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Purpose: To ensure a consistent procedural approach to Glucagon administration.
Scope: Applies to all QAS clinical staff.
Author: Clinical Quality & Patient Safety Unit, QAS
Review date: April, 2021
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**Drug class**
Hyperglycaemic

**Pharmacology**
Glucagon is a hyperglycaemic agent that mobilises hepatic glycogen, which is released into the blood as glucose.\[^1-3\]

**Metabolism**
Glucagon is metabolised by the liver, kidneys and in the plasma.\[^1\]

**Indications**
- Symptomatic hypoglycaemia (with the inability to self-administer oral glucose)

**Contraindications**
- Allergy and/or Adverse Drug Reaction

**Precautions**
- Nil

**Side effects**
- Nil

**Presentation**
- Vials (powder and solvent), 1 mg glucagon (GlucaGen® Hypokit)\[^4\]

**Onset (IM)** | **Duration (IM)** | **Half-life**
---|---|---
4–7 minutes | Variable | 3–6 minutes

**Schedule**
- S3 (Therapeutic poisons).

**Routes of administration**
- Intramuscular injection (IM)
## Glucagon

### Adult dosages

<table>
<thead>
<tr>
<th>Symptomatic hypoglycaemia (with the inability to self-administer oral glucose)</th>
</tr>
</thead>
</table>
| **IM** | 1 mg  
Single dose only.  
**Syringe preparation:** Reconstitute 1 mg of glucagon with 1 mL of water for injection in a 3 mL syringe to achieve a final concentration of 1 mg/1 mL. |

### Paediatric dosages

<table>
<thead>
<tr>
<th>Symptomatic hypoglycaemia (with the inability to self-administer oral glucose)</th>
</tr>
</thead>
</table>
| **IM** | > 25 kg – 1 mg  
Single dose only.  
**Syringe preparation:** Reconstitute 1 mg of glucagon with 1 mL of water for injection in a 3 mL syringe to achieve a final concentration of 1 mg/1 mL.  
≤ 25 kg – 0.5 mg  
Single dose only.  
**Syringe preparation:** Reconstitute 1 mg of glucagon with 2 mL of water for injection in a 3 mL syringe to achieve a final concentration of 1 mg/2 mL.  
Decant 1 mL of the prepared solution to achieve a final concentration of 0.5 mg/1 mL. |

### Special notes

- Glucagon may be ineffective in patients lacking stored glycogen (e.g. alcoholic patients with impaired liver function and neonates).
- Oral carbohydrates should be given when the patient has responded to glucagon treatment to restore liver glycogen and to prevent secondary hypoglycaemia.
- IM glucagon should only be administered if IV glucose 10% cannot be administered in a suitable time frame.
- All parenteral medications must be prepared in an aseptic manner. The rubber stopper of all vials must be disinfected with a 2% Chlorhexidine/70% Isopropyl Alcohol swab and allowed to dry prior to piercing.