Countess of Chester Hospital NHS
NHS Foundation Trust

# Ophthalmology

Junior Doctor Handbook

COUNTESS OF CHESTER HOSPITAL NHS FOUNDATION TRUST

January, 2019

# Contents

# Ophthalmology Department

## Welcome

Welcome to the Countess of Chester Hospital, where the Ophthalmology Department has a wonderful team of consultants, SAS doctors, nurses, optometrists and other AHPs. You will have exposure to various subspecialties including cornea, glaucoma, paediatrics, oculoplastics, medical retina and vitreo-retina. We have an excellent library in the department and there is the opportunity to get involved in clinical audit. We hope you will find your rotation to be both educational and enjoyable.

## The Department

### Consultant Ophthalmologists

Mr Kashif Ali – Clinical Lead (Madeline Bird – Ext 3633)

Mr Jonathan Bhargava (Kay Dorman – Ext 2238)

Mr Jeremy M Butcher (Bethan Owen – Ext 3609)

Mr Sunildath Cazabon (Jackie Reid – Ext 4183)

Miss Fiona Cuthbertson (Madeline Bird – Ext 3633)

Mr Craig Parkes (Jackie Reid – Ext 4183)

Ms Natasha Spiteri (Bethan Owen – Ext 3609)

### Doctors

Dr Zarina Munshi (Associate Specialist)

Dr Rabia Bashir (Specialty Doctor)

Dr Ukasha Dukht (Specialty Doctor)

Dr Muhammad Fawad (Specialty Doctor)

Dr Adrienn Solt (Specialty Doctor)

### Nurses

Suzanne Smith (Ward Manager)

### Specialist Nurses

Charge Nurse Simon Baker (Specialist in glaucoma/retinal vein occlusion clinic)

Sr Lyn Davies (Specialist nurse in glaucoma, pre/post operative clinics)

Sr Janet Simmonds (Specialist nurse/ glaucoma, post operative clinics)

Sr June Swire (Specialist nurse, pre/post operative clinics)

Sr Mary Tanner Edwards (Senior IVT Nurse)

Sarah Williams (Junior Clinical Nurse Specialist - IVT)

## Staff Nurses

Susan Beare

Tara Denton

Linda Godfrey

Natalie Hartley-Foster

Lorraine Jones

Neil Kilburn

Jeanette Lawlan

Christine Starling

Louise Tattum

## HCA's

Claire Anderson

Sarah Antrobus

Ruth Astbury

Patricia Breen

Jennifer Faulkner

Tracey Fletcher

Dina Gomes

Bridget Grzesiowski

Lesley Haddock

Janice Harris

Charlotte McGeorge

Ellen Perry

Caroline Pinches

Jennifer Pleasant

Davina Rogers

Rachel Sheen

Nicketa Williams

## Appointments Clerks

**Main reception – Ext 3066**

Sue Shingler

Odette Ting

**Ward 55 Clerks – Ext 6438**

Lynn Caswell Mon/Tues/Wed

Janis Harris Thurs/Fri

**Macular Administrators on Ext 2243 or 2258**

Karen Ellis

Cara Grant

## Orthoptic Department

Karen Hordern (Manager)

Sheila Clegg (Orthoptist)

Vicki McDermott (Orthoptist)

Hannah Bullock (Orthoptist)

Vicki Jackson (Orthoptist)

Maria Arshad (Orthoptist)

## Optometry Department

Jeanette Townson – Ext: 3610

Jodelle Romero-Edwards

Daniel Crosby

Christine Harm (Contact Lens Specialist)

## Photographers

Richard Cooke

Ffion Davies

Martin Hodson

## Field Technicians

Eileen Danks

Jackie Owen

## Admissions

Rena Erskine

Debbie Kirkby

# Consultant timetables

**JEREMY BUTCHER - Ext.3624 (Secretary Lynda Ext.2199)**

| | AM | PM |
|---|---|---|
| MONDAY | NWD | NWD |
| TUESDAY | SPA 1&3 BUTJGL 2&4 | BUTJCH |
| WEDNESDAY | BUTJN | ROP/SPA |
| THURSDAY | PRIVATE/SPA | BUTJCH/ADMIN |
| FRIDAY | TH3 | PRIVATE/SPA |
| SATURDAY | TH3 | |

**KASHIF ALI - Ext 6861 (Secretary Madeleine Ext.3633)**

| | AM | PM |
|---|---|---|
| MONDAY | ALIKL 2&4 / SPA 1&3 | ALIKGL 2&4 / SPA 1&3 |
| TUESDAY | TH3 | SPA |
| WEDNESDAY | ALIKMACTMT (INJECTION) | ADMIN |
| THURSDAY | ALIKCONS | TH3 / SPA |
| FRIDAY | ALIKGL / ALIKPOP | SPA |

**JONATHON BHARGAVA - Ext.3639 (Secretary Kay Ext.2238)**

| | AM | PM |
|---|---|---|
| MONDAY | | SPA 2&4 |
| TUESDAY | BHAJOCP / BHAJPOP | TH3 |
| WEDNESDAY | MINOR OP (PLASTICS) | BHAJPERS |
| THURSDAY | SPA 1&3 / NWD 2&4 | ADMIN 1&3 / NWD 2&4 |
| FRIDAY | SPA 1&3 / NWD 2&4 | THB 1&3 / NWD 2&4 |

**JOEY CAZABON - Ext.2127 (Secretary Jackie Ext.4183)**

| | AM | PM |
|---|---|---|
| MONDAY | ADMIN | TH3 |
| TUESDAY | SPA / PRIVATE | CAZJRET |
| WEDNESDAY | TH3 | SPA |
| THURSDAY | CAZJMAC | PRIVATE |
| FRIDAY | PRIVATE | ADMIN |

**FIONA CUTHBERTSON – Ext.3621 (Secretary Lynda Ext.2199)**

| | AM | PM |
|---|---|---|
| MONDAY | CUTFL (wks1&3) / CUTFMRET (wks2&4) | CUTFMAC (wks1&3) / CUTFMACNR (wk4) SPA (wk2) |
| TUESDAY | CUTFMACTMT (wks1,2&3) OZURDEX(wk4) | CUTFL(wks1,2&4) DESP(wk3) |
| WEDNESDAY | CUTFMRET CLINIC | ADMIN/SPA / FFA (wk4) |
| THURSDAY | | |
| FRIDAY | | |

**CRAIG PARKES - Ext.6817 (Secretary Jackie Ext.4183)**

| | AM | PM |
|---|---|---|
| MONDAY | TH3 | PARCMAC 2&4 |
| TUESDAY | ADMIN | SPA |
| WEDNESDAY | SPA 1&3 / PARCL 2&4 | |
| THURSDAY | PARCVRET | PARCMRET |
| FRIDAY | PARCREV | TH3 |

