



**Igniting our potential**

**Health Research Classification  
System**

International Workshop

14<sup>th</sup> Jan 2009



**Igniting our potential**

**Introduction to the UKCRC  
and health research  
analyses in the UK**

Liam O'Toole

Chief Executive, UKCRC

## Purpose of the Workshop

- ▶ Use of a single common classification system by UK funders has greatly facilitated strategy development, coordination and collaboration.
- ▶ We wish to explore:
  - ▶ Level of interest in using a common classification system
  - ▶ What lessons can we learn from the international collaboration in cancer?
  - ▶ How can we help support and facilitate its wider use?

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## Structure of the Workshop

- ▶ Programme
  - ▶ Background to HRCS
  - ▶ Experience from ICRP
  - ▶ Lunch
  - ▶ User perspectives
  - ▶ New HRCS website
  - ▶ Breakout groups and feedback session
  - ▶ Networking dinner

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## Structure of this talk

- ▶ About the UKCRC
- ▶ HRCS – origins and purpose
- ▶ Health Research Analyses
- ▶ Impact of the analyses and the HRCS in the UK
- ▶ Next steps and issues for discussion

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## UKCRC Partners



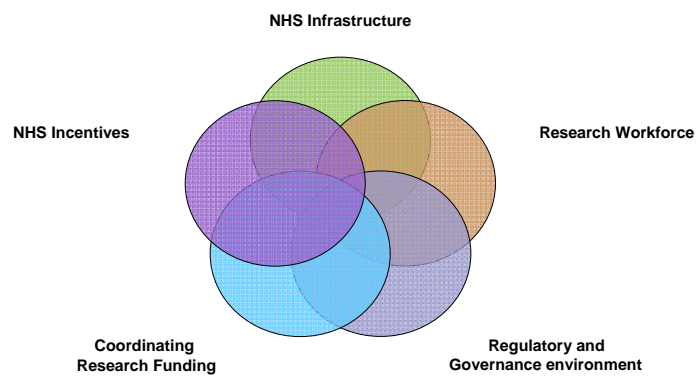
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## Progress and delivery



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## UKCRC Partners Tackled a Broad Agenda



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## Coordinating Research Funding

- ▶ Original Shared Aim:

*“To ensure a coherent approach to the funding of clinical research in the UK by developing a culture of communication and coordinated strategies between the major funders”*

- ▶ First step – we needed a map of UK health research funding

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## Mapping UK Health Research Funding

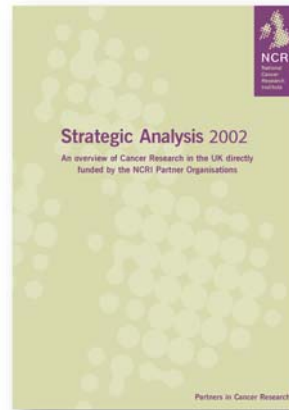
- ▶ Challenges:

- ▶ Needed to collect the portfolios of many different funding bodies, government and charity
- ▶ We needed to be able to reliably compare projects funded across the full spectrum of health research
- ▶ Needed to analyse by health area / disease type
- ▶ Needed to analyse by type of research
  
- ▶ We needed a common classification system

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## Adopted an approach based on cancer experience

- ▶ National Cancer Research Institute
  - ▶ Partnership of government, charity and industry
- ▶ Strategic Analysis 2002
  - ▶ Overview of UK cancer research
  - ▶ Based on Common Scientific Outline
- ▶ Major outcomes
  - ▶ Joint strategy discussions
  - ▶ National Prevention Research Initiative
- ▶ International Cancer Research Partners (ICRP)



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## The Health Research Classification System

- ▶ A system for classifying and analysing health and biomedical research funding
- ▶ Designed collaboratively by funding bodies
  - ▶ Including MRC, Wellcome Trust, UK Health Departments
- ▶ Covers the full spectrum of biomedical and health research across all areas of health and disease

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## Structure of the HRCS

- ▶ Two dimensional system
  - ▶ Health Categories
  - ▶ Research Activity Codes
- ▶ Health Categories
  - ▶ All areas of health or disease
  - ▶ 21 individual categories
  - ▶ Based on WHO ICD codes
- ▶ Research Activity Codes
  - ▶ All types of research activity from basic to applied
  - ▶ 48 codes in 8 groups
  - ▶ Based on cancer Common Scientific Outline

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## UK Health Research Analysis

- ▶ HRCS used to carry out two major analyses of UK health research funding
- ▶ Together the two reports represent majority of UK government & 96% of UK medical research charities' funding (over £1 billion funding)

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## UK Health Research Analysis 2006

- ▶ 11 largest Government and charity funders of health related research in the UK
  - ▶ 4 Health Departments (England, Scotland, Wales, N.Ireland), Medical Research Council, 3 other Research Councils, 3 largest charities (Wellcome Trust, Cancer Research UK, British Heart Foundation)
- ▶ 9638 UK-based directly funded peer reviewed health research awards
- ▶ Awards 'live' between 1st April 2004 - 31st March 2005
- ▶ Rigorous quality control of coding process



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## From Donation To Innovation 2007

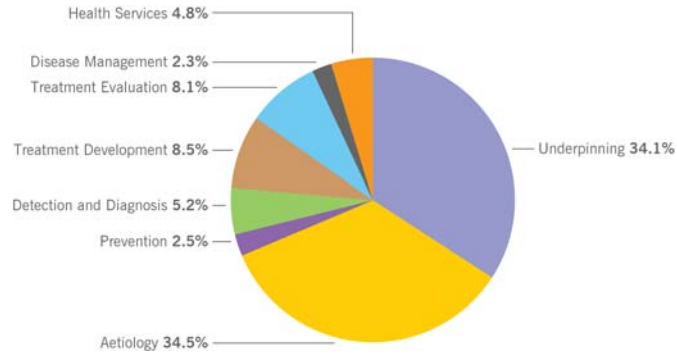
- ▶ 29 medium & smaller sized members of the Association of Medical Research Charities
- ▶ 1496 UK-based directly funded peer reviewed health research awards
- ▶ Same methodology and analysis period as previous report



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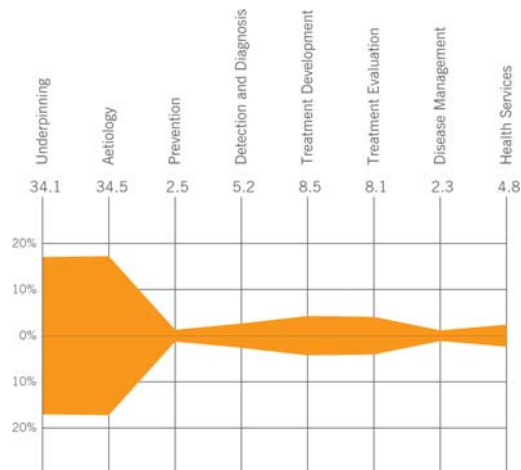


