

# 1 in 50 people who die under the age of 60 die of a brain tumour' 

55\% of the national spend on site-specific cancer research benefits four cancers: breast, leukaemia, bowel and prostate ${ }^{3}$. These four cancers represent 29\% of those diagnosed with cancer and $27 \%$ of deaths from cancer ${ }^{4}$.

Brain tumours represent $1 \%$ of cancers diagnosed, yet $3 \%$ of cancer deaths ${ }^{5}$, and for the 12 years to 2013 national spend on brain tumour sitespecific research has represented $2 \%$ of site-specific spend and $1 \%$ of all spend on cancer research ${ }^{6}$. Whilst on the face if it this looks fair, we need to consider its fairness in the light of the burden of the disease.

With one in 50 people who die under the age of 60 (from all causes) dying of a brain tumour ${ }^{7}$ and with $71 \%^{2}$ of those who die of a brain tumour being under the age of 75 (compared to $47 \%$ for all cancers), surely it is time that more funding was allocated to research into this devastating disease, that is the biggest killer of children and takes parents from their children prematurely.

In our report on National Research Funding July 2013 we highlighted that treatment for brain tumour patients lags seriously behind other cancers. This update seeks to clarify this situation further and demonstrate why we need to consider the question of curing brain tumours in terms of the research spend necessary for other cancers: around £30-35 million per annum over a 10-year time frame.

What's more, we do not believe that the full picture of national spending on health and in particular cancer research in the UK is fully understood. We know from the
institutions we work with that they apply to and receive funding from trusts and foundations and other brain tumour specific charities as well as patients and families giving directly. These figures are not officially recorded and there is a risk of poor decision-making and extremely scarce resources wasted through duplication of work.

[^0]Just 1\% of

$71 \%$ of<br>brain tumour deaths occur in those under<br>75, compared to $47 \%$ for all cancers ${ }^{\text {' }}$<br>\section*{Brain tumours} kill more children and adults under 40 than any other cancer ${ }^{6}$

We are calling on the larger cancer charities, the Government, corporates and the general public to increase funding into brain tumours to around $£ 30$ - 35 million p.a. over a 10 -year time frame, in order to find a cure.

We are also calling on the Government to introduce a national register of site-specific cancer research to track all research grants and research work, ensuring transparency of funding arrangements. This will allow shortcomings to be identified and prevent duplication of work.

National spend 2002-2013 and survival rates


Investing in research is proven - spending on breast, leukaemia, bowel and prostate cancers has seen remarkable improvements in treatments and therefore survival rates.

Five-year survival for these four cancers is at least 46.9\% and one-year survival $66.2 \%$, compared with brain cancer five-year survival of just $18.8 \%(43.7 \% \text { one year })^{12}$.

$76 \%$ of patients diagnosed with a brain tumour are under 75 compared with $64 \%$ for all cancers and the top four spend cancers - $70 \%$.
$71 \%$ of those that die of a brain tumour are under the age of 75 , compared to $47 \%$ for all cancers and $41 \%$ for the top four spend cancers.

Number of Deaths Under 40-2012
(All Cancers)

*There are no recorded deaths under the age of 40 for prostate cancer

Number of Deaths Under 40-2012
(All Causes)


What's more, brain tumours kill more children and adults under the age of 40 than any other cancer.

## Number of Deaths Under 40 and 60-2012

| Cause | Under $\mathbf{4 0}^{18}$ | Under $60^{19}$ | $\%$ of all cancer deaths under $60^{20}$ | \% of all deaths under $60^{21}$ |  |
| :--- | ---: | ---: | ---: | ---: | ---: |
| Breast Cancer | 189 | 2,483 | $13.3 \%$ | $4.6 \%$ |  |
| Leukaemia | 182 | 553 | $3.0 \%$ | $1.0 \%$ |  |
| Bowel Cancer | 132 | 1,709 | $9.1 \%$ | $3.1 \%$ |  |
| Prostate Cancer | 0 | 218 | $1.2 \%$ | $0.4 \%$ |  |
| Brain Cancer | $\mathbf{3 0 6}$ | 1,113 | $6.0 \%$ | $2.0 \%$ |  |
| All Other Cancers | 1,113 | 12,624 | $67.5 \%$ | $23.2 \%$ |  |
| All Cancers | 1,922 | 18,700 | $100.0 \%$ | $34.4 \%$ |  |
| All Other Causes | 11,252 | 35,641 | - | $65.6 \%$ |  |
| All Deaths All Causes | 13,174 | 54,341 |  | - | $100.0 \%$ |

