

MRC

Medical  
Research  
Council

## UK Stem Cell Portfolio Analysis 2007



## Background

On behalf of the UK Stem Cell Funders Forum, MRC has compiled a detailed analysis of the UK stem cell funding portfolio.

Member of the UK Stem Cell Funders Forum supplied MRC with data including the abstracts on the grants that were live in 2007. UK Clinical Research Collaboration (UKCRC) worked with MRC to code the projects with the UKCRC criteria for:

- Type of research
- Research breakdown
- Disease breakdown

and additional for:

- Funding Organisation
- Type of award (grant, training, centre of excellence, resource)
- Type of stem cell (adult, embryonic or both)
- Research model type (in vitro, model organism, human, not applicable)
- Geographical and institutional analysis.

What the analysis shows:

- A total annual spend for stem cell research by Funders Forum members was £59.6 m for grants that were live in 2007.
- A total of 469 grants were included in the analysis.
- The grant portfolio covered adult and embryonic stem cell research in both human and animal systems.
- More than half of the research funding (59%) was spent on underpinning research.
- Treatment Development made up the second largest proportion of research spending (20%) by research type.
- Research funded covers a variety of categories of health relevance. The largest fraction (33%) is for generic health relevance. With neurological stem cell research receiving the second largest amount of funding (18%).
- The funder spending the most on stem cell research is MRC.
- 57% (£35m) of funding goes on research grants
- 13% (£7.9m) of funding goes on training grants please note this figure does not include MRC or BBSRC studentships as abstracts were not available.
- 43% of funding was for work using adult stem cells and 38% was for embryonic stem cell research.
- 14% of projects used both adult and embryonic stem cells.
- 43% of work funded used an animal model.
- Cambridge University received the most funding (£9.2m, 16%) and the largest number of grants (51 grants).
- Edinburgh University receives the second highest amount of funding (£5.6m, 6.1%) and number of grants (36 grants).

## Contents of paper - UK Stem Cell Portfolio Analysis

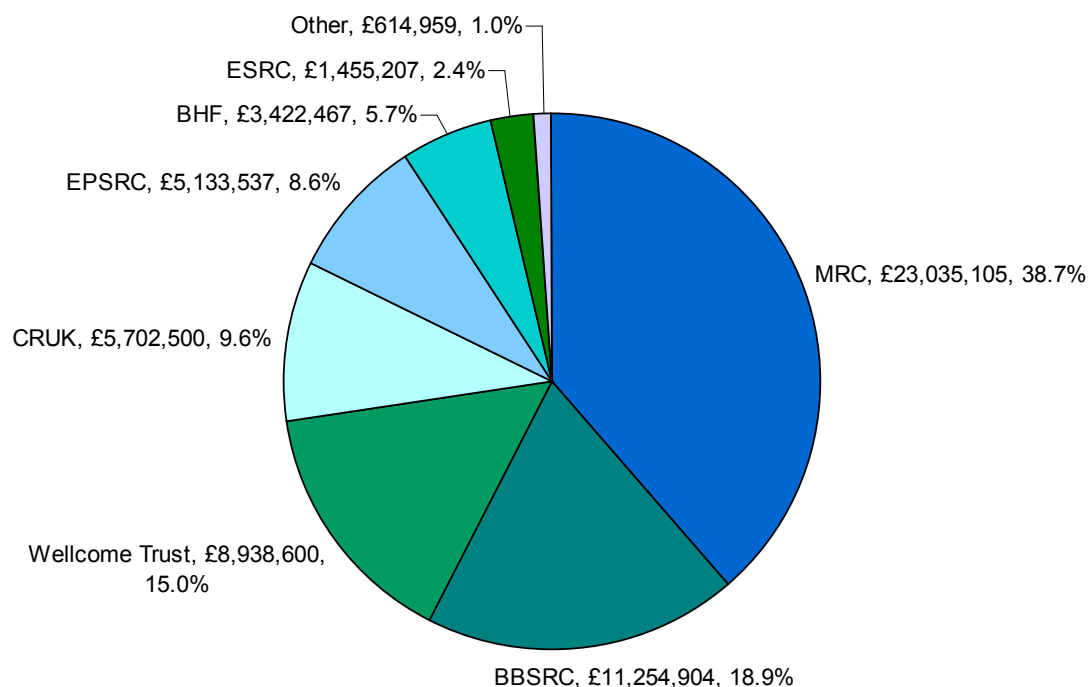
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## 1. Total Spend by Funding Organisation

Table 1 shows the annual spend and the number of awards each funder had live on 1st of January 2007. This is also shown as a percentage of the total portfolio. Figure 1 shows the percentages spend for each funder included in the analysis

Funding Organisation	Total Spend 2007	% of Total Spend	Total number of Awards Live in 2007	% of Total number of Awards
MRC	£23,035,105	38.68%	119	25.37%
BBSRC	£11,254,904	18.90%	148	31.56%
Wellcome Trust	£8,938,600	15.01%	42	8.96%
CRUK	£5,702,500	9.57%	31	6.61%
EPSRC	£5,133,537	8.62%	43	9.17%
BHF	£3,422,467	5.75%	50	10.66%
ESRC	£1,455,207	2.44%	20	4.26%
Parkinson's Disease Society	£335,916	0.56%	8	1.71%
Alzheimer's Society	£115,242	0.19%	2	0.43%
Diabetes UK	£112,801	0.19%	5	1.07%
Scottish Government	£51,000	0.09%	1	0.21%
<b>Total</b>	<b>£59,557,279</b>	<b>100.00%</b>	<b>469</b>	<b>100.00%</b>

