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Report to the Chairman, Subcommittee on Regulation, Business Opportunities, and Technology, Committee on Small Business, House of Representatives

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VA HEALTH CARE

Purchases of Safer Devices Should Be Based on Risk of Injury

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Health, Education, and
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The Honorable Ron Wyden
Chairman, Subcommittee on Regulation,
Business Opportunities, and Technology
Committee on Small Business
House of Representatives

Dear Mr. Chairman:

Each day health care workers suffer cuts, punctures, nicks, and gashes from needles and other sharp instruments they use in taking care of patients. These injuries can result in transmission of the hepatitis B virus,[1] human immunodeficiency virus (HIV),[2] and other bloodborne disease. Safer needle and sharps devices are being marketed by companies claiming that their products can reduce the number of accidental injuries. Such devices eliminate the need for a needle, maintain a protective cover over a needle, provide an alternative to resheathing a needle after use, or use some other safety mechanism.

In February 1993, you asked us to determine the effect safer needle and sharps devices can have on the working environment of health care workers in the Department of Veterans Affairs (VA). You expressed specific interest in knowing (1) the incidence of needle and sharps injuries; (2) the extent to which VA health care workers have tested positive for hepatitis B or HIV after a needle or sharps injury; (3) the safety procedures and devices currently used to minimize these injuries; (4) the extent to which VA is adopting new, safer technologies to prevent needle and sharps injuries; and (5) the cost of screening and treating personnel who have received needle and sharps injuries. This report addresses each of your concerns.

You also expressed concern that the Food and Drug Administration (FDA) may be taking too long to review and approve needle and sharps devices designed to protect health care workers from injury and exposure to

[1]Hepatitis B is caused by a virus that can be transmitted through blood and other body fluids. It causes a number of conditions, ranging from fever and jaundice to more serious conditions such as inflammation of the liver, cirrhosis of the liver, and liver cancer. There are other forms of hepatitis such as hepatitis A and C.

[2]HIV is a virus that attacks a certain type of white blood cell, the T-cell, which plays an important part in the body's immune system. As the virus slowly destroys the T-cells, the body becomes increasingly unable to fight the virus and other infections. HIV eventually leads to acquired immunodeficiency syndrome (AIDS) disease, which causes death.

bloodborne infections. In a February 2, 1994, letter, we discussed FDA's process for review and approval of such devices.[3]

To learn how VA policies and procedures concerning needle and sharps injuries were being implemented, we visited VA's Central Office in Washington, D.C., and medical centers in Philadelphia and Coatesville, Pennsylvania; Chicago (Hines); and San Francisco. To determine how private hospitals dealt with needle and sharps injuries, we interviewed personnel at the Thomas Jefferson University Hospital in Philadelphia and the San Francisco General Hospital. We also discussed the importance of reducing the numbers of needle and sharps injuries with officials at the Department of Health and Human Services' Centers for Disease Control and Prevention (CDC), the National Institute of Occupational Safety and Health, the Service Employees International Union, and other health care experts around the country.

We identified 41 safer needle and sharps devices that FDA approved from January 1, 1990, to May 31, 1993, for use in the United States and asked VA's Central Office to provide us with data on the extent to which each of these devices was procured in 1993 by VA medical centers. In conjunction with CDC, we established a method to determine the threat to VA health care workers of contracting a serious infection from a needle injury. This methodology is more fully discussed in appendix I.

Our review was conducted from February 1993 through August 1994 in accordance with generally accepted government auditing standards.

Background

VA employs over 238,337 health care workers in 158 medical centers.[4] During the course of performing their normal daily activities many of VA's health care workers come in contact with needles or sharps devices such as lancets, scalpels, and knives. Thus, the danger of receiving a percutaneous injury[5] while working with these devices is an ever-present occupational hazard. This is not unique to health care workers in VA. Health care workers in every hospital setting have always been subject to such an injury. However, with the rapid spread of HIV and hepatitis viruses,

[3]FDA Safety Devices (GAO/HEHS-94-90R, Feb. 2, 1994).

[4]VA has defined 130 of these medical centers as acute care centers. The remaining medical centers are psychiatric, long-term care, and nonacute general medical and surgical medical centers.

[5]Percutaneous means effected or performed through the skin. Percutaneous injuries include needle and sharps injuries, and we will refer to both needle and sharps injuries as percutaneous injuries. Needle injuries are injuries caused by needled devices such as syringes or intravenous (IV) lines. Sharps injuries are caused by other sharp objects such as scalpels, lancets, and broken glass.

increasing attention is being paid to ways in which such injuries can be reduced and ultimately prevented. Until recently, hospitals have tried to reduce health care workers' percutaneous injuries through education. Now, the emphasis is on reducing percutaneous injuries using safer needle and sharps devices.

Results in Brief

VA medical centers are individually responsible for acquiring medical devices they need to perform their work, including safer needle and sharps devices. While some medical centers are acquiring safer devices, insufficient data are available within these centers to demonstrate (1) the extent to which safer devices are needed and (2) whether the devices will reduce the number of percutaneous injuries.

In fiscal year 1993, VA's 130 acute care medical centers reported 4,791 needle injuries, about a 19-percent decrease from 5,933 in fiscal year 1992. VA officials do not know to what extent this decrease can be attributed to better use of universal precautions, safer devices, or underreporting of needle injuries. But infection control personnel in VA and clinical staff at the private hospitals we visited told us that percutaneous injuries regularly go unreported. In fact, medical research has found that percutaneous injuries in both public and private hospitals could be understated by as much as 75 percent because of underreporting.

Health care workers are sometimes reluctant to report these injuries for a variety of reasons, including lack of severity (for example, if the needle was not contaminated by blood) and concern about maintaining confidentiality (for example, if a worker does not want it known that he or she was exposed to a potential infection). However, a current surveillance study conducted by three private hospitals and the VA medical center in San Francisco indicates that the reporting of percutaneous injuries can be substantially improved when immediate, confidential counseling and follow-up are available to the injured workers.

VA health care workers are at risk of incurring life-threatening diseases from a percutaneous injury involving HIV- or hepatitis-infected blood from patients in VA medical centers. The risk of becoming HIV positive after a percutaneous injury is small, about one-third of 1 percent. In fact, as of September 1994, there were no documented cases of VA health care workers being infected with HIV as the result of such an injury. However, we estimated that in fiscal year 1993, VA health care workers had 71 injuries involving needles contaminated with HIV-infected blood. This

number may, in fact, be understated because it is based on data of questionable accuracy.

The risk of acquiring hepatitis B from a percutaneous injury is between 6 and 30 percent. However, VA's Central Office does not know how many of its health care workers have contracted hepatitis as a result of a percutaneous injury because no records are maintained on this type of occurrence.

To combat the danger of infection, VA has implemented standards and procedures in each of its medical centers to protect health care workers from percutaneous injuries. It also conducts training programs that emphasize the importance of a safe work environment. However, acquisition of safer devices to prevent percutaneous injuries varies by medical center, and the type of information needed to make informed procurement decisions is not always available.

In fiscal year 1993, 90 VA acute and nonacute medical centers spent about $1.1 million to purchase 33 types of new safer devices that FDA approved from January 1990 through May 1993 for marketing in the United States. The total dollar value of individual medical center purchases of these safer devices ranged from $10 to $103,000. Several of the medical centers that did not purchase safer devices are in areas with high numbers of people who are HIV positive or have already acquired AIDS.

The VA medical centers that we visited did not have financial accounting systems that allow collection of precise information on the cost of screening and treating personnel who have received a percutaneous injury. As a result, we were only able to obtain estimates of such costs.

VA Needle Injuries May Be Understated

The number of needle injuries that occur in VA medical centers may be understated because they are not being reported by health care workers. In fiscal year 1993, VA's 130 acute care medical centers reported 4,791 needle injuries, a 19-percent decrease from the 5,933 reported in fiscal year 1992. The number of needle injuries per medical center in fiscal year 1993 ranged from a low of 3 in Fort Harrison, Montana, to a high of 115 in Boston. (See app. II for a complete listing of needle injuries reported by acute care VA medical centers.)

