**NHS GREATER GLASGOW & CLYDE**

# JOB DESCRIPTION

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| 1. **JOB IDENTIFICATION**

**Job Title: Trainee Clinical Scientist** **Modality: Reproductive Science (Embryology)****Band: 6 (3 year fixed term)****Responsible to: Consultant Clinical Embryologist** **Department: Assisted Conception Service** **Directorate: Women’s & Children’s Health** |
| **2. JOB PURPOSE** |
| Under supervision of the Consultant Clinical Embryologist, the Trainee Embryologist will become proficient in and participate in, embryology and andrology services for the assessment and treatment of infertility, including, *in vitro* fertilisation (IVF), intracytoplasmic sperm injection (ICSI), and other micromanipulation techniques, pre-implantation genetic testing (PGT), gamete donation, sperm cryopreservation & surgical sperm retrieval, all within the regulations defined by the Human Fertilisation & Embryology Authority.  |
| **3. ROLE OF DEPARTMENT** |
| The post holder will work within the Edinburgh Fertility Centre and Department of Reproductive Endocrinology (EFC&DRE) based on the Royal Infirmary of Edinburgh. Approximately 600 cycles of assisted reproduction treatment (IVF/ICSI/PGT), 450 cycles of frozen embryo transfer and 2000 laboratory investigations are carried out in EFC per year.The service provides comprehensive fertility care for couples in Edinburgh and South East Scotland. It operates in conjunction with other users such as NHS Lothian, primary care and other stakeholders to ensure consistent standards of fertility care are applied throughout Scotland.The post holder will provide a highly specialised clinical scientific/embryological service within the Assisted Conception service in EFC, within a team of eight Embryologists (One Consultant Clinical Scientist, seven registered Clinical Scientists (WTE 6.0), one Embryology Practitioner and a Biomedical Scientist (BMS1).  |
| **4. ORGANISATIONAL POSITION** |
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| **5. SCOPE AND RANGE** |
| The Trainee Embryologist works as part of the scientific team and working under direct supervision will support the Consultant Clinical Embryologist in providing a high standard of laboratory service. In addition to training in laboratory duties, the post holder will become responsible for a specific area of work e.g. quality control, unit transfer of gametes and embryos, or andrology services. The post holder is (under direct supervision), expected to apply appropriate scientific knowledge, skill and expertise at the required professional level for the provision of a high quality service to patients. The scientific team operates within a multi-disciplinary team including Consultant Gynaecologists, Associate Specialists, Nursing, and Counselling and Administrative staff. Once proficient in laboratory techniques, the Trainee Embryologist will assist the Consultant Clinical Embryologist in maintaining high standards through regular review of Standard Operational Procedures.The post holder is expected to complete training in Reproductive Science within three years and successfully undertake the Scientific Training Programme Equivalence Assessment with the Academy for Healthcare Science and Registration as a Clinical Scientist with the Health and Care Professions Council once eligible. The post holder will have the opportunity to participate in appropriate clinical research within the department and in conjunction with external collaborations to improve clinical success rates. They will be expected to disseminate research findings at local, national or international level. The Trainee Embryologist will also be expected to:* Register as a Post-Graduate Trainee with NHS Education for Scotland.
* Comply with the Association of Reproductive & Clinical Scientists (ARCS) and local NHS Codes of Conduct.
* Attain and provide evidence of the knowledge, skills, and behaviours represented by the Core Standards in Good Scientific Practice and the relevant Modernising Scientific Careers curriculum learning outcomes.
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| **6. MAIN TASKS, DUTIES AND RESPONSIBILITIES** |
| **Clinical Embryology**To become proficient in laboratory techniques including:* Analysis of semen samples and assessment of their suitability for assisted conception.
* Preparation of fresh and cryopreserved semen for IVF, ICSI and IUI using swim-up and discontinuous gradient techniques, as appropriate.
* Assessment, preparation and cryopreservation of epididymal and testicular biopsied sperm.
* Preparation, assessment and injection of oocytes using ICSI.
* Handling and manipulation of oocytes and embryos to facilitate assessment of fertilisation, early cleavage and blastocyst development.
* Assessment of fertilisation and embryo development.
* Selection of embryos for embryo transfer and cryopreservation of supernumerary embryos.
* Cryopreservation of oocytes.
* Reconstitution of frozen oocytes and embryos during subsequent natural or artificial cycles.
* Communication with patients about aspects of their treatment including fertilisation results and embryo survival after thaws. This may include giving bad news and arranging follow up with clinical staff.
* Cryopreservation of sperm prior to cancer treatment.
* Completion and computation of records in accordance with the Human Fertilisation and Embryology Authority requirements.
* Consultation with medical and nursing staff during assessment of ongoing and past treatment cycles.
* Attend main theatre for surgical sperm retrieval by urological staff.
* Preparation and cryopreservation of surgically retrieved sperm.

