

ANNEX 1 METHODOLOGY

A 1.1 Data sources

Several sources of data were used in the Mapping the Landscape II report.

The dominant source which informed the majority of our analyses (chapters 3, 4 and 5) was the Research Output Database (ROD) maintained at City University (see A1.2). In chapter 2, which looked at global biomedicine, data which came directly from the Science Citation Index (SCI) and the Social Sciences Citation Index (SSCI) was used. Other sources of data included the websites of the World Health Organisation (WHO), National Institute for Clinical Excellence (NICE) and Scottish Intercollegiate Guidelines Network (SIGN) (chapters 5 and 6).

A 1.2 Research Outputs Database¹

The Research Output Database was the main source of data for the analysis. It comprises articles, notes and reviews taken from the CD-ROM versions of Science Citation Index (SCI) and the Social Sciences Citation Index (SSCI).

These two indices are produced by the Institute for Scientific Information (ISI) and were chosen because of their multidisciplinary nature and also because they record addresses of all authors in each publication. For analyses in this report, we only used UK records² which had a publication date between 1989 and 2000.

Classification of papers included in ROD

CHI Research Inc. classifies all journals processed by the ISI into one of nine major fields. This is done to aid creation of science indicators produced biennially for the US National Science Foundation. Here only papers published in specific journals relevant to the study were examined. All journals with papers in the SCI or the SSCI are classified as either “biomedical”, “fringe” or “irrelevant”.

¹ The relational database management system Oracle 8i is currently used to store and manage ROD records.

² ROD includes also papers by authors from the Republic of Ireland.

- Papers in all journals classified as “clinical medicine” or “biomedical research” were considered relevant to the database.
- Papers published in multidisciplinary journals such as *Nature* and *Science* were deemed as “fringe” – along with many others in biology, organic chemistry and the like.
- Journals in fields as remote from biomedicine as astronomy, inorganic chemistry, geology and physics were deemed to be “irrelevant”.

The database includes all papers – from the journals classified as “biomedical” – that have at least one UK or Republic of Ireland address and only selected papers from “fringe” and “irrelevant” journals.

The Biomedical Address Filter

ROD also includes papers from “fringe” journals that satisfy a “biomedical address filter” – i.e. address(es) on these papers indicated that one or more of the participating research institutions was concerned with biomedicine.

The filter contained about 600 individual search statements, with three types of address words (or contraction), where an asterisk is recognised as a wildcard – any character(s) or none – by the SCI retrieval software:

- generic, such as A*-CANC*, B*-DENT*, C*-HOSP*, D*-MED*;
- biomedical, such as ANAT, BIOMED, CANC, DIABET;
- specific, such as ASTRAZENECA, BAYER, CELLTECH.

ROD data upload

ROD data is uploaded annually, at the same time as all necessary maintenance procedures – removal of extraneous papers (false positives), inspection of all the UK addresses and any necessary correction of post-codes.

Funding data is collected by examination of all ROD papers (physical copies in libraries or full-text on the Internet) for any acknowledgement information and this is added to the database (see section A1.3).

The composition of ROD

The composition of the final database is shown in figure A1.2.1 in terms of the major fields of the papers.

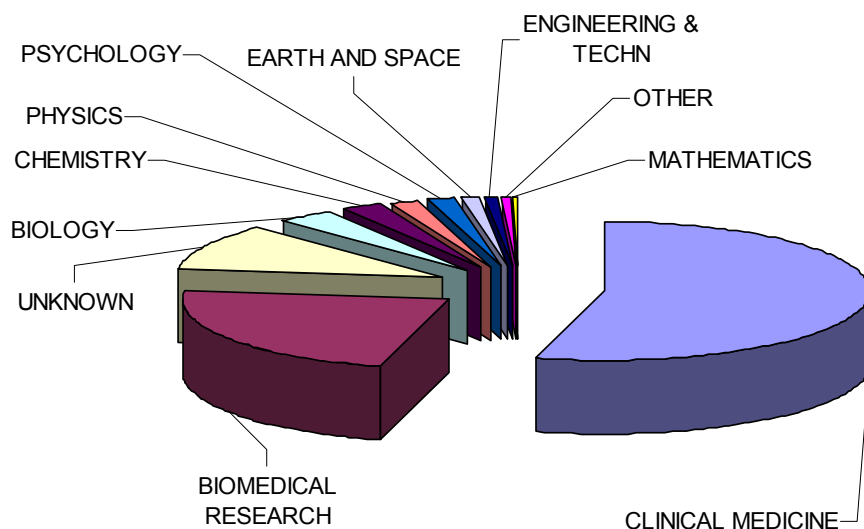


Figure A1.2.1 Distribution of the papers in UK ROD by major field (according to CHI Research Inc.), 1988 - 2001 data.