VA officials do not know to what extent the 19-percent decrease in the number of reported needle injuries is attributable to the better use of

universal precautions, acquisition of safer devices, underreporting of injuries, or a combination of these factors. However, infection control personnel at two of the medical centers we visited told us that percutaneous injuries regularly go unreported. Furthermore, medical research has found that percutaneous injuries in both public and private hospitals could be understated by as much as 75 percent because of underreporting.[6]

VA officials told us that the reasons percutaneous injuries go unreported include the lack of severity of the injury (for example, if the needle was not contaminated by blood), concern about maintaining confidentiality (for example, if a worker does not want it known that he or she was exposed to a potential infection), and the current lack of effective treatment for HIV. The threat of disciplinary action is also a deterrent to reporting injuries. For example, an official at one VA medical center said that a hospital service at the facility was telling employees that they would receive bad ratings if they had too many percutaneous injuries.

VA's Central Office collects information on needle injuries for each medical center, but it does not collect similar information on sharps injuries although this information is available at some medical centers. Both of the two private hospitals we visited collected information on the number of percutaneous injuries to their employees. One of these hospitals had 219 needle injuries in fiscal year 1991/1992, 28 of which involved HIV-infected patients. The other hospital had 213 percutaneous injuries in 1992. But officials at both hospitals told us that their employees underreport such injuries.

In December 1993, VA's National Center for Cost Containment (NCCC), at the Milwaukee VA medical center, initiated a project on the use of safer devices. In August 1994, at about the same time that a draft of this report was sent to VA for its comments, the results of this project were published. The study, Needle Stick Prevention in the Department of Veterans Affairs - Monograph I, concluded, among other things, that (1) needle injuries remain a prevalent problem for the VA health care system and (2) surveillance and tracking of needle injuries are not standardized throughout the VA system.

Efforts are under way to improve the reporting of percutaneous injuries in both VA and private sector hospitals. For example, in January 1992, San

[6]Bruce H. Harmory, M.D., "Underreporting of needlestick injuries in a university hospital," American Journal of Infection Control, October 1983, Vol. 11, No. 5, pp. 174-77.

Francisco VA medical center joined three private hospitals in a CDC-initiated percutaneous injury surveillance project. The project was designed to collect injury data in sufficient detail to isolate and understand problem situations, recommend solutions, and evaluate the effectiveness of prevention measures.

A major part of the surveillance project is a confidential 24-hour telephone hot line that employees use to report percutaneous injuries as soon as they happen. The hot line has several benefits. Specifically, injured employees receive medical advice, counseling, and follow-up treatment immediately, and the hospital receives more accurate and complete reporting of percutaneous injuries. Before either employees or the patients whose blood contaminated the employees (source patients) are tested for HIV, however, VA is required to obtain written consent from the individuals being tested. Preliminary indications are that the project is effective.

In the 12-month period after the San Francisco VA medical center implemented the 24-hour hot line, the number of reported percutaneous injuries nearly doubled from 43 in 1991 to 79 in 1992. An official at the medical center told us that, in his opinion, the increase was due to better reporting of injuries, not to a greater rate of injury. At two of the private hospitals involved in this study, the frequency of reporting percutaneous injuries increased by 54 percent and 60 percent.

Project researchers found that while the hot line improved the reporting of injuries, the prevention measures instituted as a result of the hot line information failed to reduce the number of injuries. The project researchers concluded that for health care workers, behavioral changes alone are not a satisfactory solution. In their opinion, primary prevention of occupational exposures to blood must also embrace the industrial hygiene standard of work place safety, which emphasizes use of inherently safer devices, administrative controls, and personal protective equipment.

Although the San Francisco VA medical center's 24-hour hot line program is currently in danger of being canceled for lack of funds, the Chief of Infectious Disease there told us that he will attempt to continue the hot line with a combination of hospital and research funding. The private hospitals participating in the project have integrated the hot line into their infection control programs and intend to continue it.

VA Data on Health Care Workers With HIV/AIDS or Hepatitis B Are Incomplete

As of September 1994, no VA health care worker had been reported to CDC as having acquired HIV or AIDS because of a percutaneous injury. However, VA's Central Office does not know the number of workers who may have acquired hepatitis B through work-related percutaneous injuries because it does not routinely collect those data.

The Public Health Service Act authorizes CDC through the National Center for Health Statistics to collect information on AIDS cases in the United States.[7] Although there is no federal requirement that HIV or AIDS cases be reported to CDC, all states voluntarily report known AIDS cases and 36 states require reporting of known HIV cases to CDC. Also, all states report health care workers infected with HIV. CDC receives the AIDS and HIV information from state and local health departments. These departments reported that 40 health care workers were known to have acquired HIV infection in the performance of their occupational duties through December 1993. According to CDC, as of December 1993, 12 of the 40 health care workers had developed AIDS. In addition, 83 cases were reported to CDC in which health care workers were suspected of having acquired HIV from percutaneous injuries.

Although no VA health care workers are known to have been infected on the job, the possibility of infection is very real. In fiscal year 1993, VA medical centers treated 16,749 patients with HIV or AIDS. We estimated that during 1993 at least 71 needle injuries to VA health care workers involved HIV-infected blood; and during 1992, at least 99 such injuries occurred.[8] We also estimated that every 5 years at least one VA employee will seroconvert[9] to HIV positive because of a needle injury.[10] (See app. I for the methodology we used.) Unless a cure is found, these HIV-positive health care workers will ultimately develop AIDS. Furthermore, given the fact that the data from which these calculations are made may be understated, HIV infection and seroconversion rates may be even higher.

The fear of contracting AIDS has overshadowed the dangers of acquiring hepatitis B. According to CDC, about 12,000 health care workers contract the hepatitis B virus annually, and about 250 infected individuals die from

[7]The Public Health Service Act, 42 U.S.C. 242b and 242k.

[8]The decrease in estimated needle injuries involving HIV-infected blood reflects the decrease in reported needle injuries and the decrease in the estimated patient HIV seroprevalence percentage in fiscal year 1993. Seroprevalence means the number of cases of viral infection in a population.

[9]Seroconvert means to indicate the development of antibodies in the blood in response to an infection.

[10]These estimates were calculated only for VA medical centers. The methodology we used has not been applied to other federal or private sector medical facilities.

the disease. The risk of acquiring hepatitis B from a percutaneous injury involving hepatitis B-infected blood is between 6 and 30 percent. By comparison, the risk of becoming HIV positive from a percutaneous injury is about one-third of 1 percent. Given that in 1992, 3,083 VA patients tested positive for hepatitis B and 6,613 tested positive for hepatitis C,[11] VA health care workers are at obvious risk of acquiring the disease. Although a vaccine is available that provides active immunization against hepatitis B infection, no such vaccine exists for hepatitis C.

VA Has Implemented Safety Procedures and Activities Designed to Protect Health Care Workers

VA has adopted and implemented CDC's recommended universal precautions that are designed to protect health care workers from accidental injury and infection. Under universal precautions, all health care workers are expected to use gloves, gowns, masks, and protective eyewear when exposure to blood and other potentially infectious body fluids is reasonably anticipated. These measures are also to be applied consistently for all patients no matter what the circumstances. Universal precautions also require disposal of needle and sharps devices in puncture-resistant containers located as close as possible to the use area to minimize the workers' exposure to injury.

VA has also adopted the Occupational Safety and Health Administration's (OSHA) bloodborne pathogen standard. This standard, published in December 1991, requires health care institutions to provide adequate and appropriate protection for all health care workers potentially exposed to patient blood and body fluids. The standard is designed to minimize or eliminate percutaneous injuries by using a combination of engineering and work practice controls, personal protective clothing and equipment, training, medical surveillance, hepatitis B vaccination, signs, labels, and other provisions. A key provision of the standard is the requirement that all employers develop an exposure control plan that identifies individuals who will receive training, protective equipment, vaccinations, and other benefits. All of the VA medical centers we visited were implementing exposure control plans that follow the direction of the OSHA standard. In addition, for all health care workers who are exposed to HIV-infected blood, VA has established a policy for follow-up, treatment, and care.

