European Biosafety Network

Implementation Update

This is the first in a series of publications that will share experiences, implementation challenges and best practices using information provided through the Network. Effective information exchange between the various stakeholders involved should contribute to a consistent and effective implementation of the Directive across the European Union to benefit all healthcare workers and patients.

Protecting Europe's healthcare workers from potentially fatal occupational injuries

The everyday work of healthcare staff puts them at risk of serious infections with more than 30 potentially dangerous pathogens, including hepatitis B, hepatitis C and HIV, through injuries with contaminated needles. More than one million needlestick injuries are estimated to occur in the European Union each year. The majority of these injuries are preventable with the provision of effective training, safer working procedures and safety-engineered medical devices that shield or retract the needle/sharp after use.

The June 2010 publication of EU Council Directive 2010/32 /EU, on the prevention of sharps injuries in the hospital and healthcare sector, highlighted the importance of consistently implementing mandatory measures to prevent these potentially fatal injuries. Existing legislation has largely proved to be ineffective. The Directive must be implemented in all Member States by 11 May 2013 at the latest.

The risk of incorrect risk assessment

The Directive is a major step forward but Europe's healthcare workers aren't yet adequately protected from these potentially fatal injuries. Only the full implementation of the Directive in all Member States will ensure that.

The Directive mandates risk assessment and the implementation of preventative measures wherever there is a risk of injury from a medical sharp or infection. Although logical on the face of it, some expert commentators argue that in this case the risk assessment based approach has the potential to encourage massive variation in the protection provided to healthcare workers due to differing views and errors in the assessments. One example concerns the risks associated with injection and syringes/needles.

A common fallacy that can put the lives of healthcare workers at risk

In the past some employers have established a risk hierarchy where certain applications of medical needles have been considered to pose less threat than others. Therefore, the importance of implementing preventative measures is viewed as being lower in the case of these devices. This approach usually hinges on an assumption that syringes are a low risk compared to devices intended for vascular access or blood sampling. This is a dangerous assumption.

Injection safety profile – key facts

1 **Frequency of injury**

The most common device to be involved in needlestick injuries is the syringe and needle (1) and (2).

2 **Amount of blood**

The fact that there is often no visible blood on syringe needles is one of the reasons for a perceived low risk. Blood is present on many used injection devices but is not always visible. The quantity of blood is usually sufficient to spread serious infection.

Studies undertaken in the US and Italy show that approximately one out of six hypodermic syringes and needles are contaminated with blood. (3)

Minute quantities of blood can transmit potentially fatal infection. A sufficient quantity of blood to transmit infection is frequently present in used hypodermic needles. (4) (5)

For example only 1/10 000 ml of infected plasma is required for hepatitis B virus (HBV) transmission. Many times this amount is present within the barrel or on the sides of medical sharps, even in devices not used expressly for blood drawing or vascular access.

3 Depth of injury

The depth of a needlestick injury is a very important factor in determining the risk of transmission of serious infection, e.g. HIV.

Studies have shown that sustaining a deep injury carries three times the risk for transmitting HIV or hepatitis C than the presence of visible blood on the needle, the needle having been inside a vessel or the HIV+ subject later dying. (6) (7)
Hypodermic needles have the greatest potential for deep injuries.

Conclusion

Just as it is not feasible to reliably segregate patients on the basis of risk, it is not possible to assume a low risk for certain types of medical devices that incorporate a needle. The implementation of universal preventative measures is the only way to reliably protect healthcare workers from the risks of serious infections and psychological damage resulting from needlestick injuries.

In order to be effective, national implementation of the Directive 2010/32/EU must mandate that effective training, safer working procedures and safety-engineered medical devices are fully implemented in all cases where needles are used on patients.

For more information on implementing the directive visit:

www.europeanbiosafetynetwork.eu

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