Indeed one in 50 people ( $2 \%$ ) who die under the age of 60, from any cause, die of a brain tumour and one in 17 people (6\%) who die under the age of 60 from cancer die of a brain tumour.


Analysis of NCRI Spend 2013

The improvements in survival for breast, leukaemia, bowel and prostate cancers is clearly linked to the relatively higher spend on research for these cancers with breast receiving an average $£ 32$ million p.a. over the last 12 years, leukaemia - $£ 27$ million p.a., bowel - $£ 20$ million p.a. and prostate $£ 14$ million p.a., compared to just $£ 3.5$ million for brain cancer ${ }^{22}$.
At the current rate of spend, it could take $\mathbf{1 0 0}$ years to find a cure.
[18] Deaths Registered in England and Wales, 2012, Table 5.2 and NCRI Data Package 2013, Table 3 [19] Ibid [21] Ibid [22] NCRI Data Package 2013, Table 3: NCRI spend by cancer site, National Cancer Research Institute, at http://www.ncri.org.uk/wp-content/uploads/2013/09/Data_package_13.xls


We recognise that the 22 partners of the National Cancer Research Institute (NCRI) have invested $£ 6.8$ million in 2013, an increase of $£ 1.9$ million over the previous year and welcome this increase, but we need much more ${ }^{23}$. The total $£ 502.8$ million investment in cancer research during 2013 by the NCRI partners includes $£ 109.5$ million (22\%) on 'All sites' and £170.6 million (34\%) on 'Fundamental' research, with $£ 222.7$ million (44\%) on 'Site-Specific'24.

## We do not believe that funding for 'All' and 'Fundamental' research benefits brain cancer in the same way it benefits other cancers.

Fundamental research is the basic biology science. Scientists will try to understand cancer at its deepest, most fundamental level, focusing on the very basic behaviour of individual cells. By doing so they aim to translate what they know into breakthroughs further up the chain in specific cancers. The aim is to understand the nature of how cancer cells behave and use this as a foundation for further work. All sites research however is focused specifically on patients, into schemes that look at end of life care, education and communication.

If finding the cures for other cancers, or ways to ameliorate them, automatically translated into solutions for brain tumours,
then funding brain tumour research specifically would not be as important.

## But this is untrue for a number of reasons ${ }^{27}$ :

- First, 'research' can cover a broad range of work: clinical trials, epidemiology, qualitative/questionnaire-based research, services audits and lab-based research. Each of these may serve laudable ends, but it is only the last that has a chance of preventing brain tumour deaths. Research into prevention, for example, may cut lung cancer deaths, but without knowing the cause of tumours that start in the brain this research cannot be used to prevent brain tumours.
- Second, the blood-brain barrier. The nature of the brain's blood vessels is such that attacking cancerous cells through many cytotoxic agents cannot be applied. The brain has much greater protection against toxins than other areas of the body.
- Third, cellular heterogeneity in the brain - that is, the enormous variation of cells in the brain - is unlike any other organ. To put it crudely, one liver cell is much like another. Brain cells vary massively which greatly complicates brain science and means researchers need to have far broader experience - encompassing both oncology and neuroscience - than for other cancers.
- Fourth, with over 120 types of brain tumour, research is much more difficult. Other cancers tumours are comprised of cells that tend to be uniform in their response to treatments.
- Fifth, the brain is such that even a benign tumour can kill. The chest can expand - the skull cannot.

