

# South Manchester University Hospitals NHS Trust

## R&D Annual Report 2007

**Signature of Chief Executive or delegated authority:**

I hereby confirm that the following document is the R&D Annual Report 2007 for South Manchester University Hospitals NHS Trust. I also confirm that it has been completed in accordance with the guidance issued by the Department of Health and provides an accurate representation of South Manchester University Hospitals NHS Trust's position.

Signed: \_\_\_\_\_

Designation: \_\_\_\_\_

## Section 1: Contact details

Organisation Name:	South Manchester University Hospitals NHS Trust
NHS Organisation Code:	RM2
NRR Organisation Code(s):	N0226
Contact Name:	Dr Andrew Maines
Address:	R&D Directorate Education and Research Centre Wythenshawe Hospital Southmoor Road
City:	Manchester
PostCode:	M23 9LT
Telephone:	0161 291 5775
Fax:	0161 291 5771
Email:	andrew.maines@manchester.ac.uk

## Section 2A: Overview of R&D year and examples of impact on health and social care

University Hospital of South Manchester NHS Trust is a centre of excellence for multidisciplinary research and development, and includes a strong University of Manchester research presence and highly research active Trust departments. The Trust's major research programmes focus on clinical and academic strengths in Cancer, Lung Disease, Cardiovascular, Burns & Plastics, Medicines Management, Medical Education and Gastroenterology.

Research performance continued to be strong in 2006/07 with 268 non-commercial research projects in progress supported by over £3.6m in external funding from Research Councils, Charities, UK Government, International funders and industry, as well as commercial research contracts to develop new medicines, devices and procedures to the value of over £2.5m. With over 300 peer-reviewed papers published this year and other health service impacts, research findings are informing local and national practice and policy.

The Trust's R&D Strategic Goals for 2006/07 were:

- continue to deliver high-quality research & development for the benefit of patients

- focus research on strong research themes:

Cancer (with particular focus on breast cancer)

Lung Disease (including infection)

Cardiovascular

Burns, Plastics & Reconstructive Surgery

Medicines Management

Medical Education

Gastrointestinal

Developing Themes, including Emergency Medicine, Diabetes, Rehabilitation and Service Delivery/Organisation

- work with research leaders to develop their strategies for future success e.g. maximising opportunities through Best Research for Best Health, including

Programme Grants for Applied Research to support strong research themes; Research for Patient Benefit project grants for specific research questions; NIHR Faculty funding to support research staff; other DH funding streams e.g. Health Technology Assessment, SDO, NEAT; Contribute to and access resources from new research networks, including Topic-specific Local Research Networks e.g. Diabetes and Stroke; Comprehensive Local Research Network: obtain resources for research infrastructure, and contribute to streamlining and optimisation of infrastructure; continue to deliver robust governance for all our research and to take a lead role on research governance for the region, working with the networks and the Research Alliance; continue to take a lead role in influencing direction of regional and national research strategy e.g. expert advice service, NIHR R&D IT systems; explore opportunities with non-NHS bodies, including industry and other investment opportunities

### Research Themes

#### Cancer

Lead: Professor Nigel Bundred

As a major cancer research site, and new Associate Cancer Centre, the Trust is a key partner in the Greater Manchester Research Alliance Cancer Research Programme. The Trust has a lead role in Breast and Lung cancers and also contributes research activity in GI cancers, both upper (e.g. oesophageal) and lower (e.g. colorectal) GI, urological cancers (e.g. prostate and bladder) and gynaecological cancers. The Trust is also a major partner in the Greater Manchester and Cheshire Cancer Research Network and has consistently been one of the most successful recruiters to NCRN trials within the region. The new £14m Breast Care Centre will open at Wythenshawe Hospital in Summer 2007 and will include Europe's first breast cancer prevention centre, linked to our key research theme in cancer prevention and risk. The new centre will be a regional focus for Breast Cancer Research.

