DiABETES UK
KNOW DIABETES. FIGHT DIABETES.

NHS England

Ensuring people with diabetes are cared for safety and effectively

In the event a patient with diabetes presents to the ambulance service, there are a number of key areas paramedic colleagues should be aware of in ensuring patients are cared for safely and effectively.

Diabetes technologies
Increasing numbers of people, especially those with type 1 diabetes, are using wearable diabetes technology. It is important to be able to distinguish between the 2 main types of technology people use:

- **Insulin pumps** deliver a constant infusion of rapid acting insulin via a cannula under the skin. There are 2 main types of insulin pump:
    - Patch pumps, where the cannula is integral to the pump unit. These are controlled by a separate handset. ***There is a risk these can be confused with continuous glucose monitors***.
    - Tethered pumps, where the pump unit is connected to the cannula via tubing.

- **Continuous glucose monitors (intermittently scanned and real-time)**, which give continuous glucose readings from interstitial fluid measurements taken by a sensor worn on the skin. ***There is a risk these can be confused with patch pumps***.

If a person with diabetes, particularly type 1 diabetes, is admitted to hospital - ask if they use any wearable diabetes technology. If they are unconscious, make sure you check them for wearable diabetes technology – usually worn on the arm or the abdomen but sometimes the thighs or buttocks. NB – if a person is using an insulin pump or CGM, they may not be carrying a 'traditional' insulin pen and finger-prick blood glucose tester with them.

If hypoglycaemia is present and the person is unconscious remove any device which may be administering insulin – if you are unsure of the device, consider removing it as this is the safest option. It is important to document this and ensure anyone involved in the persons care (particularly if their care is transferred to another area/team) is aware how long it has been off for.

- If removing an insulin pump, there is a risk of DKA unless insulin is administered in another way (e.g. variable rate intravenous insulin infusion).

If hyperglycaemia is present and the person is unconscious insulin delivery may have been interrupted and there is a risk of DKA. If glucose is raised in an unconscious person, measure ketones. Remove any device and store safety and treat with variable rate insulin infusion (if no ketones) or fixed rate (0.1u/kg/hour) if Ketones > 3.0 mmol/l.

Do not discard any devices that are removed as they are expensive and may be needed again and equipment should be labelled to the person if they are being transferred to hospital

Glucose and ketone measurements
Anyone who has type 1 diabetes or type 2 diabetes should have their blood glucose measured, and anyone with type 1 diabetes who is unwell should have their blood ketones measured. Blood ketones of >0.6mmol are a possible sign that someone is at risk of developing diabetic ketoacidosis (DKA) – the person should be encouraged to follow their 'sick day rules'. Blood ketones of >3.0mmol should be treated for diabetic ketoacidosis (DKA).

Follow up pathway after acute episode
People who present with an episode of hypoglycaemia or possible DKA should be referred to their usual diabetes care provider for follow up and ongoing diabetes management.

Is the person wearing diabetes technology?

Is it a pump?

Is it a CGM?

Check capillary glucose

High glucose (> 16 mmol/l) – likely pump malfunction

Counter - check glucose with finger - prick to confirm if it is accurate

Check Ketones if glucose > 14 mmol/l

negative

positive

If Ketones > 3mmol/l → treat as DKA

Give SC insulin or start insulin infusion

Remove pump and store safely

Transfer to hospital

Low glucose

Counter - check glucose with finger - prick to confirm if it is accurate

Treat as usual