While it makes sense to regularly monitor the temperatures and symptoms of hospital workers with exposure to Ebola, no additional measures are really either necessary or useful. Not only is a policy of mandatory quarantine impractical, it also serves as a disincentive for the very healthcare workers who are needed to care for these sick patients in a manner that will improve their chances of survival while containing the epidemic. In conclusion, mandatory quarantine of asymptomatic healthcare workers who have had exposure to patients infected with Ebola virus simply does not compute.

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Gary P. Wormser, MD;1
Eugene D. Shapiro, MD2

Affiliations: 1. Professor of Medicine, of Microbiology and Immunology, and of Pharmacology, New York Medical College, Valhalla, New York; 2. Professor of Pediatrics, of Epidemiology of Microbial Diseases and of Investigative Medicine, Yale University, New Haven, Connecticut.

Address correspondence to Gary P. Wormser, MD, New York Medical College, Division of Infectious Diseases, 40 Sunshine Cottage Road, Skyline Office #2N-C20, Valhalla, NY 10595 (gwormser@nymc.edu).

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Short- and Long-Term Effects of a Challenge Dose of Hepatitis B Vaccine in Individuals With and Without Residual Anti-HBs

To the Editor—In the recent article “Response to challenge dose among young adults vaccinated for hepatitis B as infants: importance of detectable residual antibody to hepatitis B surface antigen,” Spradling et al. raise important questions regarding (1) the considerable resources spent in settings such as occupational and student health clinics where individuals are tested for antibody to hepatitis B surface antigen (anti-HBs) many years after vaccination and (2) the need to identify persons who retain HB-induced immunity despite a decrease in anti-HB level to <10 mIU/mL. The authors report excellent response to a challenge dose among 16–19-year-olds with residual anti-HB levels (0.5–9.9 mIU/mL) but lower response in those without detectable antibodies (0 mIU/mL).1 Our data, obtained from subjects vaccinated at school age with 2 different vaccines, also indicate the presence of immune memory in those with residual antibodies and in the great majority of those without detectable antibodies.

We conducted two 15-year-long follow-up clinical trials.2 Subjects were vaccinated at 8–10 years of age with 3 doses (0, 1–2, and 6 months) of Engerix (10 µg; n = 1,129) or Recombivax (2.5 µg; n = 1,126). Subjects were tested for the presence of anti-HBs 1 month following the third dose and were randomly allocated to be retested 5, 10, or 15 years later. Nonresponders to the primary vaccination (anti-HBs <10 mIU/mL) received additional doses of vaccine and were excluded from the follow-up. Despite different vaccine dosage used and almost twice higher GMTs in Engerix group when compared to Recombivax (7,307 vs 3,800 mIU/mL), similar seroconversion (99.1%–99.7%) and seroprotection rates (98.9%–99.2%) were observed in the 2 study groups.2 The great majority of followed subjects (99.1%–100%) showed the presence of immune memory defined as at least 10 mIU/mL and a 4-fold anti-HB titer increase 1 month following the challenge dose. Here, we present the response to a challenge dose in subjects with and without residual antibodies (0.5–9.9 or 0 mIU/mL) 5, 10, or 15 years after vaccination (Table 1), as well as the persistence of ≥10 mIU/mL anti-HB levels 1, 5, and 10 years following challenge-dose administration.3,4

The criterion for the presence of immune memory was met by 99.1% (226 of 228) and 94% (79 of 84) of subjects with and without residual anti-HB levels, respectively. Among subjects with an immune memory, anti-HB titers ≥10 mIU/mL were still persistent 1, 5, and 10 years after challenge in 91.3% (158 of 173), 77.3% (109 of 141), and 64.4% (38 of 59), respectively.3,4

Similar to the study by Spradling et al., our results indicate that virtually all those vaccinated with residual anti-HBs titers (0.5–9.9 mIU/mL) have an immune memory to the HBV surface antigen (HBsAg). However, in our study, a higher proportion of those without residual anti-HBs showed an immune memory compared to those in the aforementioned study (94% vs 82%). This difference might be related to the exclusion of nonresponders to primary vaccination (∼1%), to different age at the time of vaccination, to longer period between challenge dose administration and blood collection (4 weeks vs 2 weeks), to differences in assay performance characteristics at the low end of antibody detection, or to shorter follow-up before challenge in our studies (5–15 years vs 16–19 years). However, our results indicate no trend toward a lower proportion of subjects showing an immune memory with time since vaccination among those with and without residual anti-HBs (Table 1). The similar proportion of subjects...
with an anti-HB titer ≥10 mIU/mL 15 years post-primary vaccination (68.2%) and 10 years post challenge (64.4%) brings into question the long-term utility of a booster dose. Additionally, the loss of antibodies or immune memory (measured as presence of anti-HBs) does not necessarily mean that the individual is not protected against clinical or chronic infection.5 Recent data suggest the presence of cellular immunity in vaccinated individuals without residual anti-HBs.5,6 Although the role of cellular immunity is not well understood, epidemiological data show that individuals not infected at the time of vaccination almost never develop acute clinical or chronic hepatitis B.5,8

In conclusion, our results and those from Spradling et al. suggest that there is no need for boosters in vaccinated individuals with residual anti-HB antibodies.

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Vladimir Gilca, MD, PhD1,2,3
Nicole Boulianne, MSc1,2,3
Donald Murphy, PhD4
Gaston De Serres, MD, PhD1,2,3

Affiliations: 1. Quebec Public Health Institute, Quebec City, Quebec, Canada; 2. Department of Social and Preventive Medicine, Laval University, Quebec City, Quebec, Canada; 3. Division of Infectious and Immunological Diseases, Laval University Research Hospital Center, Quebec City, Quebec, Canada; 4. Quebec Public Health Laboratory, Montreal, Quebec, Canada.

Address correspondence to Vladimir Gilca, 2400 d’Estimauville, Quebec City, Quebec, Canada G1E 7G9 (vladimir.gilca@inspq.qc.ca).

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