#### Lung Disease

Lead: Professor Ashley Woodcock

This theme encompasses research activities relating to asthma, allergy and atopy; chronic obstructive pulmonary disease (COPD, chronic bronchitis); environmental impacts on Respiratory Disease (RD); aetiological factors, markers of disease activity; new therapies in the management of RD; early identification of RD; health economics of RD; management of cystic fibrosis, interstitial lung disease and lung cancer (link to Cancer Programme); epidemiology of RD; primary and secondary prevention of RD; lung infection (focus on invasive fungal disease). It reflects long-established clinical and academic strengths in lung disease lead from the North West Lung Centre at Wythenshawe Hospital and has national and international recognition in many areas.

#### Cardiovascular

Lead: Professor Charles McCollum

This theme builds on academic links and clinical strengths of the Trust as a major centre for cardiovascular disease. It encompasses themes of cardiology, cardiothoracic surgery and cardiopulmonary transplantation, stroke, paradoxical emboli and cerebral injury, venous disease, thrombosis, coagulation and blood transfusion.

#### Burns, Plastics & Reconstructive Surgery

Lead Professor Gus McGrouther

This theme builds on Wythenshawe Hospital's clinical role as a major burns and plastic/reconstructive surgery centre. It forms an inter-disciplinary centre of excellence for research in tissue injury and repair, with the objectives of developing an internationally

recognised facility at the leading edge of translational research to develop new therapies to maximise clinical and social outcomes. Wythenshawe Hospital is the main NHS site for clinical trials of innovations arising from the University laboratories, taking basic science through to clinical applications.

#### Medicines Management

Lead: Professor Jonathan Cooke

This theme focuses on optimising medicines management, the delivery of pharmaceutical care to patients and demonstrating the pharmacy contribution to an evidence-based health service. There is a citywide collaboration with NHS Trusts, PCTs and the School of Pharmacy and Pharmaceutical Sciences at the University of Manchester. Pharmacy practice research is undertaken to investigate problems in day-to-day practice and the results are used to improve services.

#### Medical Education

Lead: Professor Paul O'Neill

The theme aims are 1. to develop and evaluate innovative approaches to teaching and learning in undergraduate medical education (eg IT-based learning, multidisciplinary learning, clinical skills teaching); 2. to evaluate and maximise the abilities/quality of the graduates of the problem-based learning programme at the University of Manchester Medical School; 3. to develop and evaluate multidisciplinary learning strategies; 4. to increase competencies/skill levels in the newly qualified doctor and in other clinical professions; 5. to develop workforce capacity.

#### Gastrointestinal (in partnership with Salford Royal NHS Foundation Trust)

Lead: Professor Peter Whorwell

The unit at South Manchester concentrates on research into the clinical, epidemiological and pathophysiological aspects of the functional gastrointestinal disorders. At the basic laboratory level the emphasis is on genetics, gender, neuropeptides and inflammation in relation to these disorders. Clinical studies focus on the various ways these conditions present and impact on patients' lives. Particular attention is paid to developing better treatments and exploring new therapeutic options such as recent studies on probiotics, food antibodies and hypnosis.

#### Examples of Impacts

##### Cardiothoracic

###### 1. Public disclosure of outcome data

Output: Publication of named surgeon mortality in the Northwest (BMJ2005) was an important part of the national initiative to disclose cardiac surgical outcome data to the public. Our publication (Heart 2007) has subsequently demonstrated that this program has led to a 40% reduction in risk adjusted mortality, and shown no evidence of surgeons turning down high risk cases

Impact: risk adjusted national surveillance programs on a clinician specific level, which appear to drive improvements in quality without encouraging 'risk adverse' behaviour

###### 2. Mitral best practice standards

Output: we have published proposed best practice standard for patient presenting with severe mitral regurgitation (Heart 2005), and gone on to suggest how they could be used to improve quality of care of these patients (European Heart Journal)

Impact: this work has been used extensively in presentations in North America in an attempt to improve mitral repair quality. In this country the publications are driving the Society of Cardiothoracic Surgery of GB and Ireland, the British Cardiovascular Society, the British Society for Echocardiography and the Association of Cardiothoracic Anaesthesia to meet and develop a strategy for improving quality of care in these patients.