> Investment must be made into specific laboratory-based research, so that all types of brain tumours - adult, paediatric, low-grade / benign, high-grade / malignant - will be cured.

## Our Challenge

We are in awe of charities like Leukaemia and Lymphoma Research and Children with Cancer UK who have huge national awareness. Along with Medical Research Council and Cancer Research UK funding, they have been able to turn around the fortunes of those diagnosed with Leukaemia. We recognise that charities such as Breakthrough Breast Cancer and Leukaemia and Lymphoma Research will always devote their funding to their particular cancer cause. We are working through the brain tumour All Party Parliamentary Group to urge the Medical Research Council and other more general cancer charity partners of the National Cancer Research Institute such as Cancer Research UK, to plug the gaps so that across the UK rarer cancers will be able to play catch up.

Together the Brain Tumour Research group of charities is creating a much greater national awareness of brain tumours through the media and raising much needed money to fund seven dedicated brain tumour research centres at UK universities where some brain tumour research is already being carried out. Our first Centre of Excellence was established at the University of Portsmouth in 2010. In March 2014 we announced the establishment of three further centres: Queen Mary University of London in collaboration with UCL Institute of Neurology, Imperial College Healthcare NHS Trust (London) and Plymouth University Peninsula Schools of Medicine and Dentistry.

We can't do it alone - we need you, the Government, Corporates and the

## General Public to seriously

 get behind this cause.We need you to help us.

Brain tumours are indiscriminate in the people they affect: young or old, male or female, with no regard to race. The prognosis is dependent on the type of tumour and its location in the brain; even a benign brain tumour can be life-threatening and is likely to become cancerous over time. Advances in surgery can delay the inevitable, but can leave debilitating side effects. Radiation therapy and some drugs can prolong life, but as yet there is no cure. To date, we don't fully understand the behaviour let alone the cause.

A significant investment into basic laboratory research could start to change this.

On 2nd October 2013 we launched an e-petition:

Almost $3 / 4$ of brain tumour deaths occur in those under 75. For cancer as a whole it is less than a half. Yet brain cancer continues to receive less than $1 \%$ of the national spend on cancer research. A report by Brain Tumour Research shows that treatments for brain tumours lag seriously behind other cancers. The consequence of brain tumours striking so young means the average tumour is responsible for over 20 years of life lost, making it the most lethal cancer by this measure.

## This petition calls on the Government to take action to:

- Prioritise deaths under 75 in the government's cancer funding.
- Devote a consistent or growing absolute figure to brain cancer research.
- Introduce a national register of site-specific cancer research to track all research grants and research work, ensuring transparency of funding arrangements
- Consider the question of curing brain tumours in terms of research spend necessary for other cancers: around $£ 30-£ 35$ million per annum over a ten year time-frame.

As this e-petition has received more than 10,000 signatures, the relevant Government department has provided the following response:

The Government and charities work closely together in brain tumour research and other fields of cancer research through the National Cancer Research Institute (NCRI). Factors influencing the level of research funding are discussed in Strategic Analysis 2002: An overview of Cancer Research in the UK directly funded
by the NCRI Partner Organisations can be accessed by going to www.ncri.org.uk and searching for 'Strategic Analysis 2002'.

There are a number of factors that dictate the level of research funding into a particular issue. These include:

- Scientific opportunity - this can be very important. In particular, developments in fundamental research and the introduction of new technologies often stimulate new approaches.
-The burden of disease - the incidence and severity of a type of cancer will influence both researchers and funders.
- 'Researchability' - some types of tumour are easier to work on than others but can offen provide a model system for different cancers. Many researchers are attracted to areas or diseases where there is real evidence or potential for progress.
- Fundraising - certain types of cancer may attract more public donations than others.
- The quality and size of the research workforce - because of the issues already mentioned, some areas attract more high-quality researchers than other areas. This will undoubtedly affect the number of quality proposals received by funding bodies.

NCRI partner organisations take all of these factors into account when making funding decisions. However, the relative importance of each of these in the decision-making process varies for each organisation depending on its corporate aims, culture and procedures.