VA conducts training, education, and other activities to facilitate health care worker safety. Some labor-saving initiatives have also resulted in a safer work environment. For example, in an effort to reduce the workload of physician residents, VA encourages medical centers, where appropriate,

[11]According to VA's 1992 Annual Infection Control Survey.

to establish special teams of skilled staff to insert IV lines in patients. Intravenous teams can reduce the number of needle injuries because they are specially trained and are skilled in performing such procedures. Intravenous teams have been established in 57 VA medical centers, but VA does not know to what extent these teams have reduced needle injuries.

Another approach taken by the Philadelphia and San Francisco VA medical centers is the use of phlebotomy teams. These teams are composed of members whose primary job is to draw blood from patients for testing and analysis. Medical center personnel at these facilities believe the introduction of phlebotomy teams has helped to decrease the incidence of needle injuries.

Individual medical center personnel can also play a significant role in making the work environment safer. For example, the Supply, Processing, and Distribution (SPD) Chief at the Philadelphia VA medical center developed a bloodborne pathogen report using fiscal year 1991 and 1992 percutaneous injury information to determine who was injured and when and how the injuries occurred. This was a self-initiated report and not part of VA's standard reporting process. The SPD Chief estimated it took 500 to 800 hours to analyze the data and write the report. The report findings included the following:

- The nursing service was at the most risk for injuries.
- Syringes were involved in 49 percent of the injuries in fiscal year 1992.
- Lancets were the second leading cause of injury in both fiscal year 1991 and 1992.

The SPD Chief recommended that the nursing service be targeted for all available safety training and devices, that a needleless IV system and safety lancets be procured, and that only phlebotomy and IV team personnel perform phlebotomies and IV insertions, respectively. In fiscal year 1993, the Philadelphia VA medical center implemented all the recommendations in the report. As a result, through July 1994, there were no IV injuries after the introduction of the needleless IV system in February 1994 and no lancet injuries after the introduction of the safety lancets in January 1993. The SPD Chief was waiting until the end of fiscal year 1994 to analyze the results of the implemented recommendations.

Medical Centers' Acquisition of Safer Needle and Sharps Devices Varies Widely

VA medical center purchases of safer needle and sharps devices are not necessarily based on risk data. Under VA's decentralized management philosophy, VA medical centers decide when, and to what extent, they will acquire safer devices. However, we found that medical centers are purchasing safer devices, in varying degrees, without regard to data that can be collected at each of the medical centers on the extent and cause of percutaneous injuries. As a result, purchases of safer devices are being made, but they may not be resolving the injury problems. Conversely, some medical centers that should be considering acquisition of safer devices are not doing so.

In fiscal year 1993, 90 VA medical centers spent between $10 and $103,000 to purchase safer devices that FDA approved from January 1990 through May 1993 for marketing in the United States. In total, these 90 medical centers spent about $1.1 million on 33 types of devices. (See app. III for purchases by individual medical centers in fiscal year 1993.) Whether these variations in procurement amounts are justified is unknown. However, of the top 10 VA medical center purchasers of safer devices in fiscal year 1993

- 2 medical centers (Portland, Oregon; and Cleveland) were among those with the highest needle injuries in fiscal year 1992;
- 4 medical centers (Miami; New York; Atlanta; and East Orange, New Jersey) had high patient HIV seroprevalence percentage estimates in fiscal year 1992; and
- 3 medical centers (Miami; Portland, Oregon; and Atlanta) had high health care worker HIV seroconversion estimates in fiscal year 1992.

Conversely several medical centers (Los Angeles, San Diego, Puerto Rico) with high seroprevalence or seroconversion estimates in fiscal year 1992 purchased no safer devices in fiscal year 1993. Nonetheless, in each of these facilities, the number of reported needle injuries dropped from fiscal year 1992 to fiscal year 1993.

Safer devices can be 2 to 3 times more expensive than their standard counterparts. For example, a safer 22-gauge, 1-inch, IV catheter costs approximately $1.76; the same standard IV catheter costs approximately 62 cents. Considering that a typical hospital could use hundreds of these and other safer devices in a year, the total annual cost differential could be substantial. Thus, the cost should be balanced against the safer devices' ability to reduce the number of percutaneous injuries.

Table 1 shows the 10 VA medical centers that spent the most on safer devices in 1993, the number of needle injuries that occurred in each facility, and the facilities' relative ranking in terms of patient HIV seroprevalence percentage and health care worker HIV seroconversion estimates. The table is intended to show how additional pertinent information can be used to facilitate decisions on the acquisition of safer needle and sharps devices. For example, in fiscal year 1993, the Miami VA medical center spent more than any other medical center on the purchase of safer devices. Although it was 49th of the acute medical centers in terms of needle injuries in fiscal year 1992, the center was second in patient HIV seroprevalence percentage and third in health care worker HIV seroconversion at acute medical centers. These data indicate that careful consideration should be given to acquisition of safer devices which, in this instance, occurred.

Table 1: Top 10 VA Purchasers of Safer Medical Devices and Pertinent Injury and Health Data

		Fiscal year 1992					
Fiscal year 1993		Needle injury		Patient HIV seroprevalence percentage		Health care worker HIV seroconversion	
VA medical center	Expenditures	Injuries	Rank	GAO estimate	Rank	GAO estimate	Rank
Miami	$103,313	51	49	8.303	2	.01228	3
East Orange	76,942	36	67	4.904	10	.00512	20
New York	73,078	25	86	9.230	1	.00669	17
Portland	69,594	145	1	2.432	20	.01022	8
Atlanta	60,570	41	60	6.449	4	.00767	10
Cleveland	59,100	114	6	0.000	104	.00000	104
Augusta	53,352	46	53	0.091	96	.00012	90
Louisville	45,196	39	64	0.000	118	.00000	118
Pittsburgh (UD)[a]	37,229	74	28	1.352	44	.00290	30
Providence	36,386	25	87	0.358	79	.00026	78

[a]UD means University Drive—one of two VA medical centers in Pittsburgh. The other medical center is a psychiatric facility.

The four medical centers we visited kept records on the cause of percutaneous injuries, the type of equipment involved, and the conditions under which the injuries occurred. For example, a 1992 study conducted at the Philadelphia VA medical center showed that incidents involving needle/syringe use caused 49 percent of the percutaneous injuries, with lancets being the second leading cause of injuries (representing 22 percent

of the percutaneous injuries). However, at each of these facilities, there was often little relationship between the devices causing the injuries and the devices purchased to reduce injuries. Although disposable syringes were responsible for 49 percent of the injuries reported at the Philadelphia medical center in fiscal year 1992, the medical center spent nothing on safer syringes in the next fiscal year. At the Coatesville medical center, disposable syringes caused 43 percent of the injuries in fiscal year 1992, but the medical center spent nothing on safer syringes in the next fiscal year.

Dissemination of Safer Needle and Sharps Device Evaluations Can Be Improved

Dissemination of information among VA medical centers about the efficacy of safer devices needs improvement. At the time of our review, new devices were being evaluated by commodity standards committees at each medical center. Generally, these committees did not have full knowledge of all safer devices that were available or the capabilities of the devices being marketed. Furthermore, medical centers often performed their own evaluations of a device even though another medical center may have already done so.

VA's August 1994 monograph on needlestick prevention contains an evaluation of several safety syringes, IV devices and equipment, and medication delivery systems, and provides guidelines for medical centers on how to determine whether a device will meet their needs.[12] The study stated, however, that the devices cited were not subjected to patient testing and suggested that the medical centers do so before making any major acquisitions. In addition to product evaluation, the study reached the following conclusions about safer devices:

- Safer devices are cost effective when the total direct and indirect costs of needlesticks are considered.
- Although needlestick protection devices are generally more expensive than conventional devices, market forces are reducing the cost difference.
- The knowledge and the technology currently exist to substantially reduce the risk of needle injuries.