##### Emergency Medicine

Output: research into the validity of a modified physiological early warning score in Emergency Department patients has demonstrated the enhanced performance of this score over CURB-65 in patients with community-acquired pneumonia.

Impact: these findings have informed Department of Health and international pandemic influenza planning

Output: The Emergency Department has contributed to the development and writing of the UK National Burn Plan.

Impact: The NHS Emergency Planning guidance 2005 has been expanded to include this plan.

Output: Validation has been undertaken of the UK national burn plan against previous burns major incidents.

Impact: this has provided assurance to the Department of Health on the effectiveness of the UK national burn plan.

Output: The Emergency Department has contributed to the writing of the National Critical Care Contingency Plan for Major Incidents.

Impact: New arrangements are in place for the distribution of critical care patients where demand exceeds bed capacity.

Output: The Emergency Department has contributed to the Department of Health development of guidance on critical care transport in the event of a major incident.

Impact: New arrangements are in place to transfer patients safely.

#### Breast Cancer

The ALMANAC Trial demonstrated the benefit of sentinel node surgery reduced morbidity from axillary surgery for breast cancer and improved quality of life. This had led to the adoption of sentinel node biopsy by the NHS in the UK.

#### Gastroenterology

The ongoing hypnotherapy research programme has published a study demonstrating that hypnosis is extremely effective in non cardiac chest pain with a dramatic reduction in pain and an improvement in quality of life (Jones et al). This condition is extremely common and very hard to treat with patients constantly fearing that heart disease might have been overlooked and therefore fearing sudden death. Thus hypnotherapy could now offer some hope to this group extremely distressed patients. This paper was accompanied by an editorial stating that there is a growing case for the use of hypnotherapy in functional gastrointestinal disorders.

We have also published a large scale trial on the use of a probiotic bacteria to treat irritable bowel syndrome (Whorwell et al). The results are extremely promising and offer a new approach to the treatment of this condition for which there are currently few effective therapeutic options.

#### Respiratory

Symptom Perceptions, Information Needs and Preferred Level of Involvement in Treatment Decision-Making in Patients with Chronic Obstructive Pulmonary Disease (COPD) – A Cross-Sectional Survey. Caress A-L (lead applicant), Vestbo J, Woodcock A, Luker KA, Niven R, Frank T, Campbell M. Jan 2004-Dec 2007

Output On-going project. Work to date has identified patients' perspective on their most important symptoms/problems of daily living; has led to identification of nine "core" information needs for patients with COPD and has indicated that most patients wish to feel involved in, though not to control, treatment decision-making

Impact This project has led to development of two new research instruments – a COPD-specific Information Needs Questionnaire and a set of symptom/daily-living problem related conjoint analysis scenarios (these can be used to explore patient weighting of symptoms/problems). These are currently undergoing wider testing and validation. Study data have impacted on COPD practice and quality improvement in the North West, having been utilised in "action sets" as part of a National Primary Care Development Team COPD care quality improvement programme.

A Multi-Centre Randomised Controlled Trial of Lay-Led, Individualised Self-Management Education for Adults with Asthma. Partridge MR (lead applicant), Caress A-L, Woodcock A, Luker KA. Awarded November 2002. Commenced April 2003-Jan 2007

Output The study demonstrated that appropriately trained lay people with asthma can deliver asthma self-management education as effectively as practice nurses, and that such an approach to service delivery is acceptable to patients

Impact This project has focused on development of a novel service delivery approach, which is highly relevant to current healthcare policy initiatives on service user involvement

A Multi-Centre Evaluation of Complementary Therapy Provision for Patients with Cancer – Access, Expectations and Indications for Therapy. Roberts D (lead applicant), Caress A-L, Todd C, Long A, Mackereth P, Carter A, Parkin S, Stringer J. Awarded July 2003, Commenced April 2004 – Jan 2007

