and campaigns to increase those rates have been generally unsuccessful.

Participants reviewed the numerous incentives and barriers to vaccine uptake. Reasons for low uptake range from lack of commitment by senior management of health facilities and unclear policies to lack of knowledge, and denial of risk. Positive factors included leadership, involvement of all concerned parties, reminders and peer pressure. Innovative approaches, including the use of social media, are needed. It was concluded that strategies should be modified appropriately to reach specific health care worker populations at risk and that policies for preventing infection of health care workers could include obligatory health checks to determine vaccination status or immunity. Further, mandatory vaccination of health care workers may be the only effective means in order to achieve high vaccination coverage rates.

Suggested possible future activities included: refurbishment of the image of the occupation health profession; resolving the logistical problems of administering vaccine; elaborating policy on managing health care workers who have been vaccinated against hepatitis B at birth or in early childhood and who are now starting to work in the health professions; and embedding and applying policies on vaccination against vaccine-preventable diseases in all health care facilities and training institutions. Above all, national action plans need to be written, with the involvement of health care workers in their design and implementation.

In November 2012, the Viral Hepatitis Prevention Board (VHPB) convened a meeting in Barcelona, Spain, where experts in the field of public health, viral hepatitis and immunization discussed how to reach health care workers with vaccination in order to protect them and others (indirectly) against vaccine-preventable diseases, especially hepatitis B [1]. This paper presents the topics discussed and the conclusions of the meeting.[1]

1. Context: the current situation

Globally about 60 million people, mostly women, are employed in the health care professions [2], from nurses and surgeons to maintenance staff and medical directors. At some stage in their career, almost all health care workers are at risk of infection and therefore need protection against vaccine-preventable diseases. Conversely, unvaccinated health care personnel who are infected may transmit vaccine-preventable diseases to their patients. It is the responsibility of health care facilities to provide, to the extent possible, a safe environment for patients and staff. VHPB was instrumental in changing European Union legislation in 1992 so as to recognize that responsibility [3,4], which was also recognized by the Occupational Health and Safety Administration's regulations in the USA [5].

Not only does vaccination against vaccine-preventable diseases protect health care workers, their families and their patients, it safeguards essential health care services. Generally the vaccines recommended for health care workers are those against hepatitis B, influenza (seasonal), measles, mumps, rubella, varicella, tetanus, diphtheria, pertussis and meningococcal infections. In certain circumstances vaccines against tuberculosis (especially given the rise in multi-drug resistant disease), poliomyelitis, hepatitis A and other diseases may be recommended. In Europe there is a high variability in the recommendations among countries in terms of vaccines and the targeted groups of health care professions [14]. In some settings proof of vaccination is required – for employment and access to education, for instance; in others, it is recommended.

Intergovernmental, international and national bodies have been active in developing policies, recommendations and guidelines

[1] The slides of the presentations given at the Barcelona meeting are available on the VHPB website http://www.vhpb.org/2012-november-barcelona-spain. These presentations include extra references that may serve the statements made in this report.

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not only for protecting the health workforce but for preventing transmission of infectious pathogens in health settings and morbidity and mortality in patients, and for reducing the consequences (including costs) of nosocomial infections. For instance, in 2003, a European Consensus Group (supported by the European Association for the Study of the Liver (EASL) and the British Liver Trust (BLT)) strongly advised healthcare workers to be vaccinated against hepatitis B, and to know their HBV and HCV infection status (preferably at an early stage in their career) [6]. The World Health Assembly has promoted immunization of health care workers against hepatitis B in 2007 (WHA 60.26) [7] and urged governments to formulate and provide vaccination strategies, infection-control measures, and the means to ensure injection safety for health care workers in 2010 [8]. And in 2009, the World Day on Occupation Safety and Health focused on health care workers in the context of health systems and services.

The Pan American Health Organization (PAHO) has taken the lead in the Region of the Americas, especially Latin American countries, in developing a regional strategy against hepatitis B and implementing the global plan of action on workers' health. Through a multidisciplinary approach and intersectoral alliances, partnerships and advocacy it has obtained excellent results. For example, in Peru, following a presidential decree in 2008, more than 500,000 health care workers have been vaccinated against hepatitis B.