The NCRI Cancer Research Database includes expenditure on cancer research by NCRI partner organisations. This only includes direct spend on cancer research, or spend that directly supports cancer research. The proportion of cancer research funding directly supporting brain tumour research was 1.0 per cent in 2012 and 1.4 per cent in 2013. However, this analysis includes fundamental research (33.9 per cent in 2013) and funding
relevant to all cancer sites ( 21.8 per cent in 2013). If these elements are excluded, brain tumour research received 3.1 per cent of site-specific cancer research funding in 2013. This is a greater proportion than for 39 of the 49 sitespecific categories. In fact, between 2002 and 2013, the proportion of site-specific funding spent on brain tumour research increased by a greater amount than for any other cancer site.

The Department's National Institute for Health Research (NIHR) welcomes funding applications for research into any aspect of human health, including brain tumours. These applications are subject to peer review and judged in open competition, with awards being made on the basis of the importance of the topic to patients and the NHS, value for money and scientific quality. NIHR funding is not ring-fenced for cancer research or for research on brain tumours or other types of cancer. In all disease areas, the amount of NIHR funding depends on the volume and quality of scientific activity.

The NCRI is a member of the International Cancer Research Partnership (ICRP). The ICRP database includes research awards from all member organisations, and therefore includes awards from NCRI partner organisations.

As at July 2014, this e-petition remains open to signatures and will be considered for debate by the Backbench Business Committee should it pass the 100,000 signature threshold.
http://epetitions.direct.gov.uk/petitions/55378


## National Cancer Research Funding

Following the release of our Report on National Research Funding in July 2013, we wanted to find out more about the national cancer research funding process and how the National Cancer Research Institute (NCRI) operates because there were a number of unanswered questions about the various funding streams. Page 18 of our 2013 report details the funding streams of the 22 partners which includes seven government funded bodies. Below is a summary of our conversations with members of the NCRI which aims to shed some light as to how research money is awarded.

If we have misinterpreted anything in writing this summary we would welcome feedback to sue@braintumourresearch.org

National Cancer Research Institute (NCRI)
The NCRI is a partnership of UK Government and charity bodies that funds cancer research. The partners have funded more than $£ 4.5$ billion of cancer research since 2002, and working together ensures that these funds are used to best effect. The criteria for membership are; an annual spend of $£ 1$ million on research into cancer, that grants are allocated by independent peer review and that research results are submitted to a shared database on an annual basis. While all 22 partners have individual goals and plans there is a mutual, complementary agenda of work where coordination is necessary for progress.
The partners are listed below:

## Government Funded

- Biotechnology and Biological Sciences

Research Council

- Chief Scientist Office (Scotland)
- Department of Health
- Economic and Social Research Council
- Medical Research Council
- Health and Social Care Research \& Development Public Health
- Agency Department of Health \& Social Care - Northern Ireland
- The National Institute for Social Care and Health Research - Wales


## Pharmaceutical

Association of The British Pharmaceutical Industry

## Charities

Association for International Cancer
Research (Scotland)
Breakthrough Breast Cancer

Breast Cancer Campoign
Cancer Research UK
Children with Cancer UK
Leukaemia \& Lymphoma Research
Ludwig Cancer Research
Macmillan Cancer Support
Marie Curie Cancer Care
Prostate Cancer UK
Roy Castle Lung Cancer Foundation
Tenovus
Wellcome Trust
Yorkshire Cancer
As our 2013 report acknowledged, the NCRI does
not represent all institutions that spend
money on cancer research and therefore a full picture of national spending on health and in particular cancer research in the UK is not fully understood. However, both the data and an overview of the NCRI itself provides a very important picture of the UK's spending on cancer research. Representing both the Government and larger cancer charities in the UK's research community, understanding the NCRI is imperative to understanding a significant section of cancer funding in the UK.

