Sandwell and West Birmingham Hospitals NHS
NHS Trust

LOCAL OPHTHALMIC OPERATIONAL GUIDELINES FOR INTRAOCULAR FLUID (VITREOUS AND AQUEOUS) SAMPLING AND INTRAVITREAL INJECTION OF ANTIBIOTICS IN THE MINOR PROCEDURES ROOM OF THE EYE ACCIDENT & EMERGENCY DEPARTMENT

Reference	SWBH/BMEC/Ophth/038
Category	Birmingham and Midland Eye Centre / Ophthalmology
Date Approved	29-12-2009
Date of Next Review	29-12-2012

POLICY PROFILE	
Overview	
Key overall purpose of policy	To reduce the time span from initial diagnosis to administration of treatment (i.e. door to needle time) by improving efficiency of patients care pathways and work streams, promoting rapid diagnostic sampling and effective treatment delivery to enable improved visual outcome.
Principal target audience	Ophthalmic accident and emergency staff
Application	Trust wide
Accountable Executive Director	Clinical Director Ophthalmology Surgery B
Author(s)	Mr Salman Mirza / Miss Saaeha Rauz / Mr Ash Sharma (Consultant ophthalmologists) / Naomi Bridgwater (nurse lecturer/practitioner) / Jane Wennen (matron)/ Sister Alison Hynes (Sister A&E)
Impact Assessment	
Resource implications	On going as necessary
Training implications	All staff both medical and nursing involved in the preparation and administration of this treatment are registered practitioners, having successfully undergone nationally recognised training enabling them to be regarded as competent practitioners. Induction and mandatory training for staff involved in this service delivery is also in place.
Communications implications	A copy of this document will be held in the protocol, guideline and procedure folder on each ward and department in the eye unit and on the trust intranet
Date of initial equality impact assessment	September 2009
Date of full equality impact assessment (if appropriate)	Not applicable
NHSLA risk management standards/ CQC core standards	NHSLA risk management standard level 2- Standard 2. 1. 2.
Consultation and referencing	
Key stakeholders consulted/involved in the development of the policy	Mr Salman Mirza / Miss Saaeha Rauz / Mr Ash Sharma (Consultant ophthalmologists) / Naomi Bridgwater (nurse lecturer/practitioner) / Jane Wennen (matron)/ Sister Alison Hynes (Sister A&E)Lucy Titcomb (lead ophthalmic pharmacist) Beryl Openheim/Rebecca Evans(Infection control leads) Diane Stewart (decontamination) Shashi Aggerwal (Clinical Director Surgery B)Susan Espley (Risk assessment)
Complementary Trust documents for cross	SWBH/COI/028 - Decontamination of the

reference	Environment SWBH/COI/029 - Decontamination of Equipment SWBH/COI/025 Principles of Asepsis SWBH/COI/020 Multi resistant Gram negative Micro-organisms SWBH/COI/019 Multi resistant Gram Positive Organisms SWBH/COI/010 Sharps and clinical waste (Segregation, Collection and Disposal) Infection Control Guidelines SWBH/COI/009 IFC Protective Clothing SWBH/COI/008 Management of Blood and Body Fluid Spillages SWBH/COI/006 IFC Hand Hygiene SWBH/COI/012 Care and Management of Patients with known or suspected communicable infections Treatment of Ophthalmic infections (BMEC/Ophth/09)
Approvals and monitoring	
Approving body	Divisional Governance Group – Surgery Drugs and Therapeutic Committee
Date of implementation	29-12-2009
Monitoring and audit	

DOCUMENT CONTROL AND HISTORY				
Version No	**Date Approved**	**Date of Implementation**	**Next Review Date**	**Reason for Change** e.g. full rewrite, amendment to reflect new legislation, updated flowchart, etc.
1	29-12-2009	29-12-2009	29-12-2012	

Guidelines to be followed when undertaking vitreous sampling and intravitreal antibiotic injections in the minor procedures room in the Eye Casualty Department at the Birmingham & Midland Eye Centre

Contents

1.0 Introduction

Postoperative endophthalmitis is a rare but devastating complication of intraocular surgery and despite optimum treatment the visual prognosis is very poor, with only 53% achieving a final visual acuity of 6/12 or better.[1] Urgent antibiotic therapy and identification of the causative microorganisms through culture of anterior and posterior chamber aspirates are key to reducing visual morbidity.[2]

This involves:

(i) sending urgent samples from the vitreous and aqueous humours for microbiology and rapid diagnostics, together with

(ii) concurrent administration of intravitreal antibiotics (injection of antibiotics into the posterior segment of the eye). The quicker this procedure is undertaken the better the chances of a good visual outcome.

At present this procedure is undertaken in a theatre environment with resultant time delay from the process of admission and organizing a theatre slot. This delay could be anything from a few hours to half-a-day allowing virulent pathogens to multiply within the eye, causing severe tissue destruction and potential for loss of sight: the greater the delay, the poorer the visual outcome.

It therefore becomes imperative that this procedure is undertaken swiftly and safely as possible. Setting up a clean room in the Eye A&E where this procedure could be undertaken, would be the quickest and most effective way of making this possible.