## Proportion of Combined Total Spend by Research Activity



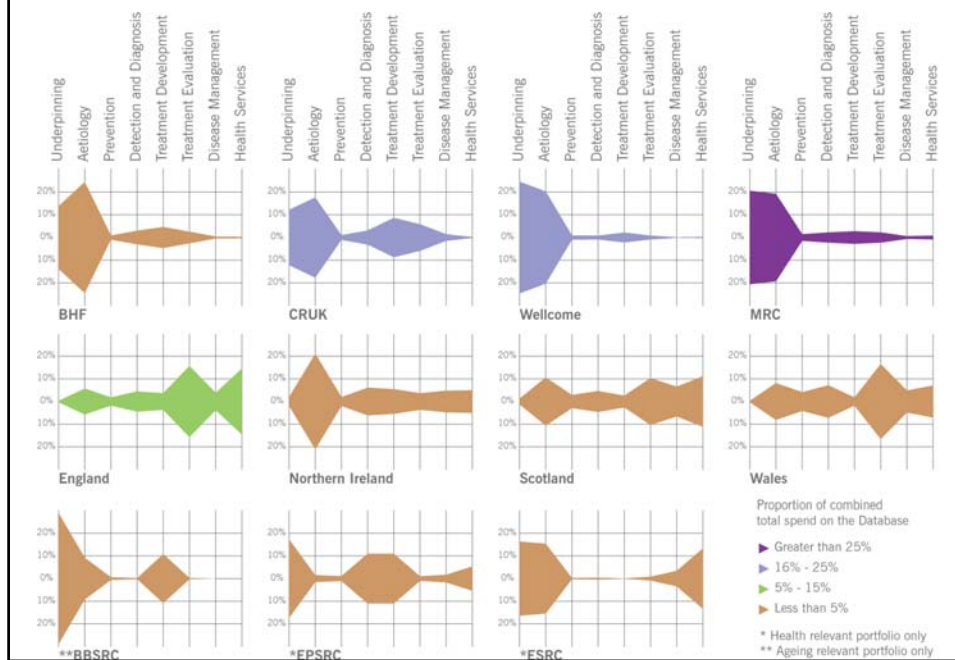
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## Proportion of Combined Total Spend by Research Activity – Kite Diagram

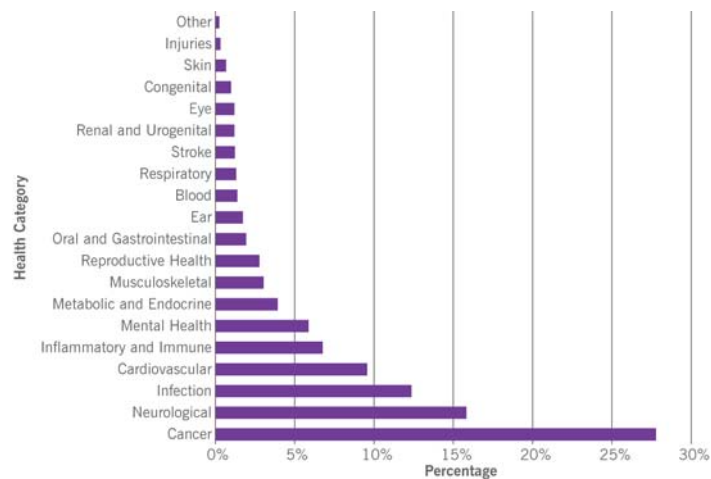


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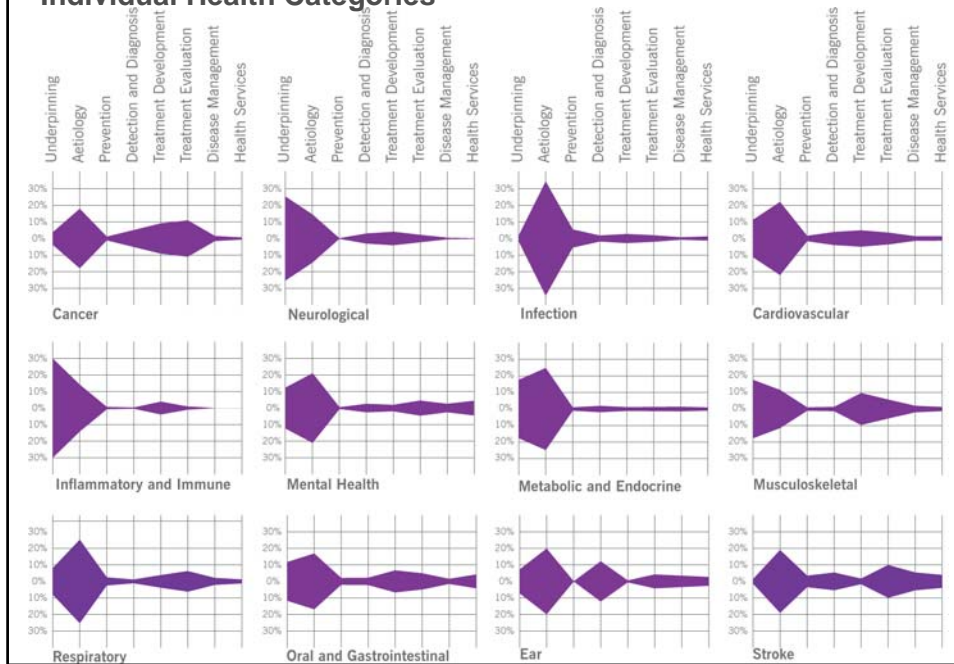
## Profile of Each Organisation's Spend by Research Activity



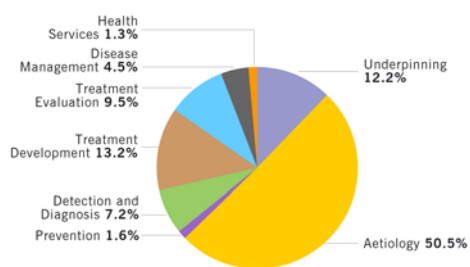
## Proportion of Combined Spend on Health Specific Categories



## Proportion of Combined Spend by Research Activity for Individual Health Categories

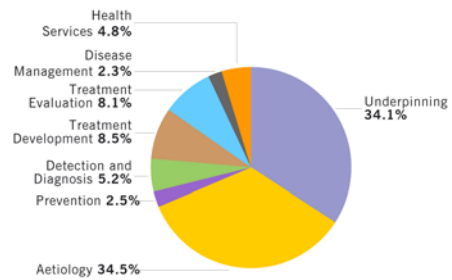


## Distribution of Total Spend by Research Activity



Medium and Smaller Sized Charities

Data from 29 medium and smaller sized AMRC member charities



UK Health Research Analysis

Data from the 11 largest government and charity funders of health research in the UK

## Impact of CSO and HRCS

- ▶ **NCRI Analysis using CSO**
  - ▶ Used for joint planning and coordination
    - ▷ National Prevention Research Initiative
  
- ▶ **UKCRC Analysis using HCRS**
  - ▶ Used for joint planning and coordination
    - ▷ Public Health Initiative (£20m)
    - ▷ Microbiology Initiative (£16m)
  
  - ▶ Informed national policy discussions
    - ▷ Cooksey report and OSCHR

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## Evaluation of the analyses and HRCS

- ▶ **Evaluation Questionnaire**
  - ▶ 29 participating organisations
    - ▷ UK government and charity funders
  
- ▶ **Reports**
  - ▶ Wide UK distribution and impact of analyses reported
  
- ▶ **HRCS**
  - ▶ 22 (76%) are using or intend to use the HRCS routinely
  - ▶ 23 (79%) are undertaking or would carry out future analyses

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## Impact Summary

- ▶ CSO and HRCS are powerful tools for underpinning collaboration and joint initiatives
- ▶ Evidence base being used
  - ▶ by individual funders
  - ▶ for joint planning and coordination
  - ▶ by the wider research community
- ▶ HRCS in use by non-UK funders
  - ▶ National Medical Research Council, Singapore
  - ▶ Food and Health Bureau, Hong Kong

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## Next steps for the HRCS

- ▶ HRCS in the UK
  - ▶ UKCRC have provided extensive training across UK funders
  - ▶ Developing a sustainable approach to QA
  - ▶ Discussions on future analysis
- ▶ We are committed to
  - ▶ Open access for use by other funders
  - ▶ Efforts to facilitate wider use

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## Questions for the workshop

- ▶ Are other funders interested in using the HRCS?
- ▶ How can we help support and facilitate its use?
- ▶ What further lessons can we learn from the cancer experience?