**NATASHA SPITERI – Ext.6818 (Secretary Beth Ext.3609)**

| | AM | PM |
|---|---|---|
| MONDAY | SPINCORNEA | ADMIN |
| TUESDAY | SPINREV | ADMIN/SPA |
| WEDNESDAY | SPINL 1&3 SPINGLAU 2&4 | TH3 |
| THURSDAY | TH3 | SPINCORNEA |
| FRIDAY | SPA | SPA |

# Doctors timetables

**DR Z MUNSHI**

| | AM | PM |
|---|---|---|
| MONDAY | CUTFMACZM | CUTFMAC 1&3 CUTFMACZM 2&4 |
| TUESDAY | SPINREVZM & EYEA/E | EYECAS |
| WEDNESDAY | BUTJREVZM | SPA |
| THURSDAY | EYEFIRSTZM | EYELZM 1&3 EYE1STM 2&4 |
| FRIDAY | EYEFIRSTM | ADMIN |

**DR A SOLT**

| | AM | PM |
|---|---|---|
| MONDAY | TH3 1&3 / EYECAS 2&4 | EYEFIRSTAS |
| TUESDAY | CAZJL | CAZJRETAS |
| WEDNESDAY | BUTJREVAS | SPA |
| THURSDAY | CAZJMACSD | MACINJ |
| FRIDAY | THEATRE | ADMIN |

**DR U DUKHT**

| | AM | PM |
|---|---|---|
| MONDAY | CUTFMACUD | EYEFIRSTUD |
| TUESDAY | TH3 | MACINJ |
| WEDNESDAY | BUTJREVUD | EYEFIRSTUD |
| THURSDAY | ALIKREVUD | EYEPOPUD 1&3 / EYELUD 2&4 |
| FRIDAY | SPA | ADMIN |

**DR M FAWAD**

| | AM | PM |
|---|---|---|
| MONDAY | EYEFIRSTMF | EYEFIRSTMF 1&3 / EYELMF 2&4 |
| TUESDAY | BHAJOCPMF | CAZJRETMF |
| WEDNESDAY | CUTFMRET | EYECAS |
| THURSDAY | ALIKREVMF | TH3 |
| FRIDAY | ADMIN | SPA |

**DR E LLOYD**

| | AM | PM |
|---|---|---|
| MONDAY | EYECAS | THEATRE |
| TUESDAY | MINOR OPS | POST OP CLINIC |
| WEDNESDAY | BUTJREV | TEACHING |
| THURSDAY | ALIKCONS | EYECAS |
| FRIDAY | PARCREV | STUDY |

**DR R BASHIR**

| | AM | PM |
|---|---|---|
| MONDAY | EYECAS / EYEA/E 1&3 / CUTFMRETRB 2&4 | EYEFIRSTRB 1&3 / ALIKGLRB 2&4 |
| TUESDAY | THEATRE | ADMIN |
| WEDNESDAY | BUTJREVRB | EYEFIRSTRB |
| THURSDAY | ALIKREVRB | SPINCORNRB |
| FRIDAY | ALIKGLRB | SPA |

## Code to the "codes"

Clinics are coded using a combination of the following codes. This can be confusing at times, so please refer to the table below if you need to book a patient back to a specific clinic, and specify the clinic code and consultant on the Clinic Outcome booking form. This will improve continuity of care for patients and avoid accidental bookings to an incorrect clinic.

| | | |
|---|---|---|
| **Consultant code** | **BUTJ** | **Jeremy Butcher** |
| | **ALIK** | **Kashif Ali** |
| | **BHAJ** | **Jonathon Bhargava** |
| | **CAZJ** | **Joey Cazabon** |
| | **CUTF** | **Fiona Cuthbertson** |
| | **PARC** | **Craig Parkes** |
| | **SPIN** | **Natasha Spiteri** |
| **Doctor code** | **ZM** | **Zarina Munshi** |
| | **AS** | **Adrienn Solt** |
| | **UD** | **Ukasha Dukht** |
| | **MF** | **Muhammad Fawad** |
| | **RB** | **Rabia Bashir** |
| **Clinic type code** | **GL / GLAU** | **Gluacoma** |
| | **CH** | **Paediatric** |
| | **L** | **Laser** |
| | **MACTMT / MACINJ** | **Injection** |
| | **POP** | **Post-op** |
| | **OCP** | **Oculoplastics** |
| | **RET / VRET** | **Vitreoretinal** |
| | **MAC** | **AMD** |
| | **MRET** | **Other medical retina** |
| | **MACNR** | **Virtual AMD clinic** |
| | **EYEFIRST / N** | **Rapid access / new patients** |
| | **REV** | **Review (General clinic)** |
| | **CORNEA / CORN** | **Cornea** |

## Timetable

Your weekly timetable is planned for the duration of your 6-month placement and is set in advance of your start date, taking into account any training requirements that you may have. This will be distributed to you via email by the College Tutor (currently Ms Spiteri).

# Teaching

## Regional teaching

**Wed pm** – Royal Liverpool University Hospital

## Local teaching

Alternate Monday Lunchtime – Medical retina / FFA - Clinic

Tuesday 8:00am – Oculoplastics and cataract teaching - Clinic

Alternate Tuesday 12:30pm – Cornea teaching – Seminar room

# Audit

If you wish to participate in an audit / data collection, please contact Mr Parkes (Current Audit Lead).

# Eye Library

There is a reference library in Westminster Eye Centre available to all staff. Please apply to the Orthoptists for a key.

# Annual and Study Leave

You will need six weeks' notice for annual and study leave. Your leave forms will need to be signed by the rota coordinator, currently Mr Kashif Ali. Study leave should be booked using the tracker system which can be accessed via the intranet homepage. A minimum of two junior doctors are required to be present within the department at any one time, so please be mindful of your colleagues when requesting leave. A calendar is situated outside the secretaries' office charting approved medical staff leave.

# Sick Leave

If you are unable to come in to work due to illness please notify the manager and secretaries as well as medical staffing as soon as possible. Please let them know how long you expect to be off with your illness if appropriate.

