ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>AHSC</td>
<td>Academic Health Sciences Collaboration</td>
</tr>
<tr>
<td>API</td>
<td>Application Programme Interface</td>
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<tr>
<td>BMS</td>
<td>Biomedical Scientist</td>
</tr>
<tr>
<td>CRW</td>
<td>Cancer Research Wales</td>
</tr>
<tr>
<td>DNA</td>
<td>Deoxyribonucleic acid</td>
</tr>
<tr>
<td>EDTA</td>
<td>Ethylenediamine tetraacetic acid</td>
</tr>
<tr>
<td>ESBB</td>
<td>European, Middle Eastern and African Society for Biopreservation and Biobanking</td>
</tr>
<tr>
<td>FFPE</td>
<td>Formalin fixed paraffin embedded</td>
</tr>
<tr>
<td>GCP</td>
<td>Good Clinical practise</td>
</tr>
<tr>
<td>H&amp;E</td>
<td>Haematoxylin &amp; Eosin</td>
</tr>
<tr>
<td>HIRU</td>
<td>Health Informatics Research Unit</td>
</tr>
<tr>
<td>HTA</td>
<td>Human Tissue Authority</td>
</tr>
<tr>
<td>ISBER</td>
<td>International Society for Biological and Environmental Repositories</td>
</tr>
<tr>
<td>IT</td>
<td>Information Technology</td>
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<tr>
<td>LHB</td>
<td>Local Health Board</td>
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<tr>
<td>LLEG</td>
<td>Lay Liaison and Ethics group</td>
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<tr>
<td>MPM</td>
<td>Malignant Pleural Mesothelioma</td>
</tr>
<tr>
<td>NCRI</td>
<td>National Cancer Research Institute</td>
</tr>
<tr>
<td>NGS</td>
<td>Next Generation Sequencing</td>
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<tr>
<td>NHS</td>
<td>National Health Service</td>
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<tr>
<td>NISCHR</td>
<td>National Institute for Social Care and Health Research</td>
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<tr>
<td>NPI</td>
<td>Nottingham Prognostic Index</td>
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<tr>
<td>QA</td>
<td>Quality Assurance</td>
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<tr>
<td>REC</td>
<td>Research Ethics Committee</td>
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<tr>
<td>RNA</td>
<td>Ribonucleic acid</td>
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<tr>
<td>TMA</td>
<td>Tissue Microarray</td>
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<tr>
<td>SCPRT</td>
<td>Short course of preoperative radiotherapy</td>
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<tr>
<td>SMP</td>
<td>Stratified Medicine Programme</td>
</tr>
<tr>
<td>SOP</td>
<td>Standard Operating Procedure</td>
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<tr>
<td>STRATUM</td>
<td>Strategic Tissue Repository Alliances Through Unified Methods</td>
</tr>
<tr>
<td>UHW</td>
<td>University Hospital of Wales</td>
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<tr>
<td>WCB</td>
<td>Wales Cancer Bank</td>
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<td>WCTU</td>
<td>Wales Cancer Trials Unit</td>
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FIGURES

<table>
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<tr>
<th>Figure</th>
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<tr>
<td>1</td>
<td>Annual recruitment by centre by year</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Percentage of consents by tumour type</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Prospective v Retrospective consents</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Consent by age and gender</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>% donations with samples types currently available</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Control bloods and questionnaires by tumour type</td>
<td>9</td>
</tr>
<tr>
<td>7</td>
<td>Applications received by year</td>
<td>13</td>
</tr>
<tr>
<td>8</td>
<td>Sample types supplied</td>
<td>14</td>
</tr>
<tr>
<td>9</td>
<td>Progress of SMP Phase I in Wales</td>
<td>17</td>
</tr>
<tr>
<td>10</td>
<td>Number of SMP consents and complete data sets relative to targets</td>
<td>17</td>
</tr>
<tr>
<td>11</td>
<td>Actual and projected numbers of complete data sets collected and Analysed for phase I SMP</td>
<td>18</td>
</tr>
<tr>
<td>12</td>
<td>Mobile app for External Review panel</td>
<td>19</td>
</tr>
<tr>
<td>13</td>
<td>PathXI viewer integrated within WCB system</td>
<td>19</td>
</tr>
<tr>
<td>14</td>
<td>WCTU hosted samples website</td>
<td>20</td>
</tr>
<tr>
<td>15</td>
<td>Forecast patient recruitment to April 2014</td>
<td>22</td>
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TABLES

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<th>Table</th>
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<tr>
<td>1</td>
<td>3 year rolling consent averages by Local Health Board</td>
<td>8</td>
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</table>
The past year has been an excellent one in terms of recruitment, now with some 7,500 patients recruited in total. An important milestone for us has been the recognition, now enshrined in the Wales Government’s Cancer Delivery Plan, that recruitment of patients to the Wales Cancer Bank (WCB) is indeed a mainstream aspect of a quality health service, and we very much welcome this. As we move forward, an obvious aspiration will be to find ways in which hospitals in Wales, that currently do not have infrastructure funded by WCB, can nonetheless contribute and thereby meet their responsibilities. This may require new and different models of patient consent, an aspect which we will be considering over the coming months.

Another highlight for us was the award, from Cancer Research Wales, of £1.5 million, for the molecular characterisation of the WCB cohort of patients. Work is now underway on parts of our collection of breast, urological, colon, gynaecological, and head and neck cancers. This project was specifically designed to complement and to add value to the Cancer Research UK Stratified Medicine Programme, which we have been proud to take part in as a Clinical Hub, but the Cancer Research Wales project now goes some way beyond it in its scope. We firmly believe that this will open the door to scientific studies of a different order of magnitude, with knowledge of the basic clinical outcomes and molecular characteristics of the samples we hold.