VA's Central Office has asked medical center personnel to share the results of their product evaluations with other medical centers through VA quarterly newsletters, the VA AIDSGRAM, and through networking. Additionally, VA expects the August 1994 monograph and others to be

[12]Additional monographs are expected to be published on IV delivery devices and systems for blood and sharps collection.

published in the future to be widely distributed among clinical providers and support groups at each medical center. When requested, the VA Marketing Center in Hines, Illinois, will also assist staff in individual medical centers with product evaluation. However, medical center personnel we visited during this review indicated that only limited use was being made of these resources. At that time, the monographs were not available.

The need for a more efficient way to obtain information on safer devices is not unique to VA. Systems are currently being developed elsewhere in the medical community to aid in the collection of injury information and the evaluation of safer devices. For example, health care experts at the University of Virginia created an exposure prevention information network designed to help hospitals develop information to identify effective products and strategies for reducing health care worker exposures to percutaneous injuries. The University of Virginia system includes (1) a data collection form employees complete after they have been injured by needle and sharps devices or exposed to blood and body fluids and (2) software CDC developed to process and analyze the data to determine the nature and circumstances surrounding injuries. Data are used to help health care providers select the most effective means of preventing injuries (for example, by acquiring safer needle and sharps devices). According to the system's project director, the information network is a valuable part of the University of Virginia hospital's exposure surveillance and product evaluation effort. Specifically, it permits uniform data collection on percutaneous injuries and the devices used to prevent them and allows direct comparisons to be made among the hospitals subscribing to the system.

Cost of Screening and Treating VA Health Care Workers With Percutaneous Injuries Is Unknown

VA does not gather data on the costs associated with screening and treating its medical center health care workers injured by needle or sharps devices. However, the recently completed monograph states that the cost of needlestick injuries can be substantial. VA health care workers who report being stuck by a needle or who receive a cut from a sharps device receive immediate medical treatment. At the time of treatment, both the injured employee and source patient are tested for hepatitis and HIV. The injured health care worker is also offered antiviral and other medications designed to help prevent development of HIV or hepatitis B.

VA officials at the medical centers we visited told us that the costs of any tests, treatments, and medications given to an employee are difficult to

determine because VA's accounting systems are not designed to identify such data. One medical center estimated that its cost to treat an employee with a percutaneous injury was about $320 in fiscal year 1993, but another medical center could not provide us with any information on the cost of treating an employee with such injuries.

Studies performed over the past several years by medical researchers have shown that the cost to screen and treat health care workers injured by needle and sharps devices can be significant:

- A 1991 study funded by CDC and performed at a large urban hospital showed that the costs to screen and treat injured workers was about $635 per injury. That total included the cost for initial laboratory work, personnel time, immunizations, and follow-up laboratory work.
- A study of needle injuries conducted at the University of Virginia hospital showed that for six major needle devices, the average cost of a needle injury was $405.[13] The study did not include the cost of AZT[14] treatment and follow-up costs, the psychological consequences of injuries, or potential litigation costs.
- At one of the private hospitals we visited the cost to screen and treat a health care worker injured by a percutaneous injury in 1993 averaged about $770 for lab tests and medicine. This included lab testing of the source patient. If the source patient was HIV positive or had AIDS, an additional $765 was incurred for a 6-week regimen of AZT treatment for the injured worker.

In addition to the initial screening, medication, and treatment costs examined in these studies, there are long-term costs associated with HIV and AIDS, including (1) the health care worker's lost earnings, (2) the productive losses to society because of a worker's sickness and premature death, (3) the psychological trauma suffered by injured health care workers, (4) the negative impact on recruitment of health care workers, and (5) the high cost of medical and litigation counseling for injured health care workers. The ultimate cost, however, is the loss of a life.

Conclusions

Purchases of safer needle and sharps devices should be based on an analysis of the potential risk to health care workers from a percutaneous

[13]The six needle devices were disposable syringes, IV tubing needle assemblies, prefilled cartridge syringes, winged steel needle IV sets, vacuum tube phlebotomy sets, and IV catheters.

[14]AZT is an antiviral drug that has been shown to interfere with the replication of HIV. It has been suggested that AZT might prevent infection if given promptly after exposure.

injury. Thus, before any medical center makes a significant expenditure of funds on any safer device, it must know (1) the actual number of injuries occurring at the medical center, (2) the device causing the injuries, (3) how the new equipment can be used to reduce injury rates, and (4) the patient population at risk of HIV or hepatitis infection. At present, little is known in VA about the extent to which percutaneous injuries have been reduced through the use of safer devices. Furthermore, each medical center is making procurement decisions without the benefit of knowledge already acquired by other VA medical centers. Safer needle and sharps devices used in conjunction with strict adherence to universal precautions should result in a reduction of percutaneous injuries. Thus, medical centers need to be made continually aware of the safer devices that are on the market and how this equipment can be used to address their specific needs.

VA's Central Office can assist medical centers by sponsoring initiatives to (1) test and evaluate safer devices in a medical center environment, (2) determine the devices' potential for reducing percutaneous injuries, and (3) disseminate the results of these initiatives to all medical centers. This information could also be made available, if requested, to other public and private hospitals.

Recommendations

We recommend that the Secretary of Veterans Affairs require the Under Secretary of Health to

- test ways to improve the reporting of percutaneous injuries and develop a systemwide strategy to implement successful approaches;
- fund pilot projects in which acute care medical centers acquire and test safer needle and sharps devices, and determine their impact on the incidence of injuries over a period of time; and
- establish a communications network to disseminate information on the results of tests and studies involving safer devices to all medical centers and to others when requested.

Agency Comments

In a letter dated September 26, 1994, the Secretary of Veterans Affairs concurred with our recommendations and provided specifics on how they would be implemented. (See app. V.) The Secretary believes, however, that our conclusions are outdated and misleading because they are based on data that might have been more relevant a year ago or more. VA believes

that the monograph issued in August 1994 addresses many of the concerns raised in our conclusions.

We disagree. The monograph is not a VA policy statement and does not address two of our major issues: (1) how VA medical centers can improve their reporting of needle and sharps injuries and (2) the need for VA's Central Office to take a leadership role in sponsoring evaluations of safer devices and communicating the results of these evaluations throughout the system.

The Secretary also expressed concern that we were publishing estimated seroprevalence and potential health care worker seroconversion rates by medical center. In his opinion, publication of such rates suggests that they are valid and reliable and can be taken at face value. In addition, the Secretary was concerned that (1) the methodology we applied to derive these rates has not been applied to estimate the potential for health care worker seroconversion for any other health care system, federal or private, and (2) the uninformed reader may interpret the published rates as a reflection of VA safety compliance. The Secretary requested that we make a clear statement in the report that the methodology used has been applied only to VA medical centers and not to other federal or private medical facilities.

We believe that the data we developed regarding seroprevalence and seroconversion are appropriate and based on a valid methodology. We received the help of CDC Infection Control officials in developing the methodology. These officials reviewed the results of our analysis and told us that they were reasonable. VA officials also reviewed the analysis results and told us that the results were probably conservative estimates. However, we agree with the Secretary that we did not specifically acknowledge that this methodology was applied only at VA medical centers, and, to alleviate his concerns, we have revised the report accordingly. Furthermore, the information contained in this report is not intended to be a reflection of VA's safety compliance programs. Rather the information is intended to show that VA medical centers are not using injury rates or patient population factors in determining risk injury potential and making purchasing decisions on safer medical devices.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, copies will be sent to appropriate congressional

committees; the Secretary of Veterans Affairs; the Director, Office of Management and Budget; and other interested parties. We will also make copies available to others upon request.

If you have questions on this report, please contact James Carlan, Assistant Director, Federal Health Care Delivery Issues, on (202) 512-7120. Other staff contributing to this report were Michael J. Stepek, Stephen L. Ballard, Deena M. El-Attar, Patricia Jones, and Lawrence L. Moore.

