

A voice from behind the needlestick statistics



Lisa Black, RN, BSN, previously a critical care nurse in Nevada, USA

e-mail: lisa.rn@worldnet.att.net. website: www.needlestick.net

On October 18, 1997, I was working on a combination medical/surgical/telemetry unit in a northern Nevada hospital, and had been assigned to care for eight acutely ill patients, one of whom was in the terminal stages of acquired immune deficiency syndrome (AIDS). Subsequently that night, I noticed that my AIDS patient had blood backed up into his intravenous line tubing, occluding the line. To prevent having to re-establish his intravenous (IV) access, I needed to irrigate the line quickly. I filled a 3 ml pre-assembled syringe/needle combination device with normal saline, inserted the needle into the rubber port of the patient's IV line and attempted to aspirate the coagulating blood and then flush the IV line. Unfortunately, the patient became startled. He jerked his arm causing the needle to dislodge from the rubber port in the line. The needle punctured the palm of my left hand.

BEGINNING THE FIGHT

My first reaction was sheer panic. This man was dying, and I had exposed myself to his horrific disease. I expressed as much blood from my wound as possible and scrubbed my hand with betadine. In the emergency department blood was immediately drawn for baseline tests for human immunodeficiency virus (HIV), hepatitis B and hepatitis C. These tests proved negative and I began a regimen of potent antiviral and protease-inhibiting medications. Though the drugs made me extremely ill, I continued for a month, assuring myself they would prevent infection.

Assigned to care for this same patient 10 nights later, my resolve continued, for he finally lost his battle with AIDS and died. I believed that the period of seroconversion was behind me after three months of blood tests proved negative, because the literature I had read indicated that close to 90% of seroconversions take place within the first 12 weeks following infected blood exposure.

However, in June 1998, I began to feel fatigued. I had swollen lymph nodes and recurrent fevers. It did not then cross my mind that these symptoms were consistent with early HIV infection. Following hospitalisation for viral meningitis, on July 27, 1998, I was told that I had indeed been infected with HIV. Further blood analyses showed my liver enzymes were severely elevated. Subsequent testing revealed that I was also seropositive for hepatitis C.

No words adequately describe the horror of that moment. However, it was to be the beginning of a new journey – one I would never have chosen. I am now among the statistics – a per-

son with occupationally acquired HIV and hepatitis C. Presently I am unable to work because my body is unable to fight infections. The decision to leave bedside nursing began in December 1998 when a rare organism caused a severe systemic infection. In septic shock and in intensive care, I survived the second, life-threatening infection related to my HIV infection.

Subsequently, my hepatitis C infection skyrocketed out of control. In January 1999, when I started a medication regimen of interferon and ribavirin, my liver enzymes were over 10 times the upper limit of normal and I had near constant abdominal pain. This regimen is not an easy one. It consists of three weekly interferon injections along with oral ribavirin which, when added to my medication regimen to treat the HIV, brings my daily pill total to 22. While this treatment offers a 75% chance that my hepatitis infection will be brought into 'long term remission' status, it is important to understand that the instrumental word is 'remission'. One is not 'cured' of hepatitis C. The best that can be hoped for is a long, possibly permanent, period of remission and good health. So far the regimen has been effective. My hepatitis C infection is currently in remission. However this has not been achieved without unpleasant side effects: periodic fevers, chills, muscle aches and a high fatigue level. I also give myself three weekly injections of neupogen to stimulate my body to produce infection-fighting white blood cells.

Telling my family about my illness has been most difficult. I have yet to explain it fully to my two daughters, ages five and nine. I dread the time when they will realise the ramifications of my illness – and that I may not share their high school graduations, marriages, their own children. My own mother's influence has been so instrumental in my life, and I want to be there for my own children. Given all the research and advances in HIV treatment, I pray for that. However, I must make plans for when I may not be part of their lives.

NEEDLESTICK INJURIES – MY STORY AND OTHERS

This is why I tell my story: I cannot change the events of October 18, 1997. Nothing will give me back my life as it was before the HIV and hepatitis C viruses became part of it. So, I want my story to prevent similar tragedies from happening to other healthcare workers, to educate others about the reality of occupational blood-borne disease. I tell my story so that other healthcare workers should not have to tell the same one.

Although the statistics presented here are largely US-based,

per capita these same injury rates equate with other medically advanced countries, and I assure you that in every country there are healthcare workers living with the tragic consequences of needlestick injury.

Consider this: the most recent statistics from the International Healthcare Worker Safety Centre in Charlottesville, Virginia, indicate that American healthcare workers sustain approximately 787,000 accidental exposures to blood and body fluids annually and 590,000 (75%) of these result from injuries by needles or other sharp objects at work. If we consider only exposures caused by ‘sharps’ injuries, approximately 12,000 of these expose a healthcare worker to HIV, the virus that causes AIDS (International Health Care Worker Safety Center, 1999a).

