**HS Greater Glasgow and Clyde**

**NHS GREATER GLASGOW AND CLYDE JOB DESCRIPTION**

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| **1. JOB IDENTIFICATION****Job Title:** Principal Clinical Scientist**Responsible to:** Director, Scottish Microbiology Reference Laboratories (SMiRL), Glasgow**Department:** SMIRL, Glasgow**Operating Division of NHS GG:** Acute - Diagnostics Directorate |
| **2. JOB PURPOSE**The post holder will provide expert clinical and technical support relating to all speciali.st testing, surveillance and outbreak services within the SMiRL, Glasgow. They will act as a specialist who has freedom to act on their own responsibility within broad policies.They will be responsible for developing, undertaking and interpreting all highly specialised procedures used across the SMiRL including methods such .as Whole Genome Sequencing, Sanger-based sequencing, real-time PCR, AMR testing and serology. The post holder will have responsibility for instigating, developing and implementing policies and interpretive guidelines, and will spend a significant proportion of their time undertaking formal research and development projects, and clinical audits across all SMiRL services.They will independently discuss, and provide specialist advice to Healthcare Professionals, including senior medical staff in both primary and secondary care and .Public Health Scotland (PHS). This includes advising on the selection, performance and interpretation of complex specialist tests used within the SMiRL to assist in the diagnosis of bacterial and parasitic infections. They will advise on treatment choices, support pathogen surveillance, and manage the investigation of outbreaks and transmission events.They will be a key member of the SMiRL, Glasgow service development team under the supervision of the consultant clinical scientist. This will include the development of methods to be used within and outwith the SMiRL.The post holder will be supported to develop highly specialised clinical expertise to prepare them for consultant level posts. Full support will be given for preparation for FRCPath Part 1examination. |
| **3. ROLE OF DEPARTMENT**The SMiRL Glasgow, funded by the National Services Division (NSD) of the Scottish Government is based at Glasgow Royal Infirmary where it provides clinical and technical specialist advisory and testing services to users across Scotland e.g. medical, nursing, pharmacy and other staff, and users in General Practice.A comprehensive service is provided to diagnose infection in patients employing many highly complex and specialised molecular and seroloQical methods. The diagnostic work includes |

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| examination of a diverse range of clinical specimens including cerebrospinal fluid, post mortem tissue, urine, faeces, sputum, bronchial aspirates and, blood/serum. Services are also offered to support the generation of pathogen surveillance data, and outbreak management in collaboration with Public Health Scotland (PHS).The SMiRL is responsible for developing and maintaining diagnostic and specialist tests, and has a successful record in training with ongoing training programs for scientific trainees. |
| **4. ORGANISATIONAL POSITION****Scottish Microbiology Reference Laboratories, Glasgow**DirectorHead of Technical Services Clinical Scientists (This post)Laboratory Manager(Virology & SMiRL)I IOperational Manager Quality & Compliance Manager |
| **5. SCOPE AND RANGE**The SMiRL, Glasgow is based at Glasgow Royal Infirmary and provides services for all Health Boards in Scotland.The laboratory is co-located on level 5 of the New Lister Building and shares a purpose built molecular suite with the West of Scotland Specialist Virology Centre (WoSSVC). The SMiRL undertakes around 20,000 investigations per annum, receiving patient specimens from wards, out-patient departments, primary care users, general practitioners, occupational health services and transplant services.The Laboratory has the following National responsibilities:It has an extensive specialist testing service primarily to support Diagnostic Microbiology and Haematology Laboratories in the identification of pathogens. Testing uses in-house and commercial methods for the diagnosis and monitoring of various bacteria and parasites. The laboratory also has a specialist serological service offering tests for a wide range of bacterial and parasitic antibodies/antigens. |