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<http://www.ukcrc.org/>  
[info@ukcrc.org](mailto:info@ukcrc.org)



International Cancer  
Research Partners

## International Cancer Research Partners

### Addressing the Global Challenges of Cancer

Cherie Nichols  
US National Cancer Institute  
National Institutes of Health  
January 14, 2009

*One Voice, One Vision*



International Cancer  
Research Partners

*One Voice, One Vision*

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### Overview

- I. About the International Cancer Research Partners (ICRP)
- II. The Common Scientific Outline (CSO)
- III. History of the Partnership
- IV. Future Opportunities
- V. Benefits of Partnership
- VI. Lessons Learned

## ***I. About the International Cancer Research Partnership***

- Unique alliance of government and non-government organizations
- Agree to adopt and promote a common language for coding grants
- Discuss, compare, and present information on funded research using a common classification framework (CSO)
- Oversee the regional, national and international project database (ICRP)
- Advocate “One Voice, One Vision” philosophy to enhance the impact of research for all individuals
- Foster global collaboration and coordination

### ***One Voice, One Vision***

*We will conquer cancer only when we bring the benefits of research to all citizens of the world. We will succeed only when we partner with others to leverage our resources and build synergy.*

*We do this through global collaboration and strategic coordination of the cancer research we support. This is our mission.*

*Our vision is a world where more and more cancers are prevented and cured. We believe this vision is within our grasp and we are prepared to work together to stretch the boundaries of science, creativity, and human commitment to achieve it.*



## ***II. The Common Scientific Outline: Why We Created It***

- To explore respective national and international cancer research portfolios via broad scientific areas
- To aid in coordination of multiple research within and outside the Partners' portfolios
- To shape cancer-related research planning and scientific resource decisions
- To enhance ability to coordinate the National Cancer Program (NCP) worldwide
- Add value to existing coding schemes--not intended to replace them

## ***Current CSO Structure***

- 7 Major Categories with 38 Subcategories
  - Biology
  - Etiology
  - Prevention
  - Early Detection, Diagnosis and Prognosis
  - Treatment
  - Cancer Control, Survivorship, and Outcomes Research
  - Scientific Model Systems
- Over 50 individual disease sites
- Over 40,000 projects

### ***III. History of the Partnership***

#### ***1997-1999: Developmental and Pilot Work on the CSO***

- First CSO created by US National Cancer Institute (NCI)
- Refined work with coding pilot study of 6000 grants by 220 program directors
- Additional refinement through by US DoD Congressionally Directed Medical Research Program (CDMRP) pilot assessing inter-rater reliability

### ***III. History of the Partnership***

#### ***2000-2002: Creating the Partnership***

- Ten international cancer funding organizations joined together as the International Cancer Research Partnership (ICRP) and agreed to:
  - Code their research portfolios to the CSO
  - Develop uniform coding policies and standards
  - Share data in aggregate form by CSO categories
  - Meet annually to discuss implementation of CSO within their organizations and share portfolio analyses
  - Create an international cancer research database and web site

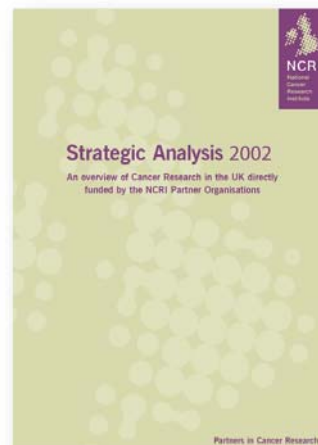
***The Original International Cancer Research (ICR) Partners***

- American Cancer Society
- California Breast Cancer Research Program
- California Cancer Research Program
- Cancer Research Campaign of the UK\*
- Cap CURE (Prostate Cancer)
- Congressionally Directed Medical Research Program (DoD)
- Medical Research Council of the UK\*
- National Cancer Institute
- Oncology Nursing Society
- Susan G. Komen Breast Cancer Foundation

In 2001 **National Cancer Research Institute (NCRI)** was created expanding UK involvement to 20 organizations by 2008.

Using the CSO classification system, the NCRI analyzes the investment in cancer research on a national level.

The 2002 report highlighted a number of underfunded areas, resulting in-depth studies.



### III. History of the Partnership

#### 2003-2005: Creating the Database

Web Site launched June 2003 ([www.cancerportfolio.com](http://www.cancerportfolio.com))

- Information on research funded by partner organizations in a central, searchable database
- Research abstracts of most recent awards of ICR Partner
- Tailored search results by cancer type, CSO category, funding organization, state or country, awardees' institution and more....
- At initiation—13,000 entries; today >40,000\*

\*Now also includes data from our newest ICR Partner- Canadian Cancer Research Alliance (Representing 23 cancer funding organizations within Canada)



**ICRP International Cancer Research Portfolio**  
A Joint Initiative of International Cancer Research Funding Organizations

Home | [Advanced Search](#)

Welcome to the **ICRP** - a database of research funded by cancer research organizations throughout the world.

The International Cancer Research Portfolio (ICRP) puts cancer research information at your fingertips. Cancer research funders from several countries have joined in a partnership to classify their research portfolios in a common manner. Using the [Common Scientific Outline](#) as a unified classification system, the ICRP allows users to search and view cancer research in a variety of ways, including:

- [By Type of Cancer](#)
- [By Area of Research](#)
- [By Funding Organization](#)

To learn more about this joint initiative, follow the links to the right.

**Participating ICR Partner Organizations:**

American Cancer Society, Breast Cancer Research, CCRA ACRC, NATIONAL CANCER INSTITUTE, NCRI, NCI, NCI-DEPARTMENT OF HEALTH AND HUMAN SERVICES FOUNDATION, Prostate Cancer Foundation, Susan G. Komen for the Cure

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### **III. History of the Partnership**

#### **2006-2008: Advancing the Partnership**

- Adopted a new mission and vision
- Developed marketing, financial, organizing, and operating principles
- Established an evaluation resource library
- Completed evaluation of combined partner career awards
- Expanded partnership roster to include Canadian Cancer Research Alliance and the Avon Foundation

#### **Previous mission statement**

*"The aim of the ICRP is to facilitate collaboration and coordination in cancer research by encouraging:*

- *Use of the Common Scientific Outline to classify cancer research;*
- *Use of CSO analyses to inform strategic planning and cancer research funding; and*
- *Participation in the ICRP website for the benefit of the international cancer community and the public."*

#### **Current mission statement**

*"The ICR Partners seek to enhance the impact of research to benefit strategic coordination of research."*

*all*

### ***III. History of the Partnership***

#### ***2009-2011: Leveraging and Building the Partnership***

- Releases of first public report on the partnership
- Reports on key analyses of annual investments for a majority of cancer research in North American and United Kingdom
- Recruits new international members (Europe, Asia, Australia)
- Formalizes business principles and processes
- Advances the database to an integrated global system of information
- Mines opportunities for global collaborations

### ***IV. Future Partnership Opportunities***

- Expand international partner membership
- Explore the feasibility of international recruitment to clinical trials
- Coordinate efforts on large studies
- Harmonize study protocols to combine research results across studies
- Jointly fund studies where internal comparisons would be informative
- Explore a role for the partnership in developing countries as they work towards leading with the cancer epidemic

#### ***V. Benefits of Partnership***

- Combines information on research funded by public, private, and international organizations into a central repository
- Improves ability to identify gaps and opportunities and report progress
- Opens a venue for leadership across the globe to systematically discuss, compare, and present information
- Draws on other funders data to inform internal and external strategic planning and decision-making
- Identifies investigators for multi-disciplinary and multi-institutional collaborations

#### ***V. Benefits of Partnership***

- Formalizes a structure for coordination with other research funders
- Leverages public-private partnerships, program development and fund-raising efforts
- Brings access to accurate and timely information about the activities of one or more partner organizations
- Provides the means to systematically manage and evaluate the organization's portfolio over time

### ***VI. Lessons Learned About the Product***

1. Resist the urge to add/delete or refine/redefine broad and sub-categories
  - Instead, encourage modifications to “what might fit” examples in subcategories.
2. Plan what research funding categories and data you want to include early in the process.
3. Harmonizing partner data specifications will be a challenge.
4. For coding consistency, identify a central coding unit/group/person, if possible
5. Standardized coding was never intended to replace detailed portfolio management

### ***VI. Lessons Learned About the Partnership***

6. Within and across organizations, continuously identify and include all interested stakeholder.
7. Assume it will be complicated.
8. Micro-manage expectations not the process.
9. Exercise your highest degree of flexibility.
10. This is a groundbreaking initiative--resolve to keep going despite challenges and set backs.





