

# NATIONAL PROFILES FOR CLINICAL SCIENCES

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**July 2006:** The following profiles have been withdrawn. They were never reviewed and have been overtaken by the generic HCS profiles. It is recommended that panels revisit matches to these profiles to satisfy themselves that the outcomes are correct and if this is the case, there is no need to rematch these jobs.

Profile Title	AfC Banding	Date of Publication
Registered Clinical Scientist (Biochemist)	7	March 2003
Registered Clinical Scientist (Medical Physics)	7	March 2003
Principal Clinical Scientist (Medical Physics)	8A	March 2003
Consultant Clinical Scientist (Biochemistry)	8C	March 2003
Consultant Clinical Scientist (Medical Physics)	8C/D	March 2003

**JOB TITLE: MEDICAL PHYSICS TECHNICIAN**

**JOB STATEMENT:**

- (1) Designs, develops and adapts/manufactures medical and other devices to specifications agreed with users
- (2) Undertakes preventative maintenance, inspection, testing, calibration and repair of diagnostic, therapeutic equipment
- (3) Advises, trains other staff e.g. radiography, radiotherapy staff in use of equipment

Factor	Relevant Job Information	JE level
1.Communication & Relationship Skills	<b>Communicates complex information: provides instruction, training to groups</b> Communicates technical equipment-related information to staff, colleagues, suppliers; trains staff in use of equipment	3 (b) (c)
2.Knowledge, Training & Experience	<b>Expertise within specialism, underpinned by theory</b> Professional engineering knowledge acquired through HND/BEng or equivalent + short courses, & regular updating.	5
3.Analytical & Judgemental Skills	<b>Range of facts, requiring analysis</b> Skills for analysing & diagnosing faults in complex equipment, designing prototypes	3
4.Planning & Organisational Skills	<b>Plans &amp; organises straightforward activities</b> Plans own workload; organises projects allocated to self; prioritises breakdown requests, plans training	2
5.Physical Skills	<b>Highly developed skills, manipulation of fine tools, materials</b> Dexterity, co-ordination & sensory skills for use of precision tools, production of precision components, gas welding, disassembly & assembly of equipment	3 (b)
6.Responsibility for Patient/Client Care	<b>Provides clinical technical services</b> Calibrates and maintains diagnostic and/or therapeutic equipment for use in patient care	4 (b)
7.Responsibility for Policy/Service Development	<b>Follows policies; proposes changes for own area</b> Comments on proposed changes to departmental policies, procedures; proposes changes	1 - 2
8.Responsibility for Financial & Physical Resources	<b>Responsible for safe use of expensive or highly complex equipment</b> Responsible for safe use of diagnostic, therapeutic equipment	2 (e)
9.Responsibility for Human Resources	<b>Provides practical training</b> Trains, assesses radiography & other staff in use of equipment; trainees, less experience technicians in use of workshop equipment	2 (c)
10.Responsibility for Information Resources	<b>Records personally generated equipment test results; use of software</b> Occasionally/ regularly uses CAD/CAM software to develop designs	1 - 3 (b)
11.Responsibility for Research & Development	<b>Regular equipment testing</b> Evaluates medical equipment; acceptance testing	2 (c)
12.Freedom to Act	<b>Clearly defined occupational policies</b> Follows departmental procedures, quality system manual; work is managed rather than supervised	3
13.Physical Effort	<b>Frequent moderate effort for short periods</b> Works in awkward positions, lifting of heavy equipment	3 (a)
14.Mental Effort	<b>Frequent concentration, unpredictable pattern</b> Daily concentration on developmental work, fault finding; interruptions for emergency repairs	3 (a)
15.Emotional Effort	<b>Exposure to distressing situations is rare/ occasional</b> Dealing with fault on equipment connected to patient	1 - 2 (a)
16.Working Conditions	<b>Frequent exposure to unpleasant conditions/some exposure to hazards</b> Dust, swarf, fumes, noise, vibration/unavoidable exposure to electrical hazards	3 (a) - 4 (a)
JE Score/Band	JE Score 339 - 370	Band 5

**JOB TITLE: SPECIALIST MEDICAL PHYSICS TECHNICIAN**

**JOB STATEMENT:**

- (1) Undertakes specialist diagnostic testing, calibration and record keeping within specific field e.g. radio-isotopes
- (2) Designs, develops and adapts/manufactures specialised medical and other devices to specifications agreed with users
- (3) Undertakes preventative maintenance, inspection, testing, calibration and repair of patient critical diagnostic, therapeutic equipment

