



**Research & Development
Directorate**

Annual Report

1998 - 1999



Introduction

1. Background

1.1 Research in South Manchester

1.1.1 South Manchester University Hospitals NHS Trust (SMUHT) has an established record of high quality, nationally and internationally recognised research and development (R&D). Many of the Trust's research programmes reflect the synergy of research partnerships between the two hospitals (Withington and Wythenshawe), the University of Manchester and other academic and NHS organisations.

1.1.2 Historically, a significant part of the Trust's research activity was laboratory-based (in the Research and Teaching Block at Withington Hospital), but, over the past decade, research activity increasingly has become more clinically-based. Most research activity is now de-centralised to clinical departments on both the Withington and Wythenshawe sites. This change in the nature and location of research is being reflected in the plans for the new Education and Research Centre on the Wythenshawe site which will have much-reduced laboratory space. New opportunities for research exist within the collaborative partnership of the Wellcome Clinical Research Facility.

1.2 1997 Bid for Portfolio Funding

1.2.1 In 1997, SMUHT submitted a bid for *portfolio* funding on the basis that it could demonstrate substantial research experience and a high level of research activity. The Trust was awarded *task-linked* funding because it did not articulate a sufficiently well-defined R&D strategy or adequately demonstrate the ability to manage its R&D funding and activity.

1.2.2 Key factors in not achieving *portfolio* funding were:

- the Trust did not provide sufficient evidence of R&D management capability (ie it did not demonstrate adequate knowledge of its research activity; research was not necessarily subjected to independent peer review; systems were not in place to ensure that ethics approval, where applicable, had been obtained; in-house approval mechanisms for new research did not exist; sources of external funding of research were not systematically documented);
- the Trust's research programmes were not felt to be sufficiently focused;
- the Trust did not provide detailed evidence of research outcomes (eg details of conference papers and publications; service developments predicated on local research work);
- the proportion of the *R&D Levy* supporting research funded by external non commercial income was relatively low in comparison to other portfolio bidders.

Performance Indicators

The performance indicator targets proposed by SMUHT and included in its *R&D Agreement* are described under the corresponding headings in this section.

2. Strategic Ability

2.1 Trust Board Commitment

2.1.1 In January, the R&D Director, who is a non Executive member of the Trust Board, presented to the Board a formal paper (Appendix 1) which briefed members on the background, current agendas and direction of R&D in the Trust and presented a three-year R&D strategy. This process enabled comment by the external organisations to which Trust Board papers are circulated. The Board responded by endorsing R&D as a core activity of the Trust and giving the R&D Committee new authority as a standing committee of the Board.

2.2 R&D Directorate Infrastructure

2.2.1 The R&D Directorate has been strengthened by the creation of two new posts. The R&D Support Nurse works across two Directorates - the Clinical and Professional Development Directorate and the R&D Directorate - to support multidisciplinary research collaborations and to develop R&D capability in the non medical professions (nursing, midwifery and the professions allied to medicine). The R&D Information Officer has responsibility for developing information collection, management and dissemination systems; providing a help-desk service to researchers; developing the use of electronic resources for information management and communication with researchers. In addition, the post of R&D Manager (formerly 0.50 WTE) was increased to full-time in November, when a new appointment to the post was made.

2.2.2 The R&D Directorate staff are:

Director of R&D	Professor Alistair Burns	2 sessions/week
Deputy Director of R&D	Dr Jonathan Cooke	1 session/week
R&D Manager	Dr Peggy Arnell	Full-time
R&D Support Nurse	Miss Pat Jones	Full-time
R&D Information Officer	Mrs Alison Robinson	Full-time
R&D Secretary	Ms Caroline George	Full-time
Research Associate	Mrs Janette Ryder	3 sessions/week

Support to the Directorate is given by:

R&D Management Accountant	Mr James Blundell	2 sessions/week
Research Adviser	Dr Leslie Houghton	0.5 session/week

Figure 1 illustrates reporting relationships for R&D within the Trust.

2.3 Remit of R&D Directorate

2.3.1 During 1998/99, the remit of the R&D Directorate was formalised:

Development of strategy, infrastructure and operational arrangements to manage research and development in accordance with the Trust's R&D Agreement with the Secretary of State through the NHSE North West

2.3.2 Also during the year, the R&D Directorate's work was considerably extended to ensure more effective management of the Trust's programmes of research in

accordance with the terms of the Trust's *R&D Agreement*. Appendix 2 sets out the main functions which the R&D Directorate now fulfills.

2.4 R&D Committee Membership

- 2.4.1 In January, the membership of the R&D Committee was revised to include the Chief Executive and the Director of Finance, indicating the level of importance accorded by the Trust Board to the business of the Committee. The R&D Committee's membership has ensured that the discussions of the Committee are informed by input from senior Trust officers and that decisions and actions link appropriately into other Trust fora.

The members of the R&D Committee are:

Director of R&D	Professor Alistair Burns
Deputy Director of R&D	Dr Jonathan Cooke
Chief Executive	Ms Jane Herbert
Director of Finance	Mr Andrew Whitley
Medical Director	Dr Phil Jones
Director of Nursing & Quality	Mrs Chris Mullen
Cancer Lead	Dr Caroline Boggis
Cardiovascular Disease Lead	Professor Charles McCollum
Mental Health Lead	Professor Louis Appleby
Respiratory Disease Lead	Professor Tony Pickering
Specialist Interests Lead	Mr Ken Dunn
R&D Manager	Dr Peggy Arnell

In attendance:

Mr James Blundell, R&D Management Accountant
Miss Catherine Guelbert, Project Manager (Withington Community Hospital)
Dr Lesley Houghton, Research Adviser
Miss Pat Jones, R&D Support Nurse
Mrs Alison Robinson, R&D Information Officer
Mrs Maureen Silcock, Clinical Audit Manager

The terms of reference of the R&D Committee, which have been ratified by the Trust Board, are given in Appendix 3.