However, there are other new approaches which we need to consider in the light of the dawn of stratified (sometimes understood as ‘personalised’) medicine.

Among the most challenging is the idea that, in advanced cancer, the molecular characteristics of the tumour may be different from what they were when the primary tumour started (sometimes years beforehand). Repeat sampling will tell us how different they might be, and we are starting to explore new ways of analysing tumour cells from patients with advanced disease, perhaps with a simple procedure like a blood test.

As ever, our thanks go to the various bodies who have funded us this year. First and foremost to the National Institute for Social Care & Health Research in Wales, and to Cancer Research Wales. Thanks are also due to Velindre Cancer Centre, and to Cancer Research UK, but most of all, to our patients, who continue to inspire us with their unfailing support.

The printed version of this year’s Annual Report is an edited version to reduce printing and related costs. A link to the full version of the Annual Report can be found on the WCB website (www.walescancerbank.com) homepage.

| AIM |

‘TO PROVIDE A POPULATION BASED RESOURCE OF TISSUE AND BLOOD SAMPLES FROM ALL PATIENTS IN WALES, WHO ARE UNDERGOING AN OPERATION TO REMOVE TISSUE WHERE CANCER IS A POSSIBLE DIAGNOSIS, FOR FUTURE RESEARCH INTO CANCER’
TARGETS FOR 2012/13

ACHIEVED
Acrrue 7,000 patients in total November 2012
Complete characterisation of first 950 sample sets ongoing
Finish development of the web accessible version of database ongoing
Supply five new projects with biosamples October 2012

OFFICE MOVE

During 2012 the central administrative office of the Wales Cancer Bank relocated. The office is now situated in the main building of the University Hospital of Wales on the ground floor. The relocation means the office is close to the pathology department and other groups within the Cardiff University Institute of Cancer and Genetics. Email addresses remain the same but the office address and new phone numbers are below:

Wales Cancer Bank
Cardiff University
Room GTR2 1
Ground Floor
UHW Main Building
Heath Park
Cardiff, CF14 4XN

Tel: 029 20743243
Fax: 02920744309

RECRUITMENT

Six new nurses (3.8fte) have started to consent patients during the reporting year and this has had a huge impact on the consenting figures. 2.0fte nurses started in Cardiff, 1.0fte in Velindre, 0.4fte in Swansea and 0.4fte in the Princess of Wales hospital in Bridgend. Bridgend is a new consenting site for WCB and the focus will be on the colorectal clinic in the first instance. Samples will be transferred to Swansea for processing and storage using the same pathway as the diagnostic samples. Dr Margaret Cotter, consultant histopathologist, takes on the role of Person Designated for the purposes of the Human Tissue Authority licence, to which Bridgend has been added as a satellite site.

1993 patients were consented in the last twelve month period, 377 of those were consented retrospectively in oncology clinics in Velindre. The graph on the opposite page shows the annual recruitment figures by geographic collection site from April 2006 to April 2013, giving a total of 7,961 patients consented.

Across the WCB current collection 53% of donors are female and 76% of all donors are over the age of 60. 88% of patients are consented prospectively and 12% retrospectively. Breast, colorectal and prostate remain the largest collections in the bank at 26%, 17% and 16.5% respectively.

RECRUITMENT BY CENTRE BY YEAR

Figure 1 - Annual recruitment by centre by year

Figure 2 - Percentage of consents by tumour type

Figure 3 - Prospective v Retrospective consents

Figure 4 - Consent by age and gender
FUNDING

ACADEMIC HEALTH SCIENCE COLLABORATION (AHSC)
Funding for the nurse in Velindre has come from the NISCHR AHSC biobanking support call. Professor John Chester coordinated the successful bid to the call at the beginning of 2012 and the funding is being used to fund additional hours across 3 research nurse posts in the clinical trials unit based in Velindre. This has proved to be a very successful consenting model and blood samples from these patients have been banked as well as being used for the Stratified Medicine programme, where applicable. In order to access tissue from these patients, WCB will need to make requests to the pathology departments in the hospitals where the patients had their biopsy or operative procedure. A request for tissue for head and neck patients is being collated and this will test the process and inform as to whether retrospective consenting has the potential to collect tissue samples or whether it will be restricted to blood samples. A cost benefit analysis will be carried out to ascertain if retrospective consenting remains a viable, cost effective model. One remit of the role funded by AHSC is to foster collaboration across all biobanks in Wales. A meeting has been arranged for June 2013 and it is hoped that representatives from all existing and planned biobanks will attend to share experiences, discuss best practices and identify areas where closer working relationships could streamline operational issues across all disciplines.

CANCER RESEARCH WALES
WCB has been in receipt of two research grants from Cancer Research Wales (CRW), both of which ended in October 2012. Some of this funding was used to initiate the molecular characterisation work and tissue samples from 420 colorectal patients and 350 prostate patients have been sent to the All Wales Genetics Service for analysis. 100 blood and tissue samples from a younger cohort (<50 years old at time of operation) have also been sent for analysis. Results have been received for the colorectal samples and are currently being analysed. WCB submitted a successful application to CRW in 2012 to continue support of staff posts and also to extend the molecular characterisation to a further 2000 patients’ samples. This new funding
will concentrate on looking for mutations in the PI3K/AKT pathway, which is known to be involved in a number of different cancers and plays a major role in cancer cell growth, cell motility, survival and metabolism. WCB is going to use targeted Next Generation Sequencing (NGS) in collaboration with the All Wales Genetic Service, to analyse 500 high grade breast cancers, 1000 urological cancers (400 prostate, 450 renal and 150 bladder cancers), 240 gynaecological cancers (140 endometrial and 100 ovarian cancers), 150 head and neck cancers and 100 lung cancers. The data that arises from this work will be put together with the pathology and clinical outcome data already collected by WCB. This shows correlation of response to drugs with DNA mutation status then this could help inform future treatment options by identifying subgroups of patients that may require stratification by molecular pathways.