Papers in journals classified by CHI Research Inc. as clinical medicine comprise 54% of ROD; papers in biomedical research journals comprise 23%. ROD includes also papers published in journals classified as biology (3.5%), chemistry (2.7%), psychology (1.5%), earth & space (1.1%), engineering & technology (1%) and mathematics (0.3%).

Postcode analysis

Bibliometric analyses by postcode area are an important part of “mapping the landscape” of the UK biomedical research. To ensure its accuracy, all UK postcodes in ROD are checked for consistency and corrected where necessary.

To verify these postcode areas and addresses a range of tools are used, including a postcode CD-ROM compiled by the Post Office, the *Hospital and Health Services Yearbook* as well as sources on the Internet.

A1.3 Method used to add funding information

The process of adding funding information to basic ISI bibliographic data was developed for ROD and has essentially continued in unchanged form since 1993.

We create workbooks which contain bibliographic details of about 1,000 papers. Recorders (normally post-graduate students) are employed to visit London libraries³, where – with the aid of a thesaurus of funding bodies – they note down the acknowledgements on each paper in the workbook.

Space is provided at the beginning of each workbook for the recorders to write down the names of any funding bodies that are not listed in the thesaurus. We then investigate these in order to determine if their names are variants of existing funders or new funders.

Categorisation of funding bodies

Each funding body is given a three-character code (listed in table A2.3). Funding bodies that are not listed in the thesaurus are given a temporary reference number and then allocated a code when further information is found from the internet and reference publications.

The funding bodies are then categorised in one of five main funding sectors:

1. GOV = national government

³ British Library and libraries of the British Medical Association, and the Royal Medical Society stock most of required journals. Occasionally, selected libraries of the University of London are used (most notably UCL, Institute of Psychiatry and Imperial College).

- government agencies (GA): agencies that are not directly controlled by Ministers;
 - government departments (GD);
 - local authorities (LA);
2. PNP = national private-non-profit
- collecting charities (CH);
 - endowed foundations (FO);
 - hospital trustees (HT): in practice, private monies available in hospitals for research;
 - mixed (MI): both collecting and endowed, used primarily for academic institutions which solicit funds for their permanent endowment, such many American universities;
 - other non-profit (NP): bodies that are not primarily engaged in the support of research, such as professional associations.
3. IND = industrial, including pharmaceutical and non-pharmaceutical companies (the former licensed to sell drugs).
- Within this category, Independent parent companies are designated IP (pharmaceutical) and IN (non-pharmaceutical) and likewise subsidiaries are designated SP and SN.
- Biotech companies – those which intend to make and sell drugs in the future but are not yet licensed to do so – are designated BT
4. International, for instance the European Commission (EC) or the World Health Organisation (WHO)
5. Foreign, e.g. National Institutes of Health.

We also show the country of each funding body with its International Standards Organization (ISO) code.

For international organisations, the “country code” is XN – with the exception of European organisations, such as the European Commission (EU).

Most international organisations are governmental in character, but the World Bank is treated as a commercial bank and given the category IN.

Each funding acknowledgement can be one of six types (listed in table A1.3.1). It is designated by a single letter, which is used as the second part of the complete funding code.

Table A1.3.1 Funding types used in ROD.

<i>Funding type</i>	<i>Code</i>	<i>Funding type</i>	<i>Code</i>
Extramural	E	Personal	P
Intramural	I	Equipment	Q
In-kind	K	Travel	T

- Extramural usually means a grant or a contract.
- Intramural acknowledgements are taken exclusively from the address, and only in respect of government labs, charities, and industry, where acknowledgements to specific funding are not usual.
- In-kind acknowledgements are for services or goods provided, typically drugs given by a pharmaceutical company for clinical trials.
- Personal support is for fellowships or studentships, or occasionally for endowed professorships, where it is clear that salary support has been provided to the investigator.
- Equipment credits are given where a substantial piece of laboratory apparatus has been used in the research and the donor is mentioned.
- Travel grants are noted when only travel and subsistence grants have been given, not salary support.