- 2.4.2 From September, the R&D Committee moved to monthly meetings - a reflection of the increased volume of work undertaken by the Committee and its assumption of a full executive role. A formal record of proceedings is prepared by the R&D Manager. (See Appendix 4 for minutes of meetings held in 1998/99.)

2.5 R&D Strategy

2.5.1 During the second quarter of the year, the R&D Committee finalised a three-year R&D strategy which was endorsed by the Trust Board (Appendix 5). The strategy was deliberately task-focused to emphasise the year-on-year objectives which needed to be achieved to position the Trust to bid for *portfolio* funding in 2001.

2.5.2 The primary aim of the strategy is to ensure that high quality peer-reviewed research is conducted which reflects the clinical expertise within the Trust and addresses Health Authority and Trust objectives. The strategy also addresses the requirement to manage research, development and dissemination within the national framework of NHS policies and priorities.

2.6 R&D Business Plan

2.6.1 A synopsis of the 1998/99 R&D business plan (Appendix 6), included in the Trust's business plan, outlines areas of focus. A detailed R&D business agenda for the period of the *R&D Agreement* is set out in the R&D strategy. Business objectives for Year 1 (Appendix 5) have all been met; a summary of these achievements is provided in Appendix 7 and details are given in the relevant sections of this report.

2.7 R&D Activity Areas

2.7.1 The Trust's *portfolio funding* bid included 16 activity areas. By 1 April 1998, research activity had been re-focused within five R&D themes: Cancer, Cardiovascular Disease, Mental Health, Respiratory Disease and Specialist Interests. Four of these themes reflect national priority areas for health gain and for R&D. The latter theme, Specialist Interests, represents areas of clinical expertise - many of them Regional services - which act as catalysts for significant research activity.

2.7.2 The research areas within each theme are listed in Appendix 8. Appendix 9 contains summaries of the five themes prepared mid-year by the researchers in each research area. The requirement to produce these summaries had two purposes: to make an initial attempt to articulate the research strategy for each research area, as a precursor to formalising R&D theme strategies, and, to engage all researchers directly in the development and regular review of those strategies.

2.8 Role of the R&D Theme Leads

2.8.1 The development of theme summaries highlighted the need to review and strengthen the role of the R&D Theme Leads within the R&D Committee and within the themes. The R&D Committee has, therefore, defined new responsibilities for the R&D Theme Leads and formalised procedures for their appointment (Appendix 10).

2.9 R&D Expenditure to Support R&D Strategy

2.9.1 Table A details 1998/99 expenditure of service support funding in each category of non commercial externally funded research.

2.9.2 Table B details 1998/99 expenditure of service support funding in each research activity area, including primary care.

2.9.3 Indicative R&D expenditure and projected external funding are shown as follows: 1999/00 (Table C); 2000/01 (Table D); 2001/02 (Table E). (The R&D Directorate will be actively seeking to increase levels of external funding by 5%, year-on-year.)

2.9.4 Details of 1998/99 expenditure on R&D training are given in Table F.

3. External Funding

3.1 Non Commercial Funding

3.1.1 Table A details total 1998/99 income for non commercial externally funded research.

3.1.2 Table B details 1998/99 income for non commercial externally funded research in each of the five research activity areas.

4. Publication Output

4.1 Peer-reviewed Publications

4.1.1 Journal publications by Trust researchers, in the 1998 calendar year, are listed in Appendix 11.

4.1.2 The number of publications from each of the R&D themes are as follows:

Theme	Number of Publications
Cancer	58
Cardiovascular Disease	40
Mental Health	46
Respiratory Disease	84
Specialist Interests	133

4.1.3 An analysis of the impact factor of the journals in which Trust staff have published is included in Appendix 11. 65% of publications appeared in journals with an impact factor; 44 % of these had an impact factor of greater than 2.

5. Multidisciplinary R&D

5.1 Multidisciplinary Working

5.1.1 Whilst the majority of research undertaken in the Trust in 1998/99 was conducted by multidisciplinary teams, the proportion of projects within each theme, where a non medical practitioner took a primary role, was as follows: Cancer (4%); Cardiovascular Disease (16%); Mental Health (10%); Respiratory Disease (31%); Specialist Interests (4%).

5.1.2 Examples of multidisciplinary projects, with a principal investigator from the non medical professions, were:

- the effect of carotid endarterectomy on concentration, reaction time and memory
- the use of an oxygen prescription chart in improving prescribing practice
- development of global scores for quality of life and chest symptoms in cystic fibrosis
- investigation of wound swabbing techniques
- intervention in carers of patients with dementia
- nurse-led clinics for follow-up of patients receiving treatment for breast cancer
- a non pharmacological approach to the management of breathlessness in patients with lung cancer
- validation of a nutritional assessment tool
- multi-professional learning between pharmacy and medical students
- investigation of the medicines information needs of patients with mental health problems

5.1.3 Details of R&D training funded in 1998/99 to support multidisciplinary working are given in Table F.

5.1.4 An account of the support provided within the Trust to multidisciplinary research is given in Section 14.

6. National Research Register

6.1 Software Upgrades

6.1.1 During the year, the *R&D Database* software and the *Microsoft Access* platform were upgraded to enable provision of the data extracts required for the *National Research Register (NRR)*. These upgrades were also necessary to enable the setting up of a database of Trust publications in standard bibliographic format.

6.1.2 The new version of the *R&D Database* offers more flexibility in user-designed reports, making the database a much more effective management tool for R&D Directorate staff. The database enables the monitoring of current research activity and funding; retrospective and prospective analyses to align R&D activities with agreed priorities; selective targeting of researchers with relevant R&D funding information; identification of potential research partnerships both within the organisation and with other partner organisations.

6.2 NRR Returns

- 6.2.1 The success of the two *NRR* returns in 1998/99 reflects the intense efforts by the R&D Support Officer and the R&D Information Officer to obtain the minimum dataset on all registered projects. It also reflected efforts by the R&D Manager to improve information flows from South Manchester Local Research Ethics Committee, the University of Manchester Research and Graduate Support Unit and the Faculty Research Administrator in the Medical School.