The endophthalmitis rate after cataract surgery is reported to be from 0.04% to 0.265 %.[3] In a large retrospective study covering 9 hospitals in Birmingham including BMEC over a 7.5 year period, the annual mean incidence of endophthalmitis was 0.099%.[4] This equates to about 1–2 patients with post cataract surgery endophthalmitis presenting to BMEC every month. Endophthalmitis can also result from other intraocular surgery such as trabeculectomy but much less frequently.

2.0 Aim/Purpose

2.1 To reduce the time span from initial diagnosis to administration of treatment (i.e. door-to-needle time) by improving efficiency of patient care pathways and work streams, promoting rapid diagnostic sampling and effective treatment delivery to enable improved visual outcome.

3.0 Objectives

3.1 The safe and competent obtaining of vitreous samples for microbiology and administration of intravitreal antibiotics in the ophthalmic accident and emergency department will be carried out by appropriately trained medical staff.

3.2 The procedure will be performed in a suitably prepared and equipped environment.

3.3 Reduction of the door-to-needle time i.e. the time frame from clinical diagnosis to initial treatment will be reduced

4.0 Scope

This policy applies to all staff involved in the delivery of care to ophthalmic patients diagnosed with postoperative endophthalmitis requiring vitreous biopsy and intravitreal antibiotics.

5.0 Definitions

GP	General Practitioner
BMEC	Birmingham and Midland Eye Centre
Post operative endophthalmitis	Serious sight threatening infection within the eye as a result of intraocular surgery
BP	Blood pressure
Eye A&E	Eye accident and emergency department

6.0 Specific detail

6.1 Entrance / Reception

Patients will enter through the main entrance of the Birmingham and Midland Eye Centre (BMEC) and report to the A&E receptionist where generic details will be checked and documented and the patient will be booked into the Eye A&E.

6.2 Waiting area / Triage in A&E

The patients will then be directed to the waiting area in the eye A&E. Male, female and disabled toilet facilities are available here. The patient will have vision tested and be triaged as urgent by the Eye A&E nursing staff to minimise waiting time. The triage nurse will be alerted to the urgency by

ascertaining date of surgery, reduction of vision, painful eye within the immediate post-operative period (1–21 days)

6.3 A&E consultation

The patient will be called in to see the Eye A&E doctor where a detailed history of past ocular and medical history including that of any allergies will be taken.

Before and after patient contact the Doctor and Nurse will clean their hands according to the Trust's hand hygiene policy to reduce the risk of cross infection.

A detailed ocular examination of the affected and fellow eye will be performed. Adverse prognostic factors such as rapidity of visual loss, presence of a relative afferent pupillary defect and dense vitritis will be noted.

If a diagnosis of presumed postoperative infectious endophthalmitis is made, the on-call specialist registrar and consultant for the session will be consulted without further delay.

The consultant under whose care the operation took place must be informed at the earliest opportunity.
If a decision may be taken to perform the vitreous biopsy and antibiotic injection in the minor procedures room, the Nurse in charge of A&E should be informed immediately.

Patients exhibiting a visual acuity of perception of light (PL) or worse will also require referral to a vitreoretinal surgeon for consideration of vitrectomy in a theatre setting.

Informed consent about the risks and benefits of the procedure will be obtained from the patient and the affected eye marked.

The microbiology laboratory at City Hospital (4261) must be alerted that an urgent vitreous and aqueous sample is to be sent. Depending on the advice given by the microbiology technician (MLSO) the sample may be inoculated onto the culture plates in A&E or sent in a sealed syringe to microbiology for immediate inoculation.

Out of hours, the on-call MLSO is contactable through switchboard.

The porters must also be alerted about an urgent sample requiring transport to the laboratory.

Arrangements for admission of the patient to the eye ward must also be made.

Patient exclusions

- Patients not consenting to the procedure or unable to give consent.
- Patients not suitable for the procedure under topical or subconjunctival / subtenons anaesthetic
- Medically unfit patients requiring anaesthetic cover for procedure.
- Paediatric patients

Patient preparation prior to treatment

- The patient is escorted to the Minor Procedures room where procedure will be undertaken.
- Check patient's name, address and date of birth (DOB) with patient and against notes.
- Ensure patient's visual acuity has been checked and documented
- Ensure written consent has been obtained, if so reconfirm with patient if he/she is happy to proceed and understands any risks and the benefits associated with the procedure.
- Ensure the eye to be treated has been marked by the ophthalmologist.
- Check and record if the patient has any allergies.
- Check notes for patient's general health history and check with the patient if there is any change in general health and medications.
- Instil dilating drops if required as prescribed.
- Instil local anaesthetic drops as prescribed and record time.

6.4 Description of the rooms

The Procedure room is located in the Ophthalmic Eye A&E Department at BMEC (Room No 8). This is a designated 'clean room'. The room has a lockable unit with cupboards and drawers, a smooth work surface above, an adjustable patient couch, sinks and appropriate lighting. The walls are all washable as is the paintwork and floors.

