NHS Commissioning Board

D12b

2012/13 NHS STANDARD CONTRACT
FOR ACUTE, AMBULANCE, COMMUNITY AND MENTAL HEALTH
AND LEARNING DISABILITY SERVICES
(MULTILATERAL)

SECTION B PART 1 - SERVICE SPECIFICATIONS

Service Specification No.	**SSNDS 37** - CRG D12b
Service	Specialised Paediatric Ophthalmology
Commissioner Lead	Sarah Watson
Provider Lead	
Period	12 months
Date of Review	March 2014

1. Population Needs

1.1 National/local context and evidence base

- Bilateral serious visual loss in childhood is uncommon. Six of every 10,000 children born in the UK each year become severely visually impaired or blind by their 16th birthday and, approximately, a further 12 become visually impaired (worse than 0.5 to 1.0 Log MAR in both eyes). Thus there are at least 4 newly visually impaired children each day in the UK and around 2 per 1000 children in a given population are visually impaired or blind – amounting to around 20,000 at any time.

- Children with milder visual loss, unilateral visual problems, or eye diseases which require treatment but do not cause visual impairment, considerably outnumber others within paediatric ophthalmic services and require a disproportionately smaller amount of available resources in the long-term than the minority with bilateral marked visual impairment. The planning of ophthalmic services should explicitly account for these three 'populations' of children: those

with visual impairment as an isolated problem, those with visual impairment as well as other impairments/disorders, and those with eye conditions associated with mild or no visual loss.

- Disorder specific frequencies are shown in the table below.

Table 1 - Frequency

Cataract	3-4 per 10,000 births/yr.
Glaucoma	5.4 in 100,000
Inherited retinal disorders	1.4/100,000 children/year (cumulative incidence by age 16 years 22.3/100,000)
Visual problems of prematurity	Up to 50% of <750gm would need treatment (Stage 3)
Neuro-Ophthalmic disorders	Individually rare, collectively commonest cause of severe visual impairment (accounting for about 50%)
Anophthalmia,microphthalmia or coloboma	11.9 per 100,000 by 16 years

2. Scope

2.1 Aims and objectives of service

- To optimise children's vision and prevent avoidable visual disability of ophthalmic (eye and vision) disorders.

- This service aims to provide the investigation and management of children and young people with rare and/or complex visual system, ocular and ocular adnexal disorders.

- This service is defined by the population it serves – children, young people and their families – and their specific needs, rather than by the disorders managed, and thus potentially encompasses all ophthalmic sub-specialties. As set out in the Royal College of Ophthalmologists' standing report '*Ophthalmic Services for Children*' (Appendix D), the purpose of ophthalmic health services for children remains:

    - Primary prevention:
      Preventing the occurrence of visually impairing disease through effective screening and treatment - e.g. screening of premature neonates for retinopathy of prematurity.

    - Secondary prevention:
      Reducing the visual impact of established disease - e.g. screening for vision impairment in 4-5 year old children followed by appropriate treatment.

- Tertiary prevention
  Maximising function in individuals with permanent visual impairment - e.g. provision of low vision aids for children with congenital eye anomalies or habilitation/rehabilitation programmes.

- The evidence base for each sub-specialty and each disease will differ. However, all components of the service will be expected to demonstrate good clinical governance.

- Treatment is predominately delivered in an outpatient setting and, where appropriate, as an inpatient (ward or day unit as required), with carefully monitored shared care arrangements in place with referring clinicians.

- The service will aim to optimise children's vision and prevent avoidable visual disability of ophthalmic (eye and vision) disorders by:

  - making timely and accurate diagnosis
  - timely investigation and management
  - providing high quality proactive treatment and care
  - providing appropriate counseling and psychological support to children and families
  - ensuring smooth and managed transition from children's to adult care between the ages of 16-19 for patients with long term conditions
  - supporting parents and families of children with long term conditions, as well as the affected child
  - supporting patients to manage their condition independently
  - ensuring effective communication between patients, families and service providers
  - providing a personal service, sensitive to the physical, psychological and emotional needs of the patient and their family.

2.2 Service description/care pathway

- Specialised ophthalmology services for children are provided by both paediatric and adult ophthalmologists working together at different levels (primary/secondary/tertiary), as evidenced by the highly successful clinical research networks through which recent national studies of uncommon paediatric disorders have been undertaken, including cataract, glaucoma, ocular anomalies, and inherited retinal disorders.
  www.rcophth.ac.uk/core/core_picker/download.asp?id=591

- Specialised services will be provided in a network model that will build on existing strengths and established networks and shared care practices. This will be an operational delivery network model or other network models as appropriate to the particular service. Each patient within a specialised network will have a designated lead clinician responsible for the overall management of their ocular condition.