MINISTRY OF HEALTH  
SINGAPORE

## HRCS: Experience of NMRC (Singapore) and Future Implications for Its Grant Framework

Dr Edwin Low, Executive Director  
National Medical Research Council, Singapore  
14<sup>th</sup> January 2009

### National Medical Research Council

- **Established in 1994**
- **A funding arm of Ministry of Health, Singapore**
- **Oversees the development and advancement of medical research in Singapore**
- **Provides research funding to healthcare institutions**
- **Awards competitive research funds for individual projects**
- **Responsible for the development of clinician-scientists through awards and fellowships**

## **Biomedical Sciences (BMS) Initiative**

- 2006 saw the launch of the Phase 2 of the Biomedical Sciences Initiative.
- Focus of Phase 2 was to build on the foundation of basic sciences (Phase 1) and to develop Translational and Clinical Research (TCR)
- An additional S\$650m was committed by the Government and NMRC was the designated programme office to develop and launch the new programmes

## **Singapore Biomedical Research Mapping (BMRM) Analysis Using HRCS**

### **Rationale**

- With the significant increase in research funding, the National Medical Research Council (NMRC) saw a need for a baseline comprehensive analysis of funding distribution.
- HRCS provides a more coherent approach:
  - to determine the status of NMRC funding distribution
  - to enable a need based funding of health care research in Singapore
- The result of analysis can be used in grant portfolio planning and assessing whether funding follows the burden of disease in Singapore as measured by Disability Adjusted Life Years (DALY) rates.
- NMRC conducted the analysis of relevant biomedical funding in the context of planning for the Singapore Biomedical Sciences Initiatives Phase III budgeting

## Methodology of Analysis

- Funding data for the period of 2002 to 2007 from NMRC and the Biomedical Research Council (BMRC) was used
- 1530 grants with a total budget of S\$376m were coded
- Only **peer reviewed competitive grants** such as Individual Research Grant (NMRC) and extramural grants (BMRC) were included in the analysis
- **Not included** - NMRC Block grants, BMRC intramural funding and Indirect cost

## Methodology of Analysis (Cont.)

How coding was done:

- 1) Data collected: project title, PI, institution, year, duration and amount of award, and scientific abstract.
- 2) Coding was done by 2 – 3 interns independently at the same time. They were trained for using the system and guided throughout the coding exercise. Individual sets of coding were compared and discussed by 2 staff from NMRC. Relatively high agreement between the coders and staff (70 – 80%)
- 3) Duration of the pilot study: 6 months (Mar to Aug 2008).

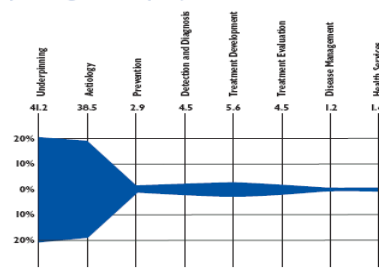
## Difference Between UKCRC Report and BRFM Report

- **UKCRC HRCS Report**
  - Used one year cash flow from different organization as the funding data
  - A snapshot of data for one financial year
- **Singapore BRFM Report**
  - Uses the **total commitment** per project as the funding data
  - Uses aggregated data from 2002-2007 in both NMRC & BMRC analysis to help assess the **trend** of fund allocation by research activity and health category

## Comparison with Disability Adjusted Life Years (DALY) Rates

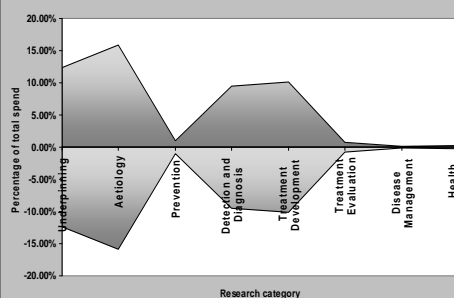
- Disability adjusted Life Years (DALY) is a frequently used measure of burden of disease and takes into account the impact of mortality and morbidity in a single measure.
- Trend in the ranking of funding distribution by health category **correlated** to that of disease areas in DALY rates in general.
- A few exceptions were observed in the categories of cardiovascular, mental, metabolic and endocrine, respiratory, injury related and renal and urogenital research, where funding allocation was not adequate when compared to DALY rates.
- Possible reasons for the deviation:
  - Block grants and intramural grants were not included for analysis.
  - Some other factors might affect the funding allocation, e.g. quality and size of research workforce for the area,
- This comparison can provide some basis for re-directing funding resources to areas with insufficient funding support.

Chart 2.1: MRC spend by research activity (expressed as percentage of total spend)



Source: UKCRC Health Research Analysis. Note: Data excludes R&D support for NIHR centres funded by the UK Health Departments, core support costs and research training places across the UK.

BMRC Combined Spend by Research Category 2002-07

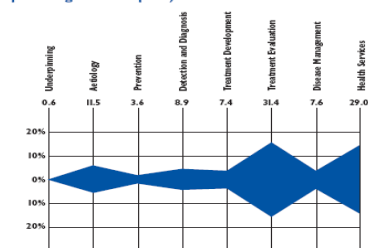


## Comparison between MRC UK and BMRC Singapore

In terms of funding distribution by research activity, MRC UK funding is directed towards basic and aetiology based research.

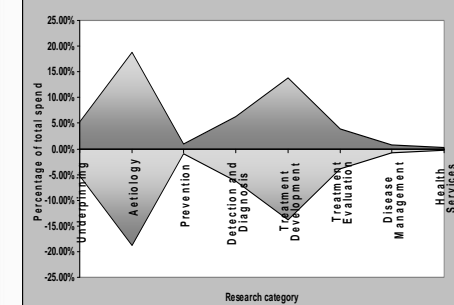
Due to the dominant basic science focus, BMRC has a large share of generic research funding. Therefore the BMRC funding pattern appears similar to that of MRC, i.e. more of basic research funding with a narrow tail in clinical research funding.

Chart 2.2: DH spend by research activity (expressed as percentage of total spend)



Source: UKCRC Health Research Analysis. Note: Data excludes R&D support for NIHR centres funded by the UK Health Departments, core support costs and research training places across the UK.

NMRC Combined Spend by Research Category 2002-07



## Comparison between DH UK and NMRC Singapore

- NMRC funding pattern over the period of 2002 to 2007 shows a narrow tail in clinical research funding although it is the counterpart to the NIHR which manages DH research funding.