The room will be used for performing the vitreous biopsy and intravitreal injections. These will be performed by a trained ophthalmologist who may be the on-call specialist registrar, senior doctor in Eye A&E or the consultant ophthalmologist. In close proximity to this room is the clean utility room, the recovery room and the dirty utility room. Full cleaning will be undertaken daily and in between cases before undertaking the procedure in the room.

The procedure

The procedure trolley will be cleaned as recommended in section 6 of the Trust infection control manual-decontamination of equipment, in the Minor Procedures room.

All packs and equipment for these procedures are stored in the Minor Procedures room where the trolley will be laid individually for each patient. All equipment for both these procedures is disposable so will be used only once then discarded. Individual sterile packs for the vitreous biopsy containing speculum, syringes, needles and drapes or sub-tenons injections containing Moorfields ridged forceps, Clarke's speculum, tenotomy scissors are used. Disposable gowns, gloves, eye pads, masks, plastic aprons are used routinely extra sterile instruments are also available and are used as necessary. Drops used for topical local anaesthetic are provided as single dose units e.g. Minims®.

Before laying the procedure trolley and with due regard to the Trust 'Principles of Asepsis' and other appropriate Trust guidelines (see references), and on completion of the procedure, the staff should wash his or her hands adhering to the Trust 'Hand Hygiene' guidelines. The use of appropriate personal protective equipment should also be adhered to.

The aqueous and vitreous humour should be sampled under topical anaesthetic (oxybuprocaine hydrochloride 0.4%, tetracaine hydrochloride 0.5% or proxymetacaine hydrochloride 0.5%) or sub-tenons anaesthetic.

The patient's periocular skin will be cleaned with povidine iodine 10 % alcohol solution and the eye cleaned with 5 % aqueous solution, or chlorhexidine gluconate 0.05 % if allergic to iodine, by the doctor prior to the procedure and a sterile drape applied and speculum inserted. A speculum is inserted before giving either sub-conjunctival (overlying the injection site) or sub-tenons local anaesthetic (2% lidocaine).

Vitreous tap: A calliper is used to measure 3.5 mm from limbus. The antibiotics with the correct dosages as indicated below are kept in readiness. A 23 G needle attached to an insulin syringe is used to draw up the vitreous sample. The needle is inserted through the conjunctiva, sclera and pars plana aiming for the middle of the eye to a distance of 5 mm. Vitreous is then aspirated. Only a small sample (0.2 ml) is required. The syringe is then capped and sent to microbiology urgently. The intravitreal antibiotics are then injected through the same area. If a sample cannot be obtained (Dry tap) ensure the syringe is not blocked. **Do not persist in using force to obtain the sample**. A minor proportion of patients may require a formal vitrector to obtain a vitreous biopsy in theatre.

Aqueous Tap: An anterior chamber tap is then performed if required, using an insulin syringe and 27 G needle. The needle is inserted through the peripheral cornea/limbus with the bevel facing upwards taking care not to damage the corneal endothelium, iris and intraocular lens. Withdraw the fluid slowly thereby preventing sudden anterior chamber collapse. Only a small sample (up to 0.1 ml) is required. Cap the syringe and send urgently to microbiology.

LIAISE WITH THE MLSO IN CHARGE OF MICROBIOLOGY BEFORE doing the procedure as outlined in the protocol for theatre specimens (aqueous/vitreous biopsies etc). The specimen must go to microbiology or micropathology if indicated immediately after it has been taken as delay will reduce the chance of microbial isolation.

Send samples for Gram stain, culture and sensitivity.

Intravitreal antibiotics are recommended and the following antibiotics give a good spread of antibacterial cover:

Vancomycin 1000 micrograms in 0.1 ml (2 mg in vitrectomised eyes) and
Amikacin 400 micrograms in 0.1 ml
or
Ceftazidime 2 mg in 0.1 ml

- The dose of these antibiotics is critical; mistakes can result in irreversible damage to the retina. All intravitreal injections are now available pre-prepared and pharmacy will keep a stock in Eye A&E. **THESE ANTIBIOTICS SHOULD BE AVAILABLE IN THE Eye A&E, BUT CONFIRM WITH NURSING STAFF BEFORE THE PROCEDURE IS UNDERTAKEN**

- The use of sub-conjunctival antibiotic is at the discretion of the surgeon.

- Topical therapy; initially use the following regimen until culture/sensitivity results are available:

  ofloxacin 0.3% or *gentamicin 1.5% preservative-free* in combination with *cefuroxime 5% preservative-free* hourly day and night
  dexamethasone preservative-free every 2 hours

There are circumstances where alternative topical antibiotics should be used. If the organism is known, phone microbiology for specific treatment instructions.

- Systemic antibiotic: ciprofloxacin 750 mg po 12 hourly, commence immediately after sampling use for a maximum of 7 days.

  Discuss with consultant about adding oral steroids to the post-operative regime at an appropriate time.

  Complete request form clearly and fully:

NB. minimum data set.....