# RSTAs

Trainees are entitled to Research / Study / Audit / Quality improvement sessions (RSTAs): 1 weekly for ST1-2s; 2 weekly for ST3-7s, and every effort will be made to protect such sessions. Under rare circumstances, you may be requested to cover clinical care during an RSTA, which will be paid back as time in lieu, should you accept. Such requests will be a last resort. You are not expected to be on site during RSTAs, but you should be

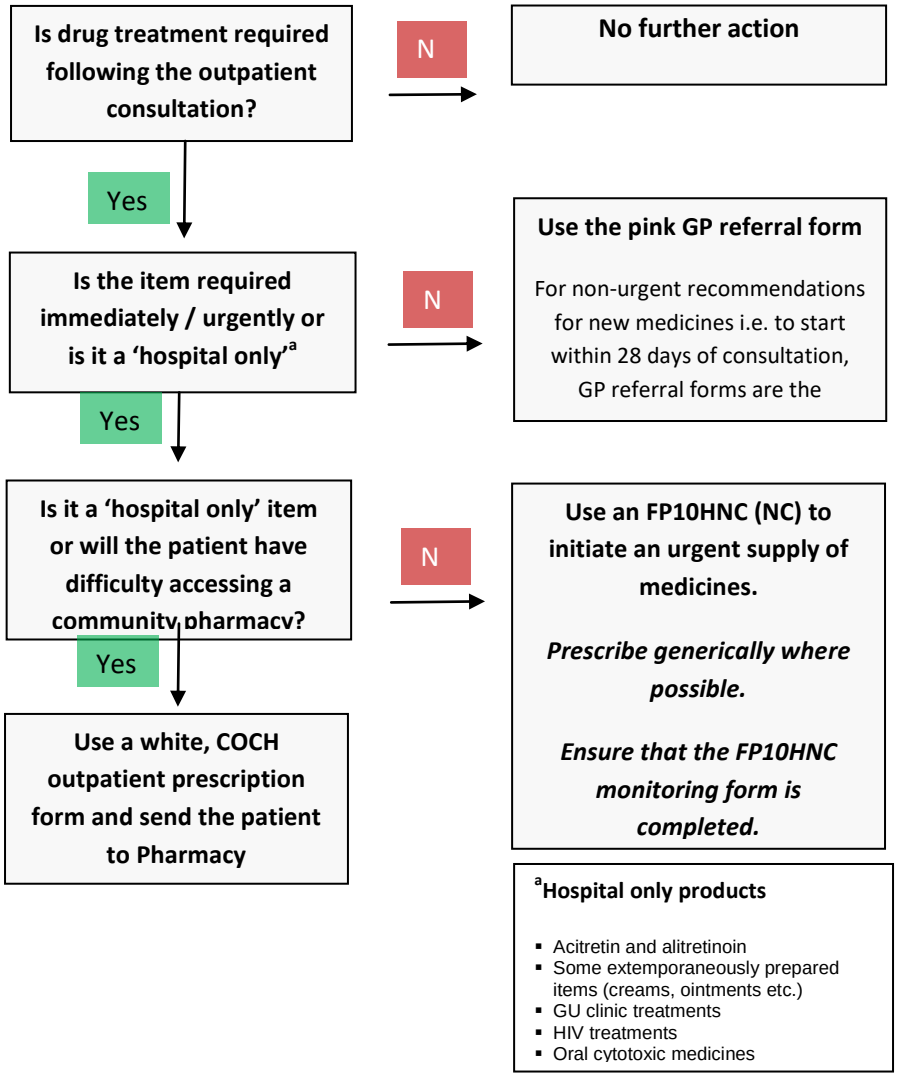
available to attend if required, and are strongly discouraged from making other commitments outside the hospital, unless approved by your Clinical Supervisor.

## Training Notice Board

There is a whiteboard dedicated to notices related to training in the corridor outside the secretaries' office. This space will be used to post information on call rotas, weekly timetables, local teaching, courses and seminars of interest and other similar information. Please feel free to pass on any information of interest to the College Tutor, to help populate the notice board.

## Outpatient Prescribing

A chart is available in all clinic rooms listing which medications are available from the eye department, hospital pharmacy (both on white hospital prescription form) and community pharmacy (FP10). The Standard Operating Procedure below describes the course of action to be taken while making prescribing decisions in the outpatient setting.



## Dictations

Dictations on clinic appointments are done using Talking Point Sound Recorder. Where possible please try to follow the template adopted by the trust below.

*Please be aware that there is often a backlog on dictations, which may mean that there can be a delay of several weeks or even months between the time of dictation and the typing the letter. Any changes to medications, urgent information to GPs or referral letters should be highlighted as* ***High Priority****, and if necessary, please also verbally communicate the urgency of a dictation to the secretarial team.*

**MedisecNET 5557 377**

Tel: 01244 366374

Fax: 01244 366423

**MR FRCS**

CONSULTANT **SURG**

Email:secretary.FRCS@nhs.net

**OUTPATIENT REPORT**

Dear Dr xxxxxxxxxxx

xxxxxxxxxxx

| | |
|---|---|
| **Re: xxxxxxxxxxxxxx**<br>**xxxxxxxxxxxxxxxxx**<br>**xxxxxxxxxxxxxxxxxx** | **DOB: xxxxxxxxxxxxxxx**<br>**Hosp No. xxxxxxxxxxxxxxxxx**<br>**NHS No. xxxxxxxxxxxxxx** |
| **Appointment Date:** | |
| **Clinic:** | |
| **Appointment Type:** | |
| **Diagnosis/problem:** | |
| **Investigations Booked:** | |
| **Treatment:** | |
| **Action for GP:** | |
| **Follow up:** | |

**Overview:**

Lorem ipsum dolor sit amet, consectetuer adipiscing elit, sed diam nonummy nibh euismod tincidunt ut laoreet dolore magna aliquam erat volutpat. Ut wisi enim ad minim venia…

Yours sincerely

**Mr FRCS**

**CONSULTANT SURGEON**

**Copy to Patient: Yes/No**

# On call and casualty commitments

## Emergency ward patient reviews

The trainee doctors are responsible for the review of ward patients needing emergency review who are unable to attend the Outpatient Department between 9am and 5pm. This will be done in accordance with a "*Ward Cover Rota*", the organisation of which will be delegated to one of the trainees. A portable slit lamp, rebound tonometer, portable Snellen chart as well as direct and indirect ophthalmoscope are available from outpatients.

## On calls

Arrowe Park Hospital (APH) and Countess of Chester Hospital (COCH) share an on call service for Ophthalmology, alternating weekly for out of hours on call provisions. COCH and APH alternate between having 2 consecutive weeks on call in January, to ensure that certain holidays alternate between the two Hospitals.

Trainees are first on call between 5:00pm and 9:00am on a rolling rota during the week that the COCH is on call. Patients presenting to APH A&E will therefore be referred to you when COCH is on call, and vice versa when APH is on-call. The vast majority of patients can be advised to attend COCH A&E, however there may be exceptional situations that will require the COCH ophthalmologist on call to travel to APH to review patients.

