Need for HIV Education among Public Health Personnel in Michigan

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This research was supported by a cooperative agreement (U62/CCU502060-04) for HIV/AIDS Prevention and Surveillance between the Centers for Disease Control and Prevention and the Michigan Department of Public Health.

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Synopsis

Knowledge and attitudes related to human immunodeficiency virus (HIV) and the use of the universal precautions recommended by the Centers for Disease Control and Prevention were investigated among 807 State and 2,797 local public health personnel in Michigan in September 1989. Survey results indicated that the majority of respondents were well-informed regarding the major routes of HIV transmission, but many respondents hold misconceptions regarding nonviable routes of transmission and about policies on HIV counseling and testing. Respondents reporting occupational exposure to blood or semen reported inconsistent use of universal precautions. Most respondents believed in providing the same quality of care for those with HIV infection as for noninfected persons. However, 32.4 percent believed that they should have the right to refuse treatment, and 9.4 percent reported that they would not be willing to provide routine public health services to an HIV-infected client.

The results of this research suggest that in Michigan, public health personnel are in need of HIV education that focuses on the correction of misconceptions about HIV transmission, counseling, and testing policies; the development of appropriate attitudes toward persons infected with HIV; and the appropriate use of universal precautions. Findings also suggest that inadequate protective equipment is an important barrier to the consistent use of universal precautions.

State and local health department personnel often serve as the first point of contact for people seeking information or assistance related to the human immunodeficiency virus (HIV). While assessments of HIV-related knowledge, attitudes, and use of universal precautions recommended by the Centers for Disease Control and Prevention (1-3)have been conducted in the United States among medical students (4-6), physicians (7-9), nurses (10-11) and emergency medical personnel (12), we are not aware of any such studies among public health department personnel.

In the fall of 1989, the HIV/AIDS Prevention and Intervention Section (formerly the Special Office on AIDS Prevention) within the Michigan Department of Public Health (MDPH) conducted a statewide survey of public health personnel in collaboration with the Michigan Association for Local Public Health (MALPH). The purpose of the survey was to evaluate needs for education about HIV among this group and to determine ways to meet these needs.

Methods

The survey instrument was designed in collaboration with the MALPH AIDS Advisory Committee. With the assistance of the Illinois Public Health

Table 1	. Perce	ntage d	istribution	of responde	nts in a surv	ey of
Michiga	in State	and lo	cal health	department	employees,	Sep-
	tember	1989.	by demog	raphic chara	cteristics	

Characteristic	State (N = 807)	Local (N = 2,797)	Total (N = 3,604)
Sex:			
Male	39.2	16.0	21.1
Female	53.8	75.8	70.9
Not reported	7.0	8.2	7.9
Race or ethnicity:			
White	80.7	74.2	75.7
Black	7.2	13.6	12.1
Hispanic	2.2	1.3	1.5
Native American	0.1	0.7	0.6
Asian-Pacific Islander	1.2	0.7	0.8
Not reported	8.6	9.5	9.3
Age:			
Under 20 years	0.6	0.2	0.3
20-29 years	9.3	12.7	11.9
30–39 years	31.6	27.2	28.2
40-49 years	28.6	26.5	26.9
50 years and older	17.0	18.1	17.9
Not reported	12.9	15.3	14.8
Range of years	18–68	18–92	18-92
Mean age (years)	40.8	41.0	40.9

Association, a draft version of the instrument was field tested among 291 public health employees in Illinois. The results of this field test (13) were used to evaluate and modify the survey instrument.

The final version of the self-administered survey instrument included five major sections: (a) knowledge of HIV transmission modes and HIV testing policies, (b) perceived need for and prior participation in educational programs related to HIV, (c) potential exposures to HIV and precautions taken to prevent infection, (d) attitudes related to the provision of services to persons infected with HIV, and (e) demographic and employment characteristics.

All contractual and civil service employees of the MDPH and 41 of 48 local health departments in the State were included in the study. Estimates for the number of employees included in the State sample were provided by the Office of Personnel, MDPH, and estimates for the number of employees in local public health agencies were provided by individual health officers. In September 1989, questionnaires were distributed to 1,342 employees at the State level through bureau, center, and office chiefs. Health officers in each participating local public health department distributed questionnaires to a total of 5,954 employees. A cover letter accompanying the survey form assured each member of the sample that their participation in the survey was completely voluntary and anonymous. A return envelope was also included with each Statistical analyses were performed using a microcomputer version of the Statistical Package for the Social Sciences (14). Analyses were limited to frequency distributions, cross-tabulations, and the calculation of means for selected continuous variables. The statistical significance of observed differences in proportions between the study groups was determined through the use of the chi-square statistic.