Patient Name Consultant Any special requests i.e. Nocardia etc
Patient Unit No Requesting clinician Bleep No
Patient location Specimen type/site
Succinct history and likely organisms. Request antibiotic sensitivities to DRUGS THAT CAN BE ADMINISTERED TOPICALLY or have ocular penetration.

On completion of the procedure any sharps will be discarded in the sharps bin in the minor procedures room. All other waste will be removed to the dirty utility room for appropriate disposal. The trolley will then be decontaminated appropriately (see clinical waste and sharps policy).

Patient care post treatment

- Following the procedure the patient will be admitted to the side room on the eye ward
- Postoperative medication including oral antibiotics, topical antibiotics, topical steroids, topical cycloplegics and adequate analgesia will be prescribed on the inpatient drug chart.

Staffing arrangements

The procedure will be carried out by a trained ophthalmologist with assistance of a suitable trained scrub nurse from Eye accident & emergency department.
Domestic services for daily cleaning and deep cleaning will be required.

The procedure will be carried out between 08.00 hours and 21.00 hours in the Eye casualty. Outside these hours the patient is admitted to the ward and the procedure carried out in the eye theatres.

Drugs

The intravitreal antibiotics to be injected will be available through the hospital pharmacy department and some emergency stock stored in the locked cupboard in the Eye A&E drugs room **(Please check with pharmacy and theatre about arrangements)**. They will be ordered per patient as necessary by medical staff. The exact dosage and volume of antibiotic to be injected will be verified by both doctor and nurse according to protocol. A copy of the updated endophthalmitis protocol with the antibiotics and dosages will be available in the procedures room.

Other uses of the minor procedures room

- As a holding bay for patients who need to lie recumbent, due to their injury or feeling unwell.
- To perform suitable minor superficial lid suturing procedures
- Irrigation of chemical splash patients if treatment room is occupied

Clinical waste policy /sharps policy

Once the procedure has been completed the used trolley will be cleaned down and any used needles, syringes and disposable instruments will be deposited in the sharps bin in the minor procedures room. The disposal of gowns, masks, drapes, gloves will be completed in the dirty utility room and comply with trust infection control recommendations on the collection and disposal of waste. **(See appendix 7).**

Infection control

The room will be cleaned daily before clinic sessions and between each patient according to the local domestic cleaning, which is adapted from the Trust Infection Control Manual **(see appendix 1).**) Personal protective equipment of aprons, gowns, and gloves are available and used routinely for each patient. Masks are also available but spillage of any body fluids from the eye is likely to be rare and none projectile

Any patient known to have or suspected of having a communicable disease will be treated as the last patient on the list. The room will then undergo appropriate cleaning (**see appendix 2)**

This guideline has been constructed with due regard to the Trust infection control guidance manual (see references).

Medical records

The compilation and storage of patients' files will comply with clinic/national policy and will be managed by the medical records team.

Coding and Informing GP
The procedure will be listed in the detailed discharge form. The appropriate coding reference will be completed

7.0 Training and awareness

All staff both medical and nursing involved in the preparation and administration of this treatment are registered practitioners, having successfully undergone nationally recognised training enabling them to be regarded as competent practitioners. Induction and mandatory training for staff involved in this service delivery is also in place.

8.0 References

1. Endophthalmitis Vitrectomy Study Group. Results of the Endophthalmitis Vitrectomy Study; a randomized trial of immediate vitrectomy and of intravenous antibiotics for the treatment of postoperative bacterial endophthalmitis. Arch Ophthalmol 1995; 113:1479–1496.

2. Mayer E, Cadman D, Ewings P, et al. A 10 year retrospective survey of cataract surgery and endophthalmitis in a single eye unit: injectable lenses lower the incidence of endophthalmitis. Br J Ophthalmol 2003; 87:867–869

3. Mollan SP, Gao A, Lockwood A, Durrani OM, Butler LB Post cataract endophthalmitis: Incidence and microbial isolates in a United Kingdom region from 1996 through 2004. J Cataract Refract Surg 2007. 33:265-8.

4. Taban M, Behrens A, Newcomb RL, et al. Acute endophthalmitis following cataract surgery; a systematic review of the literature. Arch Ophthalmol 2005; 123:613–620

5. Endophthalmitis revisited. Focus; issue 31; Autumn 2004. The Royal College of Ophthalmologists.

6. SWBH Trust policies:
   - SWBH/COI/028 - Decontamination of the Environment
   - SWBH/COI/029 - Decontamination of Equipment
   - SWBH/COI/025 - Principles of Asepsis
   - SWBH/COI/020 - Multi resistant Gram negative Micro-organisms
   - SWBH/COI/019 - Multi resistant Gram Positive Organisms
   - SWBH/COI/010 - Sharps and clinical waste (Segregation, Collection and Disposal) Infection Control Guidelines
   - SWBH/COI/009 - IFC Protective Clothing
   - SWBH/COI/008 - Management of Blood and Body Fluid Spillages
   - SWBH/COI/006 - IFC Hand Hygiene
   - SWBH/COI/012 - Care and Management of Patients with known or suspected communicable infections

Appendix 1

Domestic Cleaning of the BMEC Accident & Emergency department Minor Procedures Room

Frequency of Cleaning

Daily for fixtures - e.g. sinks, floors, work surfaces, bins, and cupboards.