- The service needs close links with appropriate medical specialities and the national ophthalmic pathology service. Internally the multi-disciplinary team

(MDT) links into multiple clinical and administrative teams as a result of the broad composition of the team. Strong links are also required between the clinical and diagnostic teams involved in the service.

- Services for children must always be provided in a suitable environment which meets national guidelines for the care of children, providing access to a skilled and trained multi-disciplinary workforce to manage children with ophthalmic problems. Specialised services are provided by ophthalmologists trained to fellowship standard in the appropriate sub-specialty. Ophthalmic specialised services, as in most other clinical disciplines, will overlap with other specialised services. Staffing levels should include all those involved in the specialist care of the child at primary, secondary and tertiary level. Care should be provided by a MDT including:

    - ophthalmologist
    - ophthalmology nurse specialist
    - paediatrician
    - orthoptists
    - optometrists
    - eye clinic liaison officer
    - whenever appropriate
    - teachers for the visually impaired
    - social worker
    - genetic counselors

- All specialist services will provide education and training working closely with the College of Ophthalmologists to determine educational and professional standards and with postgraduate training commissioners and providers. Clear policies should be in place to ensure that staff maintain and develop their specialist skills and knowledge. It is a requirement that medical staff can demonstrate that they are part of a revalidation cycle.

- All specialised services will be actively involved with research and innovation to ensure the continued development of their service. All staff involved in specialist services will be required to be involved in education and research, be given appropriate time and funding to undertake these requirements and for medical staff to be supported to provide data for revalidation.

- Specialised services are required to keep data to ensure coding is accurate.

- Some of these conditions require lifelong surveillance, and potential treatment, to limit visual loss, and which will necessitate a planned transition to adult services. Discharge policies will be in place for each service.

- The most common cause of visual impairment in children is visual pathway damage and paediatric ophthalmologists are involved in the visual assessment and rehabilitation of such children. Other common causes of visual impairment in children include; inherited retinal disorders, congenital eye anomalies (structural abnormalities of the eye comprising anophthalmia, microphthalmia and coloboma), primary or secondary disorders of the optic nerve, congenital

cataract, congenital glaucoma, retinopathy of prematurity and uveitis. Many paediatric ophthalmologists are involved in screening of pre-term infants to detect and treat retinopathy of prematurity. For all of these conditions some cases will involve intensive management and contribute disproportionately to the workload of children's eye departments. Management of these conditions requires access to comprehensive paediatric and genetic services, including neonatology and anaesthesia. The transition of children needing ongoing ophthalmic care into adult services must be carefully planned.

- The specialised ophthalmology service for children is commissioned for the following conditions:

    - **Orbital disorders**
      Orbital disorders are rare in children, and most significant paediatric orbital disorders are referred for specialist evaluation, either to a predominantly adult orbital service or to a specialist paediatric ophthalmology centre. In children, all orbital surgery (apart from minor surgery and the management of orbital cellulitis) is a specialised service. Surgery on children may often be undertaken by an (adult) orbital surgeon (i.e. an adult ophthalmic surgeon sub-specialising in orbital surgery) rather than a paediatric ophthalmic surgeon. Microphthalmia and anophthalmia are specialised services. The provision of ocular prostheses is a specialised service.

    - **Oculoplastic and Lacrimal Surgery**
      Except for routine syringe and probing, lacrimal duct intubation and minor lid surgery, paediatric oculoplastic and lacrimal surgery is a specialised service.

    - **Cataract and lens disorders**
      Treatment for cataract and lens disorders, where the condition requires surgery within the first few weeks of life, is a specialised service because of both the surgical and anaesthetic requirements for these infants and the demanding process of optical rehabilitation of infants following cataract surgery. Treatment for cataracts in older children can be managed using techniques common to adult cataract surgery. Cataract surgery in children up to the age of 2 years will be considered specialised, however this age limit will remain under review.

    - **Glaucoma**
      Infantile and congenital glaucoma in children is rare; glaucoma caused by developmental abnormalities of ocular structure is the commonest cause. Treatment of glaucoma in children is a specialised service and must be provided in a network to ensure long-term care for this chronic disease.