The new funding, of £1,500,000 over 5 years was announced by broadcaster Sian Lloyd when she hosted the CRW Symposium event in the SWALEC stadium in Cardiff in March 2013. The local press was very interested in the announcement and interviews for BBC radio Wales, ITV Wales news and the Western Mail and Swansea Evening Post were conducted with Professor Mason, Dr Parry-Jones and Mrs Pam Hayward, a WCB nurse who has donated tissue to the bank prior to taking up a role.

In October 2012, Mair, some of the Captains and other Stepping Stones supporters visited the Wales Cancer Bank laboratory in Velindre to meet WCB staff and see what impact the funding was having. The evening showcased the work WCB was doing and also gave some practical demonstrations in the laboratory in Velindre.

**STEFFING STONES**

The Wales Cancer Bank previously applied to the Stepping Stones Appeal in Velindre hospital for funding to expand the sample collection in Cardiff. The appeal is based in the Velindre Cancer Centre and it provides funding for research into lung cancer. WCB was very pleased to be successful in this bid and was honoured to become a recipient of funding donated to the appeal from wonderful fundraising activities such as Mair’s Walk and the Captain’s Climb. In September 2010, 50 climbers including 15 former Welsh rugby captains tackled Mount Kilimanjaro in Kenya to raise money for lung cancer research. The climb was the brainchild of Huw Evans, the national rugby team sports photographer whose family was affected by lung cancer. Mair Ap Gruffydd was diagnosed with lung cancer in 2006 and has since organised annual walks that have raised hundreds of thousands of pounds for research into lung cancer.

Posts available from the funding were recruited during 2012 and have enabled the initiation of a collection of lung samples in Cardiff. A full time nurse and part time laboratory technician started in April and July 2012 and 120 lung patients have been consented in the past 11 months. Patients are being consented in clinics in UHW and Llandough, resulting in patients from Cardiff, Newport and the surrounding areas being recruited into WCB. As a direct result of this funding, a number of lung patients from Cardiff have now had their samples submitted to the Stratified Medicine programme for molecular analysis.

In October 2012, Mair, some of the Captains and other Stepping Stones supporters visited the Wales Cancer Bank laboratory in Velindre to meet WCB staff and see what impact the funding was having. The evening showcased the work WCB was doing and also gave some practical demonstrations in the laboratory in Velindre.

**CANCER DELIVERY PLAN**

In 2006 the Welsh Assembly Government published ‘Designed to Tackle Cancer’, a policy document that aimed to ‘achieve incidence and survival rates for cancer similar to the best in Europe’. An updated document was published by the Welsh Government in 2012,‘Together For Health - Cancer Delivery Plan: Our-Vision’ (http://wales.gov.uk/docs/dhss/publications/120613cancerplanen.pdf), to confirm and build on the achievements made with the earlier policy and which sets out the Minister’s ‘expectations of NHS Wales, working with its partners, in tackling cancer up to 2016’. The policy sets out seven key areas for the NHS to focus on and make improvements in; preventing cancer, detecting cancer quickly, delivering fast, effective treatment, meeting people’s needs, caring at the end of life, improving information and targeting research. One of the research targets is to increase consenting to the Wales Cancer Bank to 20% of eligible patients by 2016. The table shows the current 3 year rolling average consent figures by Health Board for 2009-2011 and a 7% overall, across Wales average for 2011. These figures reflect the WCB funded activity in hospitals. The Local Health Boards (LHBs) in Wales are responsible for implementing processes to meet the performance measures laid out in the plan and no further funding is being made available to WCB to facilitate the uplift in consenting in LHBs. One LHB that does not currently have any WCB funded activity has opened discussions to investigate how this might be achieved. Future figures will return percentages based on the residency of the patient rather than the place of WCB consent to ensure a more accurate reflection of patient involvement by LHB.

<table>
<thead>
<tr>
<th>Local Health Board</th>
<th>2009-11 rolling average consent percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Powys</td>
<td>14.1</td>
</tr>
<tr>
<td>Aneurin Bevan</td>
<td>4.0</td>
</tr>
<tr>
<td>Betsi Cadwaladr</td>
<td>2.6</td>
</tr>
<tr>
<td>Cardiff and Vale</td>
<td>10.4</td>
</tr>
<tr>
<td>Cwm Taf</td>
<td>0.0</td>
</tr>
<tr>
<td>Hywel Dda</td>
<td>5.8</td>
</tr>
<tr>
<td>Powys</td>
<td>0.0</td>
</tr>
<tr>
<td>ALL WALES 2011 average</td>
<td>7.0</td>
</tr>
</tbody>
</table>

Table 1 - 3 year rolling consent averages by Local Health Board
GOVERNANCE

Since its inception, the Wales Cancer Bank has aimed to consent a non-blood control (patient’s partner or friend) to collect blood samples to be used as environmental controls. A questionnaire was also given to the patients to ascertain their anonymised family history of cancer. Following several discussions with consenting staff and the WCB Executive group the decision was taken in 2012 to stop issuing the questionnaire and also to stop asking for control samples. A review was undertaken that showed that control samples had only been collected from 7.5% of patient consents and questionnaires had been returned from 33% of patients and a large proportion of those contained little to no information. The proportion of patient consents with both a control sample and a questionnaire was 4%. The reasons for the low retrieval rate for control samples seem to be; many patients consenting to the bank are elderly and their spouse is deceased or unable to accompany the patient, difficulties in arranging suitable time for blood draw, no-one suitable to participate, unwillingness to participate. The figure below shows the proportion of control bloods and questionnaires returned by tumour type.