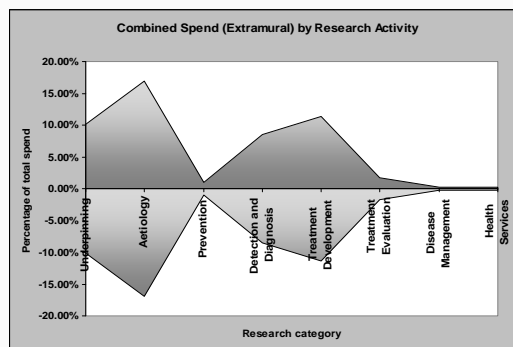
- NMRC was the only medical research funding agency till 2000 when BMRC was formed and as such a significant portion of NMRC funding also supported generic/basic research during the earlier years and this pattern continued since. *Caveat is that the larger portion of the funding i.e. intramural grants is not reflected in analysis*

- Analysis also does not reflect significant new monies injected for translational and clinical research in 2008

- Analysis suggests that NMRC needs to increase its proportion of funding for translational and clinical research funding.

## NMRC and BMRC combined analysis

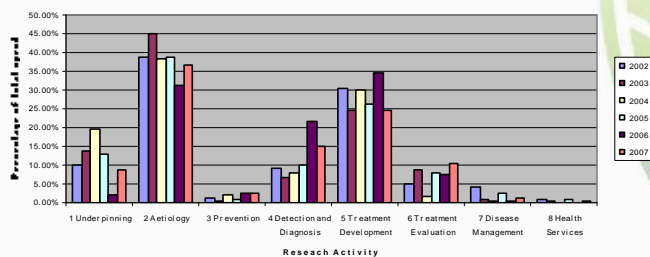
- More than half of the combined research funding has been spent on basic science and assessing the cause and development of diseases and conditions.
- More than one fourth of the combined research funding is spent on research into treatments (including treatment development and evaluation)
- Compared to other research, primary prevention of disease and well being had received significantly low proportion of funding.



## NMRC Funding Trend

- Observations: a decrease in the funding for underpinning and aetiology research, a significant increase in the study of detection and diagnosis and a slight increase in treatment.
- Observations may reflecting a shift of funding focus from basic to clinical & translational research from 2002 to 2007.

NMRC Total Spend by Research Activity 2002 - 2007





## Limitations

- **Multiple codes are equally apportioned**
  - May not reflect correctly the actual percentage as many research projects do have a main focus among multiple aims
- **Not applicable for analysis of block grants**
  - 60% of NMRC funding were directed into block grants
  - 78% of BMRC funding go to intramural grants (66%) and infrastructural support

## Future Plans

1. **NMRC will integrate HRCS into a new online grant application and evaluation system**
  - **nGager, which will be launched in mid 2009.**
  - All projects will be coded at the application stage by the applicants
  - Annual statistics can be generated from nGager for management review
  - Reviewers will be coded according to research areas to facilitate the reviewer selection process

## HRCS Coding Integrated in nGager

6. Health Research Code Scheme

HRCS Research Activity

**Research Activity**

1. Underpinning Research	1.1 Normal biological development and functioning	X
Nothing Selected	1.1 Normal biological development and functioning	X
Nothing Selected	1.2 Psychological and socioeconomic processes	X
Nothing Selected	1.3 Clinical and physical sciences	X
Nothing Selected	1.4 Methodologies and measurements	X
Nothing Selected	1.5 Resources and infrastructure (underpinning)	X

+ Add Row

**HRCS Health Category**

**Health Category**

Other
Nothing Selected
Nothing Selected
Nothing Selected
Nothing Selected

## Future Plans (Cont.)

### 2. Research mapping analysis for large scaled programmatic grants and Intramural Grants

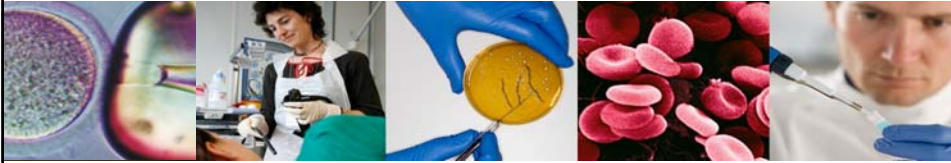
- NMRC will be working with UKCRC to convert the intramural funding data to a form suitable for HRCS analysis
- With the inclusion of intramural funding data, NMRC will be able to complete the total funding distribution assessment in Singapore





**MINISTRY OF HEALTH**  
SINGAPORE

**END**



## A funder's perspective on research classification

**Declan Mulkeen**  
Medical Research Council

## MRC background

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- Spends over £600m per annum on basic and applied research
- Mission-focussed – not discipline focussed
- From fundamental lab. science to clinical trials of new therapies
- Strategic environment demands coordination
  - With NIHR and health departments
  - With UK's strong charity sector
  - With other Research Councils
  - Internationally

## Prior to 2005

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- Frascati (1980s)
- Analyses by funding Board
- MeSH
- ICRP (2003)
- Once-off portfolio studies (neuroscience, ageing, etc)

## Value of the UKCRC initiative

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- Promoting cross-funder openness
- Enough users to be stable over time
- Independent of MRC
- Focus on purpose, not discipline
- Improved view of basic / applied spectrum

## Current practice

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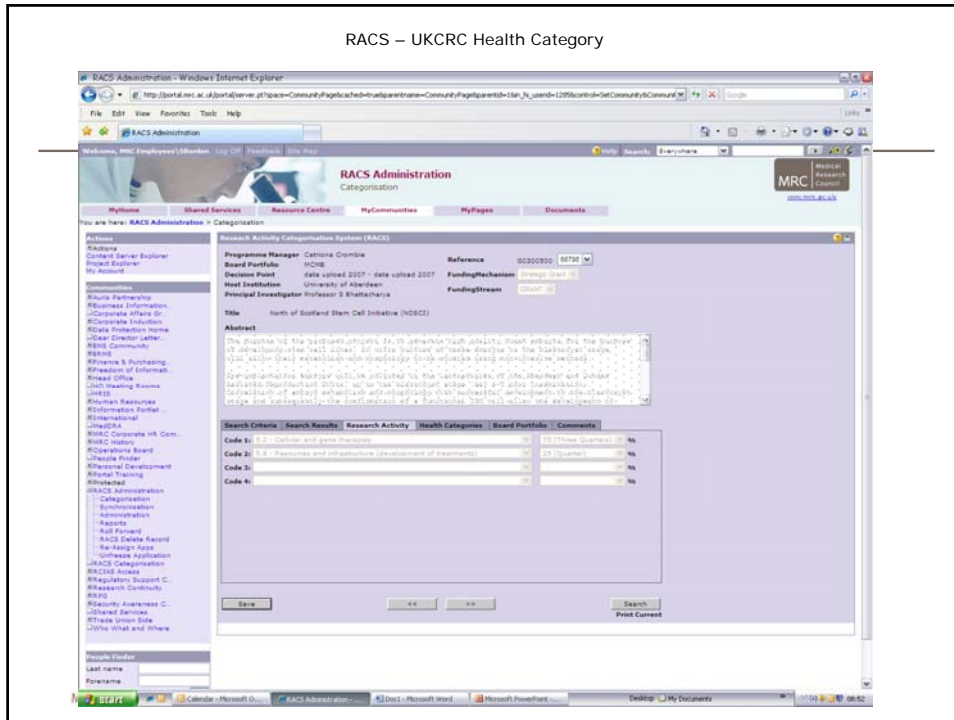
- UKCRC coding
- MeSH
- Funding panels' classification
- More detailed analyses in key areas - ICRP