7. Training

7.1 In-house Training Programme

- 7.1.1 An R&D training programme for the non medical professions, including a range of IT literacy and skills-building courses, was developed and organised by the R&D Support Nurse through the Directorate for Clinical and Professional Development. During the year, the R&D Support Nurse also organised the R&D element of Trust CPD programmes for the non medical professions and presented the R&D and evidence-based practice components of the Trust's monthly induction programmes for new staff in these professions. Details of these activities are given in Section 14.

7.2 Clinical Fellowships

- 7.2.1 In April, a new bursary scheme was introduced in the Trust for the non medical professions. Six bursaries were awarded on a competitive basis to staff to undertake MPhil programmes of research at the University of Manchester in the 1998/99 academic year. Details of the six research topics are as follows:

Research Theme	Topic
Cancer	The nature of nursing interventions in palliative care
Cardiovascular Disease	Compression therapy for venous ulceration: a randomised clinical trial of four-layer bandaging versus elastic stockings
Cardiovascular Disease	An evaluation of the urgency of response to patients suffering acute stroke
Mental Health	PRN medication: the nurse's decision, the nurse's judgement
Respiratory Disease	Primary prevention of asthma and allergic disease: acceptability of and adherence to environmental allergen control measures during the first three years of life
Specialist Interests	Investigating the continuum of care of suddenly bereaved relatives from the A&E Department into the community

Eleven specialist nurses also received a contribution from the Trust towards the payment of registration fees for Masters-level studies in support of the research remit of their specialist nurse role.

8. Consumer Involvement

8.1 Establishment of Community Health Council Partnership

8.1.1 In September, the Director of R&D established a working link with the Manchester Community Health Council (CHC), through the CHC Lead on consumer involvement, to take forward the agenda of public participation in R&D. Since then, the R&D Manager and the CHC Lead have been exploring ways to engage consumers and their representatives in R&D planning and delivery.

8.2 Survey of Trust Researchers

8.2.1 To assess the current level of consumer involvement in R&D within the Trust, researchers were asked to provide details of consumer initiatives within their own research areas (see Appendix 9). This benchmark information revealed that researchers were largely unaware of the NHSE policy for involving consumers in the development of research programmes.

8.3 Research Associate

8.3.1 This preliminary work suggested that there was a need for a dedicated worker to work under the guidance of the R&D Manager and the CHC lead on this project. The remit of a Research Associate (Public Participation in R&D) was agreed as follows:

- to undertake a literature search and literature review (eg NHSE policies and guidance; government advisory groups and committees; commissioned research; publications of representative and charitable organisations);
- to document and appraise critically academic models of public participation and emerging models (eg patient liaison groups of the Royal Colleges);
- to review existing local public participation in SMUHT;
- to make recommendations on the purpose, operation and method for evaluating an initiative to engage public participation in R&D priorities and planning.

8.3.2 In February, the R&D Committee approved the non-stipendary appointment of a Research Associate and supported the R&D Director's recommendation that the Research Associate could use this project work to support an application for PhD studies on the implementation of this NHSE policy area.

8.3.3 By year end, project milestones included the literature search and review; NHSE policy analysis; telephone interviews with key players at national level (eg Standing Advisory Group on Consumer Involvement in the NHS R&D Programme); local discussions with Trust staff who support the Trust's *Patient Council*; development of preliminary proposals.

Dimensions

9. Quality

9.1 External Funding as a Quality Indicator

9.1.1 Projects which were externally funded within the mutual obligation arrangements represented 29% of R&D activity. External grant income, by number of projects, was awarded as follows: Research Councils (9); Universities (7); Charities (66); DH/NHSE (43); Other Government/EU (12). An additional 60 projects received external non commercial funding outside the mutual obligation arrangements, which represented a further 13% of all projects in progress. This represents a three-fold increase in the proportion of the *R&D Levy* supporting research activity, funded by external non commercial awards, over the period since submission of the Trust's *portfolio bid*.

9.1.2 In 1998/99, the Trust generated a total of £4,415,654 in external non commercial income. This represents a *service support costs:grant income* ratio of 2:3.

9.2 Governance

9.2.1 The R&D Manager is a member of the Trust's Clinical Governance and Quality Committee, which is a standing committee of the Trust Board. The aim of the Committee is to *ensure that the Trust develops systems to enable clinical governance and quality to be identified, assessed, monitored and continuously improved in every Directorate/Division*.

9.2.2 During the latter part of the year, much effort was put into formalising administrative procedures. The approval procedures for new research take account of Ethics Committees' requirements and University requirements to submit applications for research funding through the Research and Graduate Support Unit. The procedures cover:

- all research projects whether internally or externally funded;
- research grants, commercial sponsorship and donations for R&D from all external sources;
- industrial and commercial R&D contracts;
- government and charity R&D contracts;
- indemnity cover.

9.3 Quality Assurance

9.3.1 The R&D Committee has agreed that the systems for peer review employed by the Research Councils, major charities and government departments do not require replication; therefore, research funded under the *Concordat Agreement* or the *Partnership Agreement* is not submitted to further, local peer review.

9.3.2 Any other project (ie internally funded or externally funded by a commercial organisation or charitable sponsor) is assessed by the Director of R&D, the Deputy Director of R&D or the R&D Manager (all of whom have substantial reviewing and editorial experience) on the basis of the project's *NRR* record. The R&D Committee then considers projects for approval at its monthly meetings. The Committee accepts that this interim arrangement is primarily an assessment of the scientific rigour of projects and their fit within the R&D themes and does not provide a specialist view.

9.3.3 The Director of R&D and the R&D Manager are currently in discussion with their counterparts from Central Manchester Healthcare and Salford Royal Hospitals NHS Trusts to try and devise a tripartite arrangement for local independent peer review of projects which would include specialist knowledge of the project subject.

10. Ethics

10.1 There is a direct input into the South Manchester Local Research Ethics Committee (LREC) and the Manchester Multi-Centre Ethics Committee (MREC) through the membership of R&D Directorate staff on LREC (two members) and MREC (one member).