**Table 1**



**Figure 1:** Total stem cell research spend for each funder.

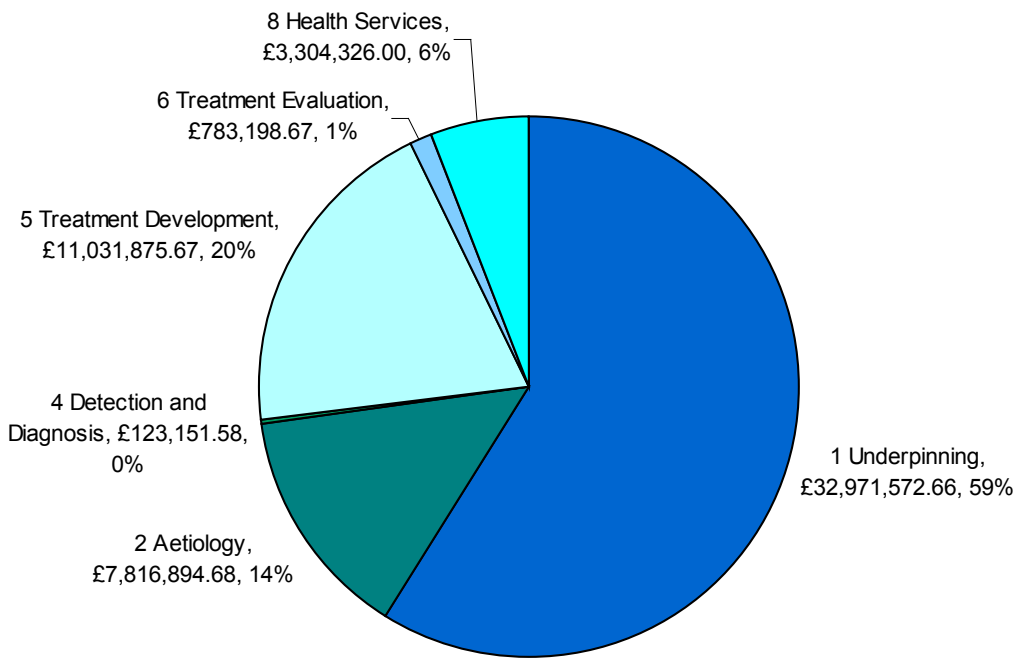
## 2. UK Clinical Research Collaboration Health Research Classification System

**2.i Award Numbers and Type of Research:** - Each grant was coded based on the abstract into the categories and subcategories listed below according to the type of research undertaken. This is based on the UK Clinical Research Collaboration (UKCRC) health research classification system. For more information on the UKCRC criteria see annex 1. Some abstracts did not contain sufficient information to allow them to be coded accurately using this criteria; these have been listed as not coded. Each grant may cover more than one subcategory; this is represented as a fraction of one. Table 2 shows the total UK funding portfolio with the number of grants in each category along with the annual spend in that area for grants live at first of January 2007.

Research Group	Research SubCode	Total Number of Grants	Total Spend
1 Underpinning	1.1 Normal biological development and functioning	170.25	£28,527,667.39
	1.3 Chemical and physical sciences	27.5	£3,860,876.27
	1.4 Methodologies and measurements	2	£387,000.00
	1.5 Resources and infrastructure (underpinning)	1	£196,029.00
1 Underpinning Total		200.75	£32,971,572.66
2 Aetiology	2.1 Biological and endogenous factors	58.75	£7,816,894.68
2 Aetiology Total		58.75	£7,816,894.68
4 Detection and Diagnosis	4.1 Discovery and preclinical testing of markers and technologies	2.5	£92,651.58
	4.2 Evaluation of markers and technologies	0.5	£30,500.00
4 Detection and Diagnosis Total		3	£123,151.58
5 Treatment Development	5.1 Pharmaceuticals	4	£556,214.07
	5.2 Cellular and gene therapies	111	£9,772,776.25
	5.3 Medical devices	3	£189,359.26
	5.4 Surgery	3	£218,552.56
	5.7 Physical	1	£67,333.33
	5.9 Resources and infrastructure (development of treatments)	2	£227,640.20
5 Treatment Development Total		124	£11,031,875.67
6 Treatment Evaluation	6.1 Pharmaceuticals	4.5	£193,197.00
	6.2 Cellular and gene therapies	4.5	£341,723.33
	6.4 Surgery	4.5	£217,778.33
	6.7 Physical	0.5	£30,500.00
6 Treatment Evaluation Total		14	£783,198.67
8 Health Services	8.1 Organisation and delivery of services	3	£566,468.50
	8.3 Policy, ethics and research governance	15	£1,877,621.00
	8.4 Research design and methodologies	2.5	£276,186.50
	8.5 Resources and infrastructure (health services)	3	£584,050.00
8 Health Services Total		23.5	£3,304,326.00
Coded Total		424	£56,031,019.26
Not Coded		45	£3,526,109.74
<b>Grand Total</b>		<b>469</b>	<b>£59,557,279.00</b>

