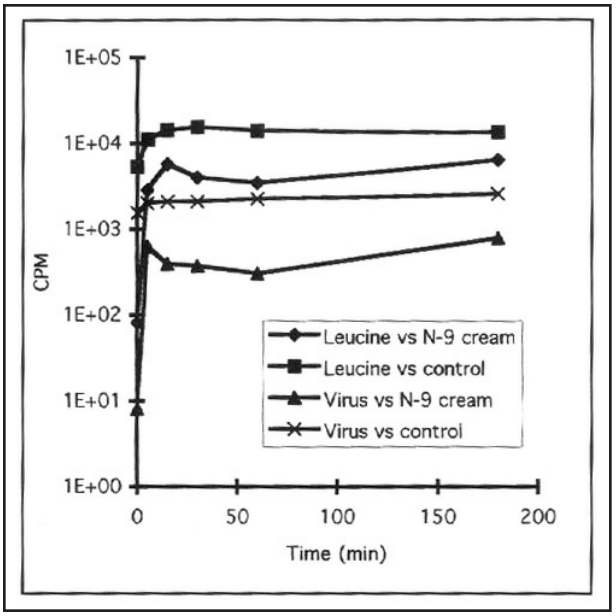

FIGURE 1. Barrier function of the cream with 5% nonoxynol-9. Radiolabeled leucine (n=4) and radiolabeled HSV-1 (n=6) were tested, and the average was plotted. Counts at all time points were significantly ($P<.05$) lower for cream compared to their respective controls.

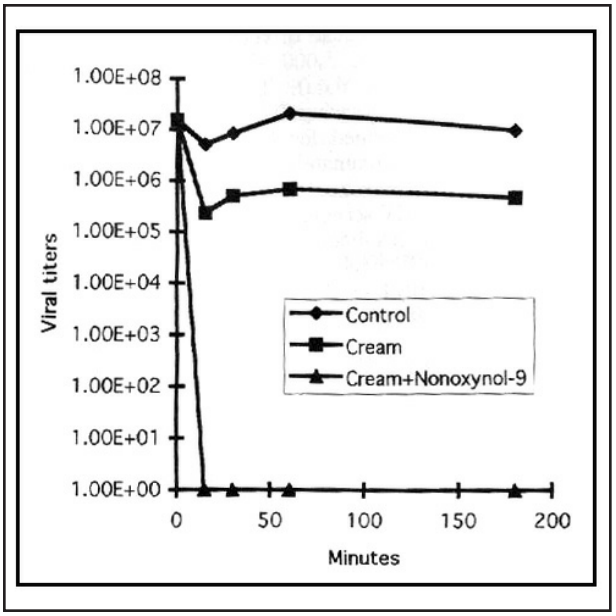

FIGURE 2. Antiviral activity of the cream base and the cream with 5% nonoxynol-9. The average of the titers for each sample (n=2) are plotted. Viral titers at all time points after 0 minutes were significantly ($P<.05$) lower for the cream with nonoxynol-9 compared to the control.

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Administrative Controls for TB: "Keep Doing What You've Always Done, and You'll Get What You Always Got"

To the Editor:

We appreciate the editorial of Dr. Wurtz[1] in response to our report entitled "Implementation and Evaluation of an Algorithm for Isolation of Patients With Suspected Pulmonary Tuberculosis."[2] We would like to clarify several points that she raised.

First, before 1993, data on patients isolated with suspected pulmonary tuberculosis (TB) were not collected consistently at the Massachusetts General Hospital (MGH). Therefore, we were unable to compare isolation data before and after the implementation of the algorithm to determine if use of the algorithm improved the rate of isolation. Anecdotal reports of inconsistent isolation prior to 1993 prompted the development of the algorithm.

Second, during 1993 and 1994, isolation data were collected only from patients with at least one positive acid-fast bacilli (AFB) sputum smear or sputum culture that grew *Mycobacterium tuberculosis.* Only the 69 patients so identified were analyzed in our report. Dr. Wurtz has mistakenly assumed that these 69 patients represent all of the patients isolated for suspected pulmonary TB in 1993 and 1994, and has calculated an apparently low "rule-out ratio" (ie, ratio of patients isolated to TB cases) of 1.7:1. Such a ratio cannot be determined, given the lack of data on all patients isolated for suspected pulmonary TB during 1993 and 1994. However, based on data from 1995, 114 patients were isolated for suspected pulmonary TB at the MGH, and nine pulmonary TB cases were diagnosed, yielding a rule-out ratio of 12.6:1.