Factor	Relevant Job Information	JE level
1.Communication & Relationship Skills	<b>Communicates complex information: provides instruction, training to groups</b> Communicates technical equipment-related information to staff, colleagues, suppliers; trains staff in use of equipment	3 (b) (c)
2.Knowledge, Training & Experience	<b>Specialist knowledge across range of procedures underpinned by theory</b> Professional engineering knowledge acquired through HND/BEng or equivalent; specialist knowledge through postgraduate diploma, short courses & regular updating.	6
3.Analytical & Judgemental Skills	<b>Complex facts, requiring analysis, interpretation, comparison of range of options</b> Skills for analysing & diagnosing faults in complex patient critical equipment, designing innovative prototypes, devices	4
4.Planning & Organisational Skills	<b>Plans &amp; organises straightforward activities</b> Plans own workload; organises projects allocated to self; prioritises breakdown requests, plans daily work schedule for others, PPM activities	2
5.Physical Skills	<b>Highly developed skills, manipulation of fine tools, materials</b> Dexterity, co-ordination & sensory skills for use of precision tools, production of precision components, gas welding, disassembly and assembly of machinery	3 (b)
6.Responsibility for Patient/Client Care	<b>Provides clinical technical services</b> Calibrates and maintains diagnostic and/or therapeutic medical equipment for use in patient care	4 (b)
7.Responsibility for Policy/Service Development	<b>Proposes changes for own area; impact on others</b> Comments on proposed changes to departmental policies, procedures; proposes changes, impact on users of equipment	2 - 3
8.Responsibility for Financial & Physical Resources	<b>Responsible for safe use of expensive or highly expensive equipment</b> Responsible for safe use of diagnostic, therapeutic equipment	2 (e)
9.Responsibility for Human Resources	<b>Day to day, professional supervision, practical training</b> Supervises other technicians, trainees; trains, assesses radiography & other staff in use of equipment; trainees, less experienced technicians in use of workshop equipment	2 (a) (b) (c)
10.Responsibility for Information Resources	<b>Occasionally/regularly uses software</b> Uses CAD/CAM software to develop designs; maintains specialist equipment records for department	2 (b) - 3 (b)
11.Responsibility for Research & Development	<b>Regular research, equipment testing,</b> Evaluates medical equipment; acceptance testing; R&D projects	2 (a) (c)
12.Freedom to Act	<b>Broad occupational policies</b> Follows departmental procedures, quality system manual; works on own in specialist area; lead professional for specialist equipment	4
13.Physical Effort	<b>Occasional, frequent moderate effort for short periods</b> Works in awkward positions, some lifting of heavy equipment	2 (d) - 3 (a)
14.Mental Effort	<b>Frequent concentration, unpredictable pattern</b> Daily concentration on developmental work, fault finding; interruptions for emergency repairs	3 (a)
15.Emotional Effort	<b>Exposure to distressing situations is rare/ occasional</b> Dealing with fault on equipment connected to patient	1 - 2 (a)
16.Working Conditions	<b>Frequent exposure to unpleasant conditions/ some exposure to hazards</b> Dust, swarf, fumes, noise, vibration, contained radioactive sources/ unavoidable exposure to electrical hazards	3 (a) - 4 (a)
JE Score/Band	JE Score 408 - 441	Band 6

**JOB TITLE: CLINICAL SCIENTIST (MOLECULAR GENETICS/CYTOGENETICS)**

**JOB STATEMENT:**

- (1) Analysis, interpretation & reporting of molecular genetic/cytogenetic tests; provides advice to clinicians
- (2) Supervision of technical and junior staff in section
- (3) Practical & theoretical training of scientific & technical staff