So the following code assigned to a paper, **WEL-E-UK-FO**, means that it was funded extramurally by the Wellcome Trust, which is classed as a British foundation.

Once all workbooks are completed in the libraries and new funding bodies identified and assigned new codes, the data entry process begins.

To insure a high level of accuracy, all data is entered into ROD twice (each time by a different clerk) and cross-checked. Any inconsistencies are resolved and corrected.

A. 1.4 Categorisation of ROD papers

For analyses in this report, only papers with at least one UK address were used.

Funding category

Not all ROD papers could have been analysed for acknowledgement information. A small percentage of papers could not have been located in the libraries or full-text on the Internet. These papers were excluded from analyses in chapter 4 (analysis of funding), but were included in all other analyses (international comparisons, volume and impact of UK outputs – chapters 2, 3, 5 and 6).

Research level (RL)

Journals in ROD are categorised on a four-point scale by their research type (RL) from RL1 (clinical papers) through to RL4 (basic research papers). This is a standard industry classification of research journals, developed by the CHI Research Inc. in the USA. Table A1.4.1 lists research type categories together with examples of journals in each category.

Table A1.4.1 Journals by research level (RL), according to CHI categorisation.

RL	Description	Examples
1	Clinical observation	<i>BMJ, J Royal Coll Gen Pract</i>
2	Clinical mix	<i>Gut, Lancet, Brit J Clin Pharmacol</i>
3	Clinical investigation	<i>Clin Science, Diabetes, Eur J Cancer</i>
4	Basic research	<i>J Physiol, Phil Trans Roy Soc London B</i>

Potential impact category (PIC)

ROD papers are also categorised by their potential impact category (PIC). This is calculated every two years. Values were available from ISI for 1990 publications (used for 1991 papers), 1992 publications (used for papers from 1992-93), 1994 publications (used for papers from 1994-95) and 1996 publications (used for papers from 1996-2000). About 15% of journals change their PIC value over any two-year period.

The use of PIC values is new to this update of *Mapping the Landscape*. The previous edition used a different measure of impact, W, which was based on assignation of an impact category (top 10% of journals in a set of core journals (these were different from subfield to subfield)).⁴

PIC, on the other hand, is calculated using actual average numbers of citations received by journals in a five-year period from their publication date.

Biomedical sub-fields

The report contains analyses of UK biomedicine as a whole, as well as more detailed analyses of selected 32 biomedical sub-fields.

Papers for the inclusion in these sub-fields are determined by using specially constructed search strategies or filters, developed by a bibliometrician – together with a subject specialist.

First, they compile a sample list of papers from existing specialist journals or specialist departments. Then all significant words from paper titles are ranked according to frequency of occurrence and then scanned. A proportion of the words are retained if they are indicative of a paper's relevance to a particular sub-field.

⁴ See: *Mapping the Landscape*, p. 42.

When these retained words are used in conjunction with Boolean operators they form a filter, which allows an extraction of relevant papers from the ISI disks. Each filter is checked for precision and recall and calibrated – the calibration factor is an estimate of the number of papers actually present in a sub-field, compared to the number identified by the filter. The concepts of precision and recall are fundamental in information retrieval and they allow to assess the accuracy (precision) and the comprehensiveness (recall) of our search strategy. Figure A1.4.1 illustrates the concept. An ideal search strategy (filter) would have values of recall and precision of one.