Third, Dr. Wurtz's comment that ". . . 19% of all patients evaluated for TB had positive acid-fast bacilli . . . smears but negative cultures . . . a surprisingly high smear false-positive rate" deserves comment and clarification. In 1993, three patients had AFB smear-positive specimens that were culture-negative. However, in 1994, 10 patients had AFB smear-positive, culture-negative specimens; six of these patients had specimens that were processed during July and August 1994 in the MGH Clinical Microbiology Laboratory. An investigation revealed that contaminated water in the laboratory had been used to prepare both potassium hydroxide and phosphate-buffered saline solutions used in the processing of AFB smears. This contamination most likely was due to a failure in the reagent water filtering system, and the problem has since been corrected. All six patients were initially isolated based on their AFB smear-positive respiratory specimens, but, when contamination was suspected and when all respiratory specimens were negative for *M tuberculosis,* they were not evaluated further for TB. If these six patients are excluded during the period 1993 and 1994, the percentage of patients with smear-positive, culture-negative specimens was 11% (7/63) of patients with positive smears or cultures and a much smaller proportion of all patients isolated for suspected TB.

Although we agree that the use of the TB algorithm did not result in the immediate isolation of all patients subsequently diagnosed with pulmonary TB, the calculated failure

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rate of the algorithm of 39% (12 of 31) is somewhat misleading. This rate includes both patients for whom isolation was delayed for >24 hours (n=7) or not implemented (n=5) and does not differentiate by level of infectiousness. Of the 12 patients with pulmonary TB who were not placed in negative-pressure isolation rooms within 24 hours of admission to the MGH, 5 were AFB smear-positive, 6 were smear-negative, and 1 patient had no smear obtained (TB diagnosed on autopsy). If only high-risk patients (ie, smear-positive, more infectious) are prioritized for immediate isolation, then only 5 of 31 patients with pulmonary TB were not isolated appropriately (algorithm failure rate=16%). The timing and duration of isolation of smear-negative patients is more uncertain, given the knowledge that only a small minority of such patients will be found to be culture-positive. The use of more rapid and sensitive diagnostic tests that currently are undergoing evaluation at our hospital and others may assist in the assessment of these patients.

Finally, we agree that clinical algorithms are subject to limitations and cannot substitute for careful clinical judgment. However, use of the TB algorithm at the MGH has improved the awareness of TB among clinicians and other healthcare workers and has assisted infection control personnel in the ongoing evaluation of TB control program needs and priorities throughout the hospital. We agree that new, as well as feasible, approaches to the management of this problem are needed.

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Triple Combination Antiretroviral Prophylaxis for Needlestick Exposure to HIV

To the Editor:

Zidovudine has been used widely for prophylactic treatment of persons exposed to human immunodeficiency virus (HIV) through needlestick exposures. There is limited evidence of efficacy due to the relatively small risk of infection after needlestick and the difficulty of implementing randomized, placebo-controlled trials.[1] There are, however, clearly documented failures, despite high doses of zidovudine given soon after HIV exposure.[2] There is also increasing frequency of zidovudine resistance in persons with HIV who have been taking zidovudine. Recent work has demonstrated that triple antiretroviral therapy with protease inhibitors is extremely effective at decreasing viral load among patients with established HIV infection.[3] Although the Centers for Disease Control and Prevention (CDC) recently recommended triple combination antiretroviral prophylaxis for needlestick exposure to HIV, there is no data on the tolerability or effectiveness of this therapy.[4]

A healthy, 38-year-old healthcare worker was performing femoral vein phlebotomy on a patient with acquired immunodeficiency syndrome. The healthcare worker accidentally sustained a deep intramuscular index-finger needlestick with an 18-gauge needle that had just come out of the femoral vein with obvious blood on it. The wound was bled, and triple therapy with D4T, 3TC, and indinavir was begun within 2 hours of the needlestick. Triple therapy was continued for 2 weeks without any side effects. Human immunodeficiency virus serology at baseline and at 3- and 6-month follow-up was negative. The healthcare worker remained in excellent health.

This is the first reported case of triple combination antiretroviral therapy, including a protease inhibitor, to prevent HIV infection after a significant exposure. The absence of HIV infection after this needlestick exposure is not surprising, given the low likelihood of developing subsequent HIV infection. As noted in the recent CDC recommendations, triple combination therapy is likely to be more effective than zidovudine; however, it is certainly more expensive, and there is potential for increased toxicity. Zidovudine was not used in this case because the index patient had been on zidovudine for many years. Consideration of a patient's prior antiretroviral treatment may be useful in guiding appropriate prophylactic strategies in the event of occupational exposure.[5] We are encouraged that a registry of prophylactic treatment has been established (telephone: 1-888-737-4448). It will be important to describe the regimen taken and its tolerability, the extent of needlestick injury, and the rate of seroconversion. These data should be interpreted in the context of index patient viral load and previous antiretroviral therapy.

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