The North West Neonatal Network (NWNODN) consists of 3 locality neonatal networks, Cheshire and Merseyside (CM) Lancashire and South Cumbria (LSC) and Greater Manchester (GM). This document has agreed by locality Clinical Effective Groups (CEG) and can be adapted for local use. Please acknowledge source if this document is adapted for local use.
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Introduction

This document sets the standard to improve nutritional intake of PN by minimising the volume of non-nutritive continuous infusions and maximising calorie intake of PN by using standard concentrated formulations and infusion rates.

This document should be used in conjunction with the standardised Lancashire & South Cumbria Neonatal Network Parenteral Nutrition Guidelines.

The standardisation of infusions across network would lead to:

1. Similar infusions when babies move between network hospitals
2. Minimise delays in transfers as same infusions can be taken across by transport team
3. Minimising drug errors by using standardised formulations.
4. Improved nutrition to babies by protecting PN volume even when baby receives other infusions
5. Facilitation of standardised PN regimen across the Lancashire & South Cumbria network
Adrenaline (Epinephrine) for intravenous infusion
(Smart pump enabled)

Drug Dosage & Route of Administration

<table>
<thead>
<tr>
<th>Route</th>
<th>Dosage</th>
<th>Frequency (times daily)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV Infusion</td>
<td>Dose range: 100nanogram – 1.5 microgram/kg/minute; adjust according to response</td>
<td>Continuous Infusion</td>
</tr>
</tbody>
</table>

Use of Adrenaline

Available Concentration: Adrenaline 1 in 1000 (1mg/mL) solution

For continuous intravenous infusion, administer through a central venous catheter or peripherally inserted central catheter using smart pump (if available)

For babies of different weight bands on smart pump, use the following table to make up appropriate strength infusions:

<table>
<thead>
<tr>
<th>Less than 1 kg</th>
<th>1 – 2.499 kg</th>
<th>2.5 – 3.999 kg</th>
<th>4 – 6 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard strength</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Double strength</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
</tbody>
</table>

Formula to prepare a STANDARD STRENGTH intravenous infusion of Adrenaline

3 \( x \) babies weight (kg) = number of milligrams adrenaline to be diluted to a final volume of 50mL

This gives:
- 100nanograms/kg/minute at an infusion rate of 0.1mL/hour
- 500nanograms/kg/minute at an infusion rate of 0.5mL/hour
- 1.5micrograms/kg/minute at an infusion rate of 1.5mL/hour

Formula to prepare a DOUBLE STRENGTH intravenous infusion of Adrenaline

6 \( x \) babies weight (kg) = number of milligrams adrenaline to be diluted to a final volume of 50mL

This gives:
- 200nanograms/kg/minute at an infusion rate of 0.1mL/hour
- 500nanograms/kg/minute at an infusion rate of 0.25mL/hour
- 1.5micrograms/kg/minute at an infusion rate of 0.75mL/hour

Prescribe as X mg Adrenaline in Y mL diluent and add the rate of infusion to the infusion chart.

NB: The final volume for Adrenaline and diluent must be 50mL.

Storage / Stability

Protect from light; discard discoloured solutions
Once opened, discard any remainder
Infusion stable for 24 hours at room temperature
Other Information

Compatible with the following infusion fluids:
- Glucose 5%
- Glucose 10%
- Sodium Chloride 0.9%

Incompatible with solutions of pH >7, Adrenaline is inactivated by sodium bicarbonate.

References

Dobutamine for intravenous infusion
(Smart pump enabled)

### Drug Dosage & Route of Administration

<table>
<thead>
<tr>
<th>Route</th>
<th>Dosage</th>
<th>Frequency (times daily)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV Infusion</td>
<td>Initially 5 microgram/kg/minute then adjust according to response. Dose range: 1-20 microgram/kg/minute</td>
<td>Continuous Infusion</td>
</tr>
</tbody>
</table>

### Use of Dobutamine

**Available Concentration:** 250mg in 20mL ampoules

For continuous intravenous infusion using smart pump (if available). See below with regards to route of administration.