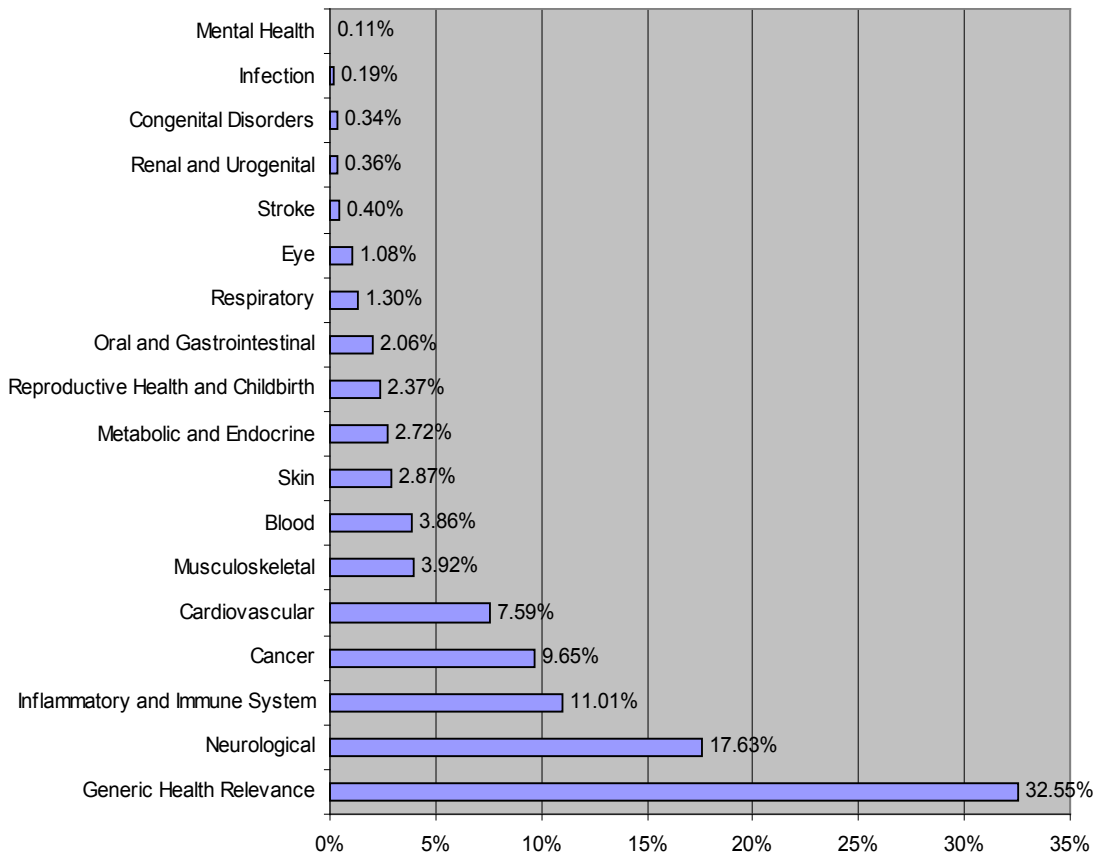
**Table 2**

**2.ii Proportion of Combined Total Spend by Research Activity:** – The amount of money spent on each type of research, by all funders, is shown in figure 2.i as a percentage.



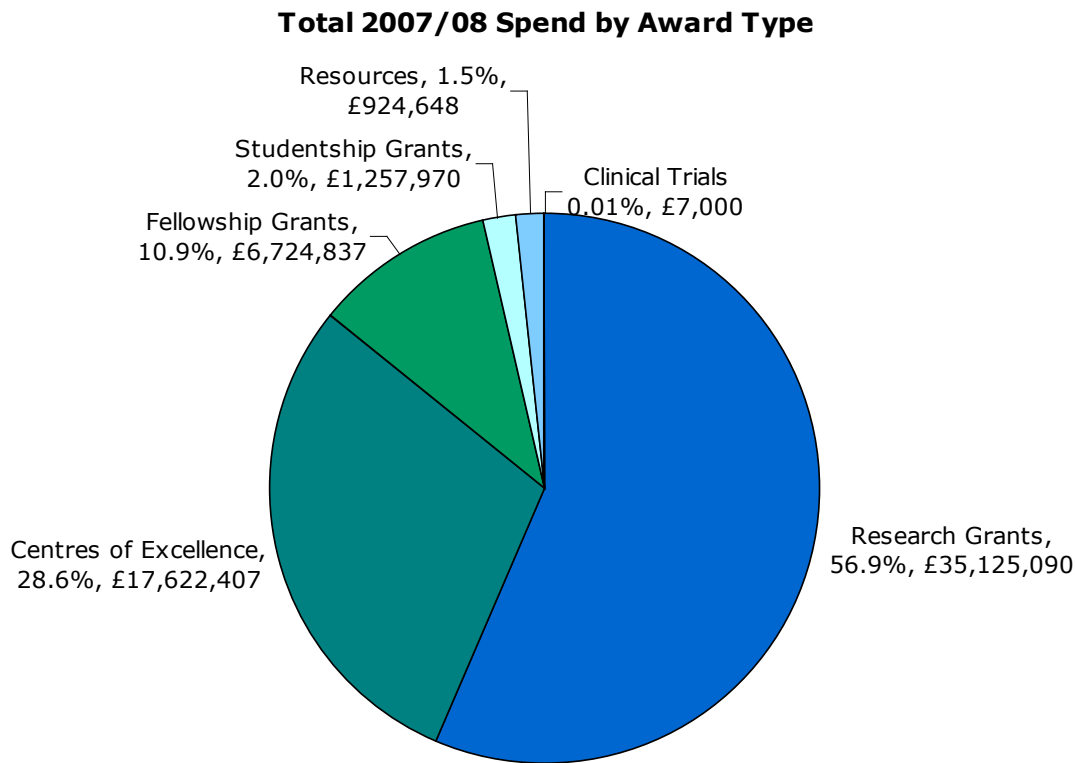
**Figure 2.1** Percent total spending by research activity

**2.iii Disease Breakdown:** – the grants were also coded for disease relevance. Figure 3, below, shows the percentage of money spent from the UK portfolio in each of the health relevance categories in the UKCRC Health Research Classification System.