In the USA, the Occupational Safety and Health Administration's Bloodborne Pathogen Standard [9] sets out what employers must do to protect workers who are occupationally exposed to blood or other potentially infectious material. Hepatitis B vaccination and improvements in infection control have dramatically reduced the disease burden from an estimated 17,000 cases of hepatitis B virus infections in health care workers in 1983 [10] to 10 reported cases in 2010, although the actual number was estimated to be 263 [11]. Following the update in 2011 on immunization of health care workers [12], the Advisory Committee on Immunization Practices is currently deciding on how to ensure protection of health care workers vaccinated in the past (pre-exposure testing for anti-HBs antibodies or no pre-exposure management). The Centers for Disease Control and Prevention (CDC) regularly issue both general and disease-specific recommendations and guidance for immunization of clinicians and other health care providers against vaccine-preventable diseases. Individual States have laws on immunization of health care workers and hospital inpatients as well as for health professional schools. Since 2007 the Joint Commission has required health care facilities to establish an annual influenza vaccination programme that would at the minimum offer onsite vaccination, monitor vaccination coverage, and provide education for health care personnel [13].

A recently published survey of 30 European countries (27 European Union members plus Norway, Switzerland and the Russian Federation) found that vaccination against hepatitis B and annual vaccination against seasonal influenza are almost universally recommended for health care workers. In eight countries vaccination against hepatitis B is mandatory or required for employment. Policies for vaccination of health care workers also exist against mumps (12 countries), measles or rubella (15 countries), varicella (17 countries), diphtheria-tetanus (14 countries), pertussis (9 countries), poliomyelitis (11 countries), hepatitis A (11 countries), tuberculosis (9 countries), and meningococcal disease (4 countries) [14]. Moreover recommendations and legal frame among European countries in terms of health care workers vaccination are very variable.

The Vaccine European New Integrated Collaboration Effort (the VENICE II project), commissioned by the European Centre for Disease Prevention and Control, collects, shares and disseminates information and best practices in field of vaccination, including hepatitis B, for 29 countries through a network of European country experts [15]. Two of its study reports issued so far deal with hepatitis B and mandatory or recommended vaccinations for health care workers. Provision of vaccine is not free of charge in all countries. The project confirmed that eight countries are implementing mandatory policies of some kind for hepatitis B vaccination of health care workers: two for all health care workers, one for special groups only and the others as a requirement by employers when hiring staff. Provisional conclusions include the recommendation that every vaccination strategy should be monitored through assessment of uptake and that data should be standardized for comparability between countries. In a pilot project, a European web-based tool (EVACO) is being developed for collecting data on vaccination coverage [16].

In spite of the plethora of policies, recommendations and health promotion activities, influenza and hepatitis vaccine uptake rates in health care workers are low, often shockingly so (see Table 1), within countries and in different age and socioeconomic groups. In some cases rates have even declined with time: rates of influenza vaccination of health care workers fell in Switzerland during the recent H1N1 pandemic.

Studies have also revealed woeful ignorance, nonchalance or disregard about the value of vaccines against vaccine-preventable diseases as well as misconceptions among health care workers. The previous devastation wrought by infectious diseases and the benefits brought by vaccination programmes seem to have been forgotten: in 1900, hundreds of thousands of people died in the USA from mumps, measles and diphtheria, whereas in the year 2000 the figure was just over 400 (J.-P. Baeyens, data presented at meeting [1]). Many general practitioners today remain uninformed about viral hepatitis even though an estimated 23 million people in Europe are thought to be chronically infected with hepatitis B or C virus and most carriers are unaware of their infection [17]. In France a survey showed that 17% of occupational physicians did not recommend measles vaccination despite the recent large measles epidemic in this country and 31% did not recommend varicella vaccine [18]. A rapid survey conducted by Belgian students using an online questionnaire and social media elicited a good response, revealing limited knowledge about vaccination programmes, policies and testing (K. Jenssens & E. Vervecken, data presented at meeting [1]), with wide variations between European countries, confirming similar results from Barcelona [19].

Infection of patients by health care workers has been amply demonstrated. Many outbreaks of vaccine-preventable diseases (recently for instance measles, pertussis and varicella) have been experienced in hospitals. Serious nosocomial outbreaks not only have high morbidity and mortality but entail high costs of containment and jeopardize health service delivery through absenteeism or closure of wards; fully protecting staff through vaccination (especially against influenza) is cost-effective. The European Liver Patients Association argues for programmes to detect infected health care workers and the European Consensus Group recommends that no healthcare worker shown to be a possible source of viral hepatitis transmission should perform exposure-prone procedures [6].

Hospital managements are unlikely to communicate or publicize information about nosocomial outbreaks, but without better knowledge of these events appropriate prevention strategies cannot be designed.

In a move that prompted a vigorous ethical debate, the University Hospital of Geneva, Switzerland, introduced a policy in 2012 when the influenza vaccination coverage rate was 27% that each vaccinated health care worker had to wear a badge stating "I am vaccinated to protect you" and non-vaccinated staff had to wear a mask and a badge saying "I am wearing a mask to protect you"