Factor	Relevant Job Information	JE Level
(1) Communication & Relationship Skills	<b>Providing &amp; receiving highly complex &amp; sensitive information/presenting complex information to large groups</b> Communicates highly complex scientific issues to other scientists, technical staff, clinicians/presents scientific papers at large scientific meetings	4 (b) – 5 (b)
(2) Knowledge, Training & Experience	<b>Highly specialist knowledge underpinned by theoretical knowledge</b> Science degree, post graduate certificate in specialised scientific field and experience to master's level equivalent	7
(3) Analytical & Judgmental Skills	<b>Range of complex facts requiring analysis, interpretation</b> Analysis of scientific tests & their interpretation, monitoring of quality outcomes	4
(4) Planning & Organisational Skills	<b>Planning of straightforward tasks &amp; activities:</b> Co-ordination of laboratory work and prioritisation of workload, planning of training programmes	2
(5) Physical Skills	<b>Highly developed physical skills where accuracy is important:</b> Use of scientific equipment, microscope work, manipulation of materials on slide	3 (b)
(6) Responsibility for Patient/Client Care	<b>Provides highly specialist clinical technical services:</b> Provides analysis & interpretation of highly complex diagnostic tests, reports findings to clinical staff	6 (b)
(7) Responsibility for Policy/Service Development	<b>Implements policies, proposes changes to practices &amp; procedures own work area</b> Participates in departmental policy formulation, implements laboratory and Trust policies	2
(8) Responsibility for Financial & Physical Resources	<b>Maintain stock control; safe use of expensive/highly complex equipment</b> Checks and orders reagents for laboratory; use of fluorescent microscopes or complex scientific equipment	2 (c) (e)
(9) Responsibility for Human Resources	<b>Professional/clinical supervision; practical training:</b> Supervises & monitors outputs of scientific & technical staff & students; identifying training needs, planning & delivering training programs	2(a) (b) (c)
(10) Responsibility for Information Resources	<b>Records personally generated test results/storage of data</b> Recording & documentation of tests performed in the laboratory/ responsible for maintaining document control system within laboratory	1 – 2 (a)
(11) Responsibility for Research & Development	<b>Regularly undertakes R &amp; D activity</b> Develops new protocols, design of pilot studies for new services	2 (a)
(12) Freedom to Act	<b>Guided by precedent &amp; occupational policies &amp; protocols, work is managed:</b> Not directly supervised but guidance received from head of section when required	3
(13) Physical Effort	<b>Restricted position for substantial proportion of working time</b> Sits at microscope for long periods	2 (a)
(14) Mental Effort	<b>Frequent requirement for prolonged concentration:</b> Detailed analysis of chromosomes, genes, DNA sequence data using microscopes or other methods for greater part of shift	4 (a)
(15) Emotional Effort	<b>Occasional exposure to distressing or emotional circumstances/occasional highly distressing circumstances</b> Diagnoses terminal conditions, abnormalities, genetic diseases/ deals with recognisable foetal parts	2 - 3 (b)
(16) Working Conditions	<b>Occasional/frequent exposure to highly unpleasant working conditions</b> Reception & processing of range of biological samples for molecular genetic/cytogenetic analysis includes tumour biopsies & body fluids	3 (b) – 4 (b)
JE Score/Band	JE Score 472-503	Band 7

**JOB TITLE: MEDICAL PHYSICS TECHNICIAN SECTION MANAGER**

**JOB STATEMENT:**

- (1) Designs, develops and adapts/manufactures specialist medical and other devices to specifications agreed with users
- (2) Undertakes preventative maintenance, inspection, testing, calibration and repair of patient critical diagnostic, therapeutic equipment
- (3) Provides specialist knowledge for commissioning of equipment
- (4) Manages work, medical physics technicians and equipment for mechanical workshops section.