Results

Questionnaires were returned by 807 State public health personnel (60 percent) and 2,797 local public health personnel (47 percent). Characteristics of survey respondents are presented in table 1. Based on demographic data collected by MALPH, local public health respondents appear to be demographically representative of local public health employees in Michigan. Similar data on State employees are not available due to civil service regulations.

Results of the knowledge portion of the survey are presented in table 2. Public health employees are generally well-informed about the major routes of HIV transmission, although 36.4 percent still mistakenly believe that the virus can be transmitted by mosquitoes, and 24 percent reported that the virus can be contracted by caring for an infected person. Policies concerning HIV testing are not well understood. Only 64.7 percent of respondents realized that the Federal Government does not require an HIV test in order to obtain a marriage license, and 78.2 percent were aware that free and anonymous testing is available in Michigan. Local level respondents tended to be better informed than those at the State level.

Use of universal precautions among those reporting exposure to blood or semen in the month before the survey are presented in table 3. Twentyfour percent of respondents reported exposure to blood or semen related to handling biologic or injection materials or treating a bleeding patient, and 21.3 percent reported administering an injection. Among those reporting occupational exposure to blood or semen, 59.6 percent reported that they consistently wore protective gloves. Far fewer reported consistent use of gowns (11.5 percent) and eyewear (13.6 percent). Respondents also reported the barriers that prevent them from following universal precautions, including awkwardness (42.3 Table 2. Percentage of Michigan State and local public health employees responding correctly to statements about HIV transmission, natural history, and policy, September 1989

HIV knowledge and correct response	State (N = 807)	Local (N = 2,797)	Total (N = 3,604)
Transmission modes			
Receiving a blood transfusion (Yes)	42.6	44.2	43.9
Donating blood (No)	91.7	92.5	92.3
Working near someone with AIDS (No)	91.8	92.6	92.4
Eating in a restaurant where the cook has AIDS (No) ¹	77.0	81.0	80.1
Shaking hands or touching someone with AIDS (No)	93.8	94.4	94.3
Sharing eating utensils with someone who has AIDS (No) ²	74.7	74.4	74.5
Using public toilets (No)	89.9	89.4	89.5
Sharing needles for drug use with someone who has AIDS (Yes)	98.5	97.8	97.9
Being coughed or sneezed on by someone who has AIDS (No)	69.4	72.1	71.5
Attending school with a child who has AIDS (No)	93.6	92.9	93.0
Being bitten by a mosquito that has bitten someone with AIDS (No) ³	57.5	65.4	63.6
Having sex with a person who has AIDS (Yes)	97.1	97.6	97.5
Caring for a person infected with HIV (No)	75.9	76.0	76.0
A woman infected with HIV can give it to her baby (Yes)	98.0	98.1	98.1
Natural history			
AIDS is caused by a virus (Yes)	93.9	93.4	93.5
You can tell if people have AIDS just by looking at them (No)	93.1	92.8	92.9
Courseling and testing policy		02.0	
The Federal Government requires an HIV test to obtain a marriage			
license (No) ³	55.2	67.5	64.7
(Yes) ³	64.3	82.2	78.2

¹Differences between State and local employees significant at P < .01.

²Differences between State and local employees significant at P < .001. ³Differences between State and local employees significant at P < .0001. NOTE: HIV = human immunodeficiency virus; AIDS = acquired immunodeficiency syndrome.

percent), inaccessibility (18.3 percent), and protective equipment of the wrong size (16.6 percent).

Findings related to attitudes toward provision of services to persons with HIV infection are presented in table 4. Almost all respondents agreed that the precautions that they were currently taking to prevent HIV infection were adequate (95.9 percent), that denying care to a person with HIV infection would be wrong (92.2 percent), and that these persons were deserving of compassion (94.5 percent) and quality services (97.2 percent). However, 32.4 percent believed that health department employees should have the right to refuse services to HIV-infected clients, and 9.4 percent reported that they would not be willing to provide public health services to a person with HIV infection.

Not presented in tabular form are the results related to inservice education about HIV. Only 33.8 percent of State level employees reported that a program on HIV had been offered, compared with 68.8 percent of local level employees (P < .0001). Of the 2,168 respondents who said that programs had been offered at their workplace, 80.5 percent reported attending at least one educational session. Participation in worksite educational programs was significantly associated with higher levels of knowledge about HIV and testing policies.