    - **Corneal Disorders and Surgery**
      Any condition requiring corneal surgery, with the exception of emergency corneal repair is a specialised service. Paediatric corneal transplant is a specialised service.

- **Eye Banking**
  - Tissue processing-i.e. for DSAEK- producing pre-cut tissue
  - plasma/serum production
  - cell culture production- ocular surface stem cells, retinal stem cells
  - amniotic membrane production.

- **Vitreoretinal Surgery**
  - The majority of paediatric vitreoretinal (VR) surgery would be expected to be provided within the adult specialist VR units or networks
  - The majority of paediatric emergency vitreoretinal surgery would be expected to be provided within the adult emergency specialist vitreoretinal networks.
  - Infantile vitreoretinal management and surgery should be considered a specialised service.

- **Retinopathy of Prematurity**
  Whilst retinopathy of prematurity screening occurs in all neonatal units, treatment needs to be undertaken in specialist centres with appropriate equipment and expertise. This should be within a network arrangement to minimise the need to transfer babies.

- **Medical retinal disorders**
  Children with retinovascular disorders such as Coats disease, familial exudative vitreoretinopathy and the retinopathy of incontinentia pigmenti need access to RETCAM fluorescein angiography, specialist expertise and laser treatment.

- **Paediatric Uveitis**
  Although uncommon, intraocular inflammation in childhood carries a significant burden of blindness, with severe vision loss occurring in 25-33% of cases. This complex group of disorders has a wide range of causes and is often associated with systemic disease. A coordinated multi-specialist approach to care is necessary for severe ocular disease.

- **Ocular Genetic Disorders**
  Ocular genetic disorders are best managed by specialist centres which provide multidisciplinary services including access to electrodiagnostic testing, genetic counselling, molecular genetic testing, specialist imaging, research facilities, and specialist ophthalmologists. This provides patients and families with timely accurate diagnosis, increased knowledge of the nature of the condition, information on prognosis, and access to increasing clinical trials.

- **Neuro-ophthalmology**
  - Neuro-ophthalmology includes the evaluation and multidisciplinary care of patients with a range of serious neurological conditions which may first present with visual problems. Adverse patient outcomes are associated with late or delayed diagnosis. Sub-specialist clinical assessment is required to ensure timely access

to the best treatment. This requires appropriate, selective diagnostic imaging and other specialised tests.

- There are a large number of children with Cerebral Visual Impairment (CVI) and the underlying brain problem frequently results in other disabilities of varying degree (e.g. cerebral palsy, learning difficulties). Local care is the most appropriate and feasible arrangement for these children, in order to document and manage aspects of basic ocular function. This is considered a non-specialised service. However, infrequent access to a multidisciplinary developmental paediatric clinic for sight impaired children and/or to a clinic with a specialist interest in CVI led by a paediatric neuro-ophthalmologist or paediatric ophthalmologist is extremely helpful and will be considered a specialised service. The care of these children will therefore be within a network of specialised and non-specialised services.

- Optic Nerve Sheath Fenestration is a specialised procedure.

- **Strabismus surgery**

  - Paediatric strabismus is a common condition managed in most ophthalmic units across the country. It does not generally require specialist or expensive equipment. Surgery is normally already undertaken by consultants with appropriate sub-specialty training and experience. At present paediatric strabismus would therefore not be considered a specialised service requiring central commissioning. There are a few units, however, which offer eye movement recording as an adjunctive investigation for certain patients e.g. some nystagmus patients. Eye movement recording facilities may be considered a specialised service.

  - Whilst emergency ophthalmic care will normally be commissioned at Clinical Commissioning Group (CCG) level there will be occasions when it needs to be specially commissioned.

2.3 Population covered

- The service outlined in this specification is for patients with conditions included in section 2.2, ordinarily resident in England; or otherwise the commissioning responsibility of the NHS in England (as defined in '*Who Pays?: Establishing the Responsible Commissioner'*, and other Department of Health guidance relating to patients entitled to NHS care or exempt from charges).

- Note: for the purposes of commissioning health services, this EXCLUDES patients who, whilst resident in England, are registered with a GP practice in Wales, but INCLUDES patients resident in Wales who are registered with a GP practice in England.

2.4 Any acceptance and exclusion criteria

- The service is accessible to all patients regardless of sex, race, or gender**.** Providers require staff to attend mandatory training on equality and diversity and the facilities provided offer appropriate disabled access for patients, family and carers. When required the providers will use translators and printed information available in multiple languages.