## Biotechnology and Biological Sciences Research Council (BBSRC)

The BBSRC funds no research directly related to disease or illness. All research is ot a level removed from disease, or genomics, genetics and cell systems through its Bioscience for Health programme that focuses on "Health and wellbeing through the life course". Their aim is to provide a baseline understanding of biology and cell function which then helps research further along the line. For example with cancer, research on physiology of healthy cells will help understand the break down of cells while the innovative research techniques discovered and the imaging databases will benefit the field of cancer. The Council's work is funded by the Department of Business, Innovation and Skills, on a three-year cycle, reviewed and justified through their priority strategic plan.

## Chief Scientist Office - Scotland (CSO)

With a budget of around $£ 70$ million the majority of the CS0's funding goes to build NHS infrastructure in Scotland that supports research and advises the Scottish Government on how research contributes to improvements in health and healthcare. Around $£ 12$ million of this budget is dedicated to two research areas, experimental medicine and health services research, and is awarded by two research committees
through three funding rounds a year.
All grant applications are evaluated by the Research Advisory Committee made up of two panels, assessing submissions for research in Health Services \& Population Health and Experimental \& Translation Medicine respectively. At any one time CSO can fund up to 190 programmes, all of which are based in Scotland, although funding can be awarded to teams from elsewhere in the UK but the research has to be carried out in Scotland. Funding comes in a block grant from the Scottish Government and is divided evenly throughout the organisation with a ceiling of $£ 223$ thousand for each grant. CSO is also involved in a partnership with the Scottish NHS Boards to fund and support the NHS Research Scotland, a body to fund and support clinical research excellence and best practice.

## Department of Health (DH)

DH takes a big picture role in the NCRI due to its role in all medical research. Cancer research is by far the best funded disease area in the UK, due to the maturity of the field and the cross field use of the basic biology. However, no funds are ring-fenced by DH with all funding allocated through a competitive process. DH focuses the majority of its funding on biomedical or clinical research, not on the specific cell research that cancers such as brain tumours require to make significant steps. The National Institute for Health Research (NIHR) is its research arm. NIHR commissions and funds NHS, social care and public health research, with a maximum of $£ 350$ thousand funding per project. All projects are peer reviewed and judged on a regional level and fall into seven different programmes:

- Programme Grants for Applied Research
- Research for Patient Benefit Programme
- Invention for Innovation Programme
- Health Technology Assessment programme
- Public Health Research Programme
- The Health Services and Delivery

Research Programme

- Efficacy and Mechanism Evaluation Programme


## Economic and Social Research Council (ESRC)

ESRC funds research into economic and social issues, supporting 4,000 researchers at any one time through funding from the Department for Business, Innovation and Skills. The Council, with its focus on social science, does not perform research specific to the medical side of cancer but has been involved in the issue of cancer care and its impact on wider society.

The ESRC took part in the NCRI Supportive and Palliative Care research initiative. It found that only $4 \%$ of research by NCRI partners was directed at palliative and supportive care, sparking a new set of clinical guidelines. It has also increased collaboration in this area and increased patient involvement in the research.

ESRC has also been involved in projects including More Effective Breast Cancer Care, Narratives of Living and Dying with Cancer: Sociological Perspectives and has joined Marie Curie Cancer in a call for applications in 2014 on:

- Pain control at home for patients in palliative care
- Symptom control at the end of life
- Addressing the needs of potentially excluded groups at the end of life


## Medical Research Council (MRC)

MRC is a politically autonomous Government agency that supports research across all medical sciences, aiming to improve human health and draw medical research together. MRC is funded by the Department for Business Innovation and Skills and in 2012/13 MRC spent $£ 766.9$ million on research, with approximately $6.2 \%$ of this on cancer research.

Working closely with the NHS and other UK health departments, the focus of research is on the effort to find dinical solutions for disease and advance the level of fundamental scientific knowledge to help save lives. Research grants are awarded to post doctorate researchers with grants very unlikely to exceed £1 million and are judged in a two-step process involving a peer review.

