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Risk of HIV-1 Infection After Human Bites

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THE FIRST DOCUMENTED SEROCONVERSION OF HIV-1 FOLLOWING a human bite¹ raises an important concern regarding occupational transmission of HIV from patient to health care worker. The HIV seroconversion described [in *The Lancet* article "Transmission of HIV-1 by human bite"] 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.

Seventy-four hospitals in the U.S. 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. Fifty (.5%) of 10,125 total 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. Based on 518,400 occupied U.S. hospi-

tal beds, this yields an estimated annual total of 622 reported bite exposures in U.S. hospitals. The job categories and locations of bites are shown in the table below.

Nineteen 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 [in *The Lancet*¹], 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 hands and arms of health care workers, the frequency of these exposures can be minimized by consistent glove use and arm protection when health care workers are in close contact with pediatric, psychiatric, or combative patients. □

Reference

1. Vidmar L, Poljak M, Tomazic J, Seme K, Lavs I. Transmission of HIV-1 by human bite. *Lancet*. 1996;347:1762-1763.

Characteristics of reported bites, 1993-1995

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

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