Neonatal Medication Guideline

# Clinical Guideline

## Adrenaline (epinephrine) – diluted for resuscitation 0.1mg/mL injections (1 in 10 000)

**Policy developed by:** SA Maternal, Neonatal & Gynaecology Community of Practice
**Approved SA Health Safety & Quality Strategic Governance Committee on:** 07 March 2017
**Next review due**: 31 March 2020


**Summary** Adrenaline (epinephrine) – diluted for resuscitation 0.1mg/mL injections (1 in 10 000) Clinical Practice Guideline for the administration of adrenaline to a neonate



**Keywords** Endotracheal route, glucose, sodium chloride, tachycardia, tremor, sweating, hyperglycaemia, cardiac monitoring, endotracheal, clinical guideline, Adrenaline (epinephrine) – diluted for resuscitation 0.1mg/mL injections (1 in 10 000)


**Policy history** Is this a new policy? **N**
Does this policy amend or update an existing policy? **Y v1.0**
Does this policy replace an existing policy? **Y**
If so, which policies? **Adrenaline for resuscitation**

**Applies to** All Health Networks
CALHN, SALHN, NALHN, CHSALHN, WCHN

**Staff impact** All Staff

**PDS reference** CG007

## Version control and change history

| Version | Date from | Date to | Amendment |
|---|---|---|---|
| 1.0 | November 2012 | March 2017 | Original version |
| 2.0 | 07 March 2017 | Current | Review and update |
| | | | |



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# Adrenaline (epinephrine) - diluted for resuscitation

## 0.1mg/mL injections (1 in 10 000)



Note

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote andfacilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a reviewof published evidence and expertopinion.

Information in this statewide guideline is current at the time ofpublication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from theguideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. Thisincludes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standardsof professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

**This is a High Risk Medication** ⚠

An overdose can be rapidly fatal.

There are two strengths of adrenaline available. This guideline uses the dilute 0.1mg/1mL form.

## For information on undiluted adrenaline, see adrenaline (undiluted) 1mg/mL

## Synonyms

Epinephrine

**ISBN number:** 978-1-74243-376-9
**Endorsed by:** South Australian Maternal, Neonatal & Gynaecology Community of Practice
**Last Revised:** 06/03/2017
**Contact:** South Australian Neonatal Medication Guidelines Workgroup at: NeoMed@health.sa.gov.au

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## Dose and Indications

### Resuscitation

**Intravenous**

Intravenous is the preferred route recommended by ILCOR (International Liaison Committeeon Resuscitation).

10 to 30 micrograms/kg (0.1 to 0.3 mL/kg of 1 in 10 000), but as weight is usually not available at birth below table can be used.

| Gestation | Dose |
|---|---|
| < 30 weeks | 0.25 mL per dose |
| 30-35 weeks | 0.5 mL per dose |
| > 35 weeks | 1 mL per dose |

Give as a bolus dose.

Repeat after 2 to 3 minutes if necessary.

**Endotracheal**

Endotracheal route should only be used if no intravenous accessavailable.

50 to 100 micrograms/kg (0.5 to 1 mL/kg of 1 in 10 000), but as weight is usually not available at birth below table can be used.

| Gestation | Dose |
|---|---|
| < 30 weeks | 1 mL per dose |
| 30-35 weeks | 2 mL per dose |
| > 35 weeks | 3 mL per dose |

Give as a bolus dose.

Repeat after 2 to 3 minutes if necessary.

## Preparation and Administration

**Intravenous**

Only administer dilute adrenaline 0.1 mg/mL (1 in 10,000) forresuscitation.

| Dose | 0.025 mg | 0.05 mg | 0.075 mg | 0.1 mg | 0.125 mg | 0.15 mg |
|---|---|---|---|---|---|---|
| Volume | 0.25 mL | 0.5 mL | 0.75 mL | 1 mL | 1.25 mL | 1.5 mL |

Administered as a push.

Flush line with saline after administration.

Discard remaining solution.

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**Endotracheal**

Administer dilute adrenaline 0.1 mg/mL (1 in 10,000) via endotracheal tube followed by positive pressure ventilation (PPV).

| Dose | 0.1 mg | 0.2 mg | 0.3 mg | 0.4 mg |
|---|---|---|---|---|
| Volume | 1 mL | 2 mL | 3 mL | 4 mL |

Discard remaining solution.

## Compatible Fluids

Glucose 5%, glucose 10%, sodium chloride 0.9%, glucose / sodium chloridecombinations

## Adverse Effects

**Common**

Tachycardia, tremor, sweating andhyperglycaemia.

**Infrequent**

Peripheral ischaemia and necrosis at infusion site, excessive increase in blood pressure, ventricular arrhythmias, cerebral haemorrhage, renal vascular ischaemia and pulmonary oedema. Theseare mostly related to overdose or rapid IVadministration.

**Rare**

Allergic reaction (sodium metabisulfite in preparations).

## Monitoring

- Cardiac monitoring and continuous medical supervision.

## Practice Points

- Caution - there are two strengths of adrenaline available
- There is insufficient evidence for the use of endotracheal adrenaline, but it is likely that a higher dose will be required to achieve similar blood levels and effect
- Adrenaline is sensitive to light and air. Protection from light is recommended

## Reference

SA Health Neonatal Resuscitation Group, Dec 2015, *Newborn Life Support*

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