Sincerely yours,

David P. Baine

David P. Baine
Director, Federal Health Care
Delivery Issues

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Tables

Abbreviations

AIDS	acquired immunodeficiency syndrome
CDC	Centers for Disease Control and Prevention
FDA	Food and Drug Administration
HIV	human immunodeficiency virus
IV	intravenous
NCCC	National Center for Cost Containment
OSHA	Occupational Safety and Health Administration
SPD	Supply, Processing, and Distribution
UD	University Drive
VA	Department of Veterans Affairs

Methodology for Estimating Injured VA Health Care Worker Seroconversion

This appendix explains the methodology we used to estimate the number of Department of Veterans Affairs health care workers who could acquire the human immunodeficiency virus after receiving an injury involving HIV-infected blood. We developed the methodology with the assistance of officials of the Centers for Disease Control and Prevention who also reviewed our preliminary results. These officials stated that the methodology was reasonable and the data were not inconsistent with unpublished data they had compiled on this subject. They noted that the VA patient population is predominantly male and suggested that we take this into account by using a different seroprevalence[15] regression coefficient. Furthermore, they suggested we use a more precise seroconversion probability rate. We followed these suggestions for making our calculations. VA officials from Environmental Services and AIDS Services also reviewed the results and told us that the results were probably conservative estimates. The methodology was applied to fiscal year 1992 and 1993 information on needle injuries, patient discharges, and new AIDS cases diagnosed at each VA acute care medical center.

To estimate the number of needle injuries involving HIV-infected blood at each of the VA's 130 acute care medical centers, we (1) determined the estimated HIV seroprevalence percentage at each VA medical center by replicating the methodology used by researchers who studied the pattern of HIV infection among patients in 20 U.S. acute care hospitals;[16] (2) multiplied the number of needle injuries by the estimated HIV seroprevalence percentage for each medical center; and (3) totaled the number of needle injuries involving HIV-infected blood at the VA medical centers.

To estimate the number of VA health care workers expected to become HIV positive, we multiplied the total estimated number of needle injuries involving HIV-infected blood in VA by .0029. That number represents the risk of becoming HIV positive after a needle injury involving HIV-infected blood and is based on a study of the risk for occupational transmission of HIV.[17] As a result of the calculation, on the basis of fiscal year 1992 data, we

[15]Seroprevalence is the number of cases of a virus in a population's blood serum.

[16]These researchers found that HIV seroprevalence for all patients was 10.4 times the AIDS diagnosis discharge rate (the annual number of patients with new diagnoses of AIDS per 1,000 discharges in 1990). According to the researcher's unpublished estimates, for males only the HIV seroprevalence was 8.09 times the AIDS diagnosis discharge rate. Since the VA hospitalizes mostly men, we used the 8.09 factor and multiplied it by the AIDS diagnosis discharge rate for each medical center.

[17]David K. Henderson, M.D., and others, "Risk For Occupational Transmission of Human Immunodeficiency Virus Type 1 (HIV-1) Associated with Clinical Exposures," Annals of Internal Medicine, Nov. 15, 1990, Vol. 113, No. 10, pp. 740-46.

estimated that the number of VA health care workers who would acquire HIV because of a work-related needle injury was one every 3.5 years.

The following calculations illustrate how these data were developed starting with the estimate of the number of VA health care workers who will seroconvert to HIV positive and working back through the steps used to derive that estimate:

- Estimated Seroconversion After a Needle Injury = [Total estimated number of needle injuries involving HIV-infected blood (98.5) x .0029] = .29 health care workers will become infected with HIV after a needle injury per year, that is, one VA health care worker every 3.5 years.
- Estimated Number of Needle Injuries Involving HIV-Infected Blood = [Needle injuries x Estimated seroprevalence percentage]. Calculations were made for each of the 130 VA acute care medical centers. The estimated number of needle injuries involving HIV-infected blood per medical center were totaled to arrive at 98.5, or approximately 99 needle injuries involving HIV-infected blood for the entire VA.
- Estimated Seroprevalence Percentage = [(AIDS diagnosis discharge rate x 8.09) ÷ 1,000]. (See footnotes 15 and 16.) This estimate was calculated for each of the 130 VA acute care medical centers.
- AIDS Diagnosis Discharge Rate = [(Newly diagnosed AIDS cases ÷ Total discharges) x 1,000]. This rate was calculated for each of the 130 VA acute care medical centers.

We duplicated this analysis using fiscal year 1993 data when the information became available. The results were as follows:

- Estimated number of VA health care workers who will acquire HIV because of a work-related needle injury was one every 5 years.
- Estimated number of needle injuries involving HIV-infected blood that year was 70.62 or approximately 71.

Fiscal Year 1992 and 1993 Needle Injuries at VA Acute Care Medical Centers

This appendix shows the number of needle injuries at VA acute care medical centers in fiscal years 1992 and 1993 as reported by VA Quality Management. It also shows the change in the number of needle injuries from one year to the next. A negative number in the change in injuries column indicates a decrease, and a positive number indicates an increase.

Table II.1: Needle Injuries at VA Acute Care Medical Centers

VA medical center	Fiscal year 1992	Fiscal year 1993	Change in injuries
Albany, NY	42	44	2
Albuquerque, NM	83	58	-30
Alexandria, LA	19	18	-1
Allen Park, MI	51	35	-16
Altoona, PA	13	9	-4
Amarillo, TX	14	12	-2
Ann Arbor, MI	75	60	-15
Asheville, NC	36	34	-2
Atlanta, GA (Decatur)	41	39	-2
Augusta, GA	46	35	-11
Baltimore, MD	76	58	-18
Batavia, NY	10	4	-6
Bath, NY	8	17	9
Bay Pines, FL	129	88	-41
Beckley, WV	9	16	7
Big Spring, TX	24	22	-2
Biloxi, MS	25	29	4
Birmingham, AL	57	34	-23
Boise, ID	26	25	-1
Boston, MA	105	115	10
Brockton/West Roxbury, MA	87	53	-34
Bronx, NY	35	48	13
Brooklyn, NY	41	35	-6
Buffalo, NY	69	60	-9
Castle Point, NY	23	13	-10
Charleston, SC	51	50	-1
Cheyenne, WY	17	7	-10
Chicago (Lakeside), IL	34	31	-3
Chicago (Westside), IL	64	36	-28
Cincinnati, OH	55	28	-27
Clarksburg, WV	9	18	9

(continued)

VA medical center	Fiscal year 1992	Fiscal year 1993	Change in injuries
Cleveland, OH	114	96	-18
Columbia, MO	67	66	-1
Columbia, SC	39	27	-12
Dallas, TX	95	97	2
Danville, IL	26	8	-18
Dayton, OH	48	48	0
Denver, CO	42	31	-11
Des Moines, IA	43	21	-22
Dublin, GA	18	14	-4
Durham, NC	91	59	-32
East Orange, NJ	36	33	-3
Erie, PA	14	15	1
Fargo, ND	28	14	-14
Fayetteville, AR	10	16	6
Fayetteville, NC	27	20	-7
Fort Harrison, MT	5	3	-2
Fort Meade, SD	10	9	-1
Fort Wayne, IN	19	23	4
Fresno, CA	25	18	-7
Gainesville, FL	67	45	-22
Grand Island, NE	11	6	-5
Grand Junction, CO	6	5	-1
Hampton, VA	39	32	-7
Hines, IL	89	63	-26
Hot Springs, SD	9	7	-2
Houston, TX	93	62	-31
Huntington, WV	18	26	8
Indianapolis, IN	79	83	4
Iowa City, IA	23	21	-2
Iron Mountain, MI	22	8	-14
Jackson, MS	69	55	-14
Kansas City, MO	50	41	-9
Kerrville, TX	14	11	-3
Lake City, FL	18	20	2
Leavenworth, KS	27	21	-6
Lexington, KY	132	75	-57
Lincoln, NE	13	12	-1
Little Rock, AR	82	100	18

(continued)