**Other Duties and Responsibilities*** To perform all duties in accordance with the Human Fertilisation and Embryology Act (1990) and the Code of Practice issued by the Human Fertilisation and Embryology Authority and Association of Reproductive and Clinical Scientists.
* To perform all duties effectively and to the highest possible standard, with meticulous attention to detail.
* To take part in the rota of duties, including on-call and weekend work, and to work flexibly to perform tasks as and when necessary including ‘out of normal working hours’.
* To ensure that appropriate written consent is obtained for all embryology and research procedures.
* To inform patients of the progress of their treatment, including the number of eggs which have fertilised normally and the outcome of thaw procedures.
* To counsel patients regarding implications of treatment options to ensure accurate information is given and informed choices made.
* To give embryology and scientific advice to clinical colleagues as required.
* To collect accurate and complete data for laboratory procedures and to critically analyse and audit laboratory performance.
* To participate in daily meetings and weekly review meetings as required.
* To successfully complete the Academy of Healthcare Science Scientific Training Programme Equivalence Assessment.
* To become registered as a Clinical Scientist with the HCPC within three years of employment.
* To perform required administrative duties associated with the efficient running of the scientific service.
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| **7a. EQUIPMENT AND MACHINERY** |
| Laboratory Equipment:* Incubators, standard and timelapse – controlling pH, temperature and humidity.
* Independent monitoring equipment for incubators (infra-red CO2 monitors and thermocouples).
* Safety cabinets – providing sterile environment for embryo culture.
* Temperature control units for microscopes, bench-tops and safety cabinets – various models.
* Microscopes – stereo, inverted and compound.
* Micromanipulation equipment – mechanical devices fitted to inverted microscopes; controlling 3-dimensional movement of micro-tools and suction.
* Laser equipment – used to ‘drill’ holes in the outer coating of embryos during PGT (fitted to microscope and under computer control).
* Alarm and autodial equipment fitted to dewars containing cryopreserved gametes and embryos.
* Oxygen monitors for areas where liquid nitrogen is used.
* Liquid nitrogen storage vessels.
* Gas regulator equipment and changeover units.
* Cameras – still and video.
* Embryo manipulation equipment – specialised hand held units.
* Pipetting devices – various.
* Heat sealing equipment - used during preparation for cryopreservation.