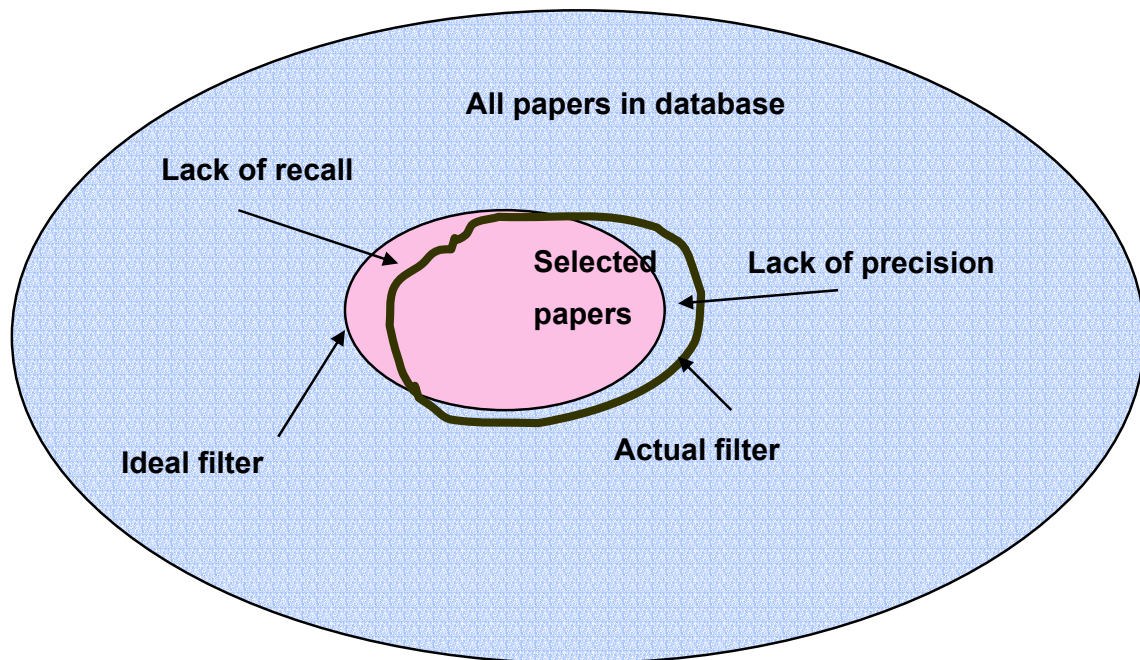


Figure A1.4.1 Illustration of the concepts of recall and precision in information retrieval.

Table A2.3 in Annex 2 shows all the subfield codes and names analysed for this report, together with their definitions, the name of the subject expert involved in their development, recall and precision scores and calibration factor.

ANNEX 2 GLOSSARY OF TERMS

Table A2.1 Country ISO codes.

<i>Country</i>	<i>Code</i>	<i>Country</i>	<i>Code</i>
Argentina	AR	Japan	JP
Australia	AU	Netherlands	NL
Brasil	BR	New Zealand	NZ
Canada	CA	Norway	NO
China	CN	Poland	PL
Denmark	DK	Russia	RU
Finland	FI	South Africa	ZA
France	FR	South Korea	KR
Germany	DE	Spain	ES
Greece	GR	Sweden	SE
Hungary	HU	Switzerland	CH
India	IN	Taiwan	TW
Ireland	IE	United Kingdom	UK
Israel	IL	United States	US
Italy	IT		

Table A2.2 Category codes for funding sectors

Category code	Funder sector
	Government
GA	Government agency
GD	Government department
LA	Local/regional authority
	Not-for-profit
CH	Charity
FO	Foundation
HT	Hospital trustees
MI	Mixed funding
NP	Other not-for-profit
	Industry
BT	Biotech industry
IN	Industry (Non-pharma), parent
IP	Pharmaceutical (pharma), parent
SN	Subsidiary industry (Non-pharma)
SP	Subsidiary pharmaceutical (pharma)
VT	Veterinary practices

Table A2.3 Organizations funding UK biomedical research referred to in the report, arranged alphabetically by triagraph code.

Code	Name	Sector	Cat. code	ISO
ART	Arthritis Research Campaign (formerly Arthritis and Research Council), Chesterfield, Derbyshire	UKNP	CH	UK
BBC	Biotechnology and Biological Sciences Research Council (BBSRC), Swindon, Wilts (includes SERC and AFRC)	UKGOV	GA	UK
BCO	British Council, London	UKGOV	GA	UK
BDA	Diabetes UK (formerly British Diabetes Association), London	UKNP	CH	UK
BHF	British Heart Foundation, London	UKNP	CH	UK
CAM	Medical Research Council (Canada), Ottawa	ForNat	GA	CA
CEC	C E C (Commission of the European Communities), Brussels	IntEU	GD	EU
CHN	Fonds National Suisse de la Recherche Scientifique (FNSRS), Bern	ForNat	GA	CH
CNR	Consiglio Nazionale delle Ricerche (CNR), Roma	ForNat	GA	IT
CRC	Cancer Research Campaign (CRC), London	UKNP	CH	UK
CRS	C N R S (Centre Nationale de la Recherche Scientifique), State Office, Paris	ForNat	GA	FR
DAF	Scottish Office Agriculture and Fisheries Department (SOAFD), Edinburgh	UKGOV	GD	UK
DFG	Deutsche Forschungsgemeinschaft	ForNat	GA	DE