For babies of different weight bands on smart pump, use the following table to make up appropriate strength infusions:

<table>
<thead>
<tr>
<th>Weight Range</th>
<th>Standard Strength</th>
<th>Double Strength</th>
<th>Quadruple Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 kg</td>
<td>Not enabled</td>
<td>Enabled</td>
<td>Not enabled</td>
</tr>
<tr>
<td>1 - 2.499 kg</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Not enabled</td>
</tr>
<tr>
<td>2.5 – 3.999 kg</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Not enabled</td>
</tr>
<tr>
<td>4 – 6 kg</td>
<td>Enabled</td>
<td>Not enabled</td>
<td>Not enabled</td>
</tr>
</tbody>
</table>

Infuse STANDARD STRENGTH via a peripheral or central line.

**Formula to prepare a STANDARD STRENGTH Continuous Intravenous Infusion of Dobutamine**

\[ 30 \times \text{babies weight (kg)} = \text{number of milligrams Dobutamine to be diluted to a final volume of 50mL} \]

This gives:
- 5 micrograms/kg/minute at an infusion rate of 0.5 mL/hour
- 10 micrograms/kg/minute at an infusion rate of 1 mL/hour
- 20 micrograms/kg/minute at an infusion rate of 2 mL/hour

Infuse DOUBLE & QUADRUPLE STRENGTH via a central line.

**Formula to prepare a DOUBLE STRENGTH Continuous Intravenous Infusion of Dobutamine**

\[ 60 \times \text{babies weight (kg)} = \text{number of milligrams Dobutamine to be diluted to a final volume of 50mL} \]

This gives:
- 5 micrograms/kg/minute at an infusion rate of 0.25mL/hour
- 10 micrograms/kg/minute at an infusion rate of 0.5mL/hour
- 20 micrograms/kg/minute at an infusion rate of 1mL/hour

**Formula to prepare a QUADRUPLE STRENGTH Continuous Intravenous Infusion of Dobutamine**

\[ 120 \times \text{babies weight (kg)} = \text{number of milligrams Dobutamine to be diluted to a final volume of 50mL} \]
This gives: 4 micrograms/kg/minute at an infusion rate of 0.1mL/hour
10 micrograms/kg/minute at an infusion rate of 0.25mL/hour
20 micrograms/kg/minute at an infusion rate of 0.5mL/hour

Prescribe as X mg Dobutamine in Y mL diluent and add the rate of infusion to the infusion chart.
NB: The final volume for Dobutamine and diluent must be 50mL

### Storage / Stability

Stable for 24 hours at room temperature
Once opened discard any remainder

Usual Maximum Concentration is 5mg/mL, i.e. 250mg in 50mL.
However, concentrations of up to 10mg/mL have been used.

Compatible with the following infusion fluids:
- Glucose 5%
- Glucose 10%
- Sodium Chloride 0.9%

Incompatible with sodium bicarbonate and other alkaline solutions. Solution may exhibit pink discolouration without loss of potency for up to 24 hours at room temperature.

### References

Dopamine for intravenous infusion
(Smart pump enabled)

Drug Dosage & Route of Administration

<table>
<thead>
<tr>
<th>Route</th>
<th>Dosage</th>
<th>Frequency (times daily)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV Infusion</td>
<td>Initially 5 microgram/kg/minute then adjust according to response. Dose range: 1-20 microgram/kg/minute</td>
<td>Continuous Infusion</td>
</tr>
</tbody>
</table>

Use of Dopamine

Available Concentration: 200mg in 5mL ampoules

For continuous intravenous infusion using smart pump (if available). See below with regards to route of administration.