There is always a consultant second on call, who can be contacted for support via switchboard (Dial "0"). When APH is on call, there is a "Duty" consultant for COCH for the entire week between 9:00am and 5:00pm. During "Duty" weekends (when APH is on call), a COCH trainee is responsible for reviewing patients on Saturday and Sunday morning from 9am – 12pm. This is designed to deal with follow-ups from the week, inpatients and other problems that should be dealt with locally rather than referred to an APH trainee who may not know the patient. It is not intended for new casualties, which should be referred to the APH doctor on call. Such cover on Bank Holidays will follow the "*Ward Cover Rota*" described above.

Where possible, and unless sub-specialist input is required early, casualties should be discussed with the on call or duty consultant for that week. For optimal continuity of care, casualty patients having had consultant input should remain under the care of that consultant, and booked to the respective clinics if requiring follow-up. Similarly, patients seen during weekend morning clinics at COCH when APH is on call should be discussed with the consultant responsible for that patient, rather than the consultant who was on call during the preceding week. This is in order to optimise continuity of care for patients.

For patients with minor eye conditions, requiring one or two follow-up visits, there is a Rapid Review clinic. This is a useful clinic to follow-up patients with conditions such as small corneal ulcers, corneal abrasions and recurrent anterior uveitis, however patients should not be repeatedly brought back to such clinics if long-term follow-up is required. Furthermore, if the patient's course turns out to be complex, there should be no hesitation in involving the consultant early.

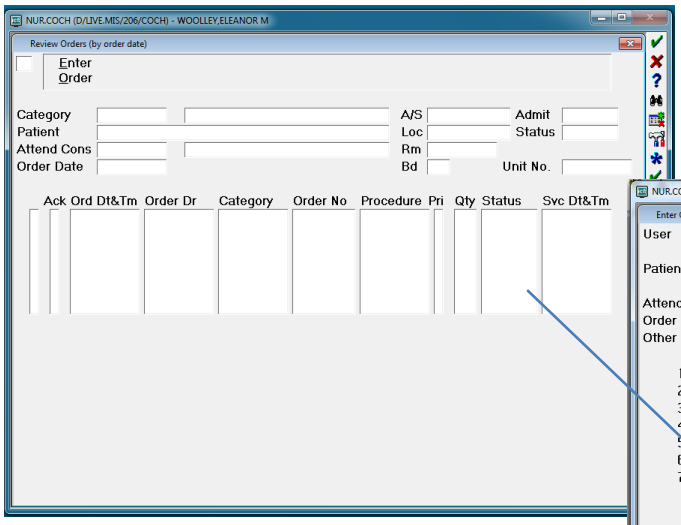
## Casualty cover on Rolling Half Days

You may be required to cover ophthalmic casualties on a rolling rota when clinics are suspended for Rolling Half Days. The Ophthalmology department does not participate in the Hospital Rolling Half Days but has its own schedule for such meetings.

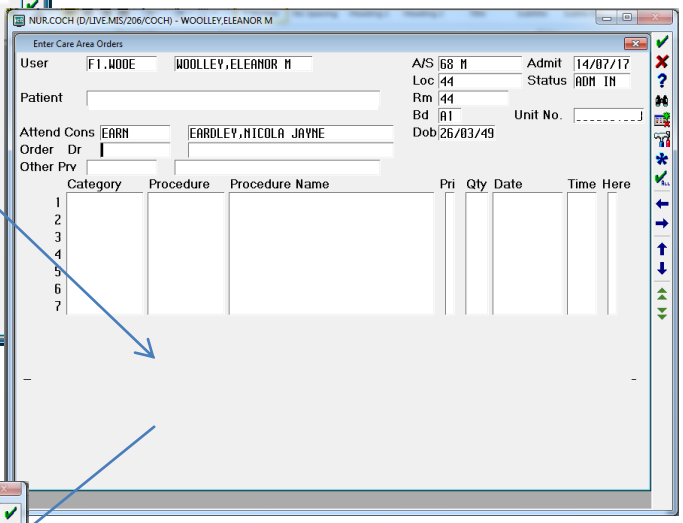
## Emergency Admissions

All emergency admissions must be notified to the consultant on call; you can contact the consultant on call through switchboard. Please ensure that all medications (whether regular, new medications or analgesia) have been prescribed on MediTech ***before the patient has left the ophthalmology department***. This is to avoid any omissions and any unnecessary calls to the on-call ophthalmologist out of hours.

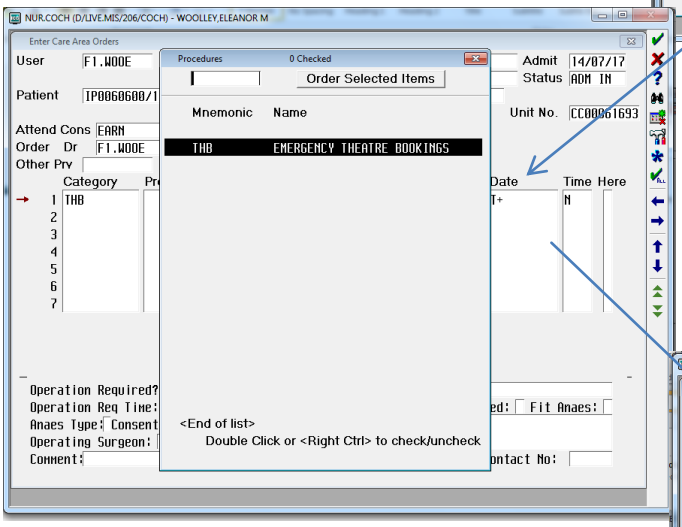
## Emergency theatre booking pathway on MediTech



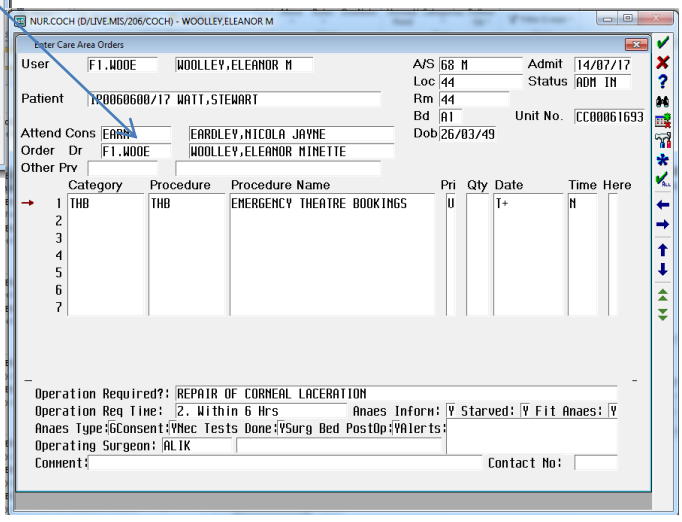

1) Select patient > Orders > Press Enter > Then type **EO (Enter Order)**




2) Under Category, type **THB**
3) Under Procedure, type **THB** again




4) Type name of operation required
5) Press **F9** to choose urgency (within 1, 6 or 24 hours)
6) **Y/N** for anaesthetist informed/ starved and fitness
7) Press **F9** to choose type of anaesthetic (GA or LA)
8) Press **F9** to choose alerts and operating surgeon
9) Type comments (phaco/ vitrectomy kit/ diathermy)
10) Include your contact number/ ward telephone