10.2 As a SMUHT representative on the South Manchester LREC, the R&D Support Nurse is well-placed to offer advice and guidance about ethical approval processes to novice researchers working within the Trust.

10.3 The R&D Manager and the R&D Information Officer have worked with the South Manchester LREC Manager to improve information flows and to reduce duplication of requests to researchers for information by the two organisations. This resulted in the revision of R&D Directorate procedures for notification of new research and for giving R&D management approval for research.

11. Relevance, Impact and Importance

11.1 The Trust's R&D themes map directly to three of the national R&D key areas and three of *Our Healthier Nation* priority areas: cancer; heart disease and stroke; mental health. There is also major R&D activity related to the other two national R&D key areas: aging (eg Alzheimer's disease; venous ulceration; feeding of stroke patients) and primary care (16% of current research projects link directly to primary care).

11.2 Relevance of the Trust's research programmes to the local service and planning priorities, identified for immediate action in 1998/99 by Manchester Health Authority, can also be demonstrated. Examples of research areas which reflect these priorities are:

Priorities	Research Areas
Emergency Admissions/ Delayed Patient Discharges	asthma and allergy; community epidemiology; occupational lung disease
Mental Health	suicide and self-harm; severe mental illness; models of community care; psychological factors associated with medical disorders
Priorities	Research Areas
Clinical Effectiveness	researcher-initiated clinical trials within all R&D themes

Coronary Heart Disease	vascular surgery; angina; stroke; coronary syndromes; cardiac transplantation
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Primary & Community Care	member of South Manchester PCG R&D Network
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11.3 The strong lead by NHSE North West in building R&D capability in the non medical professions has been supported by a wide range of local SMUHT initiatives for nursing, midwifery and the professions allied to medicine (PAMs) (see Section 14). Many of these initiatives have also been extended to the non medical professions in neighbouring community and acute Trusts.

12. Primary Care

12.1 Research Activity Involving Primary Care

12.1.1 A significant number of the research projects within the Trust have one or more of the following links with primary care:

- at least one research investigator is a primary care professional;
- patient recruitment and data collection take place within primary care;
- the research topic relates specifically to the activities of primary care professionals.

12.1.2 16% of the Trust's research work in 1998/99 linked across the clinical interface with primary care. This activity formed a proportion of R&D theme activities as follows: Cancer (9%); Cardiovascular Disease (8%); Mental Health (43%); Respiratory Disease (28%); Specialist Interests (6%).

Examples of primary care-linked research projects were:

- effect of postgraduate training of community pharmacists on provision of pharmaceutical care for the terminally ill
- locally-based bereavement support for Manchester residents
- cost effectiveness of community leg ulcer clinics
- introduction of cardiac liaison nurses to link cardiology, cardiac surgery, general practice and the discharged patient
- impact of specialist research team on the quality of residential and nursing home care
- cost/benefit issues in health care provision for asthma to include both primary and secondary care elements
- cognitive behaviour therapy in primary care for irritable bowel syndrome
- pharmacists' role in nursing and residential care

12.1.3 The investment of R&D support funding in primary care research in each of the five research activity areas is detailed in Table B (Section 2.9.2). Projected expenditure on primary care-related research for the next three years, which is based on the 1998/99 out turn, is shown in Tables C, D and E.

12.2 South Manchester Primary Care Group R&D Network

- 12.2.1 The R&D Manager assisted the R&D Facilitator, Manchester Health Authority, in writing a successful bid for *Budget 2* funding to establish a primary care R&D network in South Manchester. SMUHT is included as a collaborative partner, with individual Trust researchers available for advice and assistance in developing links with hospital and university researchers and the R&D Directorate staff available for operational support to the primary care members of the network. (Collaborative research in respiratory disease is already well-established with one of the member general practices, Bowland Road Medical Centre.)
- 12.2.2 The R&D Manager has worked proactively to identify SMUHT researchers who could begin to develop links with the member general practices in the South Manchester Primary Care Group R&D Network. Discussions with Brooklands Medical Centre general practitioners about joint research in the clinical management of diabetes and genetic screening for disease are in progress. All R&D network member practices have signalled interest in assisting in patient recruitment to a study of the treatment of depression.

12.3 Withington Community Hospital Development

- 12.3.1 SMUHT researchers who already have strong community-based research programmes within South Manchester have flagged up the potential for the community hospital to serve as a base for primary care and community-based research. As well, the potential to accommodate peripatetic researchers from University or NHS partner organisations - whose research would be most appropriately conducted from a community base as opposed to an acute hospital base - is being explored by the Project Manager for the community hospital development.

13. Partnership

13.1 Trusts within the North West Region

- 13.1.1 The R&D Directorate developed close working relationships with the R&D Directorates at Central Manchester Healthcare, Christie Hospital and Salford Royal Hospitals NHS Trusts as a first step in the Trust's strategy to develop complementary research activity within a shared vision of the future for research in Greater Manchester. These links have enabled collective problem-solving, a sharing of best practice and have helped to identify long-standing, informal inter-Trust working by researchers which, under the new R&D management arrangements, needs to be made more explicit.
- 13.1.2 The Trust's R&D strategy calls for the R&D Directorate to assist with the building of R&D capability on a pan-regional basis. To this end, the R&D Director has met on an occasional basis with the R&D Directors of Trafford Healthcare NHS Trust, Stockport Acute Services NHS Trust and Tameside & Glossop Community & Priority Services NHS Trust for informal discussions. The R&D Manager provides ad hoc advice and support to R&D Coordinators from district general hospitals across the region and, in conjunction with the R&D Manager from Central Manchester Healthcare NHS

Trust, runs the regional R&D Managers' Forum which meets bi-monthly to build understanding of the national agenda for R&D.

13.2 NHS Purchaser

13.2.1 The R&D Manager has developed a productive working relationship with the R&D Facilitator, Manchester Health Authority. This has included consultation on the development of the Trust's R&D strategy; collaboration in the development of the successful Level 3 bid to NHSE North West for funding to establish the South Manchester Primary Care Group R&D Network, and, regular liaison on matters of mutual interest.

