



# South West Neonatal Network Guideline

---

*Care Pathway for infants requiring laser surgery for  
Retinopathy of prematurity (ROP)*

*January 2016*

---

## 1. Background

ROP is a developmental retinal vascular disorder that occurs in the retina of preterm infants with incomplete retinal vascularization. Surgical treatment for ROP is a time critical intervention that prevents progressive deterioration in visual function in preterm infants. It is not a frequently performed procedure. National guidelines state that services should be delivered on a network wide basis, but no service model was previously defined in the SW region.

## 2. Scope

This policy applies to all staff, patients and neonatal units that fall within the South west Neonatal Network. This includes the following hospitals.

|   |   |
|---|---|
| Northern Devon Healthcare Trust                   | - North Devon District Hospital, Barnstable |
| Royal United Hospital Bath NHS Trust              | - Royal United Hospital Bath                |
| North Bristol NHS Trust                           | - Southmead Hospital, Bristol               |
| University Hospitals Bristol NHS Foundation Trust | - St Michaels Hospital, Bristol             |
| Royal Devon and Exeter NHS Foundation Trust       | - Royal Devon and Exeter Hospital           |
| Gloucestershire Hospitals NHS Foundation Trust    | - Gloucester Royal Hospital                 |
| Plymouth Hospitals NHS Trust                      | - Derriford Hospital, Plymouth              |
| Great Western Hospitals NHS Foundation Trust      | - Great Western Hospital, Swindon           |
| Taunton and Somerset NHS Foundation Trust         | - Musgrove Park Hospital, Taunton           |
| Torbay and South Devon NHS Foundation Trust       | - Torbay Hospital                           |
| Royal Cornwall Hospitals NHS Trust                | - Royal Cornwall Hospital, Truro            |
| Yeovil District Hospital NHS Foundation Trust     | - Yeovil District Hospital                  |

## 3. Principles

Key principles that have been agreed nationally and are widely accepted include:

- Individual Trusts are responsible for the provision of ROP screening. These should comply with National recommendations for timing. Compliance with screening is audited annually through the NNAP programme.
- Rates of ROP requiring surgical intervention in the SW are monitored via Vermont Oxford Network (all units in the South west contribute data).
- As many as 50% of infants weighing less than 750g develop ROP requiring intervention. These infants are often amongst the sickest of the ex-preterm population with high rates of significant chronic lung disease, PDA and other systemic pathology. Anaesthesia and perioperative care can be complex with as many as 30% requiring ongoing ventilation post operatively.
- Infants requiring surgery should be referred to a designated centre, where both surgical, anaesthetic and ITU capacity are available.
- Laser therapy is the current preferred treatment. Antivascularogenesis agents (anti vascular endothelial growth factor, “anti VEGF”) such as intravitreal bevacizumab have been shown to be effective but long term safety data are not yet available, and there is uncertainty re: retreatment rates. These are not established as best practice at present.
- In general, laser surgery should be undertaken under sedation, analgesia, and paralysis with respiratory support within a neonatal unit setting.

- Close post-operative follow up arrangements are required with initial review at day 5-7 post operatively. Typically, 30-40% of infants require a second surgical intervention, most commonly around day 10-14 post operatively.
- It is recognised that ROP surgery is a time critical intervention, and that surgery should be undertaken within 48 hours of identification of threshold disease. National consensus is that in the absence of tertiary capacity within 48 hrs surgery should / could be undertaken within local units by trained ophthalmology staff.
- It seems reasonable to consider that there might be some very high risk infants who present a greater anaesthetic risk who should only be considered for treatment under local anaesthesia. In this patient group intravitreal therapy under local anaesthetic may offer some overall advantages to laser therapy requiring intubation. Risks and benefits need to be considered on a case by case basis by senior Ophthalmology and tertiary NICU staff.

#### 4. Future issues / service configuration

- **Screening:** there is growing trend to consider retinal imaging systems (e.g.Retcam) as a tool to improve uniformity and recording of screening findings within and between units. This would enable remote patient consultations to reduce potentially avoidable transfers and will unify practice and thresholds for intervention.
- **Treatment:** at present the evidence favours laser therapy above intravitreal intervention. Services within the SW need to be organized to ensure that planned surgery is only undertaken in units with adequate tertiary Neonatal intensive services on site.
- **Anti VEGF:** If further evidence alters the risk: benefit ratio in the future it is possible that the use of retinal imaging to standardize thresholds for intervention plus the capacity to give anti VEGF treatment will allow ROP services to be delivered by specialist paediatric ophthalmologists within local units. This is not the case at present.
- **Audit:** The region should consider establishing follow up data collection or undertaking an audit of all ex preterm infants to assess effectiveness of ROP screening as well as collating follow up data on babies who undergo treatment.

## Appendix 1: ROP Treatment Referral Pathways