For babies of different weight bands on smart pump, use the following table to make up appropriate strength infusions:

<table>
<thead>
<tr>
<th>Weight Band</th>
<th>Standard strength</th>
<th>Double strength</th>
<th>Quadruple strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 kg</td>
<td>Not enabled</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>1 - 2.499 kg</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Not enabled</td>
</tr>
<tr>
<td>2.5 – 3.999 kg</td>
<td>Enabled</td>
<td>Not enabled</td>
<td>Not enabled</td>
</tr>
<tr>
<td>4 – 6 kg</td>
<td>Enabled</td>
<td>Not enabled</td>
<td>Not enabled</td>
</tr>
</tbody>
</table>

Infuse STANDARD STRENGTH via a peripheral or central line.

**Formula to prepare a STANDARD STRENGTH Continuous Intravenous Infusion of Dopamine**

\[
30 \times \text{babies weight (kg)} = \text{number of milligrams Dopamine to be diluted to a final volume of 50mL}
\]

This gives: 5 micrograms/kg/minute at an infusion rate of 0.5mL/hour
10 micrograms/kg/minute at an infusion rate of 1mL/hour
20 micrograms/kg/minute at an infusion rate of 2mL/hour

Infuse DOUBLE & QUADRUPLE STRENGTH via a central line.

**Formula to prepare a DOUBLE STRENGTH Continuous Intravenous Infusion of Dopamine**

\[
60 \times \text{babies weight (kg)} = \text{number of milligrams Dopamine to be diluted to a final volume of 50mL}
\]

This gives: 5 micrograms/kg/minute at an infusion rate of 0.25mL/hour
10 micrograms/kg/minute at an infusion rate of 0.5mL/hour
20 micrograms/kg/minute at an infusion rate of 1mL/hour
**Formula to prepare a QUADRUPLE STRENGTH Continuous Intravenous Infusion of Dopamine**

\[120 \times \text{babies weight (kg)} = \text{number of milligrams Dopamine to be diluted to a final volume of 50mL}\]

This gives:
- 4 micrograms/kg/minute at an infusion rate of 0.1mL/hour
- 10 micrograms/kg/minute at an infusion rate of 0.25mL/hour
- 20 micrograms/kg/minute at an infusion rate of 0.5mL/hour

**Prescribe as X mg Dopamine in Y mL diluent and add the rate of infusion to the infusion chart.**

**NB:** The final volume for Dopamine and diluent must be 50mL

**Storage / Stability**

Stable for 24 hours at room temperature
Once opened discard any remainder

Usual maximum concentration of final solution =3.2mg/mL i.e. 160mg in 50mL.
However, concentrations of up to 5.1mg/mL have been used.

Compatible with the following infusion fluids:
- Glucose 5%
- Glucose 10%
- Sodium Chloride 0.9%

Incompatible with sodium bicarbonate and other alkaline solutions

**Caution:** Do not use yellow/brown discoloured solutions. Extravasation may cause local ischaemia and tissue necrosis.

**References**

**Insulin for intravenous infusion for Hyperglycaemia**  
*(Smart pump enabled)*

### Drug Dosage & Route of Administration

<table>
<thead>
<tr>
<th>Route</th>
<th>Dosage</th>
<th>Frequency (times daily)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV Infusion</td>
<td>Dose range: 0.01 - 0.2 units/kg/hour; adjust infusion rate according to response</td>
<td>Continuous Infusion</td>
</tr>
</tbody>
</table>

### Use of Insulin

**Available Concentration:** Soluble Insulin 100 international units/mL in 10mL multi-dose vials  
*(Actrapid®)*

**For continuous intravenous infusion using smart pump (if available).**

For babies of different weight bands on smart pump, use the following table to make up appropriate strength infusions:

<table>
<thead>
<tr>
<th></th>
<th>Less than 1 kg</th>
<th>1 - 2.499 kg</th>
<th>2.5 – 3.999 kg</th>
<th>4 – 6 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard strength</td>
<td>Not enabled</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>Double strength</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Enabled</td>
<td>Not enabled</td>
</tr>
<tr>
<td>Quadruple strength</td>
<td>Enabled</td>
<td>Not enabled</td>
<td>Not enabled</td>
<td>Not enabled</td>
</tr>
</tbody>
</table>