'Survey findings suggest that failure to comply with universal precautions is not related to knowledge about HIV but, instead, may be associated with limited availability and accessibility of appropriate protective equipment. Program administrators should ensure that all equipment necessary for the consistent and appropriate use of universal precautions is readily available. . .'

Printed materials were the method preferred by 86.6 percent of the respondents for learning about HIV, followed by inservice educational programs (79.0 percent) and videos for home viewing (59.4 percent).

Discussion and Implications for Education

While nearly all respondents were able to identify correctly viable routes of HIV transmission, many also hold misconceptions. This pattern is similar to that found in national surveys of the general public

Table 3. Percentages of Michigan State and local public health employees reporting on use of CDC's universal precautions to prevent HIV infection, September 1989

	State		Local		Total	
- Precaution practice	Number	Percent	Number	Percent	Number	Percent
Among respondents reporting using a needle to treat a patient in month before the survey: did not replace plastic cover on needle used in treating patient	16	73.3	750	64.6	766	64.7
Among respondents reporting handling blood or semen or treating a bleeding patient in month prior to survey:						
Wore protective gloves	61	67.8	804	59.0	865	59.6
Wore a protective gown ¹	61	44.8	804	9.0	865	11.5
Wore protective eyewear ¹ Used bleach or disinfectant solution to clean	61	39.0	804	11.7	865	13.6
self and exposed surfaces Agreement with statements regarding barriers to CDC-recommended use of universal pre- cautions:	61	57.1	804	49.5	865	50.1
Protective equipment is easily accessible ² Protective equipment is cumbersome and	61	19.0	804	18.2	865	18.3
awkward Available protective equipment is not the	61	38.6	804	42.5	865	42.3
right size for me ³	61	29.1	804	15.8	865	16.6

¹Differences between State and local employees significant at P < .0001. ²Differences between State and local employees significant at P < .05. ³Differences between State and local employees significant at P < .01.

NOTE: CDC = Centers for Disease Control.

Table 4. Attitudes toward provision of services to HIV-infected persons among Michigan State and local public health employees, September 1989

		Percent agreeing	
Statement	State (N = 807)	Local (N = 2,797)	Total (N = 3,604)
The precautions I take while working are adequate to prevent me from			
becoming infected with HIV ¹	98.4	95.2	95.9
Denying care to a person with AIDS would be wrong ²	94.0	91.6	92.2
Clients who are known or suspected to be infected with HIV should be			
viewed with compassion regardless of how they became infected ³	92.4	9 5.2	9 4.5
ndividuals infected with HIV deserve the same quality of treatment as			
any other health department client	96.3	9 7.5	97.2
A health department employee should be allowed to refuse to provide			
appropriate services to a client because that client is infected with HIV ¹	25.2	34.4	32.4
would be willing to provide routine services which are my responsibility			
to an individual infected with HIV ¹	87.2	91.6	90.6
Children infected with HIV should be permitted to attend school	91.7	93.5	93.1

¹Differences between State and local employees significant at P < .001. ²Differences between State and local employees significant at P < .05. ³Differences between State and local employees significant at P < .01. NOTE: HIV = human immunodeficiency virus.

(15), and knowledge levels are slightly higher than those reported by a random sample of emergency medical service (EMS) providers in Michigan conducted 13 months earlier (12). We find the levels of misinformation documented in this study unacceptable. While a majority of respondents reported favorable attitudes toward the provision of services to persons with acquired immunodeficiency syndrome (AIDS)-HIV, nearly 10 percent indicated an unwillingness to provide services to a person known to be infected. Approximately one in three respondents (32.4 percent) believed that health department employees should be allowed to refuse services to clients with HIV infection; the comparable level among EMS providers 1 year earlier was one in four (25 percent) (12). Many survey respondents who reported occupational exposure to blood or semen in the month prior to the survey also reported inconsistent use of universal precautions.

These findings clearly indicate a need for further education about HIV directed toward public health personnel in Michigan. These programs should include in their objectives the development of appropriate attitudes toward persons with HIV infection and the ability to communicate accurate information on Federal and State testing policies. Personnel who may be exposed to HIV in the workplace should be required to attend intensive skill-based sessions on the use of universal precautions. Survey findings suggest that failure to comply with universal precautions is not related to knowledge about HIV but, instead, may be associated with limited availability and accessibility of appropriate protective equipment. Program administrators should ensure that all equipment necessary for the consistent and appropriate use of universal precautions is readily available, and they should work with their staffs to address all potential obstacles to precautionary behavior. In Michigan, the results of this survey have been used to plan and implement educational programs at both the State and local levels, based on the preferred learning methods identified by survey respondents.

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