- Technical equipment e.g. the reclining chair should be cleaned by nursing staff after use on each patient.

- Blood spillages should be cleaned by nursing staff in accordance with the 'Decontamination of Spillages Guidelines' (see appendix 8).

- Detergent and water should be used for routine cleaning between patients (see appendix 5).

- Disposable cloths - e.g. green roll or disposable paper towels should be used to clean surfaces and be discarded after use. Reusable cloths should NOT be used.

- Mops should be cleaned following use with detergent and water, and stored head upright.

- Walls and ceiling should be cleaned every six months or when visibly soiled.

In the event of an infected case, the 'Barrier Cleaning Policy' (intranet) should be followed and the appropriate disinfectant used.

- Buckets should be cleaned and dried thoroughly following use, and inverted to prevent reservoirs of water.

- Work should commence in clean areas, e.g. Minor Procedures room and progress to
  Dirty areas - e.g. sluice.

- All solutions used must be made to the correct dilutions.

- All solutions must be disposed of appropriately following use.

- All equipment should be stored clean and dry, (see appendix 4).

Appendix 2

Infection Control Principles on the care and management of patients with Known or Suspected Communicable Infections

It should be remembered that a common sense approach should be adopted when applying practical infection control measures and that the holistic needs of the patient should always be considered.

Procedure for preparation and cleaning of the BMEC Minor Procedures Room for patients who are suspected or have been diagnosed as an infection control risk:

Rationale: To prevent the risk of cross infection

Infection Risk

1. Hepatitis B
2. HIV/AIDS
3. Methicillin/Multi Resistant Staphylococcus Aureus (MRSA)
4. Tuberculosis including pulmonary tuberculosis

Preparation of the Minor Procedures Room

1. Disposable equipment will be used
2. All unnecessary furniture and equipment to be removed from the room.
3. Circulating staff to wear plastic aprons/disposable gowns masks and gloves.
4. Scrub team to wear disposable plastic aprons under disposable gowns and gloves

During the procedure

1. Infected cases should be done last on the list
2. Any spillage should immediately be cleared from floors with appropriate agent please **(see appendix 8).**
3. The number of people entering and leaving should be limited, by having a second circulating nurse outside the door, who can then assist the circulating nurse inside the room by passing any further equipment or instructions which may be required.

Appendix 3

DISINFECTION AND STERILISATION

It must be noted that all instrumentation used in these procedures will be for single use only (disposable) being discarded immediately after use.

Introduction

The aim of this section is to inform the user of the most appropriate method of decontamination to be used for equipment and the environment. If appropriate, always use the B Braun for decontamination of equipment. Equipment used on a patient with a known or suspected infection should be returned to B Braun in a 'biohazard' bag. Always decontaminate equipment prior to service or repair.

Cleaning

Cleaning with soap or detergent will remove most micro-organisms from a surface. A further reduction in numbers occurs as the surface dries. Thorough cleaning and drying will be adequate treatment for most surfaces and furniture in the hospital environment. Cleaning of equipment before disinfection or Sterilisation is also required.

Disinfection

Disinfection using either heat or chemicals will destroy non-sporing bacteria and most viruses, reducing them to a safe level. Disinfection is required for items in contact with intact skin or mucous membranes e.g. respiratory equipment and not intentionally invasive or associated with a patient with particularly transmissible/virulent infections. Chemical disinfection should only be used if heat treatment is impractical or undesirable, e.g. for skin, flexible endoscopes, etc.

Sterilisation

Sterilisation means the complete destruction or removal of all micro - organisms, including bacterial spores. Items involved with a break in the skin or mucous membranes should be sterilised, e.g. surgical instruments, wound care products, and products intended for parenteral use or for instillation into body cavities.
Autoclaving with steam above atmospheric pressure (121°C–134°C), or dry heat (160°C–180^{o}C) are acceptable methods for hospital use. Chemicals with sporicidal activity may sterilise but are less reliable, require rinsing to remove toxic residues and should be avoided if possible. Control of substances hazardous to health (COSHH) regulations must be followed when using any toxic or irritant substance. Alternative methods are available for heat sensitive equipment - e.g. ethylene oxide.

Appendix 4

APPROVED CHEMICAL DISINFECTANTS

To comply with COSHH Regulations always follow the manufacturers recommended guidelines when using chemical disinfectants.

If appropriate, personal protective clothing must be worn.

Disinfectants must be mixed with tepid/cold water **NOT HOT**

Only **recommended disinfectants** approved by Infection Control must be used

CHEMICAL NAME and **RECOMMENDED CONCENTRATION**

Alcohol (isopropanol or ethyl) 60–70% provided as a single use wipe or diluted ready for use with emollient e.g. for skin disinfection

Chlorine releasing agents, Usage concentrations are:
Usually supplied in tablet form.
Use concentrations are:-10,000 ppm (ppm - parts per million) for blood spillage*.
* A non-abrasive chlorine releasing powder may also be used for spillage. 1,000 ppm for environmental surfaces. 125 ppm 1:80 1.25% infant feed bottles

DISINFECTION OF SKIN AND MUCOUS MEMBRANES
Operation site povidone iodine 5 % aqueous or 10% alcohol solution is available.