**Formula to prepare a STANDARD STRENGTH Continuous Intravenous Infusion of Insulin**

5 X babies weight (kg) = number of **units** Insulin to be diluted to a **final volume** of 50mL

This gives:  
0.01 unit/kg/hour at an infusion rate of 0.1 mL/hour  
0.05 unit/kg/hour at an infusion rate of 0.5 mL/hour  
0.15 unit/kg/hour at an infusion rate of 1.5 mL/hour

**Formula to prepare a DOUBLE STRENGTH Continuous Intravenous Infusion of Insulin**

10 X babies weight (kg) = number of **units** Insulin to be diluted to a **final volume** of 50mL

This gives:  
0.02 unit/kg/hour at an infusion rate of 0.1 mL/hour  
0.05 unit/kg/hour at an infusion rate of 0.25 mL/hour  
0.15 unit/kg/hour at an infusion rate of 0.75 mL/hour

**Formula to prepare a QUADRUPLE STRENGTH Continuous Intravenous Infusion of Insulin**

20 X babies weight (kg) = number of **units** Insulin to be diluted to a **final volume** of 50mL

This gives:  
0.04 unit/kg/hour at an infusion rate of 0.1 mL/hour  
0.1 unit/kg/hour at an infusion rate of 0.25 mL/hour  
0.2 unit/kg/hour at an infusion rate of 0.5 mL/hour

Reconstitution of Vial: As per local policy
Prescribe as X unit’s insulin in Y mL diluent and add the rate of infusion to the infusion chart.  

**NB:** The final volume for insulin and diluent must be 50mL.

### Storage / Stability

Ideally should be stored in a lockable fridge before opening.  
When opened, it should be stored in a lockable cupboard.  
The vials should be discarded 6 weeks after first opening.  
Do not use if the fluid appears heavy or coloured.  
Compatible with the following infusion fluids:
- Glucose 5% (may reduce potassium levels)
- Sodium Chloride 0.9%

### References

Summary of Product Characteristics: Actrapid 100 international units/ml, Solution for Injection in a vial.  
Morphine Sulfate for intravenous infusion  
(Smart pump enabled)

**Drug Dosage & Route of Administration**

<table>
<thead>
<tr>
<th>Route</th>
<th>Dosage</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>IV Infusion</td>
<td>Initially 20 microgram/kg/hour then adjust according to response, Dose range: 10-40 microgram/kg/hour</td>
<td>Continuous Infusion</td>
</tr>
</tbody>
</table>

**Use of Morphine Sulfate**

**Available Concentrations:**  
1 mg/mL ampoules  
10 mg/mL ampoules  

In order to prevent TEN FOLD dosing errors please be aware that Neonatal Units may stock either or both concentrations of Morphine Sulfate. Please check local policy.

**For continuous intravenous infusion using smart pump (if available).**

For babies of different weight bands on smart pump, use the following table to make up appropriate strength infusions:

<table>
<thead>
<tr>
<th>Weight Band</th>
<th>Standard Strength</th>
<th>Double Strength</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 kg</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>1 - 2.499 kg</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>2.5 – 3.999 kg</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
<tr>
<td>4 – 6 kg</td>
<td>Enabled</td>
<td>Enabled</td>
</tr>
</tbody>
</table>

**Formula to prepare a STANDARD STRENGTH Continuous infusion of Morphine Sulfate**

2 X babies weight (kg) = number of milligrams Morphine Sulfate to be diluted to a final volume of 20mL

This gives:  
10 micrograms/kg/hour at an infusion rate of 0.1 mL/hour  
20 micrograms/kg/hour at an infusion rate of 0.2 mL/hour

**Formula to prepare a DOUBLE STRENGTH Continuous Intravenous Infusion of Morphine Sulfate**

4 X babies weight (kg) = number of milligrams Morphine Sulfate to be diluted to a final volume of 20mL

This gives:  
20 micrograms/kg/hour at an infusion rate of 0.1 mL/hour

Prescribe as X mg Morphine Sulfate in Y mL diluent and add the rate of infusion to the infusion chart.  
**NB:** The final volume for Morphine Sulfate injection and diluent must be 20mL.