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| The SMiRL supports clinical decisions, antimicrobial susceptibility monitoring, vaccine surveillance, public health policy formulation, and outbreak management for the Scottishpopulation. ·It provides vital information on emerging or evolving clusters, and assists in the management of local, national and international outbreaks of a range of bacterial and parasitic pathogens / diseases to support Public Health investigations. |
| **6. MAIN DUTIES/RESPONSIBILITIES Clinical/ Patient Care**The post holder will:* Provide highly specialist clinical/technical specialist testing and outbreak services for Scottish users.
* Have scientific responsibility under the direction of Consultant Clinical Scientist for all laboratory procedures within SMiRL.
* Determine the clinical significance of results generated by all methods employed within the SMiRL.
* Act independently to discuss, and provide specialist advice to Healthcare Professionals, including senior medical staff in both primary and secondary care and PHS, on the complex specialist interpretation of all tests used within the SMiRL. This includes the selection,
	+ performance and interpretation of clinically relevant tests to assist in the diagnosis of bacterial and parasitic infections, to guide treatment choices, to generate pathogen surveillance data, and to aid the investigation of outbreaks and transmission events
* Clinically authorise reports generated across the SMiRL and provide written interpretive comments on the significance of highly complex results.
* Respond to telephone consultations from users and provide specialist advice. These consultations can be time consuming and unpredictable and can occur on a daily basis.
* Maintain a thorough knowledge of clinical microbiology with an expert understanding of a wide range of testing procedures and expertise in bacterial and parasitic diseases, and in epidemiology by keeping abreast with the current published scientific literature in this field.
* Attend and participate at local, national and international clinical/scientific meetings in order to maintain knowledge and acquire new knowledge and skills for specialist service development. This participation includes the dissemination of data through formal oral presentations, and publications within national and international peer-reviewed journals.
* Develop an appropriate area of specialist expertise that can be shared across the SMiRL.
* Become a key member of the team providing the specialist services across SMiRL. The post holder will be supported to develop highly specialised clinical expertise to prepare them for consultant level posts.
* The post holder will participate in the clinical advisory service supported by the laboratory

senior Clinical Scientists/Consultants. ·**Managerial**The post holder will:* Deputise for consultant/senior clinical scientists, as required
* Be responsible for appraisals, absence management, disciplinary and grievance issues and continuing professional development (CPD) of staff members, along with the Laboratory. Technical Managers/consultant/senior clinical scientists.
* Have qood knowledqe of manaaerial processes at local and NHS level
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| * Formulate and evaluate departmental policies, operational procedures, training schedules and safety protocols and oversee their practice within the SMiRL.
* Lead in project planning such as implementing and evaluating the necessary changes to comply with UKAS and development of new testing strategies which are ongoing and may extend for at least a year
* Have extensive knowledge of, and ensure that National legislation and professional guidelines are implemented.
* Attend, participate and lead as appropriate on department and directorate committees for example Laboratory Management, Quality Assurance, Health and Safety and Risk Management.
* Be responsible for the day to day management of the services across the SMiRL including staff deployment and work prioritisation (along with the Operationsffechnical Managers), responding to an unpredictable working pattern on a daily basis with constant interruptions from staff and telephone consultations.
* Represent the Department or Directorate on hospitalff rust/National committees or Working Groups when required for services across the SMiRL.
* Contribute to the selection and appointment of staff.
* Ensure financial resources are managed effectively, along with Laboratory Operations Manager
* Monitor, and ensure appropriate prioritisation of workload across the SMiRL.
* Report and provide statistical analysis of data on a regular basis.
* Initiate, evaluate and continually monitor income generation initiatives where appropriate.
* Have responsibility (along with the Laboratory Operations Manager) for, and oversee the maintenance contracts and procurement for departmental equipment.

**Scientific:**The post holder will:* Have scientific responsibility for the quality, to nationally accepted standards (UKAS or equivalent), of the service provided within the SMiRL, including participation in appropriate internal, regional, national and international quality control and assessment schemes.
* Disseminate knowledge gained during specialised study and formal research, continually developing projects resulting in oral presentation and written publications at local, regional, national and international meetings and through peer reviewed scientific journals.
* Have a detailed knowledge of highly specialised methods, in order to identify and resolve complex analytical problems.
* Develop an expertise in and be responsible for the organisation of a specialist area of the department in an economic and effective manner, and contribute to the provision of a high quality service through continuous audit.
* Provide expert analytical, molecular, serological and epidemiological knowledge for the provision and development of the SMiRL, and have highly specialist technical skills requiring accuracy and precision necessary for that service.
* Take responsibility for the implementation and evaluation of recent developments relating to the SMiRL, and ensure the specialist services provide up-to-date, evidence based practice.
* Be required to provide professional scientific advice on various aspect of bacterial and parasitic infections to a range of national bodies in Scotland, and to commercial companies as appropriate.
* Be responsible for developing and maintaining close links with other specialist testing/ Reference Laboratory centres in the UK and internationally.
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| * Select, procure, evaluate and implement new technologies relating to the section as appropriate, for example continuous monitoring of new molecular procedures in collaboration with industry and academia.
* Provide expert *advice* regarding the purchase and procurement of departmental contracts, evaluation, quality control and staff/patient safety in connection with all molecular equipment within the department.
* Be responsible for quality assurance of the specialised tests, including external assessment and internal monitoring taking corrective action were appropriate and ensure all laboratory equipment is maintained to appropriate standards of safety and efficiency, for example the organisation of routine annual maintenance checks on all molecular equipment by relevant company engineers (along with Laboratory Manager).
* Lead in health and safety policies operating within the section and ensure that they are carried out to maintain a safe working environment for employees and visitors.
* Work autonomously and independently in the absence of colleagues
* Be a key member of SMiRL R&D projects under the supervision of senior clinical scientists. This will include the development of methods to be used within and outwith the SMiRL.