Assuming that, of every 1,000 people with HIV exposure, three will ultimately develop active HIV infection, theoretically 36 American healthcare workers will be infected with HIV annually from needlestick injuries alone. Adding hepatitis B and hepatitis C infections to this number means that some 5,000 American healthcare workers are infected with a blood-borne illness at work annually. The figures are universal. For example, at the fourth International Conference on Occupational Health, in September 1999, statistics from a French study indicated there have been 42 cases of occupational HIV infection among French healthcare workers since the AIDS epidemic began (International Health Care Worker Safety Center, 1999b). Particularly alarming is the fact that appropriate antiviral prophylactic therapy was prescribed in six of the more recent exposures, but failed in four of these despite proper administration. Tables 1 and 2 illustrate the magnitude and impact of needlestick injuries to healthcare workers worldwide.

Nurses and other healthcare workers need not put their lives at risk to care for others. The Centres for Disease Control and Prevention estimate that approximately 80% of all occupational blood exposures could be prevented by consistent use of needle devices (see Figures 1 and 2) designed to prevent a healthcare worker from being accidentally infected by a contaminated needle (Jagger, 1996).

Although safe needle devices have been available since the late 1970s and over 1,000 patents have been issued in 10 years,

Table 1. Cases of documented and possible occupational HIV infection among healthcare workers, by country, reported to 30 September, 1997. Source: AEP 4(4):42

No. (%) of infections			
Country	Documented	Possible	Total
USA	52 (55.4)	114 (67.1)	166 (62.9)
France	11 (11.7)	27 (15.9)	38 (14.3)
UK	4 (4.2)	9 (5.3)	13 (4.9)
Mexico	–	9 (5.3)	9 (3.4)
Italy	5 (5.3)	–	5 (1.9)
Australia	4 (4.2)	–	4 (1.5)
Spain	5(5.3)	–	5 (1.9)
South Africa	3 (3.2)	1 (0.6)	4 (1.5)
Germany	3 (3.2)	3 (1.8)	6 (2.3)
Belgium	2 (2.1)	1 (0.6)	3 (1.1)
Canada	1 (1.1)	2 (1.1)	3 (1.1)
Holland	–	2 (1.1)	2 (0.8)
Switzerland	2 (2.1)	–	2 (0.8)
Denmark	–	1 (0.6)	1 (0.4)
Israel	–	1 (0.6)	1 (0.4)
Argentina	1 (1.1)	–	1 (0.4)
Zambia	1 (1.1)	–	1 (0.4)
Total	94 (100)	170 (100)	264 (100)

Table 2. Cases of documented and possible occupational HIV infection (worldwide) among healthcare workers, by occupation, reported to 30 September 1997. Source: AEP 4(4):43

No. (%) of infections			
Occupation	Documented	Possible	Total
Nurse	49 (52.1)	45 (26.5)	94 (35.7)
Laboratory Worker, clinical	17 (18.0)	19 (11.2)	36 (13.6)
Laboratory worker, non-clinical	3 (3.2)	4 (2.3)	7 (2.6)
Physician, non-surgical	9 (9.6)	17 (10.0)	26 (9.8)
Physician, surgical	1 (1.1)	14 (8.2)	15 (5.7)
Health aide/attendant	1 (1.1)	15 (8.8)	16 (6.1)
Housekeeper/maintenance worker	3 (3.2)	8 (4.7)	11 (4.2)
Emergency medical tech/Paramedic	–	10 (5.9)	10 (3.8)
Dental worker	–	9 (5.3)	9 (3.4)
Embalmer/morgue technician	–	2 (1.2)	2 (0.7)
Respiratory therapist	1 (1.1)	2 (1.2)	3 (1.1)
Dialysis technician	1 (1.1)	3 (1.8)	4 (1.5)
Technician, surgical	2 (2.1)	3 (1.8)	5 (1.9)
Other/unspecified	7 (7.4)	19 (11.2)	26 (9.8)
Total	94 (100)	170 (100)	264 (100)

market penetration of the safety devices remains unacceptably low. In 1992, the United States Food and Drug Administration (FDA) urged all US hospitals to use safe and needle-free IV connection equipment wherever possible (Pugliese and Salahuddin, 1999). But this federal safety alert is just a recommendation, not a mandate, therefore medical facilities are under no legal obligation to comply.

A third of US medical facilities have not yet conformed, and less than 15% of all US hospitals use safety devices for all uses of needles (American Nurses Association, 1999). The main reason for this delay is simple – money! Although safety device technology has evolved dramatically, the cost exceeds that of the traditional device – and budgets are always under pressure.

To protect healthcare workers against needlestick injuries, many US states have produced legislative initiatives. In 1998, California nurses were the first to lobby for legislative protection against the needlestick injury epidemic, and they won their case. Now all California’s medical facilities must provide employees with needle devices designed to protect against needlestick injury. Also, facilities governed by this legislation must maintain



Figure 1. Many healthcare workers are familiar with various protective, needle-free IV connection devices such as this, as they are used in about 65% of all healthcare facilities in the USA. Courtesy of ALARIS medical systems.