13.2.2 The Director of R&D and R&D Manager meet annually with the Director of Public Health, Manchester Health Authority, to review the Trust's performance within the NHS strategic framework for use of the *R&D Levy*.

13.3 Regional, National and International Partnerships

13.3.1 Trust researchers are involved in a wide range of pan Manchester, regional and national research partnerships; for example, the Manchester Asthma and Allergy Study; the Manchester & Salford Self-harm Monitoring Service; UK National Audit of Joint Mother and Baby Admissions to Psychiatric Hospitals; UK Small Aneurysm Trial Participants; Early Breast Cancer Trialists' Collaborative Group.

13.3.2 Researchers are also involved in partnerships which have contributed to the development of national and international clinical guidelines; for example, *International Guidelines for the Selection of Lung Transplant Candidates*; *British Association of Surgical Oncology Guidelines for Surgeons in the Management of Symptomatic Breast Disease in the UK*; *The Use of Imaging in the Follow-up of Patients with Breast Cancer: Guidelines of the Royal College of Radiologists*.

13.4 Universities of Greater Manchester

13.4.1 New research partnerships with the University of Salford and Manchester Metropolitan University (MMU) have been explored through discussions with senior academics of both institutions.

13.4.2 A key result of University of Salford discussions was provision of substantial support by the Director of R&D and the R&D Manager to researchers in the Faculty of Health Care and Social Work Studies in designing research protocols and writing the narrative of joint funding applications to major charities. As well, the Directorate of Clinical and Professional Development has explored the development of direct research links with the Health Care Practice R&D Unit.

13.4.3 Ways to bring MMU research on-site to the Trust in areas of mutual clinical and research interest have been explored by the Director of R&D and R&D Manager with the Dean of Science and Engineering, and the Heads of Chemistry and Materials, Biological Science, Sport & Exercise and Psychology & Speech Pathology. The aims are to build on existing research links between the two organisations and to mount joint bids to external funding bodies (with the additional potential for service contributions by research fellows funded through these grants). Links with MMU

are also being explored by the Hospital Dean for medical students undertaking the fourth year Research Option.

13.4.4 The expansion of research links and the development of academic links, through jointly-funded posts, have been explored by the Director of Nursing and Quality with the Dean of the School of Nursing, Midwifery and Health Visiting at the University of Manchester.

13.4.5 The R&D Manager established new working links with the University of Manchester Research and Graduate Support Unit and the Faculty Research Administrator (Medical School), in an effort to improve the quality of the University's data for the Research Assessment Exercise (RAE). The R&D Directorate was able to augment the University's database with details of additional researchers, projects and funding to include in the RAE. Actions to improve information flows were agreed with these two University units.

13.4.6 The R&D Manager also worked with these University staff to improve their understanding of the NHS strategic framework for the *R&D Levy* and, in particular, to explain the responsibilities of Lead Trusts in multi-centre studies funded under *Concordat* or *Partnership Agreements* and the ways the University can assist in this process.

13.5 Manchester Intellectual Property Consortium (MANIP)

13.5.1 In 1998, SMUHT joined a team of seven other partners, University of Manchester, University of Salford, UMIST, Manchester Metropolitan University, Central Manchester Healthcare NHS Trust, Salford Royal Hospitals NHS Trust and Lyndon Davies Associates to bid successfully for £250k over three years from the DTI's *Biotechnology Exploitation Platform Challenge Programme*. The funding enabled the establishment of a consortium, from 1 May 1998, to facilitate:

- evaluation of bio-science activities;
- development of new technologies;
- protection and commercialisation of inventions.

13.6 Wellcome Clinical Research Facility

13.6.1 In 1998, SMUHT, in partnership with the University of Manchester, Central Manchester Healthcare NHS Trust and Salford Royal Hospitals NHS Trust bid successfully to the Wellcome Trust for the capital costs of a clinical research facility (CRF). The partnership agreement includes the sharing of the revenue costs of the CRF which, for SMUHT, will be a maximum of £153k in revenue costs for Years 1 to 4.

13.6.2 During the year, SMUHT, represented by the R&D Manager, contributed to the planning of the CRF facility and the development of legal agreements and operational arrangements through membership on the CRF Operational Committee. The Director and Deputy Director of R&D have supported the Director of the CRF by publicising the CRF to SMUHT researchers and encouraging them to develop research programmes which would be appropriate for siting within the CRF. Senior

Trust researchers have also contributed to this enterprise through membership on the Scientific Advisory Committee.

14. Appropriate Disciplinary Mix

14.1 R&D Support to the Non Medical Professions

14.1.1 The Trust is committed to multidisciplinary research and, to this end, created the post of R&D Support Nurse to provide a lead to both established and novice researchers in the non medical professions.

14.1.2 A 1997 Trust survey of the non medical professions revealed three key issues for these staff:

- accessing the evidence;
- educational opportunities to support R&D;
- dissemination of R&D information.

Using the survey results, the R&D Support Nurse, developed a framework for supporting R&D in the non medical professions (see Appendix 12 for summary).

14.2 Access to the Knowledge Base: Library and IT Facilities.

14.2.1 Mid year, the library in the Wythenshawe Postgraduate Medical Education Centre (PMGC) was opened to non medical staff. (The Withington PGMC library was already operating on an open access basis.)

14.2.2 During the year, a review of the capability of the Trust's library and information services (LIS) to meet the information needs of medical and non medical staff for evidence-based practice and for research was undertaken. The review included the identification of LIS funding from *SIFT*, *MADEL NMET*, and from the Trust, in line with national and regional policies. The outcome of the review was the addition of new journal titles and textbooks for non medical staff to existing holdings, in partnership with the John Rylands University Library of Manchester.

14.2.3 Four clinical resource rooms, sited adjacent to clinical areas, were established (1 at Withington; 3 at Wythenshawe) and equipped with PCs networked to the site's PGMC library fileserver to provide non medical staff with access to the *Internet* and to a range of bibliographic databases. An informatics course, *Developing Information Management Skills to Support Evidence-based Practice*, was established in collaboration with the University of Manchester School of Nursing, Midwifery and Health Visiting. During the year, 44 staff in the non medical professions received training. An information leaflet, *Library & Information Services for Nurses, Midwives and PAMS*, has been produced to support these projects (Appendix 13).