**Research and development:**The post holder will as an integral part of the job :* Be a key member of the SMiRL service development team under the supervision of the senior clinical scientists.
* Initiate and evaluate clinical audits pertinent to clinical microbiology and input findings to PHS/NSD.
* Perform regular service audits req·uired under national guidelines (UKAS) for continuous service improvements
* Initiate, participate, manage, supervise, co-ordinate and evaluate formal research and development programme within the SMiRL leading to both service improvement initiatives and advances in the knowledge of bacterial and parasitic epidemiology in Scotland
* Initiate, undertake, manage and collaborate in *relevant* research and development studies
* Be responsible for initiating and developing collaborative research studies with other Health Care professionals in Scotland, such as Public Health Scotland, Universities, Colleges and Hospitals. -
* Provide clinical research project supervision including, Specialist Registrars, Post Doctoral

Research Scientists, PhD, MSc, BSc students in addition to trainee clinical scientists and BMS staff. This includes participation in supervising clinical scientists within the national training scheme.* Lead and plan projects - some of which are ongoing collaborations that may require ethical

approval.* Negotiate funding from internal as well as external sources with associated acquisition of research project funding, for example negotiations with international pharmaceutical companies involving complex presentations and discussions.
* Communicate research findings by regularly publishing peer reviewed articles.
* Attend and participate (by means of poster and oral presentations) at local, national and international scientific meetings in order to originate and maintain collaborative links.
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| **Training , Education and Human Resources**The post holder will:* Develop, maintain and disseminate the highest professional standards of practice, through active participation in internal and external CPD training and development programmes to postdoctoral standards. This will include arranging and participating in departmental/trust seminars and local and national meetings and training events
* Contribute to the departmental responsibility for teaching/training (BMS, Clinical Scientists, Doctors, Public Health Practitioners, Medical Students, Nurses and Research Scientists) in all aspects of SMiRL.
* Participate in formal teaching, training and ongoing development sessions on a regular basis,

for example participation in the annual training of visiting Specialist Registrars in Infectious Diseases and Trainee Clinical Scientists. Prepare progress reports as required. |
| **7. EQUIPMENT, MACHINERY & SYSTEMS**The post holder will be required:* To advise and participate with the management team on the planned replacement, selection, evaluation and commissioning of highly specialised laboratory equipment and instrumentation.
* To possess broad ranging detailed knowledge of all equipment (ranging from basic laboratory equipment to highly specialised molecular equipment), technologies and methods used within the SMiRL.
* To take responsibility for the daily operation, training and the performance quality of highly specialised laboratory investigations and instrumentation used within the section, for example complex molecular equipment.
* To possess an in-depth knowledge of DNA sequence analysis software.
* To possess an in depth knowledge of the laboratory computer system (Microsoft Excel) as well as working knowledge of other systems (PECOS, TELEPATH) in order to provide a quality service for the department and to clinicians ·
* To design, implement, modify, evaluate and maintain the laboratory information systems to meet regulatory body standards.
* To oversee and supervise the analysis of complex laboratory data using statistical packages and produce appropriate reports using Microsoft PowerPoint or other software.
* To implement,. maintain and operate quality controls and document management software (Q­ Pulse).
* To implement and maintain the Laboratory's Reference Database using Reference Manager, to manage research papers.
* To have the ability to use standard computer word processor, database and spreadsheet packages
* To be responsible in creating, formatting and evaluating databases and spreadsheets used for reporting all microbiology tests with specific interest in current trends between genotypic and phenotypic results.
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| **8. DECISIONS AND JUDGEMENTS**The post holder will be required: |