Appendix 5

EQUIPMENT-CLEANING AND DECONTAMINATION

Due to the design and use of equipment purchased throughout the Trust being so diverse the aim of this section is to give the user general guidelines and recommendations for the cleaning and decontamination.
Any equipment purchased should have the ability to be decontaminated. It is the responsibility of the user to ensure that any equipment purchased is adequately decontaminated, and a regular programme of cleaning and maintenance is in situ to ensure the equipment is adequately decontaminated and maintained in optimum condition if appropriate.

When purchasing an item of equipment the manufacturers' guidelines should be reviewed to ascertain the recommended method of decontamination.

The following are some points which must be considered.

- How is the item of equipment decontaminated
- Can it withstand cleaning with detergent and water at high temperatures.
- Can it withstand disinfectants e.g. chlorine releasing agents.

If the manufacturer's guidelines state specific disinfectants, the following needs to be considered:

(i) Does the use and storage comply with COSHH?
(ii) Will they adequately decontaminate?
(iii) How cost effective is the disinfectant?
(iv) Can it be adequately and safely stored?
(v) What is the availability of the disinfectant and is there an alternative?

Prior to sending any equipment for maintenance the user has a responsibility to ensure it has been decontaminated adequately and a 'decontamination certificate' has been completed. Any equipment for return to B Braun, which has been used on a patient with a known or suspected infection, must be returned in a 'sterilin' BIOHAZARD bag.

Suction Equipment

- Protective clothing should be worn (aprons, gloves, goggles) when disposing of body fluids to prevent contamination from spillage and avoid a splash injury.
- Suction catheters should not be left attached. Must be discarded as clinical waste following use.
- Where practical granules should be used to reduce the volume of liquid.
- Disposable suction containers must be discarded as clinical waste. In a container/clinical waste bag approved to UN3291.

- Reusable suction bottles MUST be cleaned following use (wear personal protective equipment - PPE) and dried.
- If suction has been used on a patient with a known or infected communicable disease it must be returned to HSSU following use. HSSU must be notified prior to transport.

Appendix 6

COLLECTION AND DISPOSAL OF WASTE

Introduction

The collection, transportation and disposal of waste must comply with 'The Environmental Protection Act (1990), Carriage of Dangerous Goods/Classification, Packaging and Labelling (CDGCPL2 - 1996) and be in accordance with HTM2065 Guidelines.

The risk of infection from hospital waste is low, providing the correct procedures are followed to ensure the safe handling, transportation and disposal of waste. There are certain items which because of their nature are not acceptable for disposal by landfill. Therefore special arrangements need to be made for the disposal of these items which should be clearly identifiable as requiring special treatment and incineration.

Clinical waste (orange plastic bags)

- This should include items of waste contaminated with blood and body fluids - e.g. wound dressings, swabs, contaminated wipes, colostomy bags, sputum containers, disposable redivac drains etc.
- All waste from patients with a known or suspected infection - e.g. tuberculosis,
- Hepatitis B or as recommended by the Infection Control Department should be disposed of as clinical waste.
- Clinical Waste Bags must be labelled PRIOR to use with the Trust, Location and Date.
- Clinical waste should be placed in orange plastic bags which when three quarters full, are secured with a plastic bag tie.
- Clinical Waste bags must be stored in a designated locked area prior to collection.

Sharps

- The containers used for sharps must be approved to current British standards (BS7320).
- The contents should be limited to devices which may cause physical injury or those items which cannot be separated from them - e.g. syringes.
- The lid must be securely closed prior to use.
- Sharps boxes must be labelled PRIOR to use with the Trust, Location, Date and name of person assembling the box.
- Sharps boxes must have the aperture temporarily closed between use.
- Sharps boxes must be sealed when they are two thirds full.
- They must be stored in a designated locked area, prior to collection.

NB: SHARPS BOXES MUST NOT BE OVERFILLED. SHARPS MUST NOT BE

PROTRUDING FROM SHARPS BOXES. CLINICAL WASTE MUST NOT BE LEFT ON THE CORRIDORS FOR COLLECTION.

Swift bins
Swift bins are used in designated areas for the storage of clinical waste prior to collection for incineration. Where Swift Bins are used, they must be kept locked.

Human tissue
- This waste must be double bagged into clinical waste bags or placed inside UN approved rigid container. Labelled PRIOR to use as above.
- The bag/container must then be stored in a designated locked area prior to collection.

Laboratory waste
- All laboratory cultures and any patient specimens for discarding should be rendered safe, if possible, before leaving laboratory premises (the method will usually be autoclaving).
- This waste should then be disposed of as clinical waste.

Cytotoxic waste
- In areas where cytotoxic waste is used, specific guidelines must be followed.
- Cytotoxic waste must be disposed on in UN approved boxes clearly labelled 'Cytotoxic Waste'. The boxes must also be labelled with the Trust, Location and Date.
- Cytotoxic waste must be stored in designated locked areas (Pharmacy) prior to collection and not stored with Clinical Waste.
- Prior to transporting cytotoxic waste for incineration a 'Pre-Notification' form must be completed.