DOH	U K Department of Health (and Social Security), London	UKGOV	GD	UK
EMB	European Molecular Biology Organisation/Laboratory (EMBO or EMBL), Heidelberg	IntEU	NP	EU
EPR	Engineering and Physical Sciences Research Council (EPSRC)	UKGOV	GA	UK
ESF	European Science Foundation (ESF), Strasbourg	IntEU	NP	EU
ESR	Economic and Social Sciences Research Council (ESRC), Swindon	UKGOV	GA	UK
GLX	Glaxo Pharmaceuticals UK Ltd, Uxbridge. Middx (Code all new 'Glaxo-Wellcome Entries GXW).	IND	IP	UK
GXW	Glaxo Wellcome plc, Glaxo Wellcome House, Greenford, Middx	IND	IP	UK
HCU	Human Capital Mobility Project, TU Delft	IntEU	NP	EU
HFS	Human Frontier Science Program Organisation (HFSP), Strasbourg	IntEU	NP	XN
HHM	Howard Hughes Medical Institute, Bethesda, MD	ForNat	FO	US
HLR	Hoffmann-La Roche sa, Basel	IND	IP	CH
ICI	Imperial Chemicals Industries (ICI) plc (not biomed papers >= 94), London	IND	IP	UK
ICR	Imperial Cancer Research Fund (ICRF), London	UKNP	CH	UK
INS	Institut National de la Sante et de la Recherche Medicale (INSERM)	ForNat	GA	FR
IRC	International Association (Agency) for Research on Cancer (IARC)	IntEU	GA	XN
LEV	Unilever plc, London	IND	IN	UK
LIP	Lister Institute of Preventive Medicine,	UKNP	MI	UK

	Bushey Heath, Herts			
LKR	Leukaemia Research Fund Ltd, London	UKNP	CH	UK
LLL	Eli Lilly and Co, Indianapolis IN	IND	IP	US
LVH	Leverhulme Trust, London	UKNP	FO	UK
MAF	U K Ministry of Agriculture, Fisheries and Food (MAFF), London	UKGOV	GD	UK
MRC	M R C (Medical Research Council, UK) Head Quarters, London	UKGOV	GA	UK
MRK	Merck and Co. Inc., West Point PA	IND	IP	US
NAO	N A T O (North Atlantic Treaty Organisation)	IntEU	GD	XN
NER	Natural Environment Research Council (NERC), Swindon. Wilts	UKGOV	GA	UK
NIH	National Institutes of Health	ForNat	GA	US
NSF	National Science Foundation (NSF), Washington DC	ForNat	GA	US
NUF	Nuffield Foundation, London	UKNP	FO	UK
ODA	Department for International Development (DFID) - formerly 'Overseas Development Administration', London	UKGOV	GD	UK
PFZ	Pfizer Inc., New York NY	IND	IP	US
RCD	Action Research, Horsham, W Sussex	UKNP	CH	UK
RYS	Royal Society, London	UKNP	NP	UK
SDZ	Sandoz Pharmaceuticals SA (since 1996, merged with 'CIBA-Geigy' and renamed 'Novartis')	IND	IP	CH
SHD	Scottish Office Home and Health Department (SOHHD), Edinburgh	UKGOV	GD	UK
SKB	Smith Kline Beecham plc (formerly Smith Kline French), Brentford, Middx	IND	IP	UK

UDP	United Nations Development Programme (UNDP)	IntEU	GD	XN
UNC	U N I C E F	IntEU	GD	XN
WBK	World Bank	IND	IN	XN
WEL	Wellcome Trust, 183 Euston Road, London	UKNP	FO	UK
WHO	World Health Organisation, Headquarters, Geneva	IntEU	GD	XN
WLC	Wellcome Foundation / Wellcome plc, Unicorn House, London -- Code all new GLAXO-WELLCOME Entries GXW.	IND	IP	UK
ZEN	Zeneca plc	IND	IP	UK

Table A2.4 Biomedical subfields, codes, definitions, developer, precision (p) and recall (r) values and calibration factor (CF)