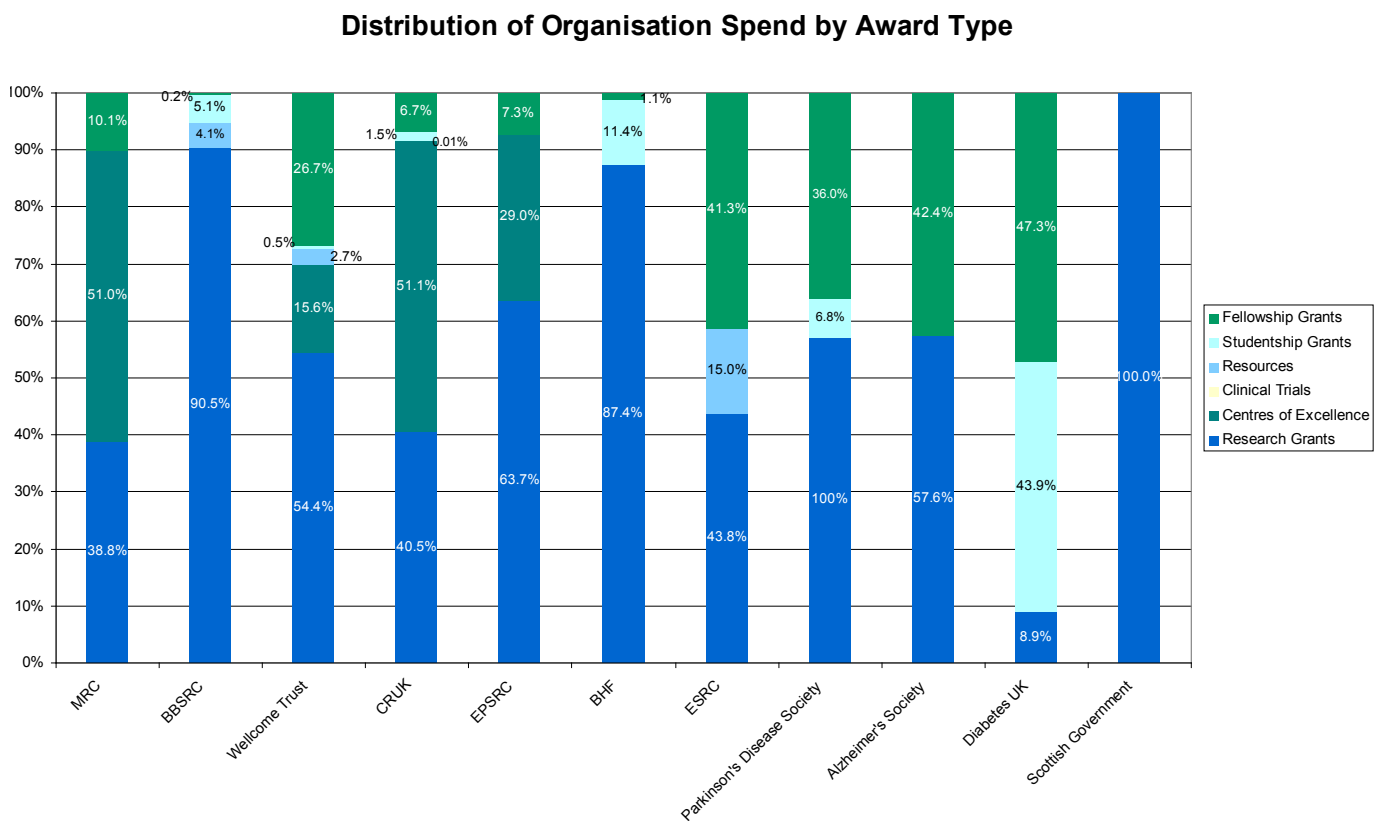


**Figure 2.2** Percentage of spending attributed to all health categories

**3. Breakdown of Spend by Award Type:** Awards were categorised for the type of funding, training grants were broken down into Fellowships and Studentships. These figures do not include all BBSRC and MRC spend on studentships as abstracts were not available. Centres of Excellence is inclusive of spend in research institutes and units.



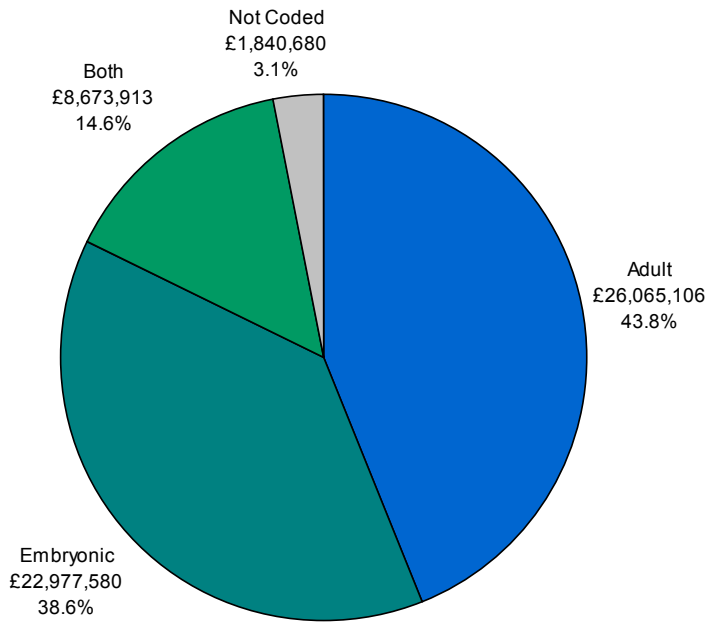
**Figure 3.i:** The percentage spend by award type for all the funders.