## Current practice

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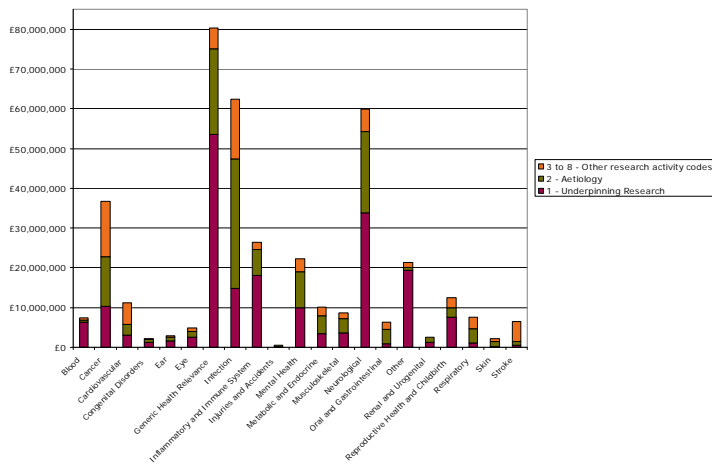
- Programme Managers classify their own awards
- Coding supported by custom software with drop-down menus
- Independent UKCRC coders check a sample – with feedback

### RACS – UKCRC Health Category

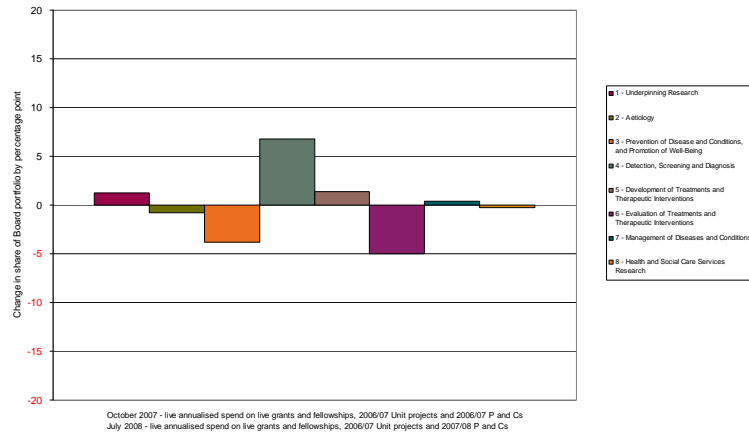


## MRC Uses – descriptive map by health area and type

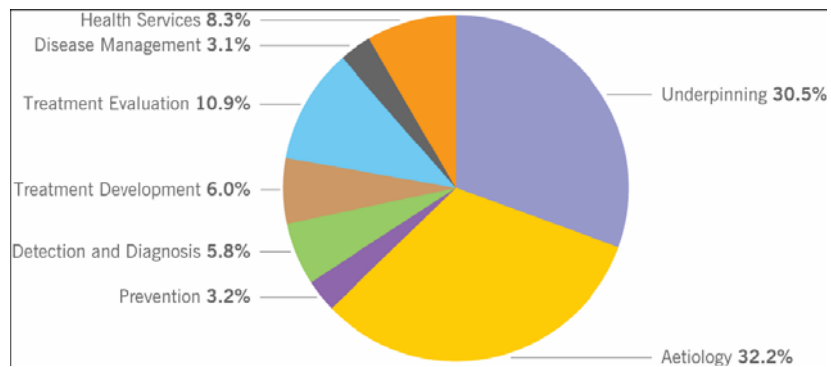
Annualised weighted spend by UKCRC Health Category and Research Activity



## MRC Uses – tracking change in a field



## Across the Public Sector – and then beyond



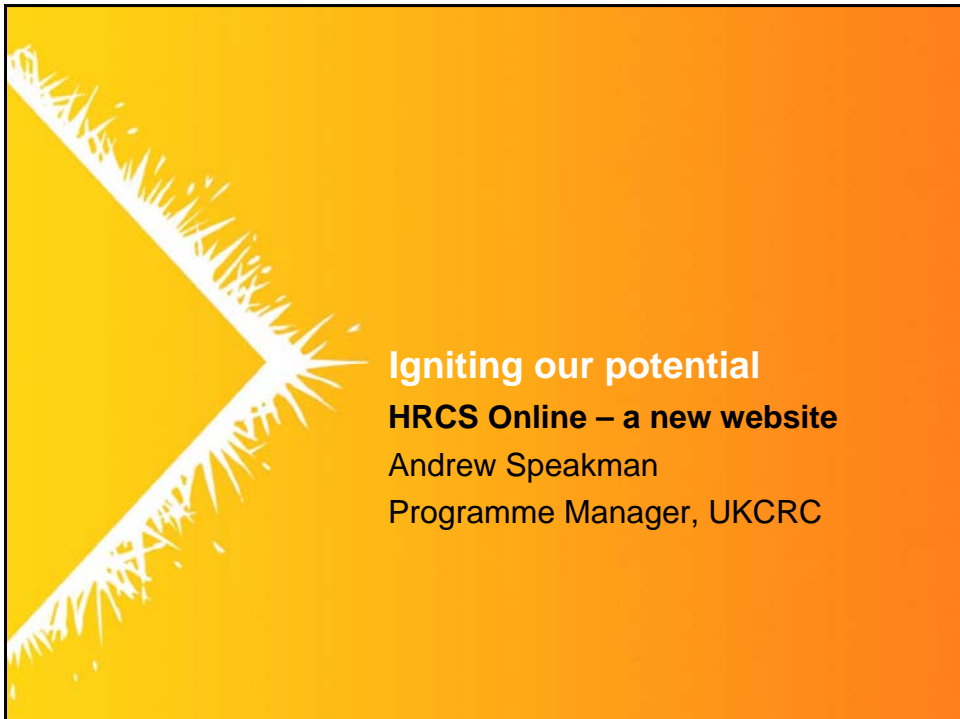
## Future Uses

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- Further UK-wide mapping of funding and changes over time
- International comparisons ? And strategy development ?
- Assessing the value of different categories of research !



**Igniting our potential**  
**Health Research Classification System**  
International Workshop  
14<sup>th</sup> Jan 2009



**Igniting our potential**  
**HRCS Online – a new website**  
Andrew Speakman  
Programme Manager, UKCRC



## Structure of this talk

- ▶ About the HRCS
  - ▶ Role, structure, uses
- ▶ Origins and purpose of HRCS Online
- ▶ Review of HRCS Online
- ▶ Next Steps

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## What is the HRCS?

- ▶ A system for classifying and analysing health and biomedical research funding
- ▶ Designed collaboratively by a range of funders
  - ▶ Single common system covering full spectrum of joint portfolio of research
  - ▶ Answers strategic questions about investment
  - ▶ Gives “broad brush” overview of funding patterns

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## Structure of the HRCS

- ▶ Two dimensional system
  - ▶ Health Categories
  - ▶ Research Activity Codes
- ▶ Health Categories
  - ▶ All areas of health or disease
  - ▶ 21 individual categories
  - ▶ Based on WHO ICD codes
- ▶ Research Activity Codes
  - ▶ All types of research activity from basic to applied
  - ▶ 48 codes in 8 groups
  - ▶ Based on cancer Common Scientific Outline

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## Health Categories

- ▶ Blood
- ▶ Cancer
- ▶ Cardiovascular
- ▶ Congenital Disorders
- ▶ Ear
- ▶ Eye
- ▶ Infection
- ▶ Inflammatory and Immune System
- ▶ Injuries and Accidents
- ▶ Mental Health
- ▶ Metabolic and Endocrine
- ▶ Musculoskeletal
- ▶ Neurological
- ▶ Oral and Gastrointestinal
- ▶ Renal and Urogenital
- ▶ Reproductive Health and Childbirth
- ▶ Respiratory
- ▶ Skin
- ▶ Stroke
- ▶ Generic Health Relevance
- ▶ Other

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## Overview of Research Activity Codes