VA medical center	Fiscal year 1992	Fiscal year 1993	Change in injuries
Loma Linda, CA	73	53	-20
Long Beach, CA	86	72	-14
Los Angeles (West), CA	123	38	-85
Louisville, KY	39	34	-5
Madison, WI	55	29	-26
Manchester, NH	27	20	-7
Marion, IL	11	14	3
Martinsburg, WV	15	24	9
Memphis, TN	67	63	-4
Miami, FL	51	44	-7
Miles City, MT	5	7	2
Milwaukee, WI	75	52	-23
Minneapolis, MN	105	76	-29
Montgomery, AL	22	6	-16
Mountain Home, TN	43	64	21
Murfreesboro, TN	20	33	13
Muskogee, OK	21	22	1
Nashville, TN	64	52	-12
New Orleans, LA	51	50	-1
New York, NY	25	32	7
Newington, CT	15	10	-5
Northport, NY	30	22	-8
Oklahoma City, OK	42	38	-4
Omaha, NE	90	40	-50
Palo Alto, CA	52	59	7
Philadelphia, PA	65	48	-17
Phoenix, AZ	37	25	-12
Pittsburgh (UD), PA	74	65	-9
Poplar Bluff, MO	7	9	2
Portland, OR	145	76	-69
Prescott, AZ	13	7	-6
Providence, RI	25	37	12
Reno, NV	14	20	6
Richmond, VA	120	104	-16
Roseburg, OR	14	10	-4
Saginaw, MI	7	17	10
Salem, VA	62	52	-10
Salt Lake City, UT	95	81	-14

(continued)

VA medical center	Fiscal year 1992	Fiscal year 1993	Change in injuries
San Antonio, TX	89	105	16
San Diego, CA	77	45	-32
San Francisco, CA	64	52	-12
San Juan, PR	71	34	-37
Seattle, WA	76	64	-12
Sepulveda, CA	32	33	1
Shreveport, LA	57	27	-30
Sioux Falls, SD	27	17	-10
Spokane, WA	7	16	9
St. Louis, MO	74	41	-33
Syracuse, NY	34	40	6
Tampa, FL	98	85	-13
Temple, TX	24	32	8
Togus, ME	27	12	-15
Topeka, KS	35	16	-19
Tucson, AZ	45	41	-4
Walla Walla, WA	15	5	-10
Washington, DC	78	74	-4
West Haven, CT	18	33	15
White River Junction, VT	18	19	1
Wichita, KS	25	13	-12
Wilkes-Barre, PA	32	16	-16
Wilmington, DE	33	24	-9
Total	**5,933**	**4,791**	**-1,142**

VA Medical Center Fiscal Year 1993 Purchases of Safer Devices

From January 1990 through May 1993, the Food and Drug Administration granted marketing approval for 41 safer needle sharps devices. In fiscal year 1993, only 90 of the 158 VA medical centers purchased safer devices. These medical centers spent $1.1 million on 33 types of safer devices. Most of the safer devices were either injection equipment or IV delivery systems. Injection equipment consists of various types of needles and syringes used to inject medicines or draw blood. IV delivery systems consist of several devices used to deliver fluids and medicine to the venous system. The VA medical centers also bought a small amount of other kinds of safer devices, such as IV catheters or phlebotomy equipment. In our study, we only considered purchases of the safer devices given FDA marketing approval between January 1990 and May 1993.

Table III.1: VA Medical Center Expenditures on Safer Devices

Fiscal year 1993

VA medical center	VA expenditures on safer devices	Injection equipment	IV delivery systems	Other devices
Miami, FL	$103,313		$103,313	
East Orange, NJ	76,942	$25,400	39,530	$12,012
New York, NY	73,078	205	72,873	
Portland, OR	69,594		69,594	
Atlanta, GA	60,570		60,570	
Cleveland, OH	59,100		59,100	
Augusta, GA	53,352		53,352	
Louisville, KY	45,196	90	45,106	
Pittsburgh (UD), PA	37,229	2,065	35,164	
Providence, RI	36,386	2,967	33,419	
Minneapolis, MN	35,905		35,905	
Albany, NY	35,510	7,350	28,160	
Palo Alto, CA	32,584		32,584	
Washington, DC	30,900	30,900		
Fresno, CA	27,914		27,914	
Dublin, GA	24,640		24,640	
Madison, WI	19,220		19,220	
Indianapolis, IN	15,030	15,030		
Togus, ME	13,730		13,730	
Alexandria, LA	13,522		13,522	
Altoona, PA	13,400		13,400	
Birmingham. AL	10,360	10,360		
Temple, TX	10,062		10,062	
San Antonio, TX	8,966	8,966		

(continued)

Fiscal year 1993

VA medical center	VA expenditures on safer devices	Injection equipment	IV delivery systems	Other devices
Asheville, NC	8,924	8,924		
Batavia, NY	8,860		8,680	180
Brockton/W. Roxbury, MA	8,322	8,044	278	
Wilkes-Barre, PA	8,280		8,280	
Lexington, KY	7,613	7,613		
Buffalo, NY	7,006		7,006	
Loma Linda, CA	6,913		6,913	
Clarksburg, WV	6,647	6,647		
Dayton, OH	6,637	6,637		
Prescott, AZ	6,560	260	6,300	
Lyons, NJ	6,402	2,993	3,409	
Muskogee, OK	5,980	5,980		
Little Rock, AR	5,882	1,228	4,654	
Nashville, TN	5,750	5,750		
Milwaukee, WI	5,561	5,561		
Sepulveda, CA	5,100		5,100	
San Francisco, CA	4,756	4,756		
Gainesville, FL	4,750	600	2,530	1,620
Bedford, MA	4,580		4,580	
Montrose, NY	4,428	4,428		
Baltimore, MD	3,850		3,850	
Sioux Falls, SD	3,600		3,600	
Salt Lake City, UT	3,436		3,436	
Cincinnati, OH	2,662	2,662		
New Orleans, LA	2,570	70	2,500	
Marion, IL	2,360		2,360	
Ft. Lyon, CO	2,325	2,235	90	
Bay Pines, FL	2,190	1,750	440	
Iron Mountain, MI	2,175		2,175	
Boise, ID	2,044	350	1,694	
Houston, TX	1,932		1,932	
Leavenworth, KS	1,771	1,771		
Salem, VA	1,585	1,585		
Lake City, FL	1,550	1,311	239	
Kerrville, TX	1,320	1,320		
Saginaw, MI	1,115		1,115	

(continued)

Fiscal year 1993

VA medical center	VA expenditures on safer devices	Injection equipment	IV delivery systems	Other devices
Ft. Howard, MD	1,040		1,040	
Marion, IN	770	770		
Reno, NV	675	675		
Seattle, WA	662			662
Grand Junction, CO	636	636		
Jackson, MS	460	460		
Iowa City, IA	446	86	360	
Fargo, ND	417	85	152	180
Newington, CT	400		400	
Cheyenne, WY	294	294		
St. Louis, MO	285	285		
Lebanon, PA	278		278	
Anchorage, AK	260		260	
Grand Island, NE	250		250	
Northhampton, MA	236	236		
White City, OR	230		230	
Martinsburg, WV	204	204		
Coatesville, PA	204		204	
Danville, IL	192		192	
Bonham, TX	161	161		
Sheridan, WY	140		140	
Salisbury, NC	127	127		
West Haven, CT	96		96	
White River Junction, VT	92	92		
Big Spring, TX	85	85		
Manchester, NH	85			85
Des Moines, IA	83	83		
Memphis, TN	80		80	
Ft. Wayne, IN	42	40		2
Huntington, WV	10	10		
Total	**$1,082,171**	**$190,136**	**$877,295**	**$14,740**

VA Medical Center Expenditures for Safer Devices Compared With Pertinent Injury and Health Data

This appendix shows the type of information that can be developed by VA medical centers to help make decisions on whether to acquire safer devices. As the table shows, in many cases, there was little correlation between the purchases made in fiscal year 1993 and the medical centers' fiscal year 1992 needle injuries or the risk of exposure to HIV (represented here by the patient HIV seroprevalence estimates and HIV seroconversion estimates we calculated). (See app. I for more information on the development of the seroprevalence and seroconversion analysis.)

