POSITION STATEMENT

Minimum Standards for Capillary Blood Lancing Devices in Health Care Settings

The Australian Diabetes Educators Association (ADEA) promotes the use of capillary blood lancing devices (lancing device) that minimise the risk of cross-infection of blood borne pathogens to staff and patients during the sampling of capillary blood.

The ADEA recommends:

- Health care agencies actively involve diabetes educators in the decision making process, with respect to the review and choice of safe and effective lancing devices.
- Health care professionals only use disposable single-use retractable lancing devices.
- Suitable training in relation to the appropriate use and disposal of the lancing device and infection control issues are provided to all staff using devices.
- The capillary blood lancing procedure be clearly documented in the health care facility’s infection control policies.
- When a person in assisted care requires ongoing capillary blood sampling, and can do their own testing, a non disposable lancing device, with reusable components, be allocated to each individual. The individual must be able to appropriately change and dispose of the used lancets themselves, otherwise testing must be performed by staff using a disposable single-use, retractable lancing device.
- Each organisation/provider ensures their specific infection control procedure ensures the protection of patients/residents and staff from blood-borne pathogens.

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Purpose

The purpose of this position paper is to:

- Identify technical and safety considerations in regards to the use of capillary blood lancing devices.

Background

Lancing devices are used to obtain a small sample of capillary blood from areas of the body such as fingers, palms, forearm, earlobe or heels (in neonates only). Lancing devices are used in both primary and secondary care and are predominantly used for the monitoring of blood glucose levels.

ADEA members have identified that some health care facilities and providers purchase or obtain lancing devices without a risk analysis, consultation of ADEA Position Statements or input from a diabetes educator. As a result, a number of health care facilities and providers use capillary blood lancing devices that are considered a potential cause of cross infection by blood-borne pathogens.

The ADEA believes that the lancet devices used for sampling capillary blood, need to minimise the associated risks to staff and patients undertaking the process.

The Medicines and Healthcare products Regulatory Agency (MHRA) has issued guidelines in the United Kingdom which highlight the risks associated with the inappropriate use of lancing devices. Health care professionals are advised that they should not use lancing devices intended for personal use to obtain blood samples from patients, and that a disposable single-use device should be used.

Technical Considerations

Lancets vary in their ability to cut and penetrate tissue and can produce differences in blood volume and puncture pain. Those that produce large blood volumes generally tend to be more painful as the lancet must penetrate the dermis to a depth of 0.6-1.3mm to produce sufficient blood.

Physiological variations in skin thickness and circulation require lancing devices to have an adjustable penetration depth. A lancet should pierce the skin to a depth that produces sufficient blood. Lancing too deeply increases pain, while not lancing deeply enough will not provide sufficient blood, necessitating repeat puncture.

An important safety feature available in some lancing devices is a retractable mechanism that decreases the risk of needlestick injury by retracting the needle immediately after it is fired.

A major consideration for users is that the lancing device produces sufficient blood with minimal pain and discomfort. Factors to be considered include size, shape and sharpness,
ease of use and adjustable depth gauge. Sharper lancets penetrate the skin more easily and produce less pain.

Operation can influence both effectiveness and safety. The disposable, single use systems have the lowest number of operational steps. It is important that the appropriate training is provided for users.

Safety

Accidental needlestick injuries can occur at any time during the use of lancing devices.6 Needlestick injury from contaminated sharps can transfer blood borne pathogens into the body through the skin.7 The pathogens that pose the most serious health risks from needlestick injuries are Hepatitis B, Hepatitis C and Human Immunodeficiency Virus (HIV).8 Care workers and healthcare professionals in multiple patient environments such as aged care and disability facilities, home care, GP surgeries, out-patient clinics, prisons must only use a single-use, disposable lancing device.

Patients who test their own blood should not share their lancing device with anyone else. Those caring for a person with diabetes and performing blood glucose testing are advised to always use a disposable, retractable lancet device. 1-3

Considerations for single-use capillary blood lancing devices

- automatic retraction mechanism with no re-usable components
- be completely disposable
- features to reduce pain
- adjustable depth gauge
- safety features designed to prevent sharps injuries
- require minimal instruction for new operators
- consistently provide blood samples of sufficient size
- to be used only in the context of standard infection control precautions of the facility.

Additional considerations for personal non-disposable lancet devices

It is important people with diabetes with their own lancing device are provided with education in the correct use of their lancing device, including how to assemble the device, use it, clean the device and end cap, frequency of cleaning, and how to remove and dispose of the lancet safely. Malfunctioning devices can create additional challenges for the user in obtaining a relatively pain-free, sufficient volume of blood to measure their blood glucose levels. Reinforcement of the importance of only using the lancet device for personal use is essential.

Other issues may affect the functional ability of such devices including extreme heat.

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References

1. MDA/2006/066 Medical Device ALERT Lancing devices used in nursing homes and care homes. 2006; www.mhra.gov.uk

2. MDA/2006/066 Medical Device ALERT Lancing devices used in nursing homes and care homes. 2007; www.mhra.gov.uk