## Health and Social Care Research \&

Development - Northern Ireland (HSC R\&D)
The HSC R\&D department focuses on research and development in healthcare in Northern Ireland. The five strategic goals are to:

- Develop an enabling infrastructure to support R\&D
- Build research capacity for R\&D
- Fund R\&D
- Support innovation as a means of transfering R\&D findings into practice
- Ensure patient and public involvement in R\&D

The agency spends around $£ 13$ million a year, this having increased from $£ 192$ thousand in 1998 , with more than half going towards supporting infrastructure
for research and clinical trials in trusts. The HSC R\&D department is an integrated agency within the wider Health and Social Care Northern Ireland with a very similar role to that of the organisations within England, Wales and Scotland. There is money for the funding of small projects, awarded through an evidence based competitive process.

The agency relies heavily on partnerships in order to carry out research, mostly of a clinical nature, although there is laboratory research funded through PhD awards, with a focus on infastructure and support. There are no disease specific programmes with all research based on evidence, merit and its contribution to science in Northern Ireland.
This means that new areas of research, where previous experiences and skills are not available, are not likely to receive funding.

From 1998 to-date, on average $14 \%$ of total R\&D funding has been spent on cancer R\&D with this work often supported through a partnership with Cancer Research UK. This research is carried out in Belfast, with the centre being a "spoke" in a wider wheel of CRUK's institutes. The focus of the research is on "translational research", with a particular benefit to bowel and breast cancer, which turns breakthroughs in the laboratory into practical ways to detect, monitor and treat cancers. There is also a radiotherapy centre with some research focus.

## National Institute for Social Care and Health Research (NISCHR) - Wales

NISCHR is part of the Welsh Department of Health and funds research as well as helps to set policy and strategy in research and development in Wales. There are three main areas for funding:

- Research and development partners: e.g. pilot studies, patient support and excess treatment costs
- Infrastructure: e.g. clinical research centres for nursing and training
- Research funding: e.g. project grants, schemes like the cancer group of clinicians meeting to generate ideas for future research

With an annual budget of $£ 43$ million, NISCHR
focuses on world class research in Wales and strategic priorities set by the Welsh Government. These areas include some in cancer: leukaemia, cancer genetics, palliative care, tuberous sclerosis (where tumours can develop in the brain). Funding is available to all those in the UK but the research itself must be undertaken in

Wales, with Cardiff, Swansea and Bangor Universities the main sites. All funding is awarded through a competitive process and with scientific peer review.

## The Association of British Pharmaceutical Industry (ABPI)

The ABPI is a trade association that represents the interests of biopharmaceutical companies in the UK. ABPI is a partner of NCRI but does not fund any research or contribute financially to the organisation. It engages regularly with NCRI to share information, methods of best practice and to help problem solve. The Association's importance is largely due to the industry, from medicines to medical devices, which this relationship facilitates.

## Cancer Research UK (CRUK)

CRUK is well known as the largest cancer research charity in the UK and is a principal partner in the NCRI, providing $65 \%$ of the research funding and the Secretariat of the group. CRUK focuses on the "middle of the 'basic to clinical' spectrum" from early diagnosis and screening to ensuring mechanisms are in place to translate discovery into a cure. CRUK funds research through its own centres and institutes, as well as through partnerships (often with industry) and compeetitive grant calls. There are currently five CRUK Institutes and 18 centres around the UK.

## Wellcome Trust

A charitable foundation that focuses primarily on biomedical research, the Wellcome Trust also supports research in technology transfer and the role of society and ethics. The group funds field, clinical and laboratory research in a wide range of areas and locations, spending around $£ 600$ million per year. The Wellcome Trust receives no public money, funding research through its own endowment of around $£ 16$ billion. This means that its decisions on research are based purely on its own objectives and standards, with no influence from Government or donors.

## Other Charities

The 12 other charity partners in the NCRI each have individual objectives and goals which are relatively clear from the individual charity names. For example, Leukaemia \& Lymphoma Research will focus predominately on cancers of the blood.

It is however less clear with Government or public bodies, where priorities cover all diseases not just cancer.