**Figure 3.ii:** The percentage spend by award type for each funder

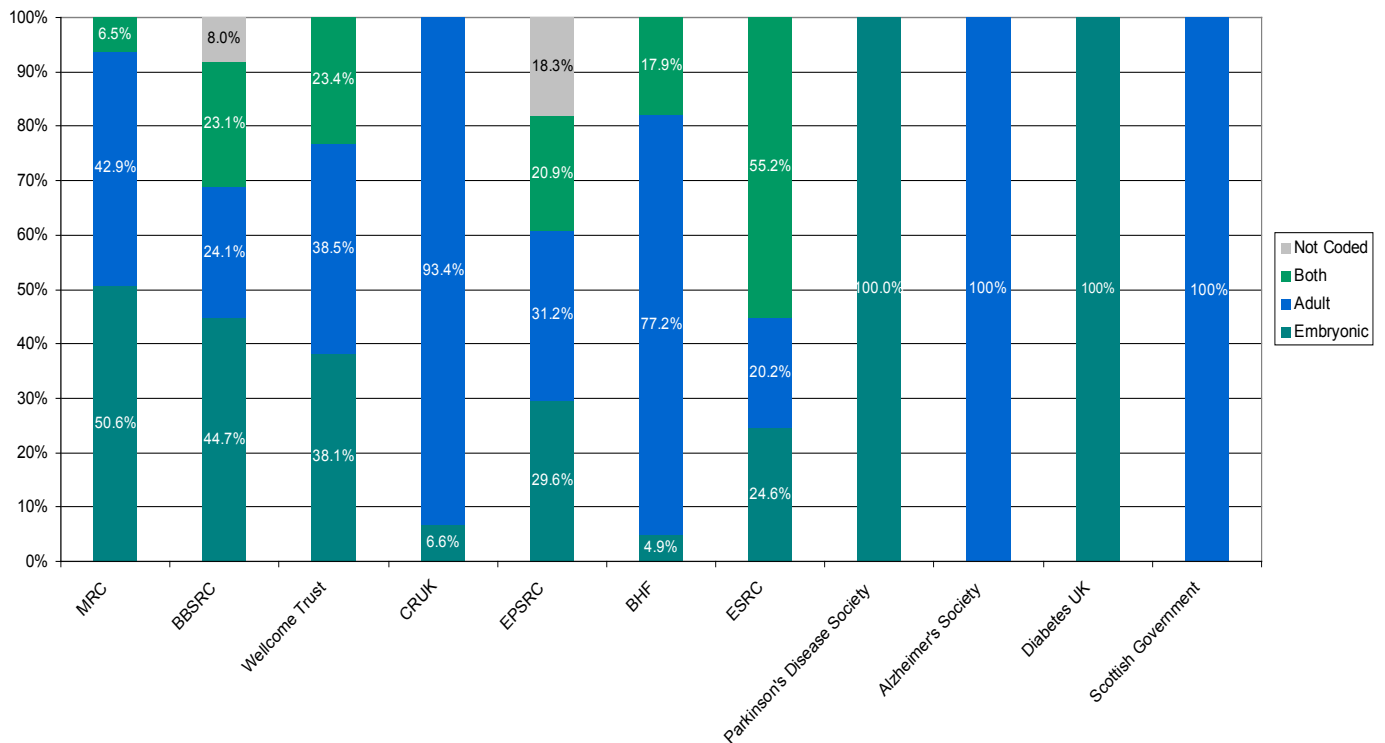
## 4. Breakdown of Spend by Stem Cell Type

**Total 2007 Spend by Stem Cell Type**



**Figure 4.i:** The percentage spend by stem cell type used in the research for all funders.

**Distribution of Organisation Spend by Stem Cell Type**

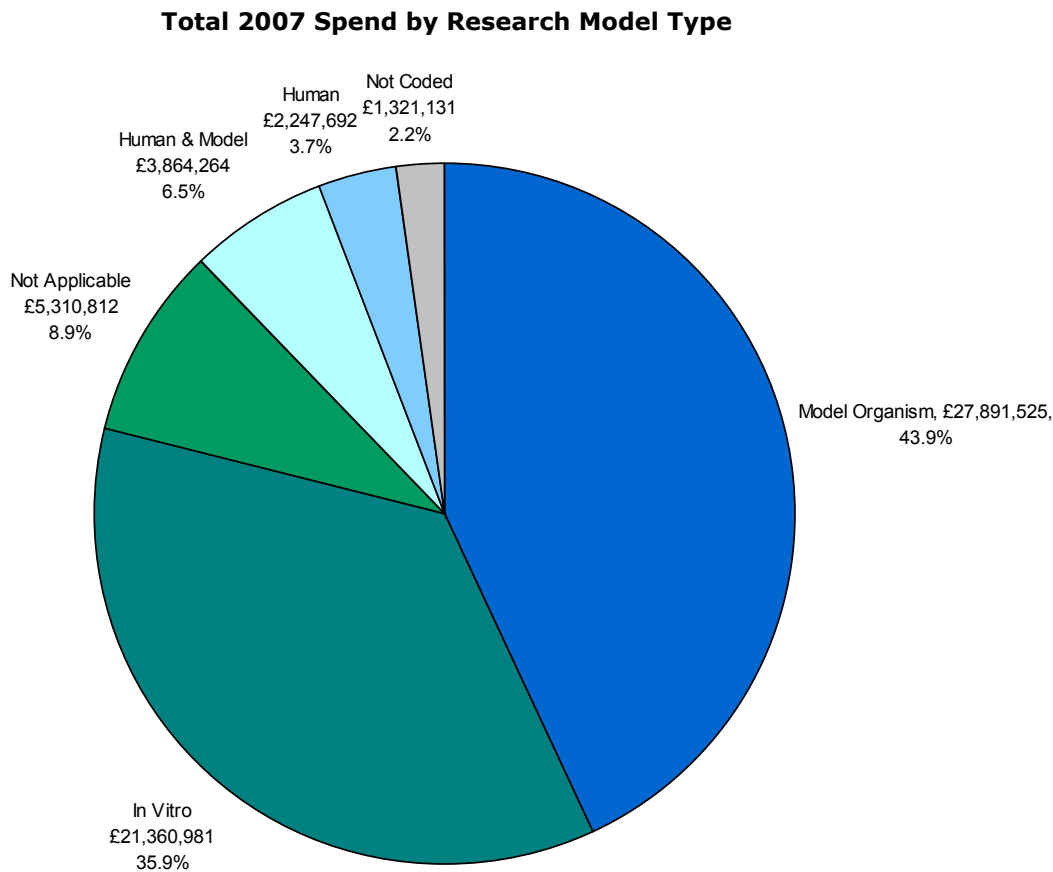


**Figure 4.ii:** The percentage spend by stem cell type used in the research for each funder.

## 5. Breakdown of Spend by Research Model Type

The grants were coded for research model.

