



**Western Health  
and Social Care Trust**

**Neonatal Intravenous Gentamicin Policy & Clinical Guidelines**

**November 2011**

<b>Policy Title</b>	Neonatal Intravenous Gentamicin policy and Clinical Guidelines
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# Neonatal Intravenous Gentamicin Policy & Clinical Guidelines

## Background

Gentamicin is a broad spectrum aminoglycoside antibiotic that is widely used as the first choice antibiotic for the treatment of neonatal infection.

Patient safety incidents have been reported nationally involving:-

- administration of gentamicin at the incorrect time,
- prescribing errors; and
- issues relating to blood level monitoring.

A Patient Safety Alert was released by the National Patient Safety Agency (NPSA) in February 2010 prompting the safer use of intravenous gentamicin for neonates.

## Policy Statement

To ensure that intravenous gentamicin is administered to neonates using a care bundle incorporating the following four elements:-

1. When prescribing gentamicin, the 24 hour clock format should be used and the unused time slots in the prescription administration record blocked out at the time of prescribing to prevent wrong time dosing.
2. Interruptions during the preparation and administration of gentamicin should be minimised by the wearing of a red disposable apron by staff to indicate that they should not be disturbed.
3. A double-checking prompt should be used during the preparation and administration of gentamicin.
4. The prescribed dose of gentamicin should be given within one hour of the prescribed time.

## **Equality and Human Rights Screening**

This policy has been screened under the equality legislation (Section 75 of the Northern Ireland Act 1998), targeting social need initiative, disability discrimination and the human rights act 1998. No significant equality implications have been identified. Assessment attached.

## **Scope of the Policy**

All medical, nursing and pharmacy staff of all grades working within NNICU, postnatal ward and infant unit must be familiar and ensure compliance with this policy

## **General Measures**

- A Gentamicin IV prescription chart for neonates has been developed to incorporate dose and frequency information, blood level monitoring requirements, 24 hour clock prompt, arrangements for subsequent dosing adjustments based on blood levels and a double checking prompt for preparation and administration. See Appendix 1
- Staff nurses must wear a red disposable apron during the preparation and administration of IV gentamicin to minimise interruptions.

## **Training Guidelines**

The WHSCT policy for Neonatal Intravenous Gentamicin will be included in the induction course for all new NNICU employees. Training slides have also been developed and all staff will be trained on the use of gentamicin in neonates and how to correctly use the new gentamicin prescription, monitoring and administration chart.

## **Audit of policy**

Compliance with the care bundle will be measured three monthly for the first 6 months, then yearly thereafter and the results reviewed by the WHSCT implementation group.

## **References**

- National Patient Safety Agency. Patient Safety Alert NPSA/2010/PSA001: Reducing the risks associated with the administration of intravenous gentamicin to neonates. NPSA, January 2010

# Appendix 1



## Gentamicin IV Prescription Chart – Neonates

Gentamicin Dosing			
Use corrected age and refer to 'BNFc'			
Gestation	Dose	Frequency	Rate
Neonates < 32 weeks post conceptional age	4mg/kg	36 hourly	IV Bolus 3-5 mins
Neonates > 32 weeks post conceptional age	4mg/kg	24 hourly	IV Bolus 3-5 mins
Date	Weight (kg)	Corrected Gestation	
		weeks	

■ The prescribed dose of gentamicin should be given within 1 hour of the prescribed time  
 ■ Reference on the main Kardex by prescribing 'Gentamicin as per chart'

Dose Calculation		Signature
Dose =	kg X mg =	PRESCRIBER
Dose Interval every =	hours	PRESCRIBER
Dose & interval checked by		DR/Nurse/Pharmacist
Dose/Interval adjustment		
Measure trough level 1 hour prior to third dose (if normal renal function) Aim for a trough level of <2mg/l, extend dosing interval if trough > 2mg/l. Next dose may be administered if levels have not returned within an hour of the prescribed time provided renal function is normal. <b>If treatment exceeds 5 days measure levels at 3 dose intervals unless renal impairment</b>		
Remember to consider:		
Renal Function	<ul style="list-style-type: none"> <li>For Patients with renal impairment,               <ul style="list-style-type: none"> <li>Levels must be checked at every dose.</li> <li>Do not give dose before trough level is known</li> </ul> </li> </ul>	
Weight	Severely oedematous neonates	
Exclusions	Exclusions to once daily dosing; burns > 20%, endocarditis,	

Write in CAPITAL LETTERS or use addressograph

Surname:.....

First Names:.....

Hospital number:.....

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Hospital:..... Ward:.....

Consultant:.....

**Check for allergies / medicines sensitivities on the main kardex**

PRESCRIPTION					PREPARATION & ADMINISTRATION		MONITORING				
Date	Day of Week	Gentamicin Dose (mg)	Time to administer (24 hr clock)	Prescriber Signature	Time (24 hr clock)	Signatures	Serum creatinine (micromol /L)	Serum Gentamicin level (tick if required)	Date & Time of Sample (24 hour clock)	Gentamicin level (mg/L)	Prescriber Action

Stopped by: Print name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_ Sept 2011

**Double Checking prompt for the preparation and administration of IV gentamicin to neonates**

- Use this prompt every time a dose is prepared / administered
- Ultimate responsibility for the process lies with checker 1, whose additional responsibilities are highlighted in **bold**
- Both members of staff to use prompt

	DATE				
<b>Blood level monitoring: Any actions required in the section below should be prioritised to ensure doses are not delayed:</b>					
<b>1. Check the date and time of the next blood level required. Are any blood levels required pre or post dose?</b>					
<b>2. Do any blood level results need action prior to administration of this dose? i.e. result chasing or results interpreted.</b>					
<b>3. If yes to question 2, has the person responsible for interpretation been informed?</b>					
<b>4. Has the blood level result been interpreted correctly? If not escalate as per policy or contact registrar or consultant</b>					
<b>5. Does the dose or dosing interval need changing as a result of the blood level result? If yes action as per policy.</b>					
<b>Prescription Chart details:</b>					
6. Check the time recorded when dose last given and frequency prescribed. Is dose due now?					
7. Is the patient's current weight recorded on prescription correct? Caution: ensure the weight is recent and realistic					
8. Has the correct dose been prescribed based on weight. Each checker to calculate dose separately					
9. Is the dosing regimen and frequency correct for gestational age?					
10. Has the prescription been signed by the prescriber?					
<b>Vial details:</b>					
11. Is this the correct medication?					
12. Is this the correct strength of gentamicin, i.e. 20mg/2ml					
13. Has the correct volume been drawn up? Each checker to calculate separately.					
<b>Administration</b>					
14. Does the patient's identity match the details on prescription chart?					
15. Has the prescription chart been signed by the administrator, including time of administration?					
<b>Staff members administering gentamicin must tick the corresponding box to confirm checks carried out</b>					

**Flow Chart for prescribing, monitoring and dose adjustment in neonates**

Take level (Record time level taken on lab form):

- 1 hour before 3<sup>rd</sup> dose (normal renal function) or
- 1 hour before 2<sup>nd</sup> dose if abnormal renal function or <28 weeks