- Specialised commissioners and CCGs must work with clinical networks to ensure that medically necessary transport for patients is commissioned and funded to ensure equity of access for patients.

- The provider has a duty to co-operate with the commissioner in undertaking Equality Impact Assessments as a requirement of race, gender, sexual orientation, religion and disability equality legislation.

2.5 Interdependencies with other services

- These will differ for each condition but the upper age limit is 19 years.
    - Treatment of amblyopia - this is not a specialised service.
    - Lacrimal disorders - probing of the nasolacrimal duct is not considered specialised
    - The management of orbital cellulitis is not a specialised service
    - Oculoplastic surgery - lid lesion surgery (e.g. for chalazia) is not considered specialised
    - Treatment of strabismus - this is not a specialised service
    - Whilst emergency ophthalmic care will normally be commissioned at CCG level there will be occasions when it needs to be specially commissioned.

- The over-arching generic referral criterion covering specialised ophthalmology services is as follows:
    - The condition is covered by the list in 2.2 of this specification.

- Referrals will mainly be from ophthalmology departments in secondary care but will also include referrals from community and hospital paediatricians, established community services, trauma units, medical genetic departments and other disparate groups such as the visiting teacher service. Patients are also referred from general practitioners, hospital consultants for medical or surgical assessment and management of specialised ophthalmology diseases/ conditions. Once referred the patient will be assessed by a specialist multidisciplinary team.

2.6 Discharge criteria

- Criteria for discharge from inpatient care:
    - No further investigation required
    - No adverse outcomes anticipated
    - Patient is safe post surgery

- Clinically appropriate shared arrangements for local care and specialist ophthalmology service follow-up have been discussed and agreed by all relevant parties
- Parents / carers have demonstrated competence in any care they will be required to provide in relation to treatment
- Parents / carers understand and have the necessary information to contact their specialist ophthalmology service provider

- All discharge planning will be managed by the ophthalmologists in charge of the case with local health and social care providers being fully informed of the patient's condition and any responsibilities they will have to assume. This will be formalised in written communication to the patient's GP and all other relevant parties.

- The specialist ophthalmology service works closely together with adult services to develop and implement an adolescent transition strategy to facilitate smooth transition for young people to adult services when necessary.

2.7 Interdependencies with other services

- Links with other services include:

  - Strategic clinical networks for children
  - Specialised Paediatric Surgery
  - Specialised Paediatric Medicine
  - Specialised Paediatric Cancer Services
  - Specialised Paediatric Cardiac Services
  - Specialised Paediatric Intensive Care
  - Specialised Neonatal Critical Care
  - Specialised Paediatric Neurosciences
  - Specialised Services for Blood and Marrow Transplantation (management of a cataract is necessary following bone marrow transplantation).
  - Cleft Lip and Palate Services for Children (detection of associated ocular conditions, e.g. Stickler syndrome, may be required).
  - Specialised Immunology Services for Children (children with juvenile arthritis are entered into a screening programme to prevent visual loss from uveitis).
  - Specialised Services for Infectious Diseases (detection and evaluation of HIV and cytomegalovirus (CMV) associated retinopathy may be required).
  - Medical Genetic Services (diagnostic confirmation/carrier detection is required for certain ophthalmic conditions for the purposes of genetic counselling).
  - Specialised Rheumatology Services (children with juvenile arthritis are entered into a screening programme to prevent visual loss from uveitis).
  - Specialised Ophthalmology Services (adult)
  - Ophthalmic surgery in children should be carried out by consultants with

appropriate sub-specialist training and expertise. It is recognised that some specialised conditions will be treated by surgeons who are not primarily paediatric ophthalmologists, e.g. subspecialist vitreoretinal surgeons.
    - Retinoblastoma Service (appendix A)
    - Ophthalmic Pathology (appendix B)
    - Stickler Service (appendix C)

- Various other services including:
    - Anaesthesia and pain management services e.g. premature infants requiring laser treatment for retinopathy of prematurity
    - Cancer services - children with cerebral tumours in and around the visual pathways will be evaluated for evidence of the effect of the tumour on vision and for evidence of tumour recurrence
    - Neurosciences services - many visual disorders have a cerebral, rather than an ocular basis and vision assessment is necessary in developmentally delayed/neurologically impaired children to exclude ocular causes of visual impairment and also to inform educational services, etc.
    - Neonatal services - infants born at less than 32 weeks gestation or with a birth weight under 1500 grams are entered into a screening programme to prevent visual loss from retinopathy of prematurity; infants with congenital eye malformations or syndromes likely to be associated with them are referred for paediatric ophthalmological evaluation; infants with bilateral sensorineural hearing loss are referred for paediatric ophthalmological evaluation to detect any associated ocular manifestations

2.8 Relevant networks and screening programmes

- Common referral networks will be between optometrists, ophthalmologists in secondary care and those in the specialised unit.