## Communication

### Staff

Duty anaesthetist if GA
Theatre 3 staff
Ward 55 nurses
If require a general surgical bed post-op inform
Emergency coordinator – bleep 2750

### Patient

Confirm time of last meal/ drink and keep NBM
Confirm if fit for anaesthetic (Liaise with anaesthetist)
Request pre-op bloods and ECG (if required for GA)

## Retrieval of eyes from Donors

There is an eye retrieval nurse available Monday – Friday 9am to 5pm to retrieve eyes. On working days, any retrieval out of hours can be left till the following morning. However, on Friday after 5 pm and weekends, you may occasionally be contacted to retrieve eyes. Eye boxes, containing sterile pots, plastic eye stands, plastic bags and UKTSSA Donor Information Forms can be obtained are boxes/kits available in Consulting Room C (Glaucoma Clinic).

Note: Retrieval of eyes from Donors who expire on Sunday can be left until Monday morning (unless bank holiday).

# Pre-Op Assessment and Protocols

## The aim of pre-op assessment is to:

a) Verify the problem (VA/IOP etc)

b) Check fit for operation

- pick up HT/UTI} inform GP
- pick up anaemia, etc
- pick up conjunctivitis, etc and treatment

c) Explain procedure to patient

d) Consent patient

e) Write up all meds and pre-op guttae

f) Note whether ECG/anaesthetic opinion will be needed O/A

## Listing patients for Surgery

There are specific forms for listing patients for Cataract surgery under local anaesthesia: Please complete all relevant sections. Once the form has been completed, please ask the patient to wait in the waiting area and hand the form to a nurse or HCA to complete the listing process.

When listing patients for oculoplastics procedures, please use specific 'oculoplastic' listing form.

There are purple listing forms for all other procedures.

## Consent Forms

Please familiarise yourself with the consent forms, in particular:

- Adult procedures under GA – Form 1
- Paediatric consent forms – Form 2
- Adult procedures under LA (including lasers) – Form 3
- Patients who lack capacity – Form 4
- Routine LA Cataract – Form 12
- FFA – a) Form 1 or b) Form Three – Single Stage Process
- Treatment for Wet AMD (FFA/OCT/Injections) – see FFA b
- Intravitreal Avastin injections – see FFA b

## Cataracts & Combined Cataract Plus Trabeculectomy

Gen med exam if for GA

Prescribe Mydriasert

## Squints

Gen med Hx + examination

## Trabeculectomies

Gen med Hx + examination if GA

Skip two days of Warfarin or new anticoagulant before surgery (if safe to do so).

Mr Ali:

Cut-off INR for trabeculectomies is 2.5.

INR should be checked 2 days prior to surgery

If INR >2.5 skip warfarin the night before

If INR >2 take half the dose the night before

- g Pilocarpine 2% pre-op

## Oculoplastics Procedures

Cataract and major oculoplastics Tuesday PM - Theatre 3

Minor oculoplastics in 'plastics theatre' Wednesday morning (no warfarin patients)

Major oculoplastic theatre 'B' alternate Friday PM

Stop Aspirin 1/52 pre-op

Skip dose of Warfarin the night before if INR > 3

## Corneal Grafts:

DSAEK

- g Cyclopentolate 1%, g Phenylephrine 2.5%, g Tropicamide 1% (all given x 3 prior to surgery)

PK and DALK

- g Pilocarpine 2% (x3)

## Post-Op Assessment and Protocols

### Cataracts

- g Tobradex QDS x 3/52

Phacoemulsification cases are refracted by their own optometrist and the results sent back to the Department. Patients are normally discharged or listed for the fellow eye at the post-op clinic at 1/52.

Extracapsular cases are refracted at three months. May need removal of sutures after 2/12

Always complete the audit form (if present)

### Trabeculectomies

- g Cyclopentolate 1% QDS x 1/52, g Tobradex QDS x 4/52 for up to 8 weeks

Discontinue glaucoma drops in operated eye but continue in fellow eye

### Squints

- g Tobradex BD x 2/52

Checked in Orthoptic Department in 3/52, then scars are checked.

### Combined Cataract and Trabeculectomy

- g Tobradex QDS for 4/52
- g Cyclopentolate 1% QDS 1/52

### Corneal grafts

DSAEK, PK and DALK post-op drops (NS)

- g Predforte QDS to continue until clinic review.

Steroids usually tapered by 1 drop every 6 weeks if all is stable – this must be done in consultation with the responsible consultant. Some patients will require more frequent steroid dosing immediately post-op.

- g Chloramphenicol QDS x 4/52

DSAEK post-op instructions (NS)

**Post-op ward instructions:**

Strict supine posture for 2 hours with no pillow support and bed completely flat.

Patients require review on ward ***prior to discharge*** by doctor for IOP check and release of air or gas if required.

**Instructions for home:**

Continue to posture supine with toilet and meal privileges overnight.

Patients must attend Ward 55 the next morning at 8:15am for doctor review in case rebubble is required on the Thursday am list.

Shield and pad can be kept on overnight, and drops started the next morning after review.

The shield should be kept on at night for the first week.

Patients should not allow any water into the eye for the first week.

## PK and DALK post-op instructions (NS)

**Post-op ward instructions:**

No posture required post-op and patients may be discharged without doctor review once they have recovered from general anaesthetic.

**Instructions for home:**

Shield and pad can be kept on overnight, and removed in the morning, after which drops should be started.

The shield should be kept on at night for the first week.

Patients should not allow any water into the eye for the first week.