Glass/aerosols
- Aerosol containers must not be included with waste for incineration due to the danger of explosion.
- Glass and aerosols must be disposed of into designated containers.

Radioactive waste
- All items containing radioactive waste must be placed in a designated 'approved' container. Clearly labelled Radioactive waste.
- The container must then be placed inside a red swift bin for collection.

Domestic waste - black plastic bags
- All other types of waste, not included in the above categories, should be regarded as domestic waste and placed in **black plastic bags**.
- To prevent spillage, it is important that these bags are not overfilled and are **securely fastened.**
- Contents must not be transferred loose from one bag to another.

SHARPS AND ‘SPECIAL WASTE’ MUST **NOT** BE DISPOSED OF AS DOMESTIC WASTE.

Any queries regarding the management of waste please contact the Transport Department on Ext. 4597.

Appendix 7

SPILLAGES

Introduction

Microbes are normally present in the environment of the home and hospital, but most are harmless and only a small proportion cause infections in susceptible people. They can be removed by thorough cleaning with a detergent solution. Microbes die rapidly on clean, dry surfaces, and thus there is little advantage in the routine use of chemical disinfectants. The use of disinfectants is restricted to the cleaning up of spillages likely to be contaminated with microbes causing specific infections - e.g. typhoid, food poisoning, *Mycobacterium tuberculosis*, hepatitis, HIV.

General guidelines

The routine management of spillage of faeces (not diarrhoea) vomit, urine, and wound exudates can be managed in the same way. This will ensure that the carer is protected.

Protective clothing

- Disposable non - sterile gloves must be worn.
- Plastic apron must be worn.
- Goggles must be available to use for preventing splashes to the eyes.

Procedure

- Always use freshly prepared solutions in a clean container.
- Using a polypropylene bowl, dilute approximately 10 ml of general purpose detergent - e.g. Hospec in 1 litre of water.
- Use disposable paper towels to remove/clean up the spillage. Discard the paper towel without returning it to the bowl. Dispose of as clinical waste.
- Continue until surface is clean and dry.
- If a mop and bucket is used to clean up spillage - they must be washed with detergent and water and stored dry after each use.

In specific instances where spillage of body fluids has occurred from a patient with suspected or confirmed infection. The additional use of a chlorine releasing agent after disinfection e.g. Sanichlor tablets or chlorine releasing powder e.g. Diversey is recommended (see List of Approved Disinfectants).

DO NOT USE CHLORINE RELEASING AGENTS ON URINE SPILLS !!

(Ref Department of Health. Safety Action Bulletin. ‘Spills of Urine: Potential Risk of Misuse of Chlorine Releasing Disinfecting Agents. SAB (90) 41 May 1990)

Blood spillages

Blood or blood stained spillages:

Disinfectant required - Chlorine releasing agents e.g. Sanichlor tablets, or chlorine releasing powder e.g. Diversey.

Concentration required -
1) In the presence of blood 10,000 ppm available chlorine.
2) If blood has previously been removed 1,000 ppm available chlorine.

Protective Clothing

- Aprons
- Gloves
- Eye protection (if splashing likely)

Procedure

Visually assess the size of the spillage and proceed accordingly.
For small blood spillages - less than 30 ml
Sprinkle with a non-abrasive chlorine releasing powder, e.g. Diversey, until all fluid is absorbed, then remove using paper towels. Wipe over surfaces with a wet paper towel and dry. All waste must be discarded as clinical waste.
For large blood spillages - greater than 30 ml

- Dilute chlorine releasing tablets in appropriate volumes of cold/tepid water.

DO NOT USE HOT WATER

- Cover the spillage with paper towels so that all liquid is absorbed, then discard as clinical waste.
- Wipe over the contaminated area using a disinfectant soaked paper towel. Do not return used paper towels to the solution.
- Continue until cleaning is complete.
- Dry surface.
- Prepare a fresh solution if necessary.

If a mop and bucket is used to clean up large spillages:

- They must be disinfected after use.
- Wash out mop and bucket with detergent and water.
- Prepare fresh solution of chlorine releasing agent and immerse mop for **10 minutes** in solution.
- Rinse in fresh water, wring and store dry
- Dispose of chlorine solution, rinse and invert bucket to dry.

NB - Spillages of sputum can be removed as described for Blood spillages.

Identification of Patients with known or suspected infections

On Admission:
NOTE: Patients undergoing vitreous sampling & intravitreal injection of antibiotics (IVT/sub-tenon injection treatment do not) normally require admission
Any patient having the above treatment (the Intra Vitreal Treatment/Sub-tenon injection) with a known or suspected infection will be done last on the list they will be notified to infection control as having a known or suspected infection, they are

then highlighted on the Patient Information system with the relevant precautions identified i.e. blood, enteric, airborne, contact, MRSA.