Output This project has demonstrated that the expectations of patients with cancer regarding benefits of complementary therapies (CTs) relate primarily to issues of general and emotional well-being, rather than to resolution of specific symptoms. It has also identified that the benefit expectations of patients and healthcare professionals differ markedly from those of complementary therapists. Gender, social class and ethnicity disparities in access to CT services were found. A lack of clear referral mechanisms and indications for therapy have been identified

Impact Study findings are feeding into national guidelines, produced by the Prince of Wales Foundation for Integrated Health, regarding the use of complementary therapies. They are also feeding into the work of the National Cancer Research Institute's (NCRI) Complementary Therapies clinical sub-group, which is leading on priority-setting for CT research. Locally, the findings are being used to inform developments in the CT services which were part of the study.

#### Primary Care Respiratory

Linehan MF, Frank TL, Hazell ML, Francis HC, Morris JA, Baxter DN, Niven R. Is the prevalence of wheeze in children altered by neonatal BCG vaccination? J Allergy Clin Immunol 2007 Mar 20 (Epub ahead of print)

Output The study demonstrated a possible 27% reduction in asthma symptom prevalence in children who had received neonatal BCG vaccination.

Impact The capacity of BCG vaccination to reduce the prevalence of respiratory symptoms in children has implications for public health policy and also in understanding asthma aetiology. Further research is needed and a major project is currently being

planned by this unit

Frank PI, Hazell ML, Morris JA, Linehan MF, Frank TL. A longitudinal study of changes in respiratory status in young adults (1993-2001). *Int J Tuberc Lung Dis.* 2007;11(3):338-343.

Output The study showed prognosis in subjects presenting with wheeze in early adult life and demonstrated the importance of smoking as a factor in patients developing new onset symptoms.

Impact The study should help in health care planning for young patients presenting with respiratory symptoms and emphasise the importance to develop smoking cessation policies.

Frank TL, Hazell ML, Linehan MF, Frank PI. The diagnostic accuracies of chronic obstructive pulmonary disease (COPD) in general practice: the results of the MAGIC (Manchester Airways Group Identifying COPD) study. *Primary Care Respiratory Journal* 2006,15(5): 286-293

Output This study found a considerable under-recording of COPD in two general practices.

Impact Suggestions were made as to the reasons for the under-diagnosis, and the means to address the problem.

Frank P, Morris J, Hazell M, Linehan M, Frank T. Smoking, respiratory symptoms and likely asthma in young people: evidence from postal questionnaire surveys in the Wythenshawe Community Asthma Project (WYCAP). *BMC Pulmonary Medicine* 2006, 6: 10. <http://www.biomedcentral.com/1471-2466/6/10>

Output This study showed that current smokers had a higher prevalence of obstructive airways disease than never smokers and also ex smokers, but that there was no difference between ex and never smokers. The differences were probably in asthma prevalence but could have been a reflection on an association with early COPD (GOLD Stage 0)

Impact The study highlighted the importance of smoking cessation planning in the community.

#### Diabetes and Heart Disease

Deaton C, Kimble L, Veledar E, Hartigan P, Boden W, O'Rourke R, Weintraub WS. The Synergistic Effect of Diabetes and Heart Disease on Patient Self-Management, Symptoms and Health Status. *Heart & Lung*, 2006; 35: 315 – 323.

Weintraub WS, Barnett P, Chen S...Deaton C, et al. 2006. Economics methods in the Clinical Outcomes Utilizing Percutaneous Coronary Revascularisation and Aggressive Guideline-driven drug Evaluation (COURAGE) Trial. *Am Heart J.* 2006;151:1180 – 1185.

Output: Although it is known that patients with heart disease and diabetes have worse mortality, morbidity, and functional status, this is one of the first studies to demonstrate the robust combined effect of diabetes and heart disease on self-management, symptoms and health status. The findings have implications for patient education, support and self-management as generic skills and/or disease specific skills are taught, but the integration of management of more than one long-term condition is left to the patient. The second paper describes the rigour of the economics methods used in the COURAGE trial, an important endpoint when comparing interventions.