Computer Equipment and Programmes:* Computers and printers.
* Specialist commercial database for all aspects of treatment, embryology and outcomes.
* Outlook and MS Office suite.
* Specialist image analysis software for embryology.
* Timelapse software and embryo selection tools.
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| **7b. SYSTEMS** |
| The post holder should adhere to the regulations set out in HFEA code of practice (9th Edition) and all professional guidelines set out by the Association of Clinical Embryologists.The post holder should adhere to all local polices as defined by NHS Lothian Healthboard.  |
| **8. DECISIONS AND JUDGEMENTS** |
| The daily organisation of the job is determined by clinical workload and proficiency in clinical tasks. The Trainee Embryologist will be guided by the Consultant, Senior and Clinical Embryologists in tasks to be prioritised to meet the needs of the Department. Once proficient in clinical duties, the Trainee Embryologist must work flexibly to perform tasks as and when necessary including ‘out of normal working hours’ and weekends.Typical Judgements* To suggest changes to patient treatment to offer the highest chance of successful treatment.
* Selection of embryos for embryo transfer and cryopreservation.
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| **9. COMMUNICATIONS AND RELATIONSHIPS** |
| The post holder works as part of a multi-disciplinary team within the Assisted Conception Service. On a daily basis there are scheduled meetings to discuss patients undergoing treatment; embryology, medical, nursing and endocrinology staff participate. A weekly review of patients who have completed treatment has additional input from administration staff. Ad hoc discussions regarding individual patients are conducted by telephone.The post holder is expected to play a part in service development and research presentations. All embryology staff have daily contact with patients, both in person and by telephone. Embryologists are responsible for:* informing patients how many eggs have successfully fertilised after IVF and ICSI treatments
* telling patients when, and how many embryos will be thawed during frozen / thawed cycles
* informing patients how many embryos have survived thawing
* discussing embryo development, day of embryo transfer and number of embryos to be transferred
* informing patients whether embryos are suitable for cryopreservation or must be discarded
* making appointments for patients to produce semen samples

The above tasks may involve giving bad news, for example, all eggs have failed to fertilise or embryos did not survive the freezing and thawing process. The embryologist must give this information sensitively and ensure that distressed patients have understood the information given. Dealing with men and adolescents who have recently been diagnosed with cancer can be very emotionally demanding, especially when their illness results in failure to produce a semen sample with the potential to allow them to have a family in the future. Embryologists liaise with:* The Urology department, theatre and ward prior to surgical sperm retrieval.
* Hospital trades and external maintenance contractors.
* Other Licensed Centres to organise the transfer of cryopreserved sperm and embryos.
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| **10. PHYSICAL, MENTAL, EMOTIONAL AND ENVIRONMENTAL DEMANDS OF THE JOB** |
| Clinical embryology is a highly specialised profession requiring prolonged periods of intense concentration and the precise manipulation of gametes and embryos, in a controlled environment, using microscopes and micromanipulation equipment. Tasks include:* The identification and movement of eggs during the retrieval procedure.
* Preparation of semen samples.
* Removal of cells from eggs prior to ICSI and before fertilisation assessments.
* Performing ICSI – selection and immobilisation of a single sperm, correct orientation of an egg and injection of the sperm into the egg. The time taken for this process is dependent on the number of eggs and sperm quality.
* Detailed assessments of embryo development and quality.
* Processing embryos though a series of solutions during freezing and thawing.
* Embryo transfer, involving precise synchrony with the clinician performing the procedure.
* Manipulation of storage devices under liquid nitrogen.
* Handling hazardous materials e.g. body fluids and liquid nitrogen.
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| **11. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB** |
| Intellectually – maintaining quality within the IVF programme. Human embryo culture is one of the most sensitive systems in tissue culture and any deterioration may not be identified immediately.Emotionally – giving bad news to patients; poor outcomes to cycles may represent the last chance of having a family.Physically – performing ICSI and embryo biopsy require prolonged periods of mental concentration to ensure minimal chance of damage to patients’ gametes and embryos.Managerially – unpredictable workload with potential for increase in activity or regulatory burden without an equivalent increase in personnel. |
| **12, KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB** |
| The Trainee Embryologist must have:* A recognised life sciences honours degree awarded at 2:1 or above and MSc or PhD in a related discipline.
* Previous employment experience in and IVF laboratory.
* A high degree of dexterity, hand eye coordination and mobility within a confined space.
* Ability to work well in a team.
* Excellent verbal and written communication skills.
* Strong numerical and analytical skills.
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