ETHICS SUBMISSION

An application for a substantial amendment to the WCB ethics approval from the REC for Wales was successfully submitted in March 2013. The patient information sheet and consent form were amended to reflect the cessation of control blood and questionnaire collection. The documentation also now clarifies that the consent given remains valid for samples from future procedures, unless the patient wishes to withdraw consent. This will enable WCB to collect longitudinal samples and facilitate research to compare samples from various points along the patients’ disease pathway.

AUDIT PRÉCIS

The 2012 audit took place in October and November 2012. Sarah Phillips and Fiona Morgan audited all consenting sites. A number of donations from the last few years were chosen at random and the associated paperwork was checked. Samples located in the freezers and paraffin or slide cabinets were checked against the coordinates stored in the database. Site files and SOP files were checked to ensure up to date documentation was available. There were some anomalies with a few storage co-ordinates and it was agreed that a REC status sheet should be created for file comparison and that the field for recording NPI score for breast cancer should be moved. SOP S01 will be redrafted to clarify the data required in the ‘clotting time’ field in the database. All sites were reminded to ensure slide scanning and quality assurance was kept up to date to help ensure prompt fulfilment of sample transfer to projects or extraction for projects. Change management requests must be created for all database issues, requests for queries and ongoing live queries.

PATHOLOGY DATA AUDIT AND REVIEW

In order to ensure complete data accuracy and standardisation before the advanced sample search facility is implemented online, a review of the current diagnoses list and hierarchical relationships was initiated. An amended list has been generated and a mapping exercise is underway. A simplified pathology data set has also been drafted for the WCB database to capture the research relevant data only and new pages are being developed to allow the recording of the molecular characterisation data.
Current and upcoming membership of the Wales Cancer Bank Advisory Board is shown below. Invitation letters will be circulated to fill the vacant positions during the summer of 2013. The Advisory Board meets twice a year in London and WCB would like to thank the members of the Board for donating their time and considerable expertise to help steer the WCB.

### WCB funders

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Jonathan Bisson</td>
<td>Welsh Government</td>
<td>Director NISCHR</td>
</tr>
<tr>
<td>Dr Malcolm Adams</td>
<td>Cancer Research Wales</td>
<td>Chairman Scientific Committee</td>
</tr>
<tr>
<td>Andrea Hague</td>
<td>Velindre NHS Trust</td>
<td>Cancer Services Lead</td>
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</tbody>
</table>

### Cardiff University

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
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</thead>
<tbody>
<tr>
<td>Professor Dylan Jones</td>
<td>Cardiff University</td>
<td>Pro-Vice Chancellor, College of Biomedical and Life Sciences</td>
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</table>

### NHS in Wales

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
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<tbody>
<tr>
<td>Dr Jane Hanson</td>
<td>Cancer National Specialist Advisory Group (NSAG) Wales</td>
<td>Head NSAG core team and Lead cancer adviser for Wales</td>
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### Cancer Services in Wales

<table>
<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
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<tbody>
<tr>
<td>Dr Jem Rashbass</td>
<td>Eastern Cancer Registration and Information Centre</td>
<td>Director</td>
</tr>
<tr>
<td>Mr Andrew Griffiths</td>
<td>NHS Wales Informatics Service</td>
<td>Director of Informatics Services</td>
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### Tissue Banking

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<thead>
<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
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<tbody>
<tr>
<td>Mrs Debbie Beirne</td>
<td>St James' hospital</td>
<td>Nurse Consultant</td>
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### IT specialist/Health informatics

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<tr>
<th>Name</th>
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<th>Position</th>
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<tbody>
<tr>
<td>Professor Hazel Biggs</td>
<td>Southampton University</td>
<td>Prof of Healthcare law and Bioethics</td>
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### Bioethicist

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<thead>
<tr>
<th>Name</th>
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<th>Position</th>
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<tbody>
<tr>
<td>Professor Robert Leonard</td>
<td>Imperial College</td>
<td>Lead Cancer Clinician</td>
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### Pathologist

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<thead>
<tr>
<th>Name</th>
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<th>Position</th>
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<tbody>
<tr>
<td>Professor Gordon Stamp</td>
<td>Royal Marsden hospital</td>
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### Surgeon

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<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
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<tbody>
<tr>
<td>Professor Brian Davidson</td>
<td>Royal Free hospital</td>
<td>Professor of Surgery</td>
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### Translational scientist

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<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
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<tbody>
<tr>
<td></td>
<td>VACANT</td>
<td></td>
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### Industry

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<th>Position</th>
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<tbody>
<tr>
<td>Dr Rick Greville</td>
<td>ABPI Cymru</td>
<td>Director</td>
</tr>
<tr>
<td>Professor Barry Furr</td>
<td>Llangarth Limited</td>
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### Lay member

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<tr>
<th>Name</th>
<th>Organisation</th>
<th>Position</th>
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</thead>
<tbody>
<tr>
<td>Mr Nick Ross</td>
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LAY LIAISON AND ETHICS GROUP

The Lay Liaison and Ethics group has continued to meet throughout the year. Two new members joined in 2012 and a third has expressed interest to join the next meeting in June 2013. The group reviewed communication strategy, discussed the issue of return of research results (incidental findings) to patients and gave opinions on the proposed amendments that were submitted to the REC for Wales in February.

Following the sad death of Mr Neil Formstone in December 2012, Mr Bob Hall took over as Chair of LLEG. Neil had been involved with WCB since the first meeting in 2003 and was a passionate patient advocate. He was a melanoma patient in 1994 and became involved in a variety of roles after his experience as he firmly believe that lay people have a vital role to play in all aspects of healthcare. He became an active member of patient support groups in North Wales and subsequently became a facilitator, trainer and co-researcher for Macmillan and encouraged lay people and professionals to interact and work together towards a common goal. He was taken ill whilst at a meeting in Cardiff in October 2012 and it was found that his melanoma had metastasized. He died in Velindre hospital on 12th December and will be sorely missed by all he worked with, not only those in WCB.