14.2.4 In conjunction with the PGMC Librarians, the R&D Support Nurse established a multidisciplinary library users group to foster integrated planning of Trust LIS for all staff. In an innovative project, the group made approaches to selected medical publishers and professional journals to provide book reviewing. One such arrangement has been set up, enabling the development of reviewing skills and a better understanding of the review process within the group.

14.3 Educational Programmes to Support R&D Capability Building

14.3.1 The R&D Support Nurse delivered an in-house programme of R&D capability building for the non medical professions, including a workshop on *Randomised Controlled Trial Methodology*. The R&D Support Nurse was a regular contributor to Trust CPD programmes, in particular, developing practitioners' critical appraisal skills and understanding of the interrelationships between clinical effectiveness, audit and research.

14.3.2 On a pan-regional basis, the R&D Support Nurse contributed to building R&D capability as an occasional lecturer for post-registration courses run by the University of Central Lancashire and as a member of the R&D Representatives Group (an R&D network of smaller Trusts outside Greater Manchester) organised by the University of Central Lancashire. At a national level, the R&D Support Nurse linked into work at the Royal College of Nursing and the Foundation for Nursing Studies on "putting research into practice".

14.4 R&D Supervision and Advice

14.4.1 During the year, the R&D Support Nurse forged new links between the Trust and the Department of Healthcare Studies, Manchester Metropolitan University, and the Department of Acute and Critical Care, University of Central Lancashire, by serving as mentor and field work supervisor to a number of nurses undertaking research projects as a requirement of degree or post-registration studies.

14.5 Development of Research Proposals

14.5.1 Both the R&D Support Nurse and the R&D Manager (who has twelve years' experience of building research capability at a national level within the physiotherapy and occupational therapy professions) were available to provide help to novice researchers with research design, the development of research proposals and formal presentations of research results.

14.6 Dissemination of R&D Information

14.6.1 The R&D Support Nurse has undertaken a major programme of R&D awareness-building through:

- developing a database of all specialist, research and education staff in the non medical professions who have a research remit within their role;
- gathering details of R&D funding sources;
- gathering details of research skills training available from academic or training organisations in the North West;
- circulating R&D-related information;
- organising bi-monthly meetings of the *Research Club* and production of a quarterly newsletter.

14.6.2 In February 1998, the *First Annual Research & Development Conference for Nurses, Midwives and PAMS* was held. The programme included 12 papers and 18 posters (Appendix 14) and attracted staff from neighbouring acute and community trusts.

15. Cost

15.1 Changes in Research Activity

- 15.1.1 Expenditure in 1998/99 (Table B) and proposed expenditure for 1999/00, 2000/01 and 2001/02 (Tables C to E) all reflect changes in research activity since the Trust's *portfolio* funding bid (Sections 2.9.2 and 2.9.3). Research activity has been re-focused from 16 to five areas of research activity (Sections 2.7.1 and 2.7.2).
- 15.1.2 478 research projects were in progress during 1998/99. Their distribution by theme area was follows: Cancer (46); Cardiovascular Disease (122); Mental Health (83); Respiratory Disease (58); Specialist Interests (169). In cost terms, Table B shows the proportion of activity which ended in Year 1; the degree to which it has been replaced, and, the nature of the replacement activity.
- 15.1.3 Work to verify funding details has revealed that, in some instances, researchers notified sub-projects of a single large externally funded project as separate projects to acknowledge different lead investigators of these sub-projects. This anomaly has been addressed and will reflect in a reduced number of individual projects in the *R&D Database* in Year 2.

15.2 Review of R&D Costings

- 15.2.1 In response to the re-focusing of research activity areas, the R&D Management Accountant and the R&D Manager began a major exercise in November to re-visit the 1998/99 indicative funding set out in the Trust's *R&D Agreement*. The aim of the exercise was to agree the costs of research activity in each clinical division with Division Directors and to map these costs to declared research activity. As R&D budgets are managed within clinical division budgets, meetings were held with each of the six divisions: Clinical Support Services, Heart & Lung, Medicine, Mental Health, Specialist Surgery and Surgery. Meetings included the Division Director, Business Manager, Divisional Accountant, along with the relevant R&D Theme Lead(s).
- 15.2.2 Only one of the R&D themes, Mental Health, maps directly to a clinical division; all of the other themes extend across two or three clinical divisions. Mental Health was therefore selected to pilot the production of an R&D theme strategic plan (Section 2.7.2) and link this into the clinical division's business planning cycle. (This process will provide for inclusion of R&D within the clinical division's cost improvements.) The project is due to report in June 1999.

15.3 Recovery of the Full Costs of Commercial Research

15.3.1 Processes for agreeing the costs of commercial research and for re-investing commercial income in R&D activity have been discussed with researchers and are scheduled for implementation in the second quarter of 1999/00.

15.4 Costing of Research Contracts

15.4.1 As outlined in Section 9.2.2, procedures for the approval of commercial and non commercial contracts have been developed to ensure closer and earlier involvement of the R&D Manager and the R&D Management Accountant in the costing of projects and in the negotiation of contract prices with commercial sponsors of research.

16. Strategic Ability

16.1 Strategic Plan

16.1.1 Sections 2.5.1 and 2.5.2 give details of the Trust's R&D strategy. Whilst setting out an action plan of year-on-year objectives, the strategy also demonstrates medium and long term R&D goals which take account of regional and national R&D priorities.

17 Integration with Other NHS Activities

17.1 Local Patient Care Services

17.1.1 The R&D themes reflect the Trust's areas of clinical excellence and promote research programmes which are consistent with the Trust's service profile. Research programmes also reflect established service links with primary and community care (eg Cardiovascular Disease, Mental Health and Respiratory Disease) and with other NHS Trusts (eg Cancer). Because research programmes are primarily clinically-based, they make important contributions to clinical effectiveness initiatives within the Trust.