# Protocol for the management of Post-Operative Endophthalmitis

## Diagnosis

Prompt diagnosis of endophthalmitis is essential. Once the diagnosis has been made vitreous biopsy and intravitreal antibiotics need to be administered **within 1 hour**. Most cases are post-operative (exogenous); however consider endogenous causes as well in systemically unwell patients. Typically ¾ of post-operative endophthalmitis patients present within 2 weeks of surgery and ¼ present after 2 weeks.

| **Signs & Symptoms of Endophthalmitis** | |
|---|---|
| Blurred vision | Pain |
| Red eye | Media haze |

## Investigations

In order of importance

1. Vitreous biopsy of 0.1 – 0.3ml via pars plana needle or vitrector without infusion. Send for gram stain, MCS and PCR
2. Anterior chamber tap of 0.1ml through paracentesis. Send for gram stain, MCS and PCR
3. Corneal scrape from any corneal ulcer. Send for gram stain and MCS
4. Baseline bloods FBC, UE, LFT, CRP

**DO NOT DELAY TREATMENT PERFORMING INVESTIGATIONS 3&4 FIRST**

- INFORM MICROBIOLOGY URGENTLY BEFORE YOU TAKE SAMPLES.
- MAKE SURE ONCE TAKEN THE SAMPLE IS URGENTLY SENT TO THE LAB FOR PROCESSING.
- CONTACT PHARMACIST TO PREPARE ANTIBIOTICS IF THE PROCEDURES ARE TO BE DONE DURING WORKING HOURS

## Treatment

1. **Intravitreal antibiotics**
   a. Vancomycin 1mg/0.1ml
   b. Ceftazidime 2mg/0.1ml

**CAUTION**

½ dose of intravitreal antibiotics if previous PPV.

¼ dose of intravitreal antibiotics in silicone oil/gas filled eyes

c. Amphotericin 10micrograms/0.1ml if fungal infection suspected

2. **Oral antibiotics**
   a. PO Linezolid 600mg stat, then BD for 2/52 (review weekly)
   b. PO Ciprofloxacin 750mg stat, then BD for 2/52 (review weekly)

3. **Topical drops**
   a. G. Vancomycin 50mg/ml (5%) hourly
   b. G. Ceftazidine 50mg/ml (5%) hourly
   c. G. Predforte 1% hourly
   d. G Atropine 1% BD or G. Cyclopentolate 1% QDS

4. **Systemic steroids**
   a. PO Prednisolone 30mg BD for 5/7 (check with Consultant)

**CAUTION**

- Linezolid can cause haematopoietic disorders (thrombocytopenia, anaemia, leucopenia and pancytopenia)
- Monitor FBC weekly
- Close monitoring in
  - Patients receiving treatment for 10-14 days
  - Pre-existing myelosuppression
  - Patients receiving drugs that have adverse effects on haemoglobin, blood counts or platelet function
  - Severe renal impairment
- Linezolid should NOT be used long term (more than 28 days) as can cause severe optic neuropathy (in both eyes). Check baseline vision, colour vision and visual field in unaffected eye. (Source – BNF 2015)

## Ordering M, C&S for Endophthalmitis on MediTech

Endophthalmitis:

Under category, select MICRO

Under procedure, select MIC.EATR for Right AC Tap and MIC.EATL for Left AC Tap

Select MIC.EVTR for Right Vitreous Tap and MIC.EV!L for Left Vitreous Tap

Under Specimen Site, select EYER for Right Eye and EYEL for Left eye

Under Clinical Info, select ENOP for Endophthalmitis

## Bacterial keratitis Guidelines

# Introduction

Bacterial keratitis is serious ophthalmic condition with the potential to cause permanent visual loss through corneal scarring, and may result in endophthalmitis and possible loss of the eye if not diagnosed early and promptly treated.[1]

The bacteria most commonly associated with keratitis are:

- *Pseudomonas aeruginosa* (Gram negative)
- *Staphylococcus aureus* (Gram positive)
- Coagulase negative *Staphylococci* (Gram positive)
- *Streptococcus pneumoniae* (Gram positive)
- *Other gram-negative bacteria*

There are 2 main options for the treatment of bacterial keratitis:

1. **<u>Single therapy fluoroquinolone (FQ)</u>**

There is some evidence to suggest that single therapy with a FQ is at least as effective as combination therapy, however there is possible inclusion bias for less severe cases of bacterial keratitis in these studies.[2-5]

It may be reasonable to consider FQ monotherapy for most bacterial keratitis cases unless:

A. Keratitis is very severe at initial presentation (very large corneal infiltrate, presence of a hypopyon and florid anterior chamber activity).
B. Keratitis is unresponsive to FQ monotherapy
C. Known pathogen resistance to FQ ***and*** poor clinical response to FQ. (Sensitivities are based on response of the organism to serum levels of antibiotics, whereas antibiotic levels on the ocular surface may reach very high concentrations with frequent topical administration, and a clinical response may still be achieved despite apparent resistance on culture reports.)[6]

2. **Combination aminoglycoside & cephalosporin**

Usually a combination of fortified **aminoglycoside-cephalosporin**, reserved for more severe bacterial keratitis cases.

- More likely to cause ocular discomfort up to 78% than FQs[7]
- Increased risk of chemical conjunctivitis up to 80%[8]
- Use of fortified topical antibiotics can cause ocular surface toxicity and should not be prolonged.

## Purpose and Scope

The purpose of this guidance is to provide an evidence-based approach towards treatment of bacterial keratitis, including risk stratification based on severity of the condition at initial presentation, and appropriate empirical antibiotic choice accordingly. It is also intended to provide guidance on the ongoing management of bacterial keratitis, including modification of treatment where clinical response is poor, and tapering of treatment to prevent toxicity.

## Patient Risk Factor

Non-compliance with guidelines may result in medium to high risk of patient morbidity.

## Responsibility

It is the responsibility of the medical staff in the ophthalmology department to follow the guidelines. Medical staff in A&E may also wish to refer to the guidelines, however they should do so in consultation with an ophthalmologist for further guidance.

## Accountability

Staff will be accountable to the ophthalmology consultant on call, or the consultant responsible for the care of the patient.

# GUIDELINES

All patients with suspected bacterial keratitis should have conjunctival bacterial swabs and a corneal scrape if the ulcer is greater than 1mm, prior to starting antibiotics. If a contact lens is available this can be sent for culture. Viral swabs should also be taken if there is any suspicion of viral keratitis.

Patients should then be started on empirical (first line) treatment according to disease severity.