## Section 2B: list of peer-reviewed publications

File containing list of publications: [RM2 MASTER PUBLICATIONS LIST 2006.xls](#) ( 101.9 KB )

## Section 3: Financial information and tables

### Table 1: Transitional R&D funding resources and associated spend

#### 1A: Resources

	Amount ( £ )
a) Balance brought forward from 2005/06 (overspend is negative; underspend is positive)	0
b) Allocation in 2006/07 (including RM&G and EU Directive funding)	3,340,040
c) Ad hoc funding in 2006/07 (ie invoiced and received in year, <i>not</i> total approved)	0
d) RM&G funding in 2006/07 (accounted for in Section 4 if applicable)	0
<b>e) Total transitional R&amp;D funding available in 2006/07</b>	<b>3,340,040</b>

#### 1B: Expenditure, external funding and deliverables

	A. Total Spend ( £ )	B. Percentage of 1.I	C. Ongoing projects	D. External funding 2006/07 ( £ )	E. Publications	F. Higher degrees
1.a) Research Council Work	129,572	4 %	10	313,015		0
1.b) University Work	329,820	10 %	20	170,214		0
1.c) Charity Work	942,372	28 %	45	1,987,384		9
1.d) DH/NHS R&D Programme work	365,157	11 %	13	538,950		1
1.e) Other work	82,455	2 %	7	143,002		0
<b>1.f) (Sum 1a - 1e)</b>	<b>1,849,376</b>	<b>55 %</b>	<b>95</b>	<b>3,152,565</b>		<b>10</b>
1.g i) R&D outside of HSG (97) 32-commercial partner	553,626	17 %	30	459,617		2
1.g ii) R&D outside of HSG (97) 32-other	577,154	17 %	32	52,600		2
1.h) R&D that has no external funder	176,689	5 %	7			0
1.i) Training	45,831	1 %				
1.j) Management costs	106,764	3 %				
1.k) Spending on transition						
i) HR costs (redundancy/redeployment) – R&D management/admin	0	0 %				
ii) HR costs (redundancy/redeployment) – researchers and research support staff	0	0 %				
iii) Preparing bids to new NIHR funding streams	30,600	1 %				
iv) Other (please specify and use the comments section to provide additional information)	0	0 %				
<b>Totals</b>			<b>164</b>	<b>3,664,782</b>	<b>308</b>	<b>14</b>
<b>1.I) Total spend using transitional R&amp;D funding (Sum 1f - 1k)</b>	<b>3,340,040</b>	<b>100 %</b>				

#### 1C: Balance

	Amount ( £ )	Percentage of 2006/07 resources (1A row e)
<b>Balance carried forward to 2007/08</b> (overspend is negative; underspend is positive)	<b>0</b>	<b>0 %</b>

## Table 2: Spend by national priority

Please provide the best estimate possible of the amount of transitional R&D funding spent during 2006/07 on each of the specified national priority areas:

a) Cancer	£ 636,080
b) Coronary heart disease	£ 235,585
c) Children's services	£ 200,248
d) Diabetes	£ 70,676
e) Emergency care	£ 106,013
f) Mental health	£ 94,234
g) Older people	£ 23,559
h) Reducing inequalities	£ 0
i) Waiting times	£ 0
j) Improving the patient experience	£ 200,248
k) Building capacity to deliver health and social care	£ 259,143
l) Renal disease	£ 35,338
m) Respiratory disease	£ 647,860
n) Chronic neurological disease	£ 47,117
o) Genetics	£ 247,364
p) Degenerative neurological disorders (including Alzheimer's)	£ 47,117
q) Medicines for children	£ 200,248
r) Public health	£ 0
s) Stroke	£ 70,676
t) Primary care	£ 94,234

## Comments on Table 1 and Table 2

This space is provided for additional comments on, or to explain any variation in, the financial tables.

## Section 4: PCT (Research Management and Governance)

This section does not apply to South Manchester University Hospitals NHS Trust