- The recommendations regarding screening, in order to promote early detection of ophthalmic disorders or reduced vision, are set out in "*Health for All Children*" and subsequently in the Child Health Promotion Programme and the Healthy Child Programme. This programme comprises the Neonatal and Infant Physical Examinations and Vision Screening at age 4 - 5 years:

- (http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_107563)

- The provider will link with patients' local healthcare providers to ensure provision of high quality, integrated care, in addition to liaison with employers etc. as necessary to provide support and advice.

2.9 Location of service delivery

Network models of care will mean that some travelling may be required for specialist care. However, this should be minimised wherever possible. Implementing shared care arrangements should help to offset this.

2.10 Days/ hours of operation

Urgent care: 24 hours / seven days a week for new referral of patients and acute referrals. This may include inpatient facilities where appropriate.
Day case: as a minimum 5 days a week, Monday to Friday
Outpatient clinics: as a minimum 5 days a week, Monday to Friday

3. Applicable Service Standards

3.1 Applicable national standards e.g. NICE, Royal Colleges

- The Royal College of Ophthalmologists is the guardian of excellence in ophthalmology. It aims to set standards in all aspects of the delivery of ophthalmic care in the interests of patients and the public. Guidance is provided under various topics (see below) and is reviewed regularly. The guidance is intended to inform both ophthalmologists and those managing eye services.

- Standards of practice are clearly identified. The maintenance of these standards may only be achieved through adequate staffing levels, proper facilities and appropriate managerial support. Ophthalmic care for patients must continuously improve through regular robust audit, professional development, innovation, and training.

- The key generic standards of care are set out in The Royal College of Ophthalmologists standing report '*Ophthalmic Services for Children'* (Appendix D) and in its '*Quality Statements and Quality Indicators for Paediatric Ophthalmology'*
http://www.rcophth.ac.uk/news.asp?section=24&itemid=515&search

- These generic standards are in keeping with national standards, in particular those laid out in:

    - National Service Framework for Children, Young People and Maternity Services: *Change for Children – Every Child Matters* (Department of Health)

    - National Service Framework for Children, Young People and Maternity Services: core standards. National Service Framework. London: Department of Health, Department for Education and Skills, 2004: 30)

    - '*Healthy lives, Brighter futures*' (Department of Health).

    - *Getting the Right Start*: National Services Framework for Children, Standard for Hospital Services.

- Mental Capacity Act
  http://www.legislation.gov.uk/ukpga/2005/9/pdfs/ukpga_20050009_en.pdf

- Other guidance, including clinical management guidance is also available from The Royal College of Ophthalmologists website www.rcophth.ac.uk including:

  - Ophthalmic Services for Children: Royal College of Ophthalmologists, August 2012, (Appendix D)
  - 'Juvenile arthritis', Royal College of Ophthalmologists (2006)
  - Vision 2020
  - 'Visual screening in childhood and adolescence', Health for all Children 4th Ed OUP National Institute of Clinical Excellence (NICE) (2009)
  - National Service Framework: Care of Children in Hospital
  - The National Framework for action to promote eye health and prevent avoidable blindness and vision loss, 2009
  - Standards for the retrieval of human ocular tissue used in transplantation, research and training, The Royal College of Ophthalmologists, October 2008
  - UK Retinopathy of Prematurity Guideline, The Royal College of Ophthalmologists, May 2008
  - Research and Training, The Royal College of Ophthalmologists, October 2008
  - Electrophysiology Eye Service Standards
    http://www.iscev.org/standards/proceduresguide.html

- **Revalidation**

  - All medical staff providing specialised services are required to be part of a robust appraisal process. The General Medical Council (GMC) recommends that doctors in specialist practice should consult the supporting information guidance provided by their College or Faculty. This guidance amplifies the headings provided by the GMC, by providing additional detail about the GMC requirements and what each College or Faculty expects relating to this, based on their specialty expertise. These expectations are laid out by the GMC.