**Storage / Stability**

Controlled Drug: store ampoules in a Controlled Drugs cupboard.  
Infusion stable for 24 hours at room temperature  
Supplies must to be ordered in the CD requisition book.

Compatible with the following infusion fluids:
- Glucose 5%
- Glucose 10%
- Sodium Chloride 0.9%

Incompatible with sodium bicarbonate and other alkaline solutions
Morphine salts are sensitive to changes in pH and morphine sulfate is liable to be precipitated out of solution in an alkaline environment.

References

Appendix 1 – Example of PN Fluid administration

Below is example of volume of fluids given to babies with extremely low birth weight (based on birth weight <1.25kg). These are the babies whose TPN volume does get compromised currently when they are started on various infusions, especially inotropes or paralytic agents as shown below.

<table>
<thead>
<tr>
<th>Weight (Kg)</th>
<th>Total fluids mL/kg/day</th>
<th>Total fluid (mL/hour)</th>
<th>TPN volume protection mL/kg/day</th>
<th>Total Fluid Volume remaining for all infusions after TPN volume protected (mL/hour)</th>
<th>Heparin Sodium in Sodium Chloride 0.45% Infusion (mL/hour)</th>
<th>Morphine Sulfate Infusion 10micrograms/kg/hour = 0.1mL/hour</th>
<th>Supplementary Glucose 10% Infusion (mL/hour)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5</td>
<td>90</td>
<td>1.88</td>
<td>60</td>
<td>0.63</td>
<td>0.3</td>
<td>0.1</td>
<td>0.23</td>
</tr>
<tr>
<td>0.5</td>
<td>120</td>
<td>2.5</td>
<td>90</td>
<td>0.63</td>
<td>0.3</td>
<td>0.1</td>
<td>0.23</td>
</tr>
<tr>
<td>0.5</td>
<td>150</td>
<td>3.13</td>
<td>120</td>
<td>0.63</td>
<td>0.3</td>
<td>0.1</td>
<td>0.23</td>
</tr>
<tr>
<td>0.75</td>
<td>90</td>
<td>2.81</td>
<td>60</td>
<td>0.94</td>
<td>0.3</td>
<td>0.1</td>
<td>0.54</td>
</tr>
<tr>
<td>0.75</td>
<td>120</td>
<td>3.75</td>
<td>90</td>
<td>0.94</td>
<td>0.3</td>
<td>0.1</td>
<td>0.54</td>
</tr>
<tr>
<td>0.75</td>
<td>150</td>
<td>4.69</td>
<td>120</td>
<td>0.94</td>
<td>0.3</td>
<td>0.1</td>
<td>0.54</td>
</tr>
<tr>
<td>1</td>
<td>90</td>
<td>3.75</td>
<td>60</td>
<td>1.25</td>
<td>0.5</td>
<td>0.1</td>
<td>0.65</td>
</tr>
<tr>
<td>1</td>
<td>120</td>
<td>5</td>
<td>90</td>
<td>1.25</td>
<td>0.5</td>
<td>0.1</td>
<td>0.65</td>
</tr>
<tr>
<td>1</td>
<td>150</td>
<td>6.25</td>
<td>120</td>
<td>1.25</td>
<td>0.5</td>
<td>0.1</td>
<td>0.65</td>
</tr>
<tr>
<td>1.25</td>
<td>90</td>
<td>4.69</td>
<td>60</td>
<td>1.56</td>
<td>0.5</td>
<td>0.1</td>
<td>0.96</td>
</tr>
<tr>
<td>1.25</td>
<td>120</td>
<td>6.25</td>
<td>90</td>
<td>1.56</td>
<td>0.5</td>
<td>0.1</td>
<td>0.96</td>
</tr>
<tr>
<td>1.25</td>
<td>150</td>
<td>7.81</td>
<td>120</td>
<td>1.56</td>
<td>0.5</td>
<td>0.1</td>
<td>0.96</td>
</tr>
<tr>
<td>1.5</td>
<td>90</td>
<td>4.69</td>
<td>60</td>
<td>1.88</td>
<td>0.5</td>
<td>0.1</td>
<td>1.28</td>
</tr>
<tr>
<td>1.5</td>
<td>120</td>
<td>6.25</td>
<td>90</td>
<td>1.88</td>
<td>0.5</td>
<td>0.1</td>
<td>1.28</td>
</tr>
<tr>
<td>1.5</td>
<td>150</td>
<td>7.81</td>
<td>120</td>
<td>1.88</td>
<td>0.5</td>
<td>0.1</td>
<td>1.28</td>
</tr>
</tbody>
</table>
# Appendix 2 - Summary of infusion monographs – Please see monographs for full details