<i>Code</i>	<i>Subfield</i>	<i>Definition</i>	<i>Expert(s)</i>	<i>p</i>	<i>r</i>	<i>CF</i>
AIDSR	AIDS research	Research on HIV, the virus which causes AIDS, includes the investigation of viral structure, replication, pathogenesis, epidemiology, and development of HIV vaccines and antiviral drugs. Other research involves the diagnosis of HIV and AIDS-related conditions, treatment and care of patients with HIV and AIDS and the effect of anti-retroviral drugs and educational campaigns on the incidence of HIV and AIDS	Dr Jenny Best, Kings Coll London	0.97	0.99	0.98
ARTHR	arthritis & rheumatism research	Research on the musculoskeletal system in health and disease including inflammatory arthritis, connective tissue diseases, degenerative joint diseases, arthritis associated with infection, non-articular rheumatism and bone disease but excluding orthopaedics. Study of the aetiology, epidemiology, treatment and basic biochemical, immunological, physiological and genetic mechanisms relevant to these diseases	Dr Madeleine Devey, Arthritis Res. Campaign	0.98	0.88	1.11
ASTHM	asthma research	Research into causation, basic mechanisms, manifestations and treatment of asthma and closely related diseases such as allergic rhinitis; research into the delivery of care to those with asthma and non-pharmacological management such as patient education and self management.	Dr Martyn Partridge, Whipps Cross Hosp.	0.98	0.86	1.14

BIENG	biomedical engineering	It integrates physical, mathematical and life sciences and engineering principles for the study of biological systems in health and disease and for the application of technology to improve quality of life. It creates knowledge from the molecular to organ systems levels, develops materials, devices, systems, technology management, and methods for assessment and evaluation of technology, for the prevention, diagnosis, and treatment of disease and for patient care and rehabilitation.	Prof Dan Bader, Queen Mary College	0.72	0.83	0.87
CARDI	cardiology	Study of the heart and its functions in health and disease, including “invasive cardiology” which is the practice of diagnostic and therapeutic cardiac procedures that involve entry into the heart or central circulation.	Dr Mary Phillips	0.96	0.88	1.10
CHILD	neonatology & paediatrics	Research into the prevalence, pathogenesis, prevention, treatment and outcome of health problems affecting newborn infants and children up to and including adolescence	Prof Kate Casteloe, Bart's Hosp.	0.94	0.83	1.13
DENTA	dental research	The branch of medical science that investigates the aetiology, epidemiology, diagnosis, prevention and management of craniofacial and oral disease. A multi-disciplinary approach is utilized to integrate oral and general health and the application of common methodologies and interventions	Dr Jan Clarkson, Dundee	0.98	0.88	1.12

DERMA	dermatology & venereology	Dermatology involves the epidemiology, prevention, diagnosis and treatment of structural, inflammatory, neoplastic and infective diseases of the skin. It also encompasses those internal diseases that have skin signs, but excludes burns and scalds. Venereology similarly covers all sexually acquired disorders that are manifest in signs and symptoms at the site of inoculation but excludes AIDS, HIV and hepatitis.	Dr Bav Shergill, Royal London Hosp	0.90	0.94	0.95
DIABE	diabetes research		Dr Moira Murphy & Dr Jayne East, Brit Diabetic Assn	0.97	0.83	1.17
ENDOC	endocrinology	Study of the basic physiological mechanisms of mammalian endocrine systems including secretory regulation and peripheral actions. It also includes the study of the causation, occurrence, presentation, diagnosis and treatment of disorders associated with or caused by disturbances of endocrine homeostatic systems. It includes diabetes, but NOT metabolic disorders arising through non-endocrine mechanisms.	Dr Mark McCarthy, ICMS	0	0	0.96
GASTR	gastroenterology	Research into the cause, basic mechanisms, diagnosis and treatment of gastrointestinal disorders. This includes epithelial biology research, studies on the enteric nervous system and its neural connections to the central neural nervous system, and the immune system of the intestine. Also included are studies of the relationships between the luminal contents of the gut, especially bacteria, and gastrointestinal function. Additional research in technologies required to	Prof David Thompson, Brit. Soc. of Gastr'y	0.83	0.87	0.95