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| * To work autonomously to interpret complex results and provide a comprehensive specialist advisory service.
* To apply their expert knowledge to interpret the broad policies in the Laboratory's Service Level Agreement to ensure service quality to the users is maintained and improvements are constantly sought in this rapidly evolving field. This may include adopting advances in

molecular typing methods and new tests, and changing referral policies, and turnaround times as required.* To work autonomously to interpret complex and highly complex results and provide a comprehensive advisory service across SMiRL.
* To authorise laboratory reports and provide written interpretive comments on the significance of the results.
* To determine appropriate Research and Development activities for the SMiRL.
* To initiate, develop and implement managerial and clinical policies, procedures and guidelin•es.
* To represent the laboratory/directorate and thus provide informed decisions on organisation­ wide managerial and clinical working- groups and committees for example managed clinical networks, health board advisory teams
* To organise own time and prioritise work accordingly
* To prioritise section workload and the allocation of staff and resources on a daily basis (along with Operations Manager/Technical Managers) and supervise staff within the SMiRL.
* To have the freedom to initiate actions within broad policies seeking advice were necessary
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| **9. COMMUNICATIONS AND RELATIONSHIPS**The post holder will be required:* To explain the epidemiological and clinical significance of highly complex results to a range of staff including medical and nursing staff up to and including consultant level. These may involve professionals from other disciplines, for example Consultants in Public Health who need to understand the significance of the genetically relationship between isolates and strains.
* To present research and development results; clinical audit findings, clinical cases, and new policies and guidelines that are complex and may be contentious when challenging current practice to large groups of .staff at local, national/international meetings.
* To participate in and establish clinical and professional networks of staff locally, nationally and internationally - for example active collaborations with other national and international reference faculties
* To facilitate changes in laboratory working practices by providing expert advice and supporting and motivating the laboratory staff.
* To vigorously challenge managerial or medical opinions when appropriate, maintaining conviction in own knowledge and opinions.
* To assess and resolve complaints where there may be barriers to understanding from Clinicians, Clinical Scientists, Biomedical Scientists, managers and departmental staff that may be complex, sensitive, unpredictable and contentious on a daily basis.
* To provide instructional training and ongoing education to laboratory staff, other health professionals, industry and academia
* To deal with the provision and receipt of highly complex and sensitive information effectively.
* To negotiate with outside suppliers and procurement officials on the provision of laboratory equipment and services within the section on a weekly basis.
* To explain to non-clinical and clinical senior management colleagues, proposals for service development, which is continuous and onaoinq
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| * To listen to, and counsel staff on complex inter-personal and performance related problems within the specialist testing section.
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| **10. PHYSICAL, MENTAL, EMOTIONAL & ENVIRONMENTAL DEMANDS OF THE JOB Physical*** Combination of sitting, standing and walking required on a daily basis.
* Occasional requirement for lifting e.g. equipment, reagents.
* Frequent requirement for sitting in a restricted position while analysing results at computer workstation including keyboard skills on a daily basis
* Frequent requirement to carry out highly complex analytical procedures requiring expert skilled performance on a daily basis
* Accurate visual skills are required to evaluate electrophoresis output and sequence data.
* Requires accurate hand-eye co-ordination for fine pipetting (measurement of very small volumes) and manipulation of highly complex equipment
* Frequent exposure to unpleasant working conditions, body fluids, toxic/carcinogenic chemical hazards (e.g. ethidium bromide), and other infections agents.

**Mental*** Frequent requirement for prolonged intense concentration for example reporting sessions, analysing DNA sequence results, and other laboratory data, preparing research proposals, writing grant applications, scientific papers and research reports.
* Frequent interruptions for immediate clinical, research or managerial advice. These interruptions are unpredictable and may require multi-tasking and re-prioritisation of work pattern.
* May occasionally need to vigorously challenge medical or managerial opinions, maintaining conviction in own knowledge and opinions.
* Pressure of service delivery and maintenance of standards, often in the presence of heavy workloads and adverse events (e.g. equipment failure, poor staffing levels).

