Service Development for Patients with Type One Diabetes

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1) **PRIORITISATION OF CALLS** – We discussed the need to increase identification of patients with clinical factors that suggest they should have a higher priority in AMPDS system. As examples Roz suggested that key indicators in DT1 should be included in AMPDS such as the Ketone level as an indicator of DKA (Diabetic Keto Acidosis).

   Jaqui explained that calls are triaged and prioritised against each other to ensure that the most seriously ill patients get the fastest treatment. She said this approach is based on risk factors rather than diagnostic criteria and added that Lyn Sugg is reviewing some of the prioritisation parameters in AMPDS with the Priority Despatch Corporation (the providers in the USA), but that any changes will need national assurance in the UKI and the triage outcome must be equivalent to other conditions of equal severity.

2) **EARLY TREATMENT AND INTERVENTION**
   The need for early faster treatment for patients who have a life threating diabetic event was discussed and particularly the impact of early intervention in recovery and clinical outcomes, e.g. early intervention to prevent organ failure or death.

   The approach for many people with DT1 is to use their own ketometers or strips. It is a source of concern that paramedics do not have equipment to measure ketones.

   Jaqui said that diabetic emergencies are usually classified as C1 or C2 giving 45-60 minute response time in over 50% of calls and that priority indicators would include: providing a history of diabetes, sickness, vomiting, raised sugar and raised ketones. Roz pointed out that that some people who are seriously ill with DT1 may not be testing themselves for sugar or ketone and that the mortality rate for women though DKA is six times that for men.

   A major concern is about the fate of patients in DKA who are taken to an A&E where there is queuing and consequently suffers serious delays in accessing emergency care.

C1	90% response in 20 minutes	63.3%	>50% response in 45 minutes	74.16%

C2	90% response in 30 minutes	67.21%	>50% response in 60 minutes	77.47%

3) USERS OF INSULIN PUMPS

The use of insulin pumps was discussed particularly in view of the need for front line staff to be trained to understand the implications when pumps fail, side effects and special issues in relation to the use of pumps by young people and children. Jaqui said that training would be provided during the year 2017/8.

Front line staff also need to be familiar with flash monitoring, i.e. using phone devises to continuously measure blood glucose just beneath the skin (e.g. Dexcom G5 Mobile CGM system.

4) KETO-METERS

A trial is planned by the LAS of keto-meters. They are not used by other ambulance services but the view in the LAS is that they would be useful for diagnosis and would speed up diagnosis and treatment. There are regulations regarding their use which the LAS will have to explore and there is currently a trial in Northern Ireland.

5) LAS CLINICAL UPDATE

Jaqui said the LAS would be producing a Clinical Update on DT1 in the next few month and that she will share the draft document with Diabetes UK and the Forum. This will include advice about DKA, hypoglycaemia, use of pumps reference to keto-meters and clarification about error messages on blood-glucose meters. Jaqui added that cards have been issued to all front line staff to explain the meaning of error messages.

6) QUALITY CONTROL

We discussed the need for quality control of clinical assessment carried out by paramedics during a diabetic emergency. The LAS has low numbers of patients who suffer a diabetic emergency compared to an acute hospital, e.g. compared to the size of the diabetic population seen by Dr Rosenthal at the Royal Free.

Jaqui said there are about 4000 blood glucose meters used by the LAS, but staff have no protected time at the start of shifts to test that equipment is working properly and there is no clinical Make Ready scheme in the LAS.

Point of care testing is the aspiration of the LAS but would be very expensive and is not possible until the LAS has access to patients medical records. This issue is one that NHS England is exploring and making contact with the

Medical Director would be useful. Jaqui said she will be attending an NHSE meeting where this issue may be discussed. It is likely that high level support would be available for a creative proposal in the direction of Point of Care testing.

Note: Point of care testing, refers to testing close to the patient rather than sending samples away. In order to generate a result quickly so that appropriate treatment can be implemented, leading to an improved clinical outcome. In best practice point of care testing equipment is linked to a laboratory assessment system to enable real time monitoring of performance and integration of results into the patient's electronic record. This approach should meets requirements associated with clinical risk management and clinical governance.

7) **EATING DISORDERS**
8) **CHILDREN AND YOUNG PEOPLE**
9) **COMMUNICATING WITH GPs**