APPLICATIONS AND SUPPLY OF BIOMATERIALS

During the period 1st April 2012 - 31st March 2013, 7 applications for biosamples were received for research projects, taking the total number of research project applications received since 2006 to 62, of which 52 have been approved. Applications received during this reporting period were 3 from Imperial College, London, 3 from Cardiff University and 1 from Velindre Cancer Centre, Cardiff.

Of these 7 applications, 5 were approved, 1 rejected and 1 is currently out for review with the External Review Panel. Three applications were for colorectal tissue, 1 each for prostate, bladder and breast with the remaining application requesting both prostate and bladder. 4 quality assurance projects were registered with WCB.

The Wales Cancer Bank charges a cost recovery fee to researchers receiving samples from the bank to offset the costs associated with accruing, storing, processing and supplying good quality, fit-for-purpose biosamples with accompanying data. The cost recovery mechanism is calculated on a project by project basis to accurately reflect the efforts expended for each specific sample and data collection. Research projects that are funded by the WCB funders (NISCHR or Cancer Research Wales) and require primary samples (ie. whole blood, sections from FFPE blocks etc) are not charged to avoid a duplicate expense to the funder.
Malignant pleural mesothelioma (MPM) is an aggressive cancer of the lining of the lung that responds poorly to current therapies. We have identified a marker, called ST4, on MPM tumours which can serve as a target for novel treatment approaches. TroVax® (Oxford BioMedica Ltd) is a vaccine that can serve as a target for novel treatment approaches. TroVax® is useful in helping the immune system to recognise and eliminate cancer cells. We are currently setting up a clinical trial (SKOPOS) where 26 MPM patients will be treated with TroVax® alongside standard chemotherapy (pemetrexed/cisplatin). The results of this trial will inform us whether TroVax® is useful in helping the immune system of the patients to generate stronger immune responses against ST4. As an independent control, we would like to know the immune effects of pemetrexed/cisplatin alone, without the cancer vaccine. We can do it by obtaining blood samples from lung cancer patients (including mesothelioma patients not participating in the trial) before and after chemotherapy to test how immune cells in patients not participating in the trial) before and after chemotherapy to test how immune cells in the blood changed due to the treatment. This extra information would help us to evaluate the results of the SKOPOS trial and may help it to be expanded into the next phase.

We have obtained evidence from work with colorectal cancer cell lines for mutations in a gene known to be a key regulator of colon cell development. We will use DNA prepared from colon tumours to screen for similar mutations in patient samples, to determine the importance of mutations in this gene in colon cancer. Mutations identified will be validated for their functional consequence in cell-based studies in which the mutant proteins will be expressed in colon cell lines and function determined using growth assays, as well as gene expression profiling studies to identify key changes.

The nucleosomes are not uniform but contain a variety of chemically modified “histone” proteins (known as the histone code) and DNA structures that differ between healthy and cancerous cells. Volition’s tests determine both the level and profile of specific nucleosome structures in blood. These profiles could potentially discriminate nucleosomes of cancer origin and also differentiate nucleosomes from different types of cancer without prior knowledge of tumour location.

Our preliminary tests have proven very sensitive for detection of cancer and are specific for particular types of cancer tested to date. We now wish to expand the number of samples examined to firmly establish diagnostic utility of the tests. This will open up the exciting prospect of widely accessible presymptomatic screening for common cancers by a simple blood test. Early detection is key to improving outcome.

The anti-cancer monoclonal antibody treatment, cetuximab is licensed for use in patients with metastatic colorectal cancer that does not contain a KRAS gene mutation. Despite this “biomarker test” only 40% of those patients without the mutation will gain any benefit from this drug. Our work will use anonymised samples from 65 patients from the Wales Cancer Bank, shared between three non-profit and internationally acknowledged laboratories, to ensure quality standardization of a test for levels of RNA specific to certain proteins within cancer tissue (namely epiregulin (EREG), amphiregulin (AREG), DUSP4 and 6). These biomarkers which can be used to predict benefit from cetuximab will be validated in prospective clinical trials. If successful this will provide a test which will ensure maximum benefit to patients and cost effectiveness of treatment, using a test which is cheap and readily available to the NHS and other institutions.

The present project involves the development of non-invasive tests for the detection of bladder and prostate cancer by detecting cells in urine produced by the tumours. The applicants have developed a method for detecting an enzyme biomarker which is present in higher quantities in tumour cells than in normal cells. The presence of cells in the urine containing these higher enzyme levels may provide a valuable indicator of the presence of tumours. The availability of a simple test based on a urine sample could greatly reduce the requirement for the invasive methods presently used for prostate and bladder cancer detection. Fresh samples of tumour tissue from the cancer bank are needed to confirm that the test being developed is capable of detecting these higher levels of enzyme biomarker in tumour cells.
The Stratified Medicine Programme (SMP) is a UK-wide project, intended to demonstrate the capability to perform routine genetic analysis of a panel of cancer-related mutations within the NHS. This will permit routine stratification of patients between different systemic anti-cancer treatments, maximising response rates and minimising unnecessary treatment-related toxicity.

Phase I of the project began in the summer of 2011, with the intention of collecting and analyzing 9000 samples across 6 pilot tumour types (lung, breast, colon, prostate, ovarian cancers and malignant melanoma) within 2 years. Sample collection in this pilot project is from 8 clinical hubs, each sending samples for analysis in one of 3 technical hubs.