**Emotional*** The requirement to direct staff to change some aspect of work procedures or prioritise, confirming that delegated authority has been consistent with expectations. This will occasionally involve confronting staff with issues they do not agree with and the need to overrule them.
* The continued pressure to maintain service delivery and compliance with professional standards.
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| * Human resource issues - staff grievances and occasional need to talk to staff on work related issues.
* May occasionally need to vigorously challenge medical or managerial opinions.
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| **11. MOST CHALLENGING/DIFFICULT PARTS OF THE JOB*** Working as a Principal Clinical Scientist is a demanding and difficult position requiring advanced specialist knowledge of bacteria and parasites, as well as having technical knowledge of specialist testing and outbreaks/surveillance. It demands interpretative skills and the ability to concentrate and review large numbers of computerised laboratory results for long periods of time, whilst handling concurrent enquires from users of the national service.
* There is an unpredictable nature of work handled requiring multitasking.
* It requires the ability to work under pressure, handle complaints and communicate with all grades of staff throughout the organisation.
* It requires prioritising work while ensuring adherence to tum-around-times in spite of possible quality issues due to environmental problems or instrumental failure.
* Ensuring continued compliance with changing mandatory national standards and service guidelines( e.g. UKAS)
* Ensuring time is protected for service development and original research.
* Maintaining high professional standards required through keeping abreast of the vast scientific literature in a rapidly evolving field.
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| **12. KNOWLEDGE, TRAINING AND EXPERIENCE REQUIRED TO DO THE JOB****Qualifications*** Upper second or first class Honours degree in relevant science for example Clinical/Medical Microbiology
* Completion of the nationally accredited Clinical' Scientist training programme, or equivalent experience
* PhD or equivalent knowledge and experience in microbiology or a relevant field is considered essential.
* Evidence of having passed the FRCPath Part 1 exam in medical microbiology or equivalent experience of clinical microbiology provision is considered desirable.

**Registration*** Clinical Scientist State Registration with the Health Professions Council. Individuals who have submitted completed portfolios at the time of application will also be considered for this role.

**Experience*** Several years of experience as a Clinical Scientist in Microbiology/Reference services. Extensive experience of molecular methods is desirable.
* Demonstration of Continuing Professional Development, for example attending appropriate specialist study days and short courses and through attendance and presentation at national and international meetings.
* Specialist knowledge in research and audit is considered essential.
* Management qualities are desirable.
* A recent publication record is also desirable
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| Job Description AgreementJob Holder's Signature DateHead of Department Signature Date |

##### PERSON SPECIFICATION FORM

**Job Title:** Principal Clinical Scientist

**Department:** Scottish Microbiology Reference Laboratory (SMiRL), Glasgow-

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| **Qualifications** | **Essential**( ) | **Desirable**( ) |
| Upper second or first class Honours degree in relevantscience e.g. Clinical / Medical Microbiology |  |  |
| Completion of the nationally accredited Clinical Scientist training programme, or equivalent experience |  |  |
| PhD or equivalent knowledge & experience in microbiology or a relevant field |  |  |
| State registration as a Clinical Scientist with the Health and Care Profession Council |  |  |
| FRCPath Part 1. Participation in further higher specialist training to achieve full Membership of the Royal College of Pathologists (achieved by examination) or equivalent.microbioloav experience |  |  |

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| **Experience** | . **Essential**( ) | **Desirable**( ) |
| Several years of experience as a Clinical Scientist inMicrobiology/Reference services. Extensive experience of molecular methods |  |  |
| Demonstration of Continuing Professional Development, for example attending appropriate specialist study days and short courses and through attendance and presentation atnational and international meetings. |  |  |
| Specialist knowledge in research and audit |  |  |
| Management experience |  |  |
| Scientific achievement, for example publications, in relevant areas of clinical microbioloav |  |  |

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| **Behavioural Competencies** | **Essential**(. ) | **Desirable**( ) |
| Good communication skills - ability to maintain good relationships with staff at all grades |  |  |
| Good planning, problem solving and organisational skills |  |  |

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| **Other** | **Essential**( ) | **Desirable**( ) |
| Advanced IT skills including expertise in Microsoft Office suites, statistical analysis and internet use |  |  |