- **In vitro** - was used for grants using only stem cell lines in culture
- **Model Organism** - was used for grants that used an animal model to study stem cell; it is expected that most grants in the this section will also be performing work "in vitro"
- **Human** - was used for projects with human participants
- **Human and Model Organism** - was used for projects which used animal models and human participants
- **Not applicable** - was used for grants that were non-biological such as those on the ethics of stem cell research.



**Figure 5.i:** The percentage spend by research model type for all funders.



### Distribution of Organisation Spend by Research Model Type

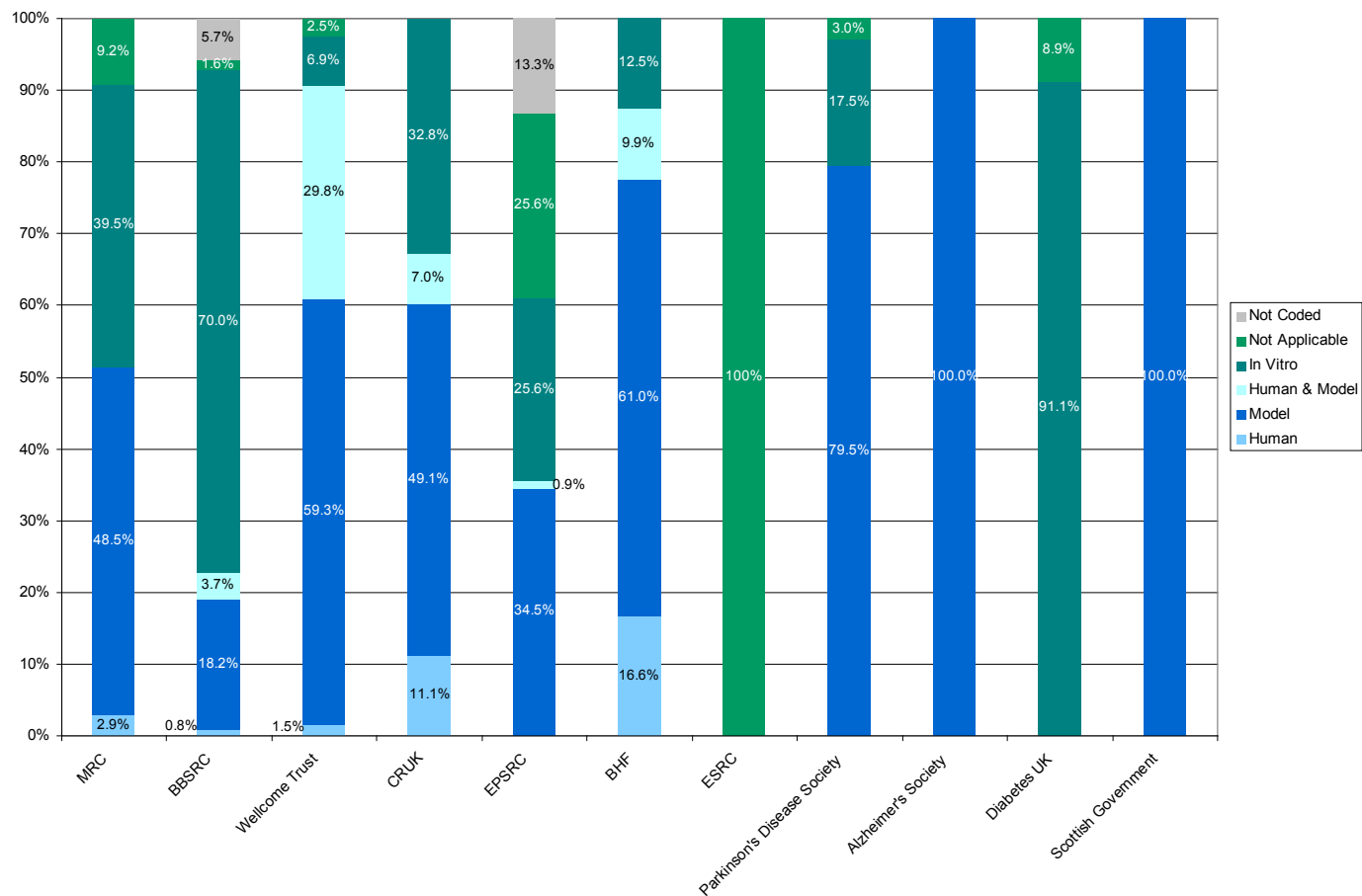
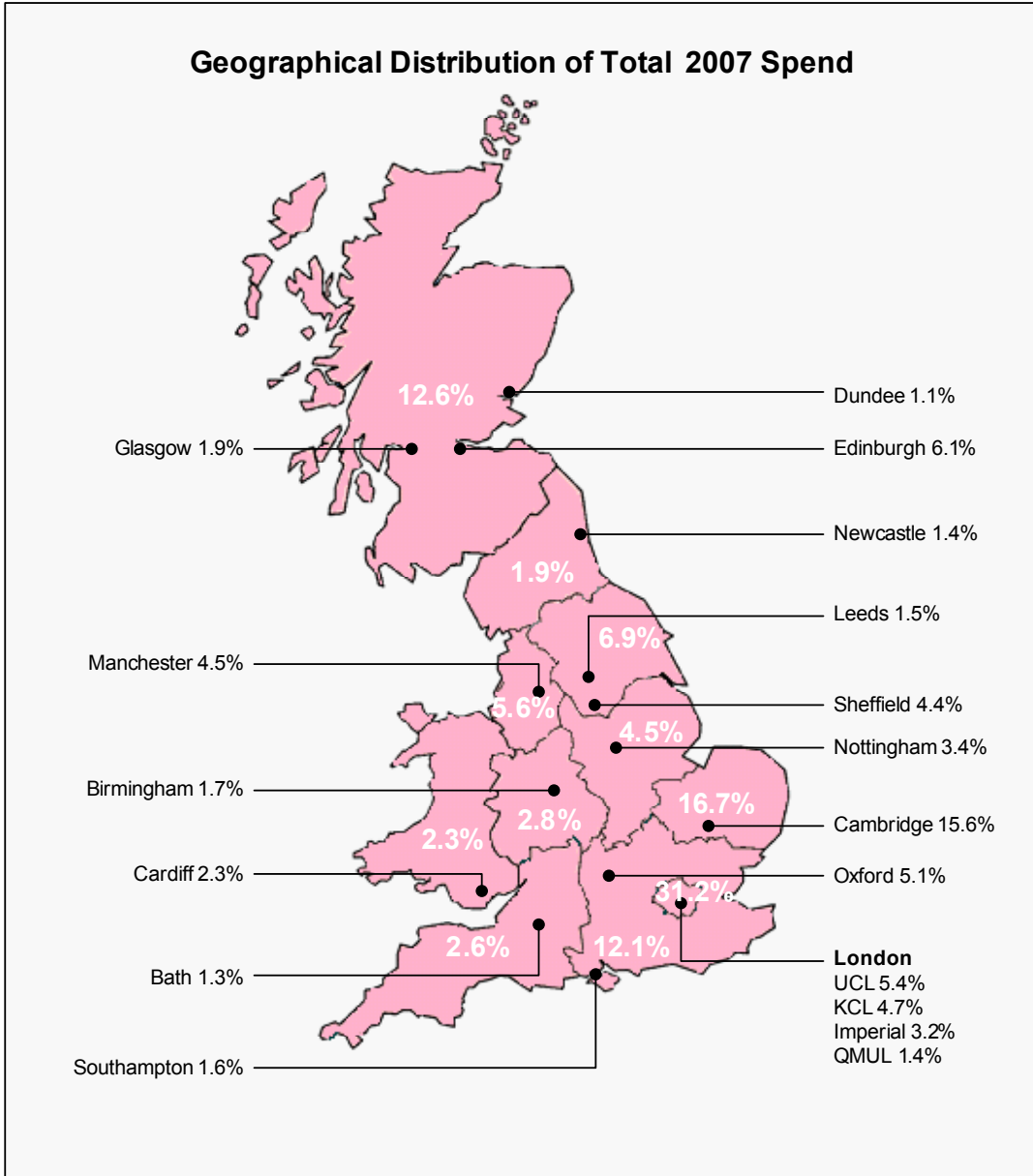