17.2 National R&D Priorities

17.2.1 Three of the R&D themes reflect national priorities for *R&D Levy* funding: cancer; heart disease and stroke; mental health (Section 11) and can demonstrate significant success in bids for regional and national *Budget 2* funding (Section 9.1.1). Efforts to develop primary care partnerships are detailed in Section 12.

17.3 Community Health Council

17.3.1 The collaborative work with Manchester Community Health Council has been described in Section 8.

17.4 Education and Training

17.4.1 The R&D Manager is a member of the Trust's Education and Research Centre Capital Project Group and a member of the Trust's newly established Medical Education Steering Committee. The R&D Manager developed the 1999/00 undergraduate medical education business objectives, in consultation with the Hospital Dean, and

the 1999/00 postgraduate medical education business objectives, in consultation with the Postgraduate Clinical Tutors and the GP Tutor - reflecting the integration of R&D with education planning in the Trust.

17.4.2 R&D links with Trust training programmes are described in Section 14.3.1.

17.5 Clinical Audit

17.5.1 During the year, working links with the Trust's Clinical Audit Department have been strengthened. The proposal to amalgamate the R&D Directorate with the Clinical Audit Department was considered, but both units agreed that the existing working arrangements for Clinical Audit provided an excellent service to the Trust and should remain separate. The Clinical Audit Manager is an observer at R&D Committee meetings and the R&D Manager is a member of the Clinical Audit Committee, providing the opportunity for the regular exchange of information and ideas.

17.5.2 Nursing and midwifery involvement in Clinical Audit was strengthened in conjunction with the Directorate of Clinical and Professional Development. Nursing and midwifery audit leads were designated within clinical divisions to promote the development of nursing and midwifery audit and, in collaboration with the R&D Support Nurse, to identify research issues through audit topics.

17.5.3 The R&D Manager has played a lead role in the development of a partnership between Manchester and Salford R&D Managers and Clinical Audit Managers to undertake a Manchester/Salford audit during 1999/00. The audit will examine the process of obtaining patient consent to participate in research studies. This innovative project demonstrates the mutual benefits that can derive from closer working between R&D and Clinical Audit.

18. Management

18.1 Management Arrangements

18.1.1 During 1998/99, the Trust has demonstrated its commitment to improving arrangements and systems for the effective management of R&D (Sections 2 and 15).

18.2 Information Management Systems

18.2.1 During the second quarter, the Trust - recognising that detailed information about the Trust's research activities and about the costs and sources of funding of that research is an essential pre-requisite to managing that research - committed additional staff resource (1.00 WTE senior manager, as R&D Support Officer, for the period of 1 July to 31 October) to ensure that this was achieved. This exercise revealed that many researchers still did not routinely notify the R&D Directorate about new research.

- 18.2.2 To address this, the R&D Support Officer met with individual researchers and clinical divisions to outline the NHS strategic framework for use of the *R&D Levy* and to explain that the provision of information was now mandatory. The change in culture has been gradual but incremental. A key action in the R&D strategy for 1998/99 was to develop new notification procedures to ensure that the *R&D Database* remains up-to-date. The appointment of the R&D Information Officer was made to support this work.
- 18.2.3 The R&D Information Officer handles all notifications of new research projects and, upon receipt of the *NRR* minimum data set, LREC/MREC application form(s) and letter(s) of ethical approval, registers projects on the *R&D Database*. The mechanisms for peer review and management approval of research are outlined in Sections 9.3.1 to 9.3.3.
- 18.2.4 The R&D Manager checks commercial indemnity agreements prior to signature by the Chief Executive and commercial and non commercial contracts prior to signature by the Director of Finance.
- 18.2.5 The R&D Information Officer has established close liaison with the Trust IT support staff and with the PGMC librarians on both sites to ensure that Trust *Intranet* and *Internet* links are fully utilised to support the work of the R&D Directorate. The R&D Manager is a member of the Trust's IM&T Steering Group.
- 18.2.6 Membership of the R&D Support Nurse in the Library Users Group (Section 14.2.4) ensures that the R&D Directorate has an effective presence in both libraries. Examples of library support are the provision of R&D Directorate boxes for reference documents and R&D notice boards.
- 18.3 Communication with Researchers in the Trust
- 18.3.1 Expansion of the R&D Directorate's electronic network links to include both *GMING* and *NHSNet* has enabled e-mail contact across both sites to both University and Trust departments. The R&D Directorate has also set up an R&D web page on the SMUHT web site (www.smuht.man.ac.uk/rd). During this year, the web page has primarily served as a location from which researchers can down-load electronic versions of R&D funding information and grant applications.
- 18.3.2 The Trust's quarterly publication for staff, *Trust Talk*, has a regular four-page feature on R&D compiled by the R&D Support Nurse (see example in Appendix 15). *R&D Briefing Notes* were launched in January to enable the R&D Directorate to circulate a digest of information and requests for researchers' action in a timely way (see example in Appendix 16). Topics needing more detail were dealt with by occasional papers which were circulated for information or for consultation. An R&D Directorate file box was placed in each PGMC library to enable reference copies of papers relating to the work of the Directorate to be readily accessed by researchers.
- 18.3.3 The inaugural *Multiprofessional R&D Exhibition* was held on 19 June (Appendix 17). 114 posters were submitted by Trust researchers. The day's formal programme included perspectives on R&D from NHSE North West, the University of Manchester, the Trust Board, the R&D Directorate and from representatives of the

R&D Themes. The meeting was well-attended by SMUHT researchers and attracted researchers from other Trusts in the region.

18.3.4 In November, the Chief Executive inaugurated the *Researchers' Meeting with the Chief Executive* to provide a forum for discussion and debate between researchers and the Chief Executive (supported by the Director of Finance, the Director of R&D, Deputy Director of R&D and the R&D Manager). The purpose of these meetings is to address issues which have a level of detail or contention which require face-to-face explanation and discussion.