Table IV.1 compares expenditures, needle injuries, and seroprevalence and seroconversion rates for acute care medical centers and nonacute medical centers. These and other data can be used to determine any medical center's need to purchase safer devices. For example, while New York's needle injury rate is relatively low, it ranks high on seroprevalence and seroconversion data. As a result, the acquisition of safer device needs to be given careful consideration.

Table IV.1: Expenditures Compared With Injury and Health Risk Data

		Fiscal year 1992					
		Needle injuries		Patient HIV seroprevalence percentage		Health care worker HIV seroconversion	
Fiscal year 1993							
VA medical center	Expenditures	Injuries	Rank	GAO estimate	Rank	GAO estimate	Rank
VA acute care medical centers							
Miami	$103,313	51	49	8.303	2	.01228	3
East Orange	76,942	36	67	4.904	10	.00512	20
New York	73,078	25	86	9.230	1	.00669	17
Portland	69,594	145	1	2.432	20	.01022	8
Atlanta	60,570	41	60	6.449	4	.00767	10
Cleveland	59,100	114	6	0.000	104	.00000	104
Augusta	53,352	46	53	0.091	96	.00012	90
Louisville	45,196	39	64	0.000	118	.00000	118
Pittsburgh (UD)	37,229	74	28	1.352	44	.00290	30
Providence	36,386	25	87	0.358	79	.00026	78
Minneapolis	35,905	105	8	0.592	61	.00180	45
Albany	35,510	42	57	0.357	80	.00043	69
Palo Alto	32,584	52	46	1.504	14	.00227	41
Washington, DC	30,900	78	22	3.730	15	.00844	9
Fresno	27,914	25	85	1.544	35	.00112	55
Dublin	24,640	18	99	0.544	66	.00028	76
Madison	19,220	55	45	0.502	68	.00080	60

(continued)

		Fiscal year 1992					
		Needle injuries		Patient HIV seroprevalence percentage		Health care worker HIV seroconversion	
Fiscal year 1993							
VA medical center	Expenditures	Injuries	Rank	GAO estimate	Rank	GAO estimate	Rank
Indianapolis	15,030	79	21	0.756	54	.00173	47
Togus	13,730	27	81	0.000	128	.00000	128
Alexandria	13,522	19	97	0.386	78	.00021	81
Altoona	13,400	13	113	0.000	98	.00000	98
Birmingham	10,360	57	42	0.497	69	.00082	59
Temple	10,062	24	90	0.491	70	.00034	74
San Antonio	8,966	89	16	1.678	33	.00433	23
Asheville	8,924	36	66	0.553	65	.00058	65
Batavia	8,860	10	118	0.000	99	.00000	99
Brockton/West Roxbury	8,322	87	17	0.659	59	.00166	48
Wilkes-Barre	8,280	32	74	0.398	77	.00037	72
Lexington	7,613	132	2	0.486	72	.00186	43
Buffalo	7,006	69	32	0.557	64	.00111	56
Loma Linda	6,913	73	30	2.337	21	.00495	21
Clarksburg	6,647	9	122	0.000	103	.00000	103
Dayton	6,637	48	52	2.070	24	.00028	31
Prescott	6,560	13	115	0.000	124	.00000	124
Muskogee	5,980	21	95	0.204	90	.00012	89
Little Rock	5,881	82	20	0.195	91	.00046	68
Nashville	5,750	64	39	0.718	55	.00133	52
Milwaukee	5,561	75	27	0.000	121	.00000	121
Sepulveda	5,100	32	73	1.388	42	.00129	53
San Francisco	4,756	64	40	5.533	6	.01027	9
Gainesville	4,750	67	35	1.522	37	.00296	29
Baltimore	3,850	76	24	3.258	16	.00718	15
Sioux Falls	3,600	27	80	0.441	75	.00035	73
Salt Lake City	3,436	95	11	0.000	127	.00000	127
Cincinnati	2,662	55	44	0.240	85	.00038	71
New Orleans	2,570	51	50	2.886	17	.00427	24
Marion	2,360	11	117	0.138	94	.00004	97
Bay Pines	2,190	129	3	4.425	11	.01655	1
Iron Mountain	2,175	22	93	0.000	115	.00000	115
Boise	2,044	26	82	0.268	83	.00020	82
Houston	1,932	93	12	4.283	13	.01155	5
Leavenworth	1,771	27	78	0.000	116	.00000	116

(continued)

		Fiscal year 1992					
		Needle injuries		Patient HIV seroprevalence percentage		Health care worker HIV seroconversion	
Fiscal year 1993							
VA medical center	Expenditures	Injuries	Rank	GAO estimate	Rank	GAO estimate	Rank
Salem	1,585	62	41	0.691	57	.00124	54
Lake City	1,550	18	101	0.132	95	.00007	94
Kerrville	1,320	14	110	0.455	74	.00018	83
Saginaw	1,115	7	126	0.000	126	.00000	126
Reno	675	14	111	1.482	39	.00060	63
Seattle	662	76	25	1.177	47	.00259	37
Grand Junction	636	6	128	0.000	112	.00000	112
Jackson	460	69	33	0.899	51	.00180	46
Iowa City	446	23	92	0.777	53	.00052	66
Fargo	417	28	76	0.209	88	.00017	86
Newington	400	15	106	0.601	60	.00026	77
Cheyenne	294	17	104	0.000	102	.00000	102
St. Louis	285	74	29	1.417	40	.00304	28
Grand Island	250	11	116	0.000	111	.00000	111
Martinsburg	204	15	105	0.695	56	.00030	75
Danville	192	26	83	0.564	63	.00043	70
West Haven	96	18	102	1.267	46	.00066	62
White River Junction	92	18	103	0.000	130	.00000	130
Big Spring	85	24	89	0.000	101	.00000	101
Manchester	85	27	79	0.000	119	.00000	119
Des Moines	83	43	55	0.000	106	.00000	106
Memphis	80	67	36	1.365	43	.00265	35
Ft. Wayne	42	19	98	0.321	81	.00018	85
Huntington	10	18	100	0.000	114	.00000	114
VA nonacute care medical centers							
Lyons	6,402	[a]	[a]	[a]	[a]	[a]	[a]
Bedford	4,580	[a]	[a]	[a]	[a]	[a]	[a]
Montrose	4,428	[a]	[a]	[a]	[a]	[a]	[a]
Ft. Lyon	2,325	[a]	[a]	[a]	[a]	[a]	[a]
Ft. Howard	1,040	[a]	[a]	[a]	[a]	[a]	[a]
Marion	770	[a]	[a]	[a]	[a]	[a]	[a]
Lebanon	278	[a]	[a]	[a]	[a]	[a]	[a]
Anchorage	260	[a]	[a]	[a]	[a]	[a]	[a]
Northhampton	236	[a]	[a]	[a]	[a]	[a]	[a]
White City	230	[a]	[a]	[a]	[a]	[a]	[a]

(continued)

		Fiscal year 1992					
Fiscal year 1993		Needle injuries		Patient HIV seroprevalence percentage		Health care worker HIV seroconversion	
VA medical center	Expenditures	Injuries	Rank	GAO estimate	Rank	GAO estimate	Rank
Coatesville	204	[a]	[a]	[a]	[a]	[a]	[a]
Bonham	161	[a]	[a]	[a]	[a]	[a]	[a]
Sheridan	140	[a]	[a]	[a]	[a]	[a]	[a]
Salisbury	127	[a]	[a]	[a]	[a]	[a]	[a]

[a]We performed the HIV seroprevalence and seroconversion analyses for VA's acute care medical centers only. We performed the purchasing analysis on all the medical centers.

Comments From the Department of Veterans Affairs

THE SECRETARY OF VETERANS AFFAIRS
WASHINGTON

SEP 26 1994

Mr. David P. Baine
Director, Federal Health Care
Delivery Issues
U. S. General Accounting Office
441 G Street, Northwest
Washington, DC 20548

Dear Mr. Baine:

Now GAO/HEHS-95-12.