Cardiff is one of three centres to host both a clinical and a technical hub. Clinical hub activity in Wales has been co-ordinated and managed by WCB, in close liaison with the technical hub, based in the Medical Genetics department of Cardiff and Vale UHB. The technical hub also analyses samples collected by clinical hubs in Manchester and Glasgow.

Early results of the entire SMP project were presented in poster form at the Annual Meeting of the American Society of Clinical Oncology (ASCO) in Chicago in June 2012 (http://meetinglibrary.asco.org/content/99102-114). Results for samples obtained by the Cardiff clinical hub and analysed in the Cardiff technical hub are presented here for the period 1st April 2012 to 31st March 2013, during which time minor modifications were made to the total target number of samples to be collected and analysed by the Cardiff hubs, and the balance between tumour types. Obstacles successfully overcome included difficulties in transferring anonymised, linked clinical data to the central data store.

In the 12 months to 31st March 2013, an additional 886 patients were consented at the 5 tissue collection sites (University Hospital Wales, Cardiff; Royal Gwent Hospital, Newport; Singleton and Morriston Hospitals, Swansea; Withybush Hospital, Haverfordwest), see graph below (Figures are presented for numbers of consents (‘Actual’), numbers of complete sample sets sent for analysis (‘Complete sets’) and results of analyses obtained (‘Results’), October 2011 to March 2013, relative to agreed target numbers of results to be returned (‘Target’). In the same period, 749 sets of analyses have been performed successfully, representing 67% of the total required in the 2-year period of Phase I.

The number of complete sample sets sent for analysis in each tissue type is now very close to the target number required, across all of the tumour types in the Phase I project and, in the case of colo-rectal, lung and ovarian cancers, is ahead of target.

The numbers of patients consented (1129) has already exceeded the 1104 complete analyses required - Figure 1. Assuming that recent rates of consent and analysis are maintained over the last 2 months of tissue collection, current projections are that 102% of required analyses will be performed. This is clearly an excellent outcome, and is a great credit to all WCB and Medical Genetics staff involved in the project.

Phase II of the SMP project is planned to continue immediately after completion of Phase I, at the end of June 2013. It is expected that sample collection and analysis will be carried out at a larger number of hubs than in Phase I. It is anticipated that Welsh collection centres will be involved, as in Phase I, and that WCB and Medical Genetics will again co-ordinate the activities of the clinical and technical hubs, respectively. At the time of going to press, it is anticipated that tissue collection will be in lung cancers only, reflecting particular opportunities for translational and clinical research in this area.
**INFORMATION TECHNOLOGY (IT)**

**Governance**
As part of the contract between Swansea University Health Informatics Research Unit (HIRU) and Cardiff University to supply IT services to the WCB, the WCB IT Board has been formed and the terms of reference agreed. The Board includes two Cardiff University and two Swansea University representatives with an independent chair. As well as the IT Board a WCB user group has been established with representatives of the different WCB user groups, including nursing, laboratory, management and IT. The WCB IT user group role is to set the priorities for implementation of the requirements; this means that only the most valuable requirements are implemented in each software development cycle.

**Recruitment**
Towards the end of the year the WCB welcomed two new staff members, alongside the existing IT manager. The database manager post was taken up by Mr Robert Wilson and a web developer role was filled by Mr Charles Keene. The opportunity to backfill the two posts represents a substantial increase in resources for next year’s work plan.

**Developments**
In 2012/13 the WCB introduced its first mobile App that can be used on tablets or smart phones. Using new HTML5 technology ensures that the App can be used on any device regardless of its make. The App will create a seamless process for recording applications by WCB admin staff and the scoring of applications by our external review panel. The experience gained in this project will allow the WCB IT service to offer more mobile functionality in the near future.

Another important milestone achieved this year was the integration of the WCB sample tracking system with pathXL digital image viewer. This included the setting up of a terabyte image storage server using Swansea University (HIRU) available infrastructure and the installation of the pathXL website. Our sample tracking system was also integrated with the pathXL viewer using direct calls to the pathXL Application Programing Interface (API). The use of the pathXL digital image viewer enables virtual microscopy for the WCB slides. This means that samples can be annotated by a number of remote users and annotation can be shared and flagged in specific places on the image. The pathXL software also includes the functionality of recording and scoring tissue micro arrays (TMA).

**Clinical Trial Hosting**
WCB continues to host samples for the following UK clinical trials: SCOPE, RT-VIN, FOLFERA, T-FRAG, SCALOP, TOUCAN, SUCCINCT, ZICE, COIN, XERXES and FOCUS3. During the year the COPERNICUS trial started recruitment and WCB now also hosts these samples.

**Change Management**
As in previous years the maintenance, development, support and training of the existing software has been at the forefront of activity and taken up most resource. There have been 279 change management items recorded and completed this year. The WCB IT service has also offered ongoing support for development of external project functionality such as the SMP project and the Wales Cancer Trial Unit (WCTU) website for the hosted WCB samples.

![Figure 12 - Mobile App for ERP](image)
![Figure 13 - PathXL viewer integrated within the WCB system](image)

![Figure 14 - WCTU hosted samples web site](image)
Wales Cancer Bank  Annual Report  2012 - 2013

CONFERENCEs AND MARKETING

WCB staff have attended a variety of workshops, seminars and conferences over the year to keep their professional skills current, enhance their knowledge in specific areas and exchange ideas and experiences. A full list can be found in Appendix B in the online version of the annual report (www.walescancerbank.com).

MARKETING

A part-time PR and marketing post has been created and will focus on outreach activities to engage researchers in Wales and the rest of the UK to raise awareness of WCB, ascertain sample requirements, feedback on the application process and to gather information to inform future policy. An online survey is under development for distribution to cancer researchers in Wales and results will be collated in June 2013.