18.4 Management of Intellectual Property

18.4.1 The MANIP consortium provides a mechanism for SMUHT to identify the areas of research and research output which may have commercial merit. During the year, the Technology Exploitation Executive, employed through the DTI grant, undertook nine audits in the Trust which included an assessment of the scope for protection of intellectual property (IP), evaluation of market opportunities and advice on the most effective paths to market (Appendix 18).

18.4.2 A two-pronged approach has been adopted in taking forward the IP agenda in the Trust. During the second quarter, the R&D Support Officer met individually with all researchers with major programmes of research to explain the implications of HSC 1998/106 *Policy Framework for the Management of Intellectual Property within the NHS arising from Research & Development* and researchers' responsibilities for notifying IP to the R&D Directorate. This initiative was followed by meetings held by the Deputy Director of R&D and the R&D Manager with each of the six clinical divisions to explain the responsibilities of the Trust and researchers in relation to IP. The consensus of these meetings was that Clinical Directors were best placed to bring research with IP potential to the attention of the R&D Directorate. Clinical Directors have subsequently been given formal responsibility for this.

18.4.3 Copies of the NHSE guidance, *Handling Inventions and other Intellectual Property: A Guide for Researchers*, and a publication by the Association of University Teachers, *Your Guide to Intellectual Property Rights*, have been widely circulated within the Trust by the R&D Directorate. Both documents are held by Clinical Directors, R&D Theme Leads, Division Business Managers, members of the R&D Committee and the two libraries, for reference by researchers.

18.4.4 To assist in the development of Trust processes for Intellectual Property Rights (IPR), the R&D Manager sought guidance from the NHS Intellectual Property Adviser on:

- the development of terms and conditions, covering ownership of IP and revenue-sharing arrangements of income from successful exploitation of IPR, for inclusion in contracts of all Trust employees;
- the management arrangements for IPR which need to be adopted formally by the Trust Board.

This guidance was received at year-end, enabling the R&D Manager to prepare a draft document for consultation within the Trust.

- 18.4.5 In the final quarter, a draft *Memorandum of Understanding* covering the sharing of IPR and income, where the inventor holds joint appointments with the University of Manchester and an NHS Trust, was prepared by Vuman Limited (acting on behalf of the University of Manchester). Substantial revisions were proposed by the SMUHT R&D Manager and discussions are continuing with the R&D Managers from Central Manchester Healthcare and Salford Royal Hospitals NHS Trusts to agree a joint position for further negotiation with Vuman Limited.
- 18.4.6 In January, the R&D Manager presented a proposal to the Manchester Business School for a group of final year MBA students to undertake a project in the Trust to develop a management model for IP. The project was designed to complement the work of the MANIP consortium which was struggling to meet its commitments to all eight partners within the available staff resources. The project aim was the development of a management model for the identification, protection and technological transfer of IP within the NHS.

The project objectives were:

- to benchmark best practice in the management and exploitation of intellectual property in secondary and tertiary health care in western Europe;
- to develop a framework for NHS organisational responses to new Department of Health agendas for the effective management of R&D activity and the IP which arises from exchequer-funded R&D;
- to develop a model for the audit, evaluation of the market potential and technological transfer of IP;
- to utilise the research staff infrastructure and R&D activity of SMUHT for model testing.

In the final round of negotiations, another project from a North American organisation was selected by the Manchester Business School. Nonetheless, the project planning had, in effect, constituted a stocktake of the work and achievements to date within the Trust relating to the IP agenda and enabled the R&D Manager to formulate an IP action plan for 1999/00.

18.5 Statistical Support

- 18.5.1 Historically, the customers of the Department of Medical Statistics have mainly been Withington-based medical researchers and career scientists in University departments. Because of limited staff resources, the service was not actively publicised on the Wythenshawe site. Over the course of this year, however, the Director of R&D has actively promoted the statistical service across the whole Trust. Transfer of the service (1.60 WTE staff) from the University of Manchester to the Trust in February, under the management umbrella of the R&D Directorate, has further increased the service's profile.
- 18.5.2 The approaches to the service by Wythenshawe-based medical researchers and career scientists and by researchers across the Trust in the non medical professions

had increased substantially by year-end. In March, a business case for expanding the service was submitted for consideration by the R&D Committee in the next financial year. The business case is in support of the following proposals:

- to provide a statistical advisory service to all Trust researchers undertaking R&D Directorate-approved projects;
- to establish an open-access statistics clinic to enable rapid access to statistical support;
- to include all researchers in the non medical professions in the customer base for the statistical support service;
- to provide a rolling statistics education programme open to all researchers;
- to increase the number of collaborations in major non commercial externally funded projects.

Conclusion

19.1 Change, Impetus and Renewal

19.1.1 This year has seen substantial progress by the Trust in addressing its R&D agenda. With the support of the Trust Board, the R&D Directorate has been able to lead on major change in the research culture within the Trust. There is a new understanding by researchers of the need for internal communication about research activities and the importance of their direct participation in developing and addressing R&D strategic objectives on a Trust-wide basis.

19.1.2 Both medical and non medical researchers have begun to see the benefits of the operational support available to them under the new management arrangements for R&D: timely notification of new funding opportunities; support in the preparation of funding bids; support in making effective use of network technology to access electronic information resources; statistical support in research design and data handling. The initiatives during the year to increase R&D capability and involvement across the health professions have given a new impetus to multidisciplinary research.

19.1.3 At a time of renewal and new direction for the Trust - evidenced by the major capital developments on the Wythenshawe site - the Trust Chairman and the Chief Executive are strongly supporting a review of research activity which accommodates planned changes in service configuration. New research partnerships are developing which will draw on the Trust's clinical and research resources and provide working links to strengthen research programmes and capability.

19.1.4 The Trust's vision for R&D is being achieved by the promotion of excellence in key areas of activity which tap existing research strengths and reflect clinical specialties represented within, and often uniquely to, the Trust. Emerging areas of R&D activity, which may not yet have fully achieved their potential, are being encouraged; in particular, research undertaken by the non medical professions. Focus and collaboration are the principles underpinning the R&D Directorate's efforts to shape the Trust's R&D portfolio: focus on the R&D themes and collaboration with other research partners.