This is in response to your draft report, **VA HEALTH CARE: Increased Management Attention Needed to Address Needlestick Injuries Issues** (GAO/HEHS-94-202). Although I concur with GAO's recommendations, I believe that GAO's conclusions are based on data that might have been more relevant a year ago or longer but are outdated and misleading today. The Veterans Health Administration (VHA) is already addressing many of the key issues GAO raises.

For example, I expect that the final report will reflect the ongoing contributions of VHA's National Center for Cost Containment (NCCC) at the VA Medical Center Milwaukee, Wisconsin, and their Technical Advisory Group (TAG) on needlestick prevention. In December 1993, the TAG began an extensive project that concentrated primarily on the usage of safer needle devices. The TAG consisted of expert users of various needled products from Nursing Service (Infection Control, Critical Care, Intravenous Therapy), as well as experts in the areas of acquisition, and safety and employee health. The enclosure details the activities of this group. I am pleased to say their conclusions and recommendations are being published in a series of monographs (the first was published in August 1994), which are being widely communicated and implemented throughout VA's health care system.

Since the issues the TAG addresses relate directly to the concerns in your report and since GAO evaluators interviewed the NCCC needlestick

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Mr. David P. Baine

prevention project managers and provided positive feedback regarding project accomplishments, I am seriously disappointed this VHA progress was not reflected in the draft report. In fact, it was completely ignored in the report's discussion on "dissemination of new, safe medical device technology evaluations" and the recommendations.

I am also concerned with the report's publishing estimated seroprevalence and potential health care worker seroconversion rates by medical center. Publication of such data in an official report suggests that the rates have validity and reliability. To our knowledge, the methodologies applied to derive the rates have not been applied to estimate the potential for health care worker seroconversion for any other Federal or private hospitals or systems. Thus, there is no basis for comparison. Comparable rates might well be found in any medical facility with similar caseloads of HIV-infected and AIDS patients. Regrettably, the report makes no attempt to qualify the statistical findings, and the uninformed reader is further misled to interpret the published rates as a reflection of VA safety compliance.

The enclosure details VHA's ongoing aggressive approach to the issues raised in the draft report and provides an action plan to implement the recommendations. Thank you for the opportunity to comment on your report.

Sincerely yours,

Jesse Brown

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DEPARTMENT OF VETERANS AFFAIRS COMMENTS TO
GAO DRAFT REPORT, **VA HEALTH CARE: Increased Management Attention Needed to Address Needlestick Injuries Issues**
(GAO/HEHS-94-202)

GAO recommends that I require the Under Secretary for Health to:

- **test ways to improve the reporting of needlestick and other percutaneous injuries and develop a systemwide strategy to implement successful approaches.**

Concur - As reflected in report findings, the number of needlestick and sharps device injuries occurring in VA may be under reported. This perceived underreporting is certainly not unique to VA; rather it is universally acknowledged by experts in the field that underreporting is probably the rule in virtually all health care facilities for the reasons cited in the draft report. VHA's Offices of Environmental Health (including the AIDS Service), Nursing, Quality Management and Infectious Diseases continue to work closely together to identify more consistent reporting mechanisms at both the field and national levels (through data collection and analysis processes involved with the Quality Improvement Checklist national data management and reporting system, which includes a data element dealing with needlestick reporting). However, because each medical facility is different, local reporting systems must reflect the individualized needs and "cultures" of each center. Noted in other sections of this action plan are details of some of the activities of the National Center for Cost Containment (NCCC) project on needlestick prevention. Among the goals of the Technical Advisory Group (TAG) of this project is to identify improved methods of reporting and gathering data relating to needlestick injury throughout the system. A systemwide strategy, however, will continue to focus on preventative techniques, including strong encouragement for all facilities to use the safer needle devices that are currently being marketed. Education and awareness of all involved staff are essential in lowering the number of needlesticks that might occur. VHA systemwide strategy in both preventing injury and in

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facilitating more accurate reporting emphasizes the need for continually improving educational and training programs.

- **fund pilot projects in which acute medical centers acquire and test new, safe needle and medical devices, and determine their impact on the incidence of needlesticks over a period of time.**

Concur - The GAO draft report unfortunately did not acknowledge the many activities of the NCCC/TAG project on needlestick prevention. This group, which consisted of regular users of various needle products as well as acquisition and safety experts from both the field and VA Central Office, extensively reviewed available literature on the potential cost of needlestick injury, consulted with recognized experts in the field and reviewed available VA statistics relating to needlestick injuries. Specific to this recommendation, the TAG completed its goal of compiling a standard, rated listing of available injury prevention devices that will form the foundation for a VA safe device formulary. The TAG will coordinate formulary development with VA's National Acquisition Center to assure product availability, the existence of Federal Supply Schedule contracts and optimal price structures. TAG members personally conducted "hands-on" tests and evaluated all "safer" needle devices available on the market. In order to assess the products as objectively as possible, the TAG developed specific evaluation criteria for each type of system. To accomplish this, they reviewed numerous journals, documents and articles that detailed assessment criteria. At the same time, product evaluation experts gathered cost and purchase history data from VA databases, primarily IFCAP Integrated Fund Distribution Control Point Activity, Accounting and Procurement. Evaluated systems were separated into six categories: safety syringes, IV devices equipment, medication delivery systems, IV delivery devices, blood contamination systems, and sharps collection systems. Final results of this project are included in Needle Stick Prevention - Monograph I (provided separately to GAO during this report review period). Two additional monographs will be published within the next several months.

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Findings and recommendations generated by the NCCC/TAG will be widely distributed and marketed throughout the system. Widespread use of safer devices will be strongly encouraged and pilot facilities most fully using the devices will be identified and carefully monitored to assess the potential impact of the devices in reducing incidence of needlestick injuries.

- **establish a communications network through which information on the results of tests and studies involving safe needle and medical devices can be disseminated to all medical centers, and made available to others when requested.**

Concur - Although no single, centralized communications network exists, VHA uses many communications tools, including program specialty conference calls, "hotlines," newsletters, national teleconferences and e-mail groups to disseminate relevant information throughout the system. Information generated by the NCCC/TAG will be distributed to every VA medical facility through the printed monographs and informational guidelines. Project directors for the needlestick prevention undertaking are already scheduled to give presentations on various conference calls, including an upcoming call for all occupational safety and health coordinators. Such presentations and discussions will also be incorporated into Nursing Service conference calls and into regularly scheduled conferences involving the AIDS and Infectious Disease Services. In addition, during upcoming weekly Operations conference calls, VHA will encourage medical center directors to implement the recommendations included in the published monographs and to assure that the publications are widely distributed and discussed throughout their facilities.

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Additional Comments:

- The publication of estimated seroprevalence and potential health care worker seroconversion rates by medical center within the draft report are inappropriate without a clear statement by GAO that the methodology used has been applied only to VA medical centers and not to other Federal or private medical facilities.

Although the methodology itself is in question, VHA's greater concern is related to the interpretation of such rates by the unsuspecting or non-research oriented reader of the report, whether he or she be a member of the general public or Congress. Publication of such tables in an official government report suggests that the rates are fully valid and reliable and can be taken at face value. To the best of VHA's knowledge, the methodologies used to derive the rates have not been applied to estimate the potential for health care worker seroconversion for any other Federal or private sector facility; it has only been applied in VA. During a recent meeting with GAO representatives, it was stated that all upcoming reports would contain a comparative analysis with similar findings in the private sector. In this instance, such a comparison has not been forthcoming. It could be assumed that comparable rates would be found in any other medical facility, be it Federal or private, with similar caseloads of HIV-infected and AIDS patients. An interpretation of the published tables by an uninformed reader could be that the safety and health of VA health care workers is somehow compromised to a degree not found in other health care delivery facilities throughout the country. If the tables and rates are to remain in the final report, GAO should clearly state that the methodology was applied only to VA facilities and was not applied for comparative purposes to non-VA institutions.

- In several places the draft report refers to procedures to be followed when needlestick injuries occur. It should be made clear that before any HIV testing occurs for either patients or employees, VA is required to obtain written consent from the individual being tested.