CONFERENCES

WCB is involved in many UK and international biobanking groups, committees and working groups. There is active involvement in the International Society for Biological and Environmental Repositories (ISBER). Dr Parry-Jones is a member of the ISBER marketing committee and nominations committee and, along with Professor Thomas, a member of the Hospital Integrated Biobanks working group. A workshop proposal from WCB has been accepted for the annual ISBER conference being held in Sydney, Australia in May 2013 and will be run by Dr Parry-Jones, Professor Thomas and A/Professor Nik Zepts from St John of God Pathology, Western Australia.

Dr Parry-Jones took a poster to the ESBB conference in Granada, Spain in November 2012 highlighting the results of the first 120 colorectal samples to have molecular characterisation completed. The characterisation of the full set of 400 colorectal samples has now been completed and work is underway on the analysis of this data for drafting for submission for publication later in 2013.

WCB is an active member of the Confederation of Cancer Biobanks and Dr Parry-Jones is a biobank representative member on the Executive group. Professor Thomas and Dr Parry-Jones are on working groups for the Strategic Tissue Repository Alliances Through Unified Methods (STRATUM) project. This project was established by an industry-academia consortium that gained governmental funding in 2011, from the Stratified Medicines Programme (‘Business Models Value Systems’) of the Technology Strategy Board. Its aim is to define the building blocks for a UK network of biobanks, including a business model to enable equitable access to human biological samples and to optimise their use in biomedical research.

NCRI

The Wales Cancer Bank exhibited for the 8th year at the National Cancer Research Institute (NCRI) annual conference in Liverpool in November 2012, alongside the Wales Cancer Trials Unit and the Wales Cancer Research Network. The Welsh themed stands attracted a lot of interest. WCB also hosted a workshop event on Monday 5th November entitled ‘Tailoring biobanks for Stratified Medicine - cutting your tissue to fit’. Daniel Glaser, Head of Special Projects for Public Engagement at the Wellcome Trust chaired the event and there were interesting and thought provoking talks from Dr Luca Roz from the Istituto Nazionale Tumori in Milan, Professor Doug Altman, the Director of the Centre of Statistics in Medicine at the University of Oxford and Professor Noel Clarke Professor of Urological Oncology at the University of Manchester.

BioWales

In March 2013 WCB attended and exhibited at the BioWales conference in the Millennium centre in Cardiff. BioWales is one of the UK’s largest life sciences conference events and the two day conference brought together 500 delegates from pharmaceutical companies, industry, academia, the NHS, Government and funding organisations. Sir Christopher Evans gave the keynote address and informed delegates about the drive to create a life science cluster that maximizes local skills and growth potential in Wales by setting up the £100m Wales Life Sciences Investment Fund. The fund, which is being supported with £50m from the Welsh Government with additional private sector investment envisaged to take the fund to at least £100m, is being managed by new firm Arthurian Life Sciences. The exhibition hosted 35 stands and the WCB stand attracted a lot of interest and several contacts were made and sample enquiries initiated.

LOOKING AHEAD

The trend line on the graph below forecasts the patient recruitment to the end of April 2014, using the accumulated recruitment totals since inception. It predicts that a total of 9,775 patients will be consented by the end of the next reporting period (end March 2014), assuming current staffing levels and patient access are maintained across all current recruiting sites.

Looking forward:

2013/14 will be a year of consolidation for WCB, ensuring that that the way pathology and molecular data is recorded is standardised and fit for purpose to enable the successful implementation of a more structured online sample search and application facility.

Models of consent will be reviewed and longitudinal sampling investigated for specific cohorts of patients. A number of tissue microarrays are being planned and will be available for application by research groups from the end of 2013.

The 10th anniversary of the WCB launch will be in June 2014 and planning for the event will start in June 2013. Members of the LLEG will work closely with WCB Executive group members to formulate an event to celebrate the achievements to date, whilst looking forward to the rollout of testing for stratified medicine and the potential impacts.

WCB has agreed to be a case study for a Dutch researcher investigating the role and impact of patient and public involvement in biobanking and interviews will take place in June 2013.

1 patient’s samples have been used by 8 different projects

TARGETs for 2013/14

- Accrue 9,775 patients in total
- Survey cancer researchers in Wales
- Complete pathology data audit and implement new database pages
- Implement online sample search facility
- Supply five new projects with biosamples

Dr Christopher Evans gave the keynote address and NHS, Government and funding organisations. Sir Christopher Evans gave the keynote address and informed delegates about the drive to create a life science cluster that maximizes local skills and growth potential in Wales by setting up the £100m Wales Life Sciences Investment Fund. The fund, which is being supported with £50m from the Welsh Government with additional private sector investment envisaged to take the fund to at least £100m, is being managed by new firm Arthurian Life Sciences. The exhibition hosted 35 stands and the WCB stand attracted a lot of interest and several contacts were made and sample enquiries initiated.
17 patient’s samples have been used in 5 different research projects

13 patients have had their samples used in 6 different research projects
## FINANCIAL STATEMENT

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<th>Velindre</th>
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APPENDIX A

WALES CANCER BANK AUDIT 2012

The annual audit schedule in 2012 took place between the 2nd October and 20th November 2012. All sites were visited by the WCB Project Officer and a WCB BMS from Cardiff. A random selection of donations, spanning all years of collection, were inspected at each site with a sample trail completed for all audited donations. A list of incomplete data was generated to show donations without a donation, blood samples, no diagnosis, questionable ischaemic times or no pathology report after one month. The follow up information audit at each site compared the information on the database against each completed follow up form. Additional samples were audited that were co-located with the sample numbers identified for audit. This resulted in a far larger number of samples being checked for location accuracy.