Brain Tumour Research The Business Centre, Padbury Hill Farm, Padbury, Buckingham, Bucks, MK18 2BN

Registered charity number 1153487 (England and Wales) Company limited by guarantee number 08570737 (England and Wales)

Follow us here:


References: National Cancer Research Funding p10/11
[1] NCRI Data Package 2013, Table 3: NCRI spend by cancer site, National Cancer Research Institute, at http://www.ncri.org.uk/wp-content/uploads/2013/09/ Data_package_13.xls [2] BBSRC: http://www.bbsrc.ac.uk/research/bioscience-health.aspx, date last accessed 25/06/2014 [3] BBSRC: http://www.bbsrc. ac.uk/organisation/organisation-index.aspx, date last accessed 25/06/2014 [4] Conversation Alan McNair, Chief Scientist Office on 4th October 2013 [5] Ibid [6] Ibid [7] NIHR: http://www.nihr.ac.uk/research/Pages/programmes_research_programmes.aspx, date last accessed 25/06/2014 [8] Economic and Social Research Council http://www.esrc.ac.uk/about-esrc/what-we-do/index.aspx, date last accessed 25/06/2014 [9] Medical Research Council, Annual Report and Accounts 2012/2013 p 14 \& 15 [10] MRC: http://www.mrc.ac.uk/funding/how-we-fund-research/research-grant/, date last accessed 25/06/2014 [11] The Department of Health, Social Services and Public Safety, http://www.dhsspsni.gov.uk/index/phealth/ph-research-dev.htm, date last accessed 25/06/2014 [12] The Department of Health, Social Services and Public Safety, Review of the impact of HSC Research and Development Funding in Northern Ireland http://www. dhsspsni.gov.uk/evaluation-hsc-rd-final-report-iune-2012.pdf, date last accessed 25/06/2014 [13] Conversation with Professor Bernie Hannigan of HSCNI on 25th February 2014 [14] NISCHR, http://wales.gov.uk/topics/health/nhswales/nischr/?lang=en, date last accessed 25/06/2014 [15] Conversation with Dr Angharad Kerr of NISCHR on 24th of January 2014 [16] Conversation with Nicola Partridge of ABPI on 13th February 2014 [17] Wellcome Trust, http://www. wellcome.ac.uk/About-us/Organisation/index.htm, date last accessed 25/06/2014


[^0]:    [1] Deaths Registered in England and Wales, 2012, Table 5.2, Deaths: underlying cause, sex and age-group, 2012: Chapter II Neoplasms, Office for National Statistics, at http://www. ons.gov.uk/ons/rel/vsob1/death-reg-sum-tables/2012/sb-deaths-first-release--2012.html [2] Ibid [3] NCRI Data Package 2013, Table 3: NCRI spend by cancer site, National Cancer Research Institute, at http://www.ncri.org.uk/wp-content/uploads/2013/09/Data_package_13.xls [4] Ibid [5] Deaths Registered in England and Wales, 2012, Table 5.2 and NCRI Data Research Institute, at http://www.ncri.org.uk/wp-content/uploads/2013/09/Data_package_13.xls [4] bid [5] Deaths Registered in England and Wales, 2012 , Table 5.2 and NCRI Data
    Package 2013, Table 3 [6] NCRI Data Package 2013, Table 3: NCRI spend by cancer site, National Cancer Research Institute, at http://www.ncri.org.uk/wp-content/uploads/2013/09/ Package 2013, Table 3 [6] NCRI Data Package 2013, Table 3: NCRI spend by cancer site, National Cancer Research Institute, at http://www.ncri.org. uk/wp-content/uploads/2013/09/
    Data_package_13.xls [7] Deaths Registered in England and Wales, 2012, Table 5.2, Deaths: underlying cause, sex and age-group, 2012: Chapter II Neoplasms, Office for National Data_package_13.xls [7] Deaths Registered in England and Wales, 2012, Table 5.2, Deaths: underlying cause,
    Statistics, at http://www.ons.gov.uk/ons/rel/vsobl/death-reg-sum-tables/2012/sb-deaths-first-release--2012.html]