  - For those support staff involved in paediatric eye care, revalidation is also necessary. Orthoptists and other allied health professionals including Operating Department Practitioners must be registered with the Health Professions Council (HPC), optometrists registered with the General Optical Council (GOC), and nurses with the Nursing and Midwifery Council (NMC). These processes require revalidation and proof of competency for those staff who do not require registration to practice appropriate legislation (such as Criminal Records Bureau (CRB) checks and occupational health checks), as well as a robust Knowledge and Skills Framework (KSF) appraisal will be required.

- **Service user/carer information**

- As set out in The Royal College of Ophthalmologists's 'Ophthalmic Services for Children' and 'Quality Statements and Indicators for Paediatric Ophthalmology', every patient and family / carer must have the opportunity to discuss their diagnosis, prognosis and treatment, and receive information about their condition in an accessible format clearly understood by patients and free from jargon.

- The information must cover:
  - a description of the disease
  - the life-long implications of the disease
  - the prognosis for retention of sight
  - management of the disease within the scope of the commissioned service as described in the specification, clinical pathways and service standards
  - details of appointments including expected duration, requirement for pupil dilatation etc
  - details of who to contact in between appointments if the condition changes
  - diagnostic procedures and methods of investigations during assessment
  - any requirements for on-going monitoring
  - drugs and other treatments commissioned in the clinical pathway including any available compliance aids, drop instillation technique, drug storage etc
  - treatment options including mode of action, frequency and severity of side effects, as well as benefits of treatment so that people are able to be active in the decision making process
  - a realistic assessment of predicted outcome
  - the importance of self-management and care
  - dietary and nutrition information
  - the availability of genetic counseling for inherited ocular conditions
  - information about support organisation and internet resources
  - advice, when appropriate, on Letter of Vision Impairment (LVI), Referral of Vision Impairment (RVI) and Certificate of Vision Impairment (CVI)
  - details of who the patient's lead clinician is
  - contact details for the patient's allocated named nurse.

- The service must also provide education to patients and carers about:
  - the symptoms of disease
  - contact details in case of concern.

- **Patient Groups**

  - Services should work with patient groups to ensure patient input into the development and provision of the services provided.

4. Key Service Outcomes

4.1 Governance

Generic quality standards for Paediatric Ophthalmology Services have been established by the Royal College of Ophthalmologists
http://www.rcophth.ac.uk/news.asp?section=24&itemid=515&search

- Providers will support clinical teams to routinely collect outcome data to demonstrate quality standards
- Providers will ensure that clinical teams will have inbuilt time and resources for continuous professional development, education, revalidation and service developments
- The facilities and environment are required to be safe and appropriately staffed to deliver and care for these complex cases
- All patients will have a lead clinician responsible for the management of their care within the clinical network
- Clinical incidents should be recorded and investigated
- Annual report of morbidity and mortality produced
- Annual report of complaints and outcomes of recommendations produced

4.2 Specific Service Outcomes

- To be agreed by condition, national and international standards but generic Quality Standards have been set out by The Royal College of Ophthalmologists.

- There will be a continual audit cycle across the service. This will include feedback from patients and their families, for example through regular questionnaire surveys or routine use of patient reported experience measures.

- **Continual Service Improvement Plan**

    - Service improvement will be continually ensured through areas such as:
        - the appropriate investigation and management of complaints
        - monitoring information about the effectiveness of interventions
        - regular feedback to commissioners regarding patient outcomes
        - learning good practice from other specialist services
        - service user feedback/patient and public involvement through regular surveys
        - continued research within the service and publication of the results of PNH-related research
        - the development of appropriate policies and guidance on best practice in modifying the service, such as additional outreach clinics in new locations as needed

    - Service improvement may be stimulated through other areas such as:
        - needs assessments
        - other communication with stakeholders
        - external peer reviewed research

- This must be an ongoing and dynamic process. Providers and Commissioners have a commitment to work together to continually improve the service and react to innovative and dynamic ideas. They have a responsibility to continually review and redesign services and consider and act upon requests of the other party.

Appendices

- Retinoblastoma Service (appendix A)
- Ophthalmic Pathology (appendix B)
- Stickler Service (appendix C)
- Ophthalmic Services for Children (appendix D)


Rb Service spec


Ophthalmic Pathology spec


Stickler service spec


Ophthalmic Service for Children