Factor	Relevant Job Information	JE level
1.Communication & Relationship Skills	<b>Communicates complex information: negotiating skills required to secure co-operation</b> Communicates technical equipment-related information to staff, colleagues, suppliers; negotiates equipment specifications with users, suppliers	4
2.Knowledge, Training & Experience	<b>Highly developed specialist knowledge underpinned by theory, experience</b> Professional engineering knowledge acquired through HND/BEng or equivalent; specialist knowledge through postgraduate diploma, short courses & regular updating, significant experience to master's equivalent level	7
3.Analytical & Judgemental Skills	<b>Complex facts, requiring analysis, interpretation, comparison of range of options</b> Skills for analysing & diagnosing faults in complex patient critical equipment, designing innovative prototypes, devices; evaluates procedures and equipment	4
4.Planning & Organisational Skills	<b>Plans &amp; organises complex activities requiring adjustments</b> Plans section workload, PPM programme; prioritises breakdown requests, readjusts routine work as necessary	3
5.Physical Skills	<b>Highly developed skills, manipulation of fine tools, materials</b> Dexterity, co-ordination & sensory skills for use of precision tools, production of precision components, gas welding, disassembly and assembly of machinery	3 (b)
6.Responsibility for Patient/Client Care	<b>Provides clinical technical services/ provides specialised advice</b> Calibrates and maintains diagnostic and/or therapeutic equipment for use in patient care/ responsible for providing specialist advice to other professionals on the purchase, commissioning of medical equipment & devices	4 (b) - 5 (c)
7.Responsibility for Policy/Service Development	<b>Proposes changes for own area, impact on others</b> Comments on proposed changes to departmental policies, procedures; proposes changes, impact on users of equipment	3
8.Responsibility for Financial & Physical Resources	<b>Authorised signatory/holds delegated budget</b> Authorises spending on equipment, supplies/holds non-pay budget for equipment etc.	3 (a) (d)
9.Responsibility for Human Resources	<b>Day to day management</b> Manages workshop technicians, trainees, including work allocation, appraisal, grievances	3 (a)
10.Responsibility for Information Resources	<b>Occasionally/regularly uses software</b> Uses CAD/CAM software to develop designs; maintains specialist equipment records for department	2 (b) - 3 (b)
11.Responsibility for Research & Development	<b>Regular research, equipment testing</b> Evaluates medical equipment, acceptance testing; R&D projects	2 (a) (c)
12.Freedom to Act	<b>Broad occupational policies</b> Follows departmental procedures, quality system manual; manages section	4
13.Physical Effort	<b>Occasional, frequent moderate effort for short periods</b> Works in awkward positions, some lifting of heavy equipment	2 (d) - 3 (a)
14.Mental Effort	<b>Frequent concentration, unpredictable pattern</b> Daily concentration on developmental work, fault finding, meetings; interruptions for emergency repairs, management issues	3 (a)
15.Emotional Effort	<b>Exposure to distressing situations is rare/ occasional</b> Dealing with fault on equipment connected to patient	1 - 2 (a)
16.Working Conditions	<b>Frequent exposure to unpleasant conditions/ some exposure to hazards</b> Dust, swarf, fumes, noise, vibration/ unavoidable exposure to electrical hazards	3 (a) - 4 (a)
JE Score/Band	JE Score 498 - 530	Band 7

**JOB TITLE: PRINCIPAL CLINICAL SCIENTIST (MOLECULAR GENETICS /CYTOGENETICS)**

**JOB STATEMENT:**

- (1) Analysis, interpretation & reporting of abnormal molecular genetic/ cytogenetic test results
- (2) Manages scientists & technical staff in section
- (3) Oversees the quality of service from the laboratory section
- (4) Training of trainees to ensure compliance with professional standards

Factor	Relevant Job Information	JE Level
(1) Communication & Relationship Skills	<b>Communicates highly complex, sensitive information, co-operation or agreement required/presenting complex information to large groups</b> Communicates results of highly complex scientific tests & explains the implications of abnormal test results, agreement & co-operation of other professionals required/presents papers to large scientific meetings	5 (a) (b)
(2) Knowledge, Training & Experience	<b>Highly developed specialist knowledge underpinned by theoretical knowledge &amp; experience:</b> Science degree, post graduate certificate in specialised scientific field, experience, to masters level equivalent	7
(3) Analytical & Judgmental Skills	<b>Complex facts requiring analysis &amp; interpretation:</b> Analysis of abnormal scientific test results & their implications	4
(4) Planning & Organisational Skills	<b>Planning of complex tasks &amp; activities, makes adjustments</b> Co-ordination of section workload, re-organises as necessary, implementation of skills mix changes	3
(5) Physical Skills	<b>Highly developed physical skills where accuracy is important:</b> Use of scientific equipment, microscope work	3 (b)
(6) Responsibility for Patient/Client Care	<b>Provides highly specialist clinical technical services:</b> Responsible for the provision of a highly specialist/ complex molecular/cytogenetic service, maintains the quality of the service; authorises all section reports	6 (b)
(7) Responsibility for Policy/Service Development	<b>Implements policies, proposes changes to practices &amp; procedures, impact beyond own area</b> Develops policies for section & participates in laboratory policy formulation & implementation, impact on other sections	3
(8) Responsibility for Financial & Physical Resources	<b>Purchase of some physical assets</b> Responsible for procurement of equipment & supplies for section	3 (b)
(9) Responsibility for Human Resources	<b>Responsible for day to day management of a group of staff</b> Manages staff in section, supervises & monitors outputs of scientific & technical staff & students	3 (a)
(10) Responsibility for Information Resources	<b>Records personally generated test results/ data storage</b> Recording & documentation of patient results for audit and analysis of patient referrals/ laboratory database management	1 - 2 (a)
(11) Responsibility for Research & Development	<b>R&amp;D as major job requirement</b> Undertakes R&D e.g. develops new molecular/ cytogenetic techniques	3
(12) Freedom to Act	<b>Broad occupational policies &amp; protocols</b> Manages work of section	4
(13) Physical Effort	<b>Sitting or standing in a restricted position:</b> Microscope work	2 (a)
(14) Mental Effort	<b>Frequent requirement for prolonged concentration</b> Detailed analysis of chromosomes, genes, DNA sequence data using microscopes or other methods for greater part of shift	4 (a)
(15) Emotional Effort	<b>Occasional exposure to distressing or emotional circumstances/occasional highly distressing circumstances</b> Diagnoses terminal conditions, abnormalities, genetic diseases/ deals with recognisable foetal parts	2 - 3 (b)
(16) Working Conditions	<b>Occasional/frequent exposure to highly unpleasant working conditions</b> Reception & processing of range of biological samples for molecular genetic/ cytogenetic analysis includes tumour biopsies & body fluids	3 (b) - 4 (b)
JE Score/Band	JE Score 544-564	Band 8 (a)