## First line

### Mild keratitis

- Guttae Levofloxacin 0.5% q 1-4 hourly depending on severity

### Severe keratitis

- Cefuroxime 5% eye drops (preservative free) and gentamicin 1.5% eye drops (PF)

*Gentamycin is very toxic to the ocular surface and its use should not be prolonged beyond 5 days in most cases.*

Dosing regimen:

- q 5-15 mins x 1 hour
- Then q 30 mins - 1 hour
- q 1 hourly day and night x 48 hours
- q 1-2 hourly waking hours only to complete 5 days of intensive treatment

- PO Moxifloxacin 400mg OD for 10 days

*Oral antibiotics should be given when there is extension of the infection to the anterior chamber or sclera.*

## Second line

- Cefuroxime 5% eye drops (PF) and gentamicin 1.5% eye drops (PF)

*Consider switching in patients initially treated with FQ monotherapy who are responding poorly or worsening.*

- Vancomycin 5% eye drops (preservative free, unlicensed) - consider if MRSA is suspected or history of MRSA colonisation

*Vancomycin can be used in combination with Ofloxacin or Levofloxacin. Be aware that it is also very toxic to the ocular surface and its use should not be prolonged beyond 5 days in most cases.*

## Neisseria gonorrhoeae keratoconjunctivitis

- IM ceftriaxone 1g single dose [9] *** PLUS
- Irrigation of the eye with saline or water PLUS
- Cefuroxime 5% eye drops (PF) hourly for at least 24 hours, tapering to 6 times daily

There is a lack of evidence to guide treatment options if there is a history of penicillin anaphylaxis or established cephalosporin allergy. Treatment should be based on antimicrobial susceptibility results where available.

*** GU Medicine referral should be made without delay to:

Cheshire West & Chester Integrated Sexual Health

Fountains Health

Delamere Street

Chester CH1 4DS

Office 01244 385458; Integrated Sexual Health Service Secretary 01244 385472;

Sexual Health & HIV : Appointments 0300 2470020; Fax 01244 373408

https://www.thesexualhealthhub.co.uk/services-near-you/cheshire-west-and-chester/

***In cases of Neisseria gonorrhoeae conjunctivitis, it is preferable to refer to GU medicine for swabs prior to systemic antibiotic treatment UNLESS there is significant corneal involvement.***

Neisseria gonorrhoeae can cause a severe keratitis resulting in corneal melting and perforation, and if the cornea is threatened, there should be no delay in administering systemic treatment. Early involvement of a cornea specialist is important in suspected cases.

## Monitoring and modification of treatment

Patients should be monitored frequently to assess response to treatment, typically every 1-2 days in the first week.

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Modification of treatment

- Determined by clinical response: if satisfactory, there is no need to modify treatment, regardless of Gram stain and culture results and sensitivities
- If the eye shows lack of improvement or stabilisation by 48 hours consider a change in:
    - Type of antibiotics
    - Frequency of antibiotics

  (Note that the clinical picture will often appear to worsen in the first 24 hours, despite appropriate treatment).

- Dual antibiotic therapy may become unnecessary once the organism has been identified (eg. switch from combination cefuroxime and gentamicin to FQ monotherapy for *Pseudomonas* to prevent toxicity)
- Taper treatment as infection improves to prevent toxicity. Sterility is usually achieved after 5 days of intensive treatment assuming no pathogen resistance. Thereafter, consider switching to ofloxacin or chloramphenicol.

## Collection of corneal scrapes

Corneal scrapes must be taken from all corneal ulcers. A prepared pack for the collection of corneal scrapes is available from the Primary Care Department or A+E department. Kits containing a microscope slide and BHI broth are supplied by the Microbiology Department on a weekly basis. If the kits run out, extra kits can be put together on request (Ext 6797).

### Equipment needed

- Conjunctival swab for bacteria, fungi and yeasts: blue tube (TCS)
- Conjunctival or corneal swab for viruses (green top) or Chlamydia (red top - Remel)
- Sterile gloves, two number 11 blades
- Prepared pack containing slide and slide container, bottle with BHI transport medium

### Collection of corneal scrapes

It is important that corneal scrapes are collected in the following manner:

a. A conjunctival swab for bacterial or fungal isolation is collected (blue/ black tube – TCS) If a co-existent viral infection is suspected, a viral swab should be collected (Red top – Remel, or green tube). Once the latter has been placed within the Virocult tube, it is important to gently squeeze the bottom of the tubing several times to improve recovery of the virus. A swab can be taken for chlamydia if appropriate (white tube – Hologic).

b. Sterile gloves should be worn and the hand that holds the number 11 blade, should avoid touching non-sterile surfaces such as the patient's eyelids, slide or slit-lamp biomicroscope.

c. Before donning the gloves focus the light of the slit lamp on the corneal ulcer. An assistant should be available to elevate the patient's upper eyelid. If no assistant is available, a speculum can be used, although this is seldom necessary. Material from the first corneal scrape is smeared within a marked circle on the slide provided, and the blade discarded. A new sterile number 11 blade is then used to obtain a second corneal scrape and the blade placed in to the bottle containing the transport medium (BHI). If no assistant is available, the base of the bottle is held by the non-sterile hand. Following placement of the blade into the NHI, the lid is screwed back on using the fifth finger of the sterile hand. The slide is placed within the slide container provided. It should be clearly marked on which side of the slide the smear has been placed.

## Transport to Laboratory

The BHI bottle containing blade and case containing slide must be repackaged and sent to Microbiology Department. Don't forget to send contact lens and contact lens cases if appropriate. Other foreign objects such as corneal sutures should be placed in a separate bottle of BHI. All samples must be clearly labelled with patient's name, DOB, hospital number.

If extra kits or an URGENT gram stain is required, telephone the Microbiology Department:

For core working hours: Mon – Fri (09:00 – 19:00) Sat/ Sun (09:00 – 12:00)

Ext. 6797 (Microbiology) and Ext 5454 (for urgent hospital transport)

Out of hours contact the On-call Biomedical Scientist via switchboard.

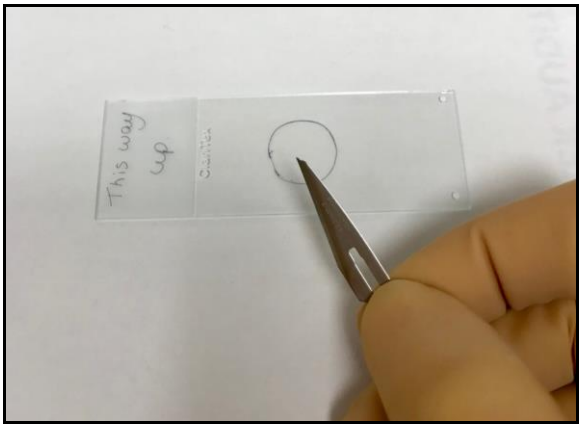
The sample will be collected by the Biomedical Scientisist 'Out of Hours'.