Where patients have diarrhoea & vomiting and come from a nursing/residential home, Infection Control should be informed about the details of the home as there is an alerting mechanism that needs to be followed (i.e notifying the HPA/PCT).

Post Admission:
If more than 2 cases of diarrhoea & vomiting occur on a ward and are unrelated to the patient's original clinical condition, the Infection Control Team must be alerted.

General Principles
(i) Entrance and Exit
- The door of the room must be kept closed at all times unless otherwise indicated.
- The room must be equipped only with items required to nurse the patient.
- Place laminated either Source / Protective isolation sign on the door as required.

(ii) Protective Clothing (see Protective Clothing SWBH/COI/009, intranet)

Aprons
- A disposable apron must be worn when caring for a patient with a known or suspected infection.
- Aprons must only be used once and then disposed of (as clinical waste) before leaving the room/bed space.

Gloves
- Must be worn prior to contact with blood / body fluids or when handling contaminated articles (Sterile gloves should be worn when indicated e.g. Aseptic procedures)
- *Hand hygiene must be adhered to when removing gloves*

Masks
- When recommended particle filter masks help to protect from droplet infection e.g. multi drug resistant tuberculosis; meningococcal meningitis; SARS.
- Masks must be securely fitted and cover the nose and mouth.
- Only masks that are approved to EU standards must be worn.
- Masks should be put on before entering the room
- NB: all staff wearing masks should undertake 'fit testing' to ensure they are competent in their use and management.

(iii) Hand Hygiene (see Hand Hygiene policy SWBH/COI/006, intranet)
- Compliance with a good hand hygiene technique before / after contact with the patient is the most important measure in preventing the spread of infection.

(iv) Infected Linen

- Place linen in a clear alginate stitched bag and tie with the strip provided prior to placing in a red linen bag
- *Linen used on patients who are MRSA positive does not need to be treated as infected unless blood stained or soiled*.
- Ensure that no sharps or other extraneous materials are left in linen as this may cause injury to the laundry staff, or damage machinery.

(v) Equipment

- Do NOT place equipment in paper dressing/used instrument bags with BIOHAZARD labels attached
- Do NOT place equipment used on the above patients, directly into the HSSU bins within the ward/department
- ALWAYS USE a sterilin/autoclavable bags
- BE SURE that the bag used is large enough to contain the items being sent
- ALWAYS TIE the bag securely
- ALWAYS PLACE the bag in the appropriate HSSU bin for collection
- Please ensure that all Sharps are disposed of into an approved container and not sent back to HSSU

(vi) Crockery and Cutlery

- Use normal utensils and return to central kitchen in the usual way.
- For patients with blood borne viruses who may be bleeding from the mouth – seek advice from ICT.

(vii) Bed Pans and urinals.

- Cover and remove immediately to the macerator. Bed pan bases / commodes should be kept for the use of the infected patient only and must be decontaminated after each use.

(viii) Clinical Waste

- All waste designated as clinical waste must be placed into an orange clinical waste bag (approved to UN3291). All bags must be secured with a ‘clinical waste tie prior to disposal.
- Where yellow ‘swift bins’ are used to store clinical waste ready for collection swift bins must remain locked when not in use!

(ix) Disposal of Sharps

- All sharps must be disposed of at the point of use inside a sharps box approved to BS7320
- Sharps must not be left unattended
- Sharps boxes must be assembled correctly and the person assembling the sharps box must sign appropriate place on label
- The aperture to the sharps box is closed (temporary closure in place) when not in use
- The aperture is double clicked (to permanently close) prior to disposal

(x) Specimens (see Specimen Collection and Transportation SWBH/COI/011, available on intranet)

- Specimen forms must be labelled correctly, indicating site, relevant history and ward/department.

- Specimens from patients with known or suspected infection must NOT be placed in the Air tube transport system (shute).
- Specimens from patients with known or suspected infections MUST be labelled BIOHAZARD

(xi) Patient telephone, television, bedside equipment

- All equipment must be cleaned between each patient use and when soiled as per agreed cleaning protocols.
- Following discharge/transfer of a patient the foam ear pieces (from the headset) should be removed and discarded. This will enable Patient line staff to identify which terminals require cleaning. All terminals should be cleaned between patient use.

(xii) Visitors incubating infections

- Visitors should be encouraged to let staff know if they have a communicable infection, which may be transmitted to hospital patients (see Information Leaflet- 'Visiting Someone in Hospital'), intranet.

Restriction of Visitors

- Dependent upon the nature and extent of the communicable infection visitors may need to be restricted to minimise the risk of transmission. This should be done in consultation with Infection Control and the Hospital Director.

Restriction of Children

- In high risk areas where transmissible infections are involved children should be restricted, except in exceptional circumstances and following discussion with Infection Control. If children are allowed to visit a risk assessment should be undertaken and documented in patients notes outlining relatives are aware of their responsibility for risk.

Check list before performing vitreous biopsy and injecting intravitreal antibiotics

Date:	**Signature:**
Confirm Identity.	
Consent.	
Site Marked.	
Allergies.	
Antibiotics available	
Bed available	
Microbiology informed	
Transport for samples	
Consultant informed	