**JOB TITLE: CONSULTANT CLINICAL SCIENTIST HEAD OF SERVICE (MOLECULAR GENETICS/ CYTOGENETICS)**

**JOB STATEMENT:**

1. Manages regional or equivalent molecular genetic /cytogenetic department & service, including quality management and managing scientists, technical & support staff in the department
2. Carries out molecular genetic /cytogenetic analysis, interpretation & reporting of abnormal results
3. Oversees professional development of all staff to ensure compliance with professional standards

Factor	Relevant Job Information	JE Level
(1) Communication & Relationship Skills	Communicates highly complex & sensitive information, agreement required/ presenting complex information to large groups Negotiates & commissions new services, negotiates for funding Promotes & facilitates professional development for scientific staff, communications on service development/ presenting scientific papers to large scientific meetings	5 (a) (b)
(2) Knowledge, Training & Experience	Advanced theoretical knowledge of a range of work procedures Science degree, post graduate qualification in specialised scientific field, doctorate or equivalent experience	8 (a)
(3) Analytical & Judgmental Skills	Highly complex facts requiring analysis & interpretation: Resolving organisational and staffing issues in relation to delivery of laboratory services in line with service need.	5
(4) Planning & Organisational Skills	Planning & organisation of broad range of complex activities, long term planning Planning, organising regional scientific service, commissioning of new services & development of professional education for scientific staff.	4
(5) Physical Skills	Highly developed physical skills where accuracy is important: Use of scientific equipment, microscope work	3 (b)
(6) Responsibility for Patient/Client Care	Accountable for delivery of clinical technical service Responsible for the provision of a specialist regional molecular genetic/cytogenetic service, maintains the quality of service output	7
(7) Responsibility for Policy/Service Development	Implements policies/service, proposes changes to practices for directorate or equivalent Develops policies for the regional or equivalent provision of a specialist scientific service, co-ordinates policy across trusts, with impact on a range of other services	5
(8) Responsibility for Financial & Physical Resources	Budget holder for a service Manages & controls the budget for a specialist scientific department & service	4 (a)
(9) Responsibility for Human Resources	Responsible as line manager for a department: Responsibility for the management and the professional development of scientific & support staff to ensure delivery of a specialised scientific service	4 (a)
(10) Responsibility for Information Resources	Responsible for operation of one or more information systems Responsible for regional service information systems	4 (b)
(11) Responsibility for Research & Development	Regularly undertakes R & D activity/ major job responsibility/ co-ordinates R&D Manages ongoing clinical audit for the scientific service, commissions the development of new methods/ co-ordinates departmental & cross-departmental R&D	2 (a) - 4
(12) Freedom to Act	Guided by general health, occupational policies: Guidance from professional protocols, codes of practice & guidelines; manages regional service	5
(13) Physical Effort	Occasional light physical effort/ sitting or standing in a restricted position: Microscope work	1 – 2 (a)
(14) Mental Effort	Occasional/frequent requirement for prolonged concentration Detailed analysis of chromosomes, genes, DNA sequence data using microscopes or other methods, verification of written reports for greater part of shift	3 (b) – 4 (a)
(15) Emotional Effort	Occasional exposure to distressing or emotional circumstances/occasional highly distressing circumstances Diagnoses terminal conditions, abnormalities, genetic diseases, staffing issues/ deals with recognisable foetal parts	2 – 3 (b)
(16) Working Conditions	Occasional exposure to highly unpleasant working conditions Reception & processing of range of biological samples for molecular/cytogenetic analysis includes tumour biopsies, body fluids	3 (b)
JE Score/Band	JE Score 691-728	Band 8 (d) & over