## Ordering M, C&S for Corneal Ulcers on MediTech

- Under category, select MICRO
- Under procedure, select MIC.EC1R for Right Corneal Scrape and MIC.EC1L for Left Corneal Scrape
- Under Specimen Site, select CORNR for Right Cornea and CORNL for Left cornea
- Under Clinical Info, select CULC for Corneal Ulcer

## Corneal Scrape for Microscopy, Culture and Sensitivity

**Scrape for Microscopy**

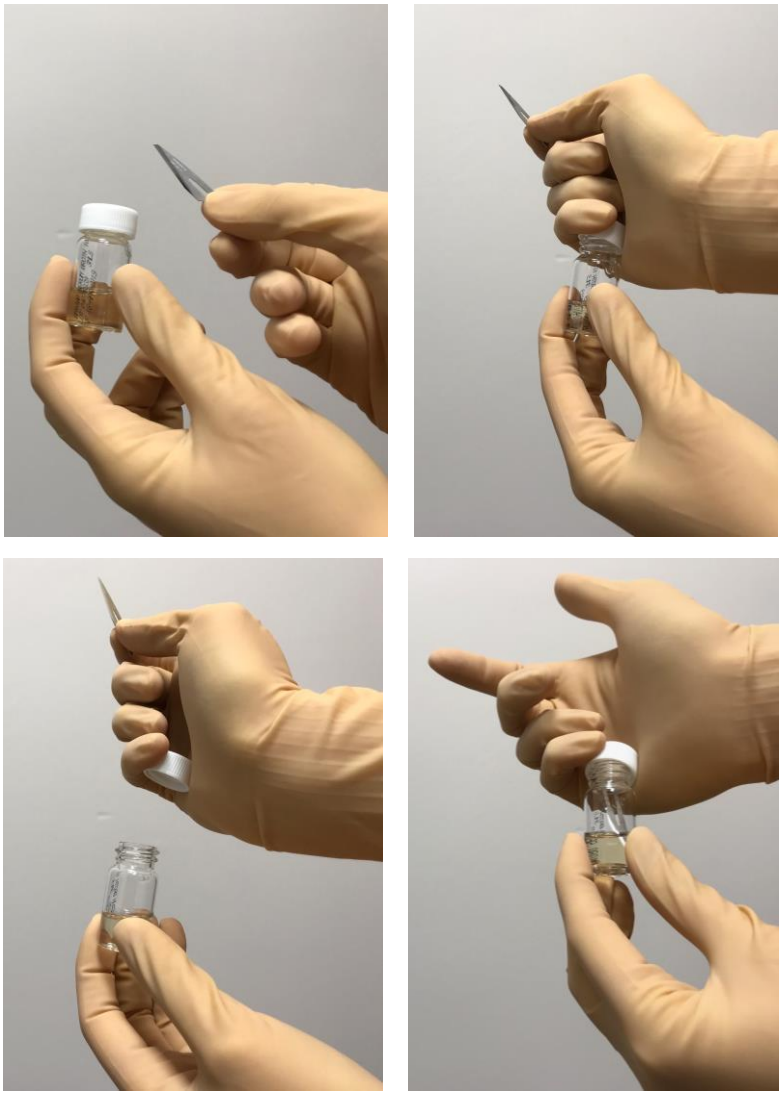




Prepare smear with material from the first scrape and return slide to the container. Mark around the smear and the side of the slide on which the smear has been placed, to facilitate staining in the microbiology lab.

**Scrape for Bacterial Culture**

Transfer the blade from the second scrape to the bottle containing the BHI broth.



Blade held in right hand (sterile glove). Left hand holds transport bottle.

If no assistant, index and thumb of sterile right hand handle blade and baby finger controls lid of bottle. It is essential that blade is transferred to the bottle without making contact with any other surface.

## Herpes Simplex Keratitis Guidelines

| HSK treatment guidelines | | |
|---|---|---|
| **Epithelial** | **Topical treatment:**<br>ACV 5% (Zovirax) 5 times a day for 14 days* **or**:<br>Ganciclovir 0.15% (Zirgan) 5 times a day for 14 days*<br>Debridement of the dendritic lesion and send for PCR in all cases if not previously done | **Systemic treatment:**<br>Alternative to topical treatment in dendritic / geographic keratitis in:<br>• Immunocompromised patients<br>• Non-compliance, intolerance or toxicity from topical ACV<br>**Dendritic**: ACV 400mg 5 times a day **or**:<br>Valaciclovir 500mg BD for 7 days<br>**Geographic**: ACV 800mg 5 times a day **or**:<br>Valaciclovir 1g TDS for 14-21 days |
| **Stromal** | **Without epithelial ulcer:**<br>ACV 400mg BD **or**:<br>Valaciclovir 500mg OD during topical steroid use **and**:<br>Prednisolone 1% 4-8 times a day tapered over > 10 weeks | **With epithelial ulcer:**<br>ACV 800mg 5 times daily **or**:<br>Valaciclovir 1g TDS for 7-10 days** **+/-**<br>Prednisolone 1% BD (with caution) tapered slowly as disease comes under control |
| **Endothelial** | ACV 400 - 800mg 5 times daily or:<br>Valaciclovir 1g TDS for 7-10 days** **and**:<br>Prednisolone 1% 4-8 times a day tapered over >10 weeks | |
| **Keratouveitis** | ACV 800mg 5 times daily or:<br>Valaciclovir 1g TDS for 7-10 days** **and**:<br>Prednisolone 1% 4-8 times a day tapered over >10 weeks | |
| **Prophylaxis** | Indications:<br>• Multiple recurrences of any type of HSK, especially stromal HSK<br>• Recurrent inflammation with scar / vascularisation approaching visual axis<br>• Patients with history of ocular HSV following ocular surgery including PK<br>• Patients with history of ocular HSV during immunosuppressive treatment<br>ACV 400mg BD **or**:<br>Valaciclovir 500mg OD | |

* Discontinue topical ACV / Ganciclovir after 2 weeks and replace with oral prophylactic dose ACV if required
** Reduce to prophylactic dose after 7-10 days and maintain for as long as frequent topical steroids are in use

## Uveitis

***Investigate if***: Bilateral, granulomatous or 2nd acute episode

Investigations: Use Meditech

Under category type: / F9, then choose OPH.UVEIT or OPH.UVEIT2

Treatment:

G Maxidex or Pred Forte: hourly or 2 hourly for 3 - 7 days

Then taper according to response

Cycloplegics for one week or as required

Occ. Betnesol nocte for 2-3/52

## Retinal Detachment

Please discuss all cases with the consultant on call or VR consultant (Mr Parkes or Mr Cazabon). Where possible all cases are dealt with regionally between APH and COCH. Any referrals made to Liverpool should be consultant to consultant. When seen within working hours, please obtain an OCT of the macula, especially when the case is not clearly a macula off detachment.

## Other useful guidelines

There is a folder for Ophthalmology guidelines which can be found on the 'Shared S drive' using the following pathway:

My Computer > S: Drive > Clinical > Ophthalmology > Eye Drive