

and pityriasis versicolor, respectively, in the past. The differentiation of the lipophilic yeasts was based on the cellular morphology, which has been shown to be unstable in lesions as well as in culture.<sup>3</sup> Analysis of the G+C composition of several independent isolates and DNA reassociation studies revealed that both *P. ovale* and *P. orbicularis* are indeed synonymous and represent a single species—*Malassezia furfur*.<sup>4</sup> Therefore, the correct designation of the agent implied in the pathogenesis of seborrhoeic dermatitis in patients with AIDS would have been *M. furfur* at the time the review was written. In the meantime more extended typing has established a total of seven species within the genus *Malassezia*. Some of the strains belonging to two of these species—ie, *M. globosa* and *M. slooffiae*—were isolated from seborrhoeic dermatitis in patients with AIDS.<sup>5</sup>

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## Risk of HIV-1 infection after human bites

**SIR**—The first documented seroconversion of HIV-1 following a human bite<sup>1</sup> raises an important concern regarding occupational transmission of HIV from patient to health care workers. The HIV-1 seroconversion described suggests that for HIV-1 transmission to occur, there must be blood in the mouth of the source patient and a break in the integrity of the skin of the health-care worker.

74 hospitals in the USA participating in the Exposure Prevention Information Network (EPINet) report their employees' occupational percutaneous injuries and exposures to blood or body fluids to researchers at the University of Virginia. A review of EPINet data from 1993 to 1995 was conducted to determine the rate of bite exposures in health-care workers and the frequency of associated risk factors that might increase occupational infection risk. There were no occupational HIV-1 seroconversions in participating hospitals, and 50/70 (71%) hospitals reported that overall 1.7% of exposures involved an HIV-1-positive source patient. 50 of 10 125 incidents involved a health-care worker who was bitten by a patient; an annual rate of 0.12 reported bites per 100 occupied hospital beds. On the basis of 518 400

occupied US hospital beds, this yields an estimated annual total of 622 reported bite exposures in US hospitals. The job categories and locations of bites are shown in the table.

19 of the 50 bites (38%) involved non-intact skin or a percutaneous injury to the health-care worker. Information concerning presence of blood in the source patient's mouth was available for 36 of the 50 cases. Of these, blood was noted in three cases of exposure to intact skin and in none of the cases in which there was a break in the integrity of the skin.

In contrast to the case reported,<sup>1</sup> of the 28 incidents in which descriptions of the bites were available, none involved an involuntary bite as might occur during a seizure. In the 28 cases, 14 source patients were combative, ten were children, three were psychiatric patients, and one involved the removal of an orthodontic appliance.

These data show that occupational bites are fairly infrequent. Nevertheless, because 86% of bites were to the hand and arms of health care workers, the frequency of these exposures can be minimised by consistent glove use and arm protection when health-care workers are in close contact with paediatric, psychiatric, or combative patients.

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## Tuberculosis skin tests

**SIR**—Maderazo (Sept 21, p 832)<sup>1</sup> addresses the question of tissue response to cutaneous tuberculin testing in patients with suspected *Mycobacterium tuberculosis* disease. We contest the clinical relevance in this setting. The ideal method of reading the test can be debated, but it is more important to define the test's true value in diagnosis.

Several workers have found tuberculin testing to be neither sensitive nor specific. Holden and colleagues<sup>2</sup> reported false negative rates of 48.7%, 33.9%, and 17.4% for commercial purified protein derivative (PPD), standard PPD, and stabilised PPD, respectively, among 115 simultaneously skin-tested proven *M. tuberculosis* patients. This work highlights the inadequacy of the test for diagnosing the condition and, furthermore, illustrates the variable responses to the different preparations of PPD. Subgroup analysis of these 115 cases showed that the test was less reliable in both the elderly and the sicker patients, adding credence to the previously reported occurrence of anergic states. Odelwo<sup>3</sup> found similar shortcomings of the tuberculin test among 37 proven cases and 75 controls. In this study Mantoux responses of 9.9 mm represented a sensitivity of 86.5% and a specificity of only 28%, and there was no significant difference between the number of cases compared with controls for those showing reactions of 9 mm. By contrast, Rose and colleagues<sup>4</sup> cite more optimistic data for the tuberculin skin test. They retrospectively examined data for 643 694 naval recruits and a population of 3826 confirmed cases of tuberculosis. The results showed a range of sensitivities: from 0.59 to 1.0 depending on the cutpoint for skin response size. The specificity ranged from 0.95–1.0. Rose and colleagues suggest that the test compares favourably to other screening and diagnostic methods.

The diagnosis of *M. tuberculosis* is not easy, and involves consideration of the patient's ethnic and social background, age, and nutritional and general health status. Traditional clinical assessments—including chest radiographs and

Body part*	Frequency	Job category	Frequency
Hand	24	Nurse	25
Arm	23	Attendant	9
Chest	5	Therapist/counsellor/teacher	7
Head	2	Other	7
Leg	1	Physician	2
<b>Total</b>	<b>55</b>	<b>Total</b>	<b>50</b>

\*Some health-care workers were bitten on more than one body part.

Table: Characteristics of reported bites 1993–95