1	<b>Underpinning Research</b>	Research that underpins investigations into the cause, development, detection, treatment and management of diseases, conditions and ill health
2	<b>Aetiology</b>	Identification of determinants that are involved in the cause, risk or development of disease, conditions and ill health
3	<b>Prevention of Disease and Conditions, and Promotion of Well-Being</b>	Research aimed at the primary prevention of disease, conditions or ill health, or promotion of well-being
4	<b>Detection, Screening and Diagnosis</b>	Discovery, development and evaluation of diagnostic, prognostic and predictive markers and technologies
5	<b>Development of Treatments and Therapeutic Interventions</b>	Discovery and development of therapeutic interventions and testing in model systems and preclinical settings
6	<b>Evaluation of Treatments and Therapeutic Interventions</b>	Testing and evaluation of therapeutic interventions in clinical, community or applied settings
7	<b>Management of Diseases and Conditions</b>	Research into individual care needs and management of disease, conditions or ill health
8	<b>Health and Social Care Services Research</b>	Research into the provision and delivery of health and social care services, health policy and studies of research design, measurements and methodologies

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## Application of the HRCS

- ▶ Coding is based on the main research objective
  - ▶ Not a keyword system
- ▶ Which is linked directly to associated funding
  - ▶ Codes based on lifetime of the award
  - ▶ Exact percentages with every code
- ▶ Provides a broad overview of the centre of gravity of research
  - ▶ But does not capture every aspect
  - ▶ And is not a financial audit tool

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## Use of the HRCS

- ▶ Extensive accumulated experience
  - ▶ Work began in 2005
  - ▶ Several major analyses
  - ▶ Range of organisations, award types and settings
- ▶ It works and is stable
- ▶ Open source and freely available

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## Practicalities of using the HRCS

- ▶ Quality assurance – ensuring consistency and standardisation
  - ▶ Contract coders
  - ▶ Training sessions
- ▶ Data processing – collecting, checking and analysing codes
  - ▶ Data entry form
  - ▶ Analysis database

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## Resources developed for the HRCS

- ▶ HRCS System
  - ▶ Definition of the system included in analysis reports
- ▶ HRCS Manual
  - ▶ Created to help expert coders and to train new users
  - ▶ Includes background and history, recommended approach to coding, further guidance on each of the categories, common questions and answers
- ▶ Analysis and reporting tools
  - ▶ Data entry spreadsheet
  - ▶ Database store
  - ▶ Analysis spreadsheets

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## HRCS Online

- ▶ Aims
  - ▶ To make existing information and resources more accessible
  - ▶ To provide further contextual help and links
  - ▶ To promote sustainability of the system
- ▶ Intended for two distinct groups
  - ▶ Naïve users wanting to learn how to use the system
  - ▶ Reference source for experienced users

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## Features of the website

- ▶ Online version of the classification system
- ▶ Access to information and guidance topics in the manual
- ▶ Linkages, contextual help, overviews
- ▶ Fully searchable
- ▶ Background on the origins and purpose of the system
- ▶ Download of reports, documents and software

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## HRCS Online

<http://www.hrcsonline.net> - HRCS - Home - Microsoft Internet Explorer

File Edit View Favorites Tools Help

 **HRCS Online**  
UKCRC Health Research Classification System

Home | HRCS System | Background | Reports & Downloads | Contacts & Events

### About this website

This website is an information resource for those who want to learn how to use the Health Research Classification System (HRCS) and an online reference and manual for those already using the system.

Click on **HRCS System** to start learning about the system. Click on **Background** to read background information about the classification system.

### What is the HRCS?

The Health Research Classification System (HRCS) is a bespoke system for classifying the full spectrum of biomedical and health research - from basic to applied - across all areas of health and disease. You can read a summary of its **key features**.

An **international workshop** will take place in London on 14th January 2009 to discuss the HRCS classification system.

### Origins of the HRCS

- The HRCS is **designed** to produce a broad strategic overview of health research funding.
- It was **developed** by the UK Clinical Research Collaboration (UKCRC) Partners and it has been adopted by many UK health research funders.
- It was the basis for **two major reports** about the UK's health research funding which have had a major impact.

### Downloads from this website

This website provides **online access** to all the codes and categories of the HRCS, but they can also be downloaded in PDF format for review or printing.

[Download the HRCS](#)

You can also download a number of **analysis tools** for use with the HRCS.

Site Map | Search HRCS | HRCS Overview | HRCS Download | Printable Version

# Introduction

The screenshot shows the HRCS Online website in a Microsoft Internet Explorer browser window. The address bar displays "http://www.hrcsonline.net - HRCS - Microsoft Internet Explorer". The page features the HRCS Online logo and navigation tabs for "Home", "HRCS System", "Background", "Reports & Downloads", and "Contacts & Events". A secondary navigation bar includes "HRCS", "Search", "Health Categories", "Research Activity Codes", and "Guidance Topics". The main content area is titled "Introduction to the HRCS" and explains that the HRCS is a two-dimensional framework. It lists two dimensions: Research Activity Codes (48 codes) and Health Categories (21 categories). A search box with a "Go" button is located on the left. The footer contains a "Site Map" and "Printable Version" links.

# Health Categories

The screenshot shows the "Health Categories" page for "Mental Health" on the HRCS Online website. The browser window title is "http://www.hrcsonline.net - HRCS - Health Categories - Microsoft Internet E...". The page has a left-hand navigation menu listing various health categories such as "Blind", "Cancer", "Cardiovascular", "Congenital Disorders", "Ear", "Eye", "Genetic Health Relevance", "Infection", "Inflammatory and Immune System", "Injuries and Accidents", "Mental Health", "Metabolic and Endocrine", "Musculoskeletal", "Neurological", "Oral and Gastrointestinal", "Other", "Renal and Urogenital", "Reproductive Health and Childbirth", "Respiratory", "Skin", and "Stroke". The "Mental Health" category is selected. The main content area provides a description of mental health, including depression, schizophrenia, and psychosis. It includes a section for "Advice" and "Related Guidance Topics" such as "Alcohol consumption", "Diet, obesity and nutrition", and "Research in the field of neuropsychology". A search box and a "Summary" link are also visible.

## Research Activity Codes

http://www.hrcsonline.net - HRCS - Research Activity Codes - Microsoft Inter...

HRCS Online  
UKCRC Health Research Classification System

Home HRCS System Background Reports & Downloads Contacts & Events

HRCS Search Health Categories Research Activity Codes Guidance Topics

**3.4 Vaccines** Overview | Summary | Search

Research on vaccines for prevention of disease including

- discovery, development and testing of vaccines and vaccination in model systems
- mechanism of action
- development, implementation and evaluation of vaccination programmes and studies to increase uptake
- decision making, outcomes from vaccination and evaluation of evidence to inform policy

**Advice**

Most vaccines are protective against infection and consequently the majority of vaccine development will be in this category.

Excludes the minority of vaccine studies that are being developed or used for treatment (which would fall into **5.1 Pharmaceuticals** or **6.1 Pharmaceuticals**).

**Related Guidance Topics** [Click to hide](#)

- Trials

All guidance topics related to Research Activity Codes:

Ageing

**Related Codes from the Common Scientific Outline** [Click to hide](#)

- 3.4 Vaccines

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## Guidance Topics

http://www.hrcsonline.net - HRCS - Guidance Topics - Microsoft Internet Expl...

HRCS Online  
UKCRC Health Research Classification System

Home HRCS System Background Reports & Downloads Contacts & Events

HRCS Search Health Categories Research Activity Codes Guidance Topics

**Trials** Overview | Search

Trials are not just in **6 Treatment Evaluation** - there can be trials in **4 Detection and Diagnosis**, **3 Prevention** and **8 Health Services**.

There are a number of research areas that are repeated in different parts of the **Research Activity Codes**. Classification of research is context dependent and the **coding guidance** is to identify the appropriate main **code group** first prior to assigning a sub-code.

