Applied Industrial Hygiene

ISSN: 0882-8032 (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/uaph20

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To cite this article: John B. Moran (1988) Personal Protective Equipment: Aids, Applied Industrial Hygiene, 3:2, F-20-F-22, DOI: 10.1080/08828032.1988.10388503

To link to this article: https://doi.org/10.1080/08828032.1988.10388503

Published online: 24 Feb 2011.

Personal Protective Equipment

Aids

John B. Moran

In the course of several presentations to safety and health professionals over the past few months, all of which contained at least a brief discussion of personal protective equipment (PPE), the most recurrent questions involve the AIDS virus and issues such as:

- Is AIDS a significant occupational problem?
- How do I discuss the occupational AIDS issue in relevant terms with my concerned employees?
- What exposures represent risks?
- What protective measures should be used?

While PPE and AIDS, largely from a respirator decontamination perspective, have been the subject of this column previously, recent activities by the Federal Government merit further discussion.

The Department of Labor *and* the Department of Health and Human Services recently developed and released a *Joint Advisory Notice* on "Protection Against Occupational Exposure to Hepatitis B. Virus (HBV) and Human Immunodeficiency Virus (HIV)," the latter (HIV) being commonly referred to as AIDS. This Joint Notice, dated October 19, 1987, was published in the *Federal Register* on October 30, 1987, (52 FR 41818) and is being printed for broad dissemination by the Department of Labor. [A copy may be obtained from the National Occupational Safety and Health Administration (OSHA) Information Office; call (202)523-8148.]

The Joint Notice addresses all but one of the above "questions." The following selected quotes from the Joint Notice briefly address these issues:

"As of August 10, 1987, a cumulative total of 40,051 AIDS cases (of which 558 were pediatric) had been reported to the CDC, with 23,165 (57.8%) of these known to have died. Although occupational HIV infection has been documented, no AIDS case or AIDS-related death is believed to be occupationally related."

"Identified risk factors for HIV transmission are essentially identical to those for HBV. Homosexual/bisexual males and male intravenous drug abusers account for 85.4 percent of all AIDS cases, female intravenous drug abusers for 3.4 percent, and heterosexual contact for 3.8 percent. Blood transfusion and treatment of hemophilia/coagulation disorders account for 3.0 percent of cases, and 1.4 are pediatric cases. In only 3.0 percent of all AIDS cases has a risk factor not been identified. Like HBV, there is no evidence that HIV is transmitted by casual contact, fecal-oral or airborne routes, or by contaminated food or drinking water; barriers to HBV are effective against HIV. Workers are at risk of HIV infection to the extent they are directly exposed to blood and body fluids. Even in groups that presumably have high potential exposure to HIV-contaminated fluids and tissues, e.g., health-care workers specializing in treatment of AIDS patients and the parents, spouse, children, or other persons living with AIDS patients, transmission is recognized as occurring only between sexual partners or as a consequence of mucous membrane or parenteral (including open wound) exposure to blood or other body fluids.

Despite the similarities in the modes of transmission, the risk of HBV infection in health-care settings far exceeds that for HIV infection. For example, it has been estimated that the risk of acquiring HBV infection following puncture with a needle contaminated by an HBV carrier ranges from 6 percent to 30 percent—far in excess of the risk of HIV infection under similar circumstances, which the CDC and others estimated to be less than 1 percent."

"The cumulative epidemiologic data indicate that transmission of HBV and HIV requires direct, intimate contact with or parenteral inoculation of blood and blood products, semen, or tissues. The mere presence of, or casual contact with, an infected person cannot be construed as 'exposure' to HBV or HIV. Although the theoretical possibility of rare or low risk alternative modes of transmission cannot be totally excluded, the only documented occupational risks of HBV and HIV infection are associated with parenteral (including open wound) and mucous membrane exposure to blood and tissues. Workers occupationally exposed to blood, body fluids, or tissues can be protected from the recognized risks of HBV and HIV infection by

TABLE I. Exposure Categories*

CATEGORY I. Tasks That Involve Exposure to Blood, Body Fluids, Or Tissues.

All procedures or other job-related tasks that involve an inherent potential for mucous membrane or skin contact with blood, body fluids, or tissues, or a potential for spills or splashes of them, are Category I tasks. Use of appropriate protective measures should be required for every employee engaged in Category I tasks.

CATEGORY II. Tasks That Involve No Exposure to Blood, Body Fluids, Or Tissues, But Employment May Require Performing Unplanned Category I Tasks.

The normal work routine involves no exposure to blood, body fluids, or tissues, but exposure or potential exposure may be required as a condition of employment. Appropriate protective measures should be readily available to every employee engaged in Category II tasks.

CATEGORY III. Tasks That Involve No Exposure to Blood, Body Fluids, Or Tissues, and Category I Tasks Are Not A Condition Of Employment.

The normal work routine involves no exposure to blood, body fluids, or tissues (although situations can be imagined or hypothesized under which anyone, anywhere, might encounter potential exposure to body fluids). Persons who perform these duties are not called upon as part of their employment to perform or assist in emergency medical care or first aid or to be potentially exposed in some other way. Tasks that involve handling of implements or utensils, use of public or shared bathroom facilities or telephones, and personal contacts such as handshaking are Category III tasks.

* Dept. of Labor; Dept. of Health and Human Services: Joint Advisory Notice. Fed. Reg. October 30, 1987.