<table>
<thead>
<tr>
<th>DRUG</th>
<th>Final Syringe Volume</th>
<th>STANDARD STRENGTH</th>
<th>DOUBLE STRENGTH</th>
<th>QUADRAPLE STRENGTH</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADRENALINE</td>
<td>50mL</td>
<td>100nanograms/kg/minute =0.1mL/minute</td>
<td>200nanograms/kg/minute =0.1mL/hour</td>
<td>N/A</td>
<td>Standard and Double strength valid across all weight ranges No Quadruple strength</td>
</tr>
<tr>
<td>Amount of drug</td>
<td>3mg/kg</td>
<td>6mg/kg</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluent</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOBUTAMINE</td>
<td>50mL</td>
<td>10micrograms/kg/minute =1mL/hour</td>
<td>10micrograms/kg/minute =0.5mL/hour</td>
<td>10micrograms/kg/minute =0.25mL/hour</td>
<td>Standard strength – only valid for ≥1kg Double strength- only valid for &lt;4 kg Quadruple strength - only valid for &lt; 1kg</td>
</tr>
<tr>
<td>Amount of drug</td>
<td>30mg/kg</td>
<td>60mg/kg</td>
<td>120mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluent</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DOPAMINE</td>
<td>50mL</td>
<td>10micrograms/kg/minute =1mL/hour</td>
<td>10micrograms/kg/minute =0.5mL/hour</td>
<td>10micrograms/kg/minute =0.25mL/hour</td>
<td>Standard strength – only valid for ≥1kg Double strength- only valid for &lt;4 kg Quadruple strength - only valid for &lt; 1kg</td>
</tr>
<tr>
<td>Amount of drug</td>
<td>30mg/kg</td>
<td>60mg/kg</td>
<td>120mg/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluent</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>INSULIN</td>
<td>50mL</td>
<td>0.1units/kg/hour =0.1mL/hour</td>
<td>0.1units/kg/hour =0.5mL/hour</td>
<td>0.1units/kg/hour =0.25mL/hour</td>
<td>Standard strength – only valid for ≥1kg Double strength- only valid for &lt;4 kg Quadruple strength - only valid for &lt; 1kg</td>
</tr>
<tr>
<td>Amount of drug</td>
<td>5units/kg</td>
<td>10units/kg</td>
<td>20units/kg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluent</td>
<td>Glucose 5% Sodium Chloride 0.9%</td>
<td>Glucose 5% Sodium Chloride 0.9%</td>
<td>Glucose 5% Sodium Chloride 0.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MORPHINE</td>
<td>20mL</td>
<td>10micrograms/kg/hour =0.1mL/hour</td>
<td>20micrograms/kg/hours = 0.1mL/hour</td>
<td>N/A</td>
<td>Standard and Double strength valid across all weight ranges No Quadruple strength</td>
</tr>
<tr>
<td>Amount of drug</td>
<td>2mg/kg</td>
<td>4mg/kg</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diluent</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>Glucose 5% Glucose 10% Sodium Chloride 0.9%</td>
<td>N/A</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>