Figure 2. The NMT Safety Syringe can be used as a 'normal' syringe, however at the end of drug delivery the device is automatically activated and the needle retracts safely into the barrel, virtually eliminating the risk of accidental needlestick injury. Courtesy of New Medical Technologies.

needlestick injury surveillance data that indicates the way employees become injured (Perry, 1998).

To date, seven American states legally require employers to provide healthcare workers with safer needle designs and 22 other states are currently legislating on this issue. Now the federal government of the United States is also considering legislation to protect healthcare workers. If signed into law, this would amend the blood-borne pathogen standard imposed on every US healthcare facility, and require employers to provide employees with a safe working environment.

'INSIGNIFICANT ... RISK'?

During some heated debates on the California needlestick bill, now signed into law, a California hospital administrator issued this statement: 'The relatively insignificant statistical risk, that a healthcare worker will be infected with a blood-borne illness in the course of their employ, does not justify mandating the additional revenue expenditure that would be necessary to implement safety devices as the industry standard.'

As one of these 'relatively insignificant statistical risks', the statement incensed and disgusted me. This quote states volumes more than the mere 42 words required to put that reckless disregard for healthcare workers' lives in print. It demonstrates

the desperate need for legislative regulation to protect healthcare workers from like-minded administrators.

Though we cannot put a price tag on human life, the costs of needlestick injuries are phenomenal. The cost to treat one high-risk needlestick, from which no infection results, can easily exceed US\$3,000 (American Nurses Association, 1999). There is no ceiling to this cost if a healthcare worker actually becomes infected with a blood-borne illness. In my case, the medications I must take for the rest of my life cost approximately US\$6,000 a month. Because I am unable to work, my lost wages must be added to the total spent on treating one needlestick victim. The total would buy a lot of safety needles.

However, the costs transcend monetary terms. These infections also come at tremendous emotional and psychological expense. Mothers of young children must consider questions such as who will care for their children when they are too ill to continue. It really comes down to this – without a needle there is no needlestick injury. Without needlestick injuries, healthcare workers and their families will no longer have to live with the tragedy of occupational blood exposure.

The time for change is now. It is unacceptable that stories such as mine continue to be played out every day – across the globe.

ACKNOWLEDGEMENT

This article has been reproduced following its publication last year in *European Hospital* 3/2000 with the permission of the publishers.

REFERENCES

- American Nurses Association. (1999). *Needlestick Injury Fact Sheet*.
- Jagger J. (1996). Reducing occupational exposure to bloodborne pathogens: where do we stand a decade later? *Infection Control and Hospital Epidemiology*; 17: 573–575.
- International Health Care Worker Safety Center. (1999a). *Uniform Needlestick and Sharp-Object Injury Report*. US EPINet Network.
- International Health Care Worker Safety Center. (1999b). International Researchers Publish Study on Worldwide Cases of Occupational HIV infection. *Advances in Exposure Prevention*; 4: 42–43.
- Perry J. (1998). California Leads the Way With Health Care Worker Safety Law. *Advances in Exposure Prevention*; 4: 1–5.
- Pugliese G, Salahuddin M. (1999). *Sharps Injury Prevention Program A Step-By-Step Guide*. American Hospital Association. ■

▶ COMMERCIAL CONNECTIONS ◀

KCI-MEDICAL SUPPORTS THE EUROPEAN FEDERATION OF CRITICAL CARE NURSING ASSOCIATIONS (EfCCNa)

Kinetic Concepts Inc (KCI) is one of the sponsors of EfCCNa. KCI is a global corporation with European offices in Great Britain, France, Germany, the Scandinavian countries, Austria, Switzerland, Italy and the Netherlands. The wide range of KCI's products includes (Gore-Tex® Low Air Loss) specialty beds and mattresses designed to assist in preventing and treating the complications of skin breakdown. KCI is well known for its wound care treatment with VAC® therapy and pulmonary care in ventilated patients with specialty beds that provide kinetic therapy and prone position therapy.

KCI is dedicated to working together with both national and pan-European critical care organisations in order to be effective in providing innovative products that play an active role in the healing process of the critically ill patient. Because of this, KCI felt attracted to an important organisation like the EfCCNa whose motto is: 'Working together – achieving more.'

Chris Borsten, Manager of Professional Service, from the Netherlands and Helmuth Boeger, Product Manager, from Germany have represented KCI in the discussions with EfCCNa. At the Zagreb meeting in March 1999 they gave a clear presentation on how the company's products can influence the clinical outcome of patients on the critical care unit. During further meetings in Berlin and Barcelona we had some good discussions about the future of critical care nursing in Europe and how both organisations could work together to contribute to this process.

EfCCNa wants to thank KCI-Medical for their generous financial support to the organisation. We look forward to developing this collaboration more widely and effectively in the coming years so that both parties will increasingly benefit.

For more information about KCI please visit the EfCCNa website (www.efccna.org) where you will find a hyperlink that connects you with the homepage of KCI.

Jan Westrate, EfCCNa, The Netherlands