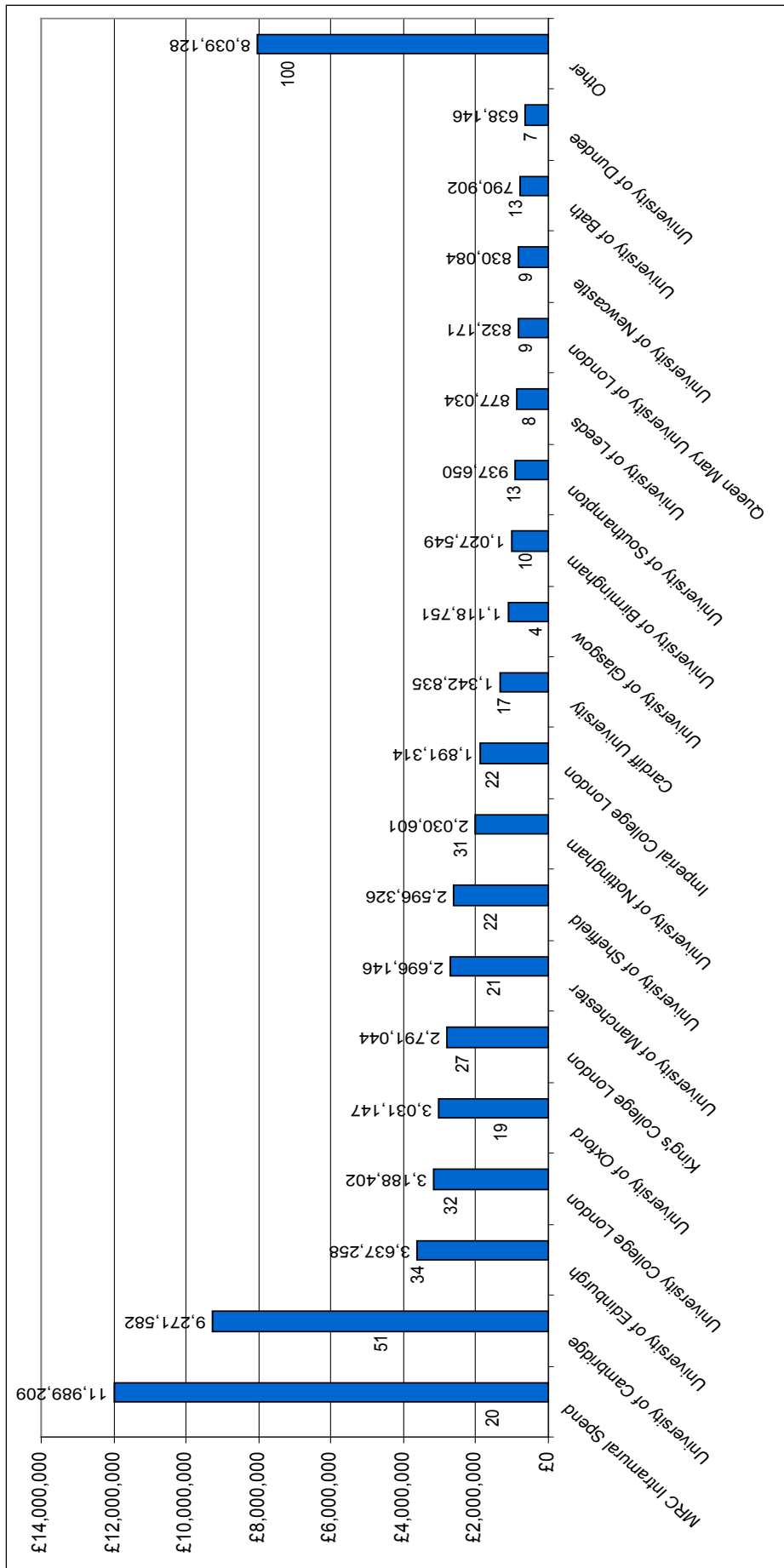
Figure 5.ii: The percentage spend by research model for each funder.