A to D  
E to M  
N to Q  
R to Z

Reproductive health  
Resources and infrastructure  
Sepsis  
Sequelae and side effects  
Sexual health  
Smoking and tobacco  
Stem cells  
Supplements  
Surgical procedures  
Trials  
Vasculitis  
Wounds

Site Map | Search HRCS | HRCS Overview | HRCS Download | Printable Version



## Contextual Help

http://www.hrcsonline.net - HRCS - Research Activity Codes - Microsoft Inter...

HRCS Online  
UKCRC Health Research Classification System

Home HRCS System Background Reports & Downloads Contacts & Events

HRCS Search Health Categories Research Activity Codes Guidance Topics

**Research Activity Codes** Overview 2 | Summary 2 | Search 2

Research Activity Codes classify types of research a

This dimension of the HRCS has 48 sub-codes divided into eight overarching code groups which encompass all aspects of health related research activity ranging from basic to applied research.

The Research Activity Codes are modelled on the structure of the **Common Scientific Outline**, a cancer research specific classification system developed by the **International Cancer Research Partners**.

**Advice**

See the **coding guidance** on assigning Research Activity Codes.

1 Underpinning  
2 Aetiology  
3 Prevention  
4 Detection and Diagnosis  
5 Treatment Development  
6 Treatment Evaluation  
7 Disease Management  
8 Health Services

Full list of all Research Activity Codes

Site Map | Search HRCS | HRCS Overview | HRCS Download | Printable Version

## Overviews and Summaries

http://www.hrcsonline.net - HRCS - Summary of Codes - Microsoft Internet Ex...

HRCS Online  
UKCRC Health Research Classification System

Home HRCS System Background Reports & Downloads Contacts & Events

HRCS Search Health Categories Research Activity Codes Guidance Topics

**Summary of Research Activity Codes** Back

Research Activity Codes	Includes
1 Underpinning Research	Research that underpins investigations into the cause, development, detection, treatment and management of diseases, conditions and ill health
2 Aetiology	Identification of determinants that are involved in the cause, risk or development of disease, conditions and ill health
3 Prevention of Disease and Conditions, and Promotion of Well-Being	Research aimed at the primary prevention of disease, conditions or ill health, or promotion of well-being
4 Detection, Screening and Diagnosis	Discovery, development and evaluation of diagnostic, prognostic and predictive markers and technologies
5 Development of Treatments and Therapeutic Interventions	Discovery and development of therapeutic interventions and testing in model systems and preclinical settings
6 Evaluation of Treatments and Therapeutic Interventions	Testing and evaluation of therapeutic interventions in clinical, community or applied settings
7 Management of Diseases and Conditions	Research into individual care needs and management of disease, conditions or ill health
8 Health and Social Care Services Research	Research into the provision and delivery of health and social care services, health policy and studies of research design, measurements and methodologies

Site Map | Search HRCS | HRCS Overview | HRCS Download | Printable Version

# Searching

The screenshot shows the HRCS Online search results for the term 'diet'. The page is titled 'HRCS Online UKCRC Health Research Classification System'. The search results are organized into several sections: 'Search Details', 'Health Categories', 'Research Activity Codes', and 'Guidance Topics'. The 'Health Categories' section lists 'Metabolic and Endocrine' with a description: 'Studies on nutrition, diet and obesity are context based and should only be coded as Metabolic and Endocrine if they relate to metabolism.' The 'Research Activity Codes' section lists three categories: '3.1 Primary prevention interventions to modify behaviours or promote well-being', '5.7 Physical', and '6.7 Physical', each with a brief description. The 'Guidance Topics' section provides detailed coding instructions for 'Diet, obesity and nutrition', including a note that 'The coding for studies on obesity, diet and nutrition will depend on the nature of the research.' The page also includes a search filter on the left and a footer with navigation links and a Creative Commons license.

# Background

The screenshot shows the HRCS Online background page. The page is titled 'HRCS Online UKCRC Health Research Classification System'. The main content is under the heading 'Key Features'. It describes the HRCS as a system for classifying and analysing health research funding, with the role of facilitating research management by answering strategic questions about investment. The page lists several main benefits: it covers the full spectrum of biomedical and health research, directly links the main research objective to associated funding, has a history of being used to classify thousands of research awards, is a common stable system allowing meaningful comparisons, and its analysis results provide a broad overview of the strategic centre of gravity of a set of research awards. The page also lists what it does not do: it does not capture all facets of the research or potential downstream outcomes, and it is not a traditional keyword system enabling advanced searching and finding. The page includes a sidebar with links to 'Key Features', 'Design and Aims', 'History and Use', and 'Licence Conditions'. The footer contains navigation links and a Creative Commons license.

## Reports


The screenshot shows a web browser window displaying the HRCS Online website. The page title is "HRCS - Analysis Reports". The main content area is titled "Health Research Analysis Reports". It features a navigation menu with "Home", "HRCS System", "Background", "Reports & Downloads", and "Contacts & Events". The "Analysis Reports" section is active, showing a list of links: "Analysis Reports", "Analysis Tools", and "HRCS Download". The main text describes two reports: "UK Health Research Analysis" (2006) and "From Donation To Innovation" (2007). It includes two small images: one for the 2006 report and one for the 2007 report. The footer contains a site map, search options, and a Creative Commons BY-NC-ND license.

[Analysis Reports](#)  
[Analysis Tools](#)  
[HRCS Download](#)

### Health Research Analysis Reports

The HRCS underpinned two important UKCRC reports which together provide a comprehensive overview of non-commercial health research funding in the UK.

The results of an analysis of the UK's 11 largest government and charity health research funders are in the **UK Health Research Analysis** report which was published in 2006.



Subsequently the HRCS was used to analyse the funding activities of 29 medium and smaller sized members of the Association of Medical Research Charities. This report, **From Donation To Innovation**, was published in 2007.



The two analysis reports have been disseminated widely in the UK and had a major impact, providing the basis for high level strategy discussions and informing a number of joint funding initiatives.

Site Map | Search HRCS | HRCS Overview | HRCS Download | Printable Version

## Software

The screenshot shows a web browser window displaying the HRCS Online website. The page title is "HRCS - Analysis Tools". The main content area is titled "Analysis Tools". It features a navigation menu with "Home", "HRCS System", "Background", "Reports & Downloads", and "Contacts & Events". The "Analysis Tools" section is active, showing a list of links: "Analysis Reports", "Analysis Tools", and "HRCS Download". The main text describes the HRCS as an analytical framework and lists three tools: "Data entry spreadsheet (MS Excel)", "HRCS database (MS Access)", and "Pivot table analysis spreadsheet (MS Excel)". It also mentions that detailed explanatory comments are provided for each spreadsheet. The footer contains a site map, search options, and a Creative Commons BY-NC-ND license.

### Analysis Tools

The HRCS is an analytical framework where assigned codes are directly linked to award funding using a standardised coding and apportionment system. This means that amounts of investment associated with specific areas of research can be analysed in a reproducible manner with no double counting of total award funds.

A number of simple tools have been developed to enable analysis using the HRCS, as follows:

- Data entry spreadsheet (MS Excel)
- HRCS database (MS Access)
- Pivot table analysis spreadsheet (MS Excel)

There are detailed explanatory comments in each of the spreadsheets. The database is used to import from the data entry spreadsheet and then export in the correct format to the analysis spreadsheet.

Site Map | Search HRCS | HRCS Overview | HRCS Download | Printable Version

## Website development

- ▶ 'Soft launch' Dec 2008
- ▶ Short term plans
  - ▶ Incorporating feedback from workshop
  - ▶ Wider publicity and awareness building
  - ▶ Developing administration and update procedures
- ▶ Longer term possibilities
  - ▶ Could be a focus for a user community?
  - ▶ Integration with other systems

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<http://www.ukcrc.org/>  
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