		studies the gastrointestinal tract, especially endoscopic and radiologic are included, e.g. fiberoptic endoscopy, ultrasound, MR scanning.				
GENET	genetics	The study of heredity and transmission of biological variation. It includes studies of genetic disease, of mapping genes on chromosomes, mutation, characterisation of DNA sequences and the control of gene expression as relevant to human and animal health. It also includes cross-disciplines including behavioural genetics, pharmacogenetics and immunogenetics.	Dr Barbara Skene; Dr Jill Kent Revised by Dr Angela Kingman	0.90	0.94	0.96
GERON	gerontology	Research addressing the aetiology of the ageing process in human beings, the treatment of ageing-related diseases, and societal measures to maintain the physical and mental health and well-being of elderly persons.	Dr Ian Scott; Prof Tony Warnes, U/Sheffield; Dr Edward Dickinson Roy Coll Physic	0	0	1.11 (SCI), 1.06 (SSCI)
HAEMA	haematology	Research into the physiology of blood and the causes, diagnosis and treatment of blood disorders mediated by its constituent cells or plasma proteins	Prof David Lane, Charing Cross Hosp (ICMS)	0	0	0.93
IMMAL	immunology and allergy	Allergology comprises clinical studies and immunological research in mammals to study the body's responses to normally innocuous substances that result in inflammation, including genetic pre-disposing factors and the effects of some infectious agents. Immunology is the study of the body's response to infectious agents and inappropriate responses to other agents, including allergens, self-antigens and transplanted material.	Dr Caroline Cross, WT	0.91	0.93	0.98

INFE	infectious diseases	Research into diseases of vertebrates whose cause can be traced to the presence or replication of an organism, the genetic material of which is not present in the chromosomes of most of the host population. It excludes disease of plants and invertebrates. It also excludes CJD, BSE and similar diseases, but includes retroviruses, whose genomes can be found integrated into the chromosomes of some members of the host population and all parasites.	Dr John Stephenson; Dr Caroline Cross, WT	0.85	0.99	0.85
MALAR	malaria research	Research relevant to malaria disease in animals and humans; the parasite causing malaria (species of the genus Plasmodium); and mosquito carriers. The full spectrum of research from basic cellular, biochemical and molecular studies, through clinical, epidemiological and field studies, vaccine and drug development studies, as well as operational research into the delivery of malaria treatment and control measures by health services and other organisations	Dr Catherine Davies; revised by Dr Steven Lipworth, consultant and Dr Andres de Francisco, Global Forum for Health Research	0.89	0.98	0.91
MENTH	mental health	Research into the causation, occurrence, presentation, diagnosis, treatments and care of disorders affecting the mental health of their sufferers in childhood, adolescence, adulthood and older age. The major diagnostic categories included are: anxiety disorders, bipolar disorders, conduct disorders, the dementias, depression, eating disorders, obsessive compulsive disorders, phobias, schizophrenia and suicide. Substance abuse is excluded. Mental retardation and handicap are not specifically included.	Dr Helen Cope; Prof Graham Thornicroft and Dr Louise Howard, Maudsley Inst of Psychiatry	0.91	0.93	0.98

MONED	motor neurone disease research	Research on causation, molecular and biochemical mechanisms of neurodegeneration and regeneration in amyotrophic lateral sclerosis and other motor neuron diseases; research into markers of diagnosis and disease progression, pharmacological treatment and multidisciplinary care management	Dr Brian Dickie, Motor Neurone Disease Association	0.96	0.93	1.03
MULSC	multiple sclerosis research	Research into the cause, basic mechanisms, diagnosis and treatment of multiple sclerosis. This includes glial cell research and studies on astrocytes and the blood brain barrier relevant to MS. Also included are animal models of MS such as experimental autoimmune encephalomyelitis and models induced by Theiler's or Semliki Forest virus. It includes relevant research on myelin and myelin protein genes.	Dr Lorna Layward, Mult. Sclerosis Society	0.95	0.93	1.02
NEUSC	neuroscience	Basic research in the neurosciences is concerned with the growth, development, structure and function of the nervous system, including the brain, spinal cord and the peripheral nerves. It includes traditional studies of the anatomy, physiology, pharmacology, biochemistry, psychology and pathology of the nervous system, as well as molecular biology and computer science. Excludes mental health, psychology and psychiatry and clinical studies on patients	Dr Peter Sneddon	0.87	0.86	1.01
OBSGY	obstetrics & gynaecology	Research into the cause, basic mechanisms, diagnosis and treatment of all maternal aspects of obstetrics and disorders of the female genital tract including the vulva, cervix, uterus, ovary, fallopian tubes and the placenta. Such disorders include both non-neoplastic and benign and malignant	Prof Phil Steer, Charing Cross Hosp (ICMS)	0	0	1.01