0882-8032/88/020F20-02$2.00 © 1988 AIH

Seventy-fifth Anniversary Year of the Department of Labor

By the President of the United States of America

A Proclamation

March 4, 1988, will be the seventy-fifth anniversary of President William Howard Taft's signing into law an act establishing the United States Department of Labor. In celebrating this milestone, we honor both the mandate of this ninth Executive department and the men and women who have made that mandate a reality through the years.

Recognition of the need for a Department of Labor began in the late 19th and early 20th centuries. Labor organizations such as the Knights of Labor and the American Federation of Labor (AFL) urged the creation of a Federal department to deal with matters affecting working people. A Bureau of Labor was established in the Department of the Interior in 1884. This Bureau was made an independent, but not Executive-rank, Department of Labor in 1888. When the Department of Commerce and Labor was created in 1903, the Department of Labor returned to bureau status within it. The famed labor leader Samuel Gompers and others then campaigned for a Cabinet-level Department of Labor.

That campaign bore fruit with President Taft's bill-signing in 1913. The mandate of the Department of Labor was "to foster, promote, and develop the welfare of the wage earners of the United States, to improve their working conditions and to advance their opportunities for profitable employment." That immense task has inspired the Department ever since.

The Department has fulfilled its duties during war and peace, during depression and prosperity. Through the years, the Department of Labor has improved the lives of working people and benefited all Americans through its contributions to the success of our economy.

Among other tasks, the Department helps workers find and train for jobs; monitors changes in employment, prices, and other economic measures; oversees the broad range of working conditions and safeguards working people's rights; assures and strengthens collective bargaining; and ensures freedom from discrimination. Seeking to help business and industry achieve economic growth and stability, the Department also promotes cooperative relationships between labor and management and encourages collaborative efforts with trade unions and employer organizations.

The Department has played a significant international role as well, cultivating understanding among labor organizations throughout the world and fostering free unions and efficient governmental labor institutions in other nations.

NOW, THEREFORE, I, RONALD REAGAN, President of the United States of America, do hereby proclaim the year 1988 as United States Department of Labor Seventy-fifth Anniversary Year. I call upon the people of the United States to observe this Anniversary Year with appropriate programs, ceremonies, and activities. In order to enhance participation in this important observance, I call upon the Secretary of Labor to establish an Honorary Committee for the Department of Labor Seventy-fifth Anniversary Year, and to invite all living former Secretaries of Labor and the Presidents of the AFL–CIO and the Chamber of Commerce to act as Co-Chairs of the Committee. I also call upon the Secretary to invite other distinguished persons to serve as Committee members, including representatives of the Congress, labor, management, and academia.

IN WITNESS WHEREOF, I have hereunto set my hand this twenty-third day of April, in the year of our Lord nineteen hundred and eighty-seven, and of the Independence of the United States of America the two hundred and eleventh.

Ronald Reagan

TABLE II. Recommendations for PPE

Category I:	• Minimum of appropriate gloves. • Protective eyewear or face shields where splash potential exists. • Gloves or gauntlets which are both puncture-resistant and impervious to blood for auto accident scenes, for instance (paramedics). • Impervious coveralls where potential exists for clothing becoming soaked with blood.
Category II:	• Ready access to appropriate protective equipment, e.g., gloves protective eyewear, or surgical masks.
Category III:	• None required.

imposing barriers in the form of engineering controls, work practices, and protective equipment that are readily available, commonly used, and minimally intrusive."

"As the first step in determining what actions are required to protect worker health, every employer should evaluate all working conditions and the specific tasks that workers are expected to encounter as a consequence of employment. That evaluation should lead to the classification of work-related tasks to one of three categories of potential exposure (Table 1). These categories represent those tasks that require protective equipment to be worn during the task (Category I); tasks that do not require any protective equipment (Category III); and an intermediate grouping of tasks (Category II) that also do not require protective equipment, but that inherently include the predictable job-related requirement to perform Category I tasks unexpectedly or on short notice, so that these persons should have immediate access to some minimal set of protective devices."

The Joint Notice provides more specific guidance under the following headings: Administrative, Training and Education, Engineering Controls, Work Practices, PPE, Medical, and Recordkeeping.

Table II summarizes the recommendations contained in the Joint Notice under the Personal Protective Equipment Section. The PPE Section recommendations are quite general in nature, however, and lack specifics which are important to the purchaser/user. Purchasers/users should seek detailed performance information from potential suppliers, particularly for gloves. Basic information of importance is the standard (ASTM, ANSI, NFPA, etc.) to which the product conforms, whether the manufacturer verifies compliance with the standard and is willing to specify such in writing, and the relevance of the standard. For example, ASTM D 3577-78a (1982) for rubber surgical gloves permits up to 1.5 percent of the new gloves inspected to evidence pinhole leaks (this possibility and the relatively low puncture resistance is why many medical personnel "double glove"). Likewise, suppliers should provide detailed guidance with regard to decontamination; i.e., do the agents used to kill the HIV adversely affect the performance of the protective gloves, particularly where decontamination is desired while wearing the gloves.

I conferred with an emergency medical response individual who recommends the use of NFPA 1973–1983 gloves for accident scene work over the surgical gloves for puncture and cut resistance protection. In addition, he recommends the donning of a second pair of surgical gloves (after removal of the NFPA gloves) before any on-scene invasive life support techniques are instituted.

Finally, a clarifying note. The Joint Notice specifies protective eyewear *or* face shields. Note that protective eyewear or face shields should comply with the applicable ANSI Standard; that standard requires the use of protective eyewear when a face shield is utilized. ♦

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