## 6. Percentage Spend by Geographical Region and Institution



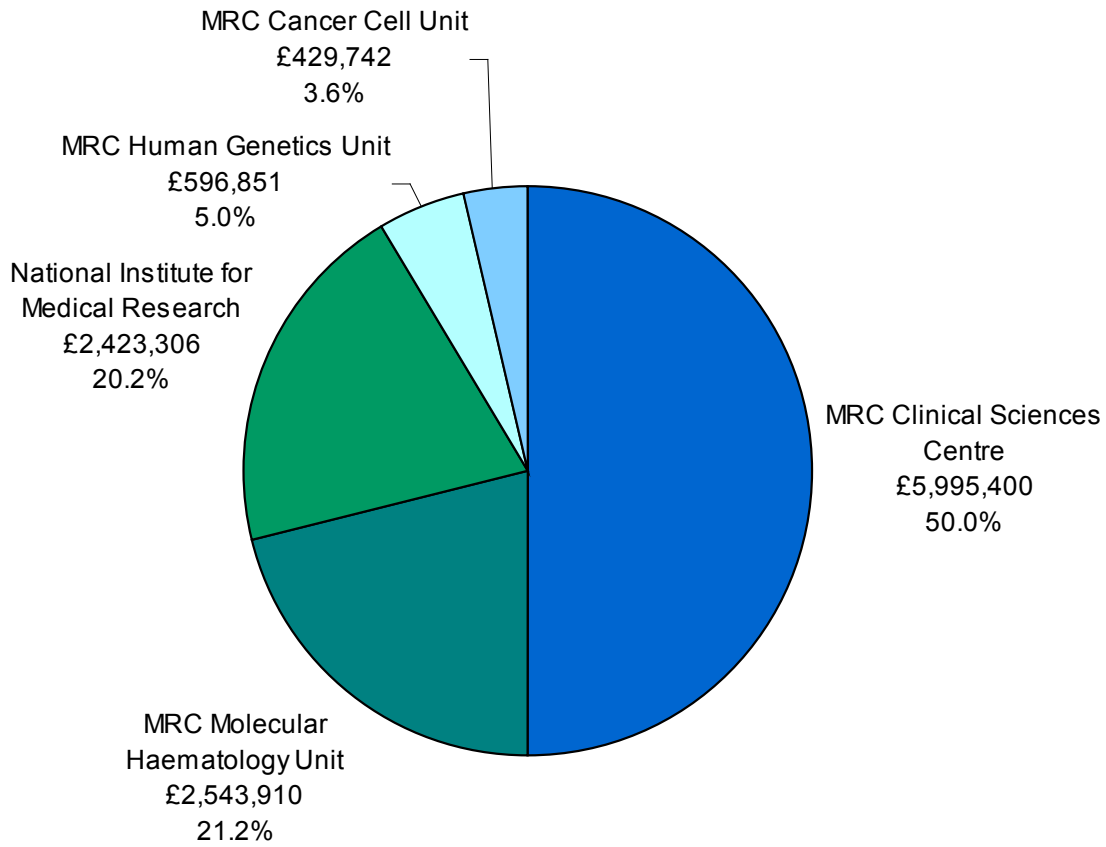
**Figure 6.1:** The percentage spend for all funders are shown by geographical region and individual universities receiving  $\geq 1.0\%$  of total spend are pinpointed on the map, specifically these refer to the “Universities of” the city named e.g. University of Bath, University of Birmingham or University of Oxford. The figures for the regions encompass all spend in that region including HEI receiving  $<1\%$  of funding and funders’ own Institutes and Units, e.g. The Babraham Institute. No awards were made to any institution based in Northern Ireland.

### Distribution of Spend by Higher Education Institute (HEI)



**Figure 6.ii:** each university receiving  $\geq 1\%$  of total funding is shown. The figures next to each bar denote the total number of live awards held by the university/Research Institute. The spend for all MRC Units and Institutes has been shown together in one column, further information on MRC intramural spend is shown in Figure 5.iii. All the Universities and Institutes receiving  $< 1\%$  of the total spend are shown together this is an additional 37 HEI.

### MRC Intramural Spend



**Figure 6.iii:** The distribution of MRC funding on stem cells research in MRC Units and Institutes shown as a percentage of total MRC spend (£23.6M).