		neoplastic conditions including infertility, endometriosis, smooth muscle cell disorders and intraepithelial neoplasia.				
ONCOL	cancer research	The study and treatment of cancer or tumours. This incorporates academic oncology and clinical oncology. Academic oncology is aimed at identifying the causative agents or underlying genetic defects producing cancer and at developing these discoveries into effective drugs and other therapies. Clinical oncology is oriented towards the treatment, management and cure of cancer.	Dr Lesley Walker, Dr Lynne Davies: Canc. Res Camp.	0.95	0.9	1.06
OPHTH	ophthalmology	The medical specialty relating to the treatment of diseases and disorders of the eye. It includes studies of the structure and function of the eye, the diagnosis and treatment of diseases, injuries and defects of the eye and corrective surgery to remove cataracts, improve vision and remove diseased eye tissue	Dr Sian Thomas	0.98	0.98	1.00
OTORH	otorhinolaryngology	Otology includes congenital and acquired diseases, including cancer, of the ear and posterior skull base, their causes, diagnosis, medical and surgical treatment, and patient rehabilitation. Rhinology similarly covers the nose, sinuses and anterior skull base, and includes allergy and facial plastics. Laryngology covers the upper aerodigestive tract, the head and neck, excluding the brain and eyes. Work on animals is excluded except for research on hair cells.	Dr Guri Sandhu, Royal Throat, Nose & Ear Hosp.	0.91	0.79	1.15
RENAL	renal medicine	Research into the causes, genetic and environmental, of diseases of	Prof David Kerr (formerly	0.94	0.94	1.00

		the kidneys and urinary tract, including the information generated by national gene and clinical data banks, and into animal models of human renal diseases. Studies of the epidemiology of renal diseases, their early detection and the benefits and cost effectiveness of population screening. Results of controlled trials of treatments including dialysis and transplantation and of the audit of clinical practice through Renal Registries. Studies of the complications of renal failure, notably heart disease, and of their prevention and treatment. Basic science research relevant to renal disease.	RPMS)			
RESPI	respiratory medicine	Research into causation, occurrence, clinical features, pathophysiology and treatment of diseases affecting upper and lower airways and lung parenchyma	Prof Martyn Partridge, ICSTM (Charing Cross Hosp)	0.97	0.89	1.09
STROK	stroke research	Research on the genetics, epidemiology, diagnosis, imaging, causes, prevention and treatment of cerebrovascular disease. Includes stroke, transient ischaemic attack, cerebral venous thrombosis, cerebral infarction, cerebral (including subarachnoid) haemorrhage and vascular (multi-infarct) dementia. It also includes animal models of cerebral ischaemia or haemorrhage.	Prof. M Brown	0.89	0.82	1.09

SURGE	surgery	Research on all aspects of surgery, including neurosurgery; orthopaedic and trauma, ENT, cardiac, thoracic, vascular, gastrointestinal, urological, transplant, plastic, maxillo-facial, paediatric, gynaecological, ophthalmological and general surgery. It includes surgical techniques including laparoscopy, and related research in musculoskeletal tissues, transplantation and gastrointestinal surgery-related issues and vascular tissues.	Prof Sean Hughes, RPMS (ICMS); revised by Prof Bob Carpenter, Barts Hosp.	0.81	0.64	1.26
TROPM	tropical medicine	All types of research relevant to health and disease in Africa, Southern and Central America, and Asia, including studies of the major infectious diseases, of disease carriers (e.g. insects), nutritional disorders, snake bites and non-communicable diseases. The search strategy does not specifically target non-communicable diseases, but will capture some research in this area through the use of broad key words linked to health and disease in the tropics and through retrieving all publications in the major tropical medicine journals	Dr Catherine Davies	0	0	1.19
TROVE	tropical veterinary medicine	Biomedical research involving animals aimed at the improvement of animal or human health (except where the animal is being used purely as a model for biomedical processes, including diseases, in humans) in Africa, Southern and Central America and Asia, including studies on infectious diseases, vectors, nutritional disorders, welfare and health related aspects of animal production	Dr John Claxton, Wellcome Trust	0.99	0.915	1.08

VETER	veterinary medicine	Biomedical research involving animals aimed at the improvement of animal or human health (except where the animal is being used purely as a model for biomedical processes, including diseases, in humans) including studies on infectious diseases, vectors, nutritional disorders, welfare and health in domesticated animals (mammals, birds, fish, and invertebrates) and in wild animals, where they impact on domestic animals or human health	Dr John Claxton, Wellcome Trust	0.94	0.96	0.97
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