Four sites have been collecting for nearly eight years and the 2012 audit was the eighth such internal inspection during this time. Royal Gwent has been collecting samples for six years and this was the sixth internal audit at the site and Velindre has been collecting samples since July 2011 and this was the second internal audit at the site. The workflows and role responsibilities of staff at each site have local variation in order to fit in with routine clinical practice. Role responsibilities at each site are documented and included in the Service Level Agreements signed by each participating LHB and NHS Trust. All SLAs were redrafted to cover the new funding period to March 2015 and distributed in 2010. Cardiff and Vale University Health Board is still to respond (as at 27th November 2012).

Each site is covered by a HTA licence to store tissue for research purposes. No major issues were highlighted that could potentially jeopardise the licence at any site. All sites are working within local and WCB guidelines on Health and Safety and adhere to WCB Standard Operating Procedures, although staff are reminded to ensure that they are fully conversant with all SOPs. SOP files and site files were not inspected on this occasion but a list of REC and R&D approvals will be circulated by March 2013 ahead of the audit and inspections due later in the year. The majority of SOPs were reviewed in February 2012, after which the updated SOP log was circulated to each site to ensure all site SOP files are up to date at audit 2012.

AUDIT SCHEDULE

<table>
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<th>Site</th>
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<td>Cardiff (Llandough)</td>
<td>2nd October 2012</td>
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<tr>
<td>Cardiff (Med Gen)</td>
<td>5th October 2012</td>
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<td>Royal Gwent</td>
<td>9th October 2012</td>
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<tr>
<td>Withybush</td>
<td>16th October 2012</td>
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<tr>
<td>Swansea (Singleton, Morriston)</td>
<td>24th October 2012</td>
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<tr>
<td>Bangor</td>
<td>15th November 2012</td>
</tr>
<tr>
<td>Velindre</td>
<td>20th November 2012</td>
</tr>
<tr>
<td>Cardiff (UHW)</td>
<td>20th November 2012</td>
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</table>
A number of data queries were run to check integrity of data at each site:
1. Donations with missing diagnosis.
2. Donations without blood samples.
3. No pathology reports for donations over 30 days old.
4. Samples without a donation.
5. Query ischaemic time.

General
Some specialties are not on the database so pathology reports are not able to be completed. Information is held on paper copies but transfer on to database is not possible. Therefore a number of the missing pathology reports highlighted on the audit paperwork are as a direct consequence of datasets not being available on database, although the dataset for lung has been added to allow the staff to begin entering the backlog of pathology reports for this tissue type. Diagnosis should be entered onto the database to ensure information present for potential applications.

ACTIONS
To be implemented centrally:
• Create a REC status sheet for file comparison
• Move the NPI field on database.
• Prioritise outstanding pathology reports onto database.
• Redraft WCB SOPS01 to clarify data entered in ‘clotting time’ field on database.

To be implemented at sites:
• QA needs to be kept up to date to ensure prompt fulfilment of sample transfer to projects or extraction for projects.
• Follow up treatment and outcome data to be collected.
• Scanning of H&E slides to be kept current.
• Change Management requests to be created for all database issues.
• Ensure REC file is current.
• Ensure data is accurately transcribed onto database.
• Radiotherapy information provided by Swansea should go onto a follow up sheet and transferred to originating site for entry onto the database.
• Strict adherence to WCB SOPs should be observed.

Conclusions
All sites are generally operating well and the audit gave a good opportunity for the exchange of views and discussions about local practice and the project in general. The action points identified involve both central and local activity. It is hoped that all points can be actioned by the end of March 2013.

Sample tracking and shipment procedures are now well established in all sites and need to be continued to ensure the exact location of every sample is known.

The management teams wishes to express its thanks to all staff, not only for their hospitality during the audit visits, but for their continued enthusiastic support for the project.

Notes by centres
Cardiff
The data queries were run against the live WCB database:
• Donations with missing diagnosis – 178 instances for all Cardiff consented patients.
• Donations without any blood samples – 39 instances for all Cardiff consented patients.
• No pathology reports for donations over 30 days old - 32 instances for all Cardiff consented patients.
• Samples without a donation - none
• The ischaemic time query returns results for those donations that have either a negative ischaemic time or the ischaemic time is greater than 3 hours - 2 instances found for all Cardiff consented patients.

A list of the missing data was sent to the WCB nurses to address. In addition, 9 WCB numbers from UHW were randomly chosen on the 27th November 2012 to check the data and sample tracking. The numbers were, 616, 638, 802, 873, 923, 1150, 1388, 1002 and 1010.

In the absence of a Cardiff Research Nurse, the follow up data for UHW and Velindre was not audited this year.

UHW
Donation 616
• All samples in correct place.

Donation 638
• All samples in correct place.
• Serum but not EDTA available for this patient.
Donation 802
• All samples in correct place.
Donation 873
• All samples in correct place.
• Time left patient not shown on frozen form but shown on paraffin form.
• Time placed for sample placed in formalin was time sample left patient so incorrect.
• Paraffin samples are cores and the number of cores taken for WCB are not recorded on the form.
• Omitted a letter from the pathology report number.
Donation 923
• All samples in correct place.
• Time left patient not shown on frozen form but shown on paraffin form.
Donation 1002
• All samples in correct place.
Donation 1150
• All samples in correct place.
• Frozen form not signed and date shown is date of surgery.
• Letter omitted on pathology report number.
Donation 1010
• All samples in correct place.
Donation 1150
• All samples in correct place.
• Letter omitted on pathology report number.
Donation 1188
• All samples in correct place.

Partial list of issues:
- Omitted a letter from the pathology report number.
- Time used for sample placed in formalin was time sample left patient so incorrect.
- Paraffin samples are cores and the number of cores taken for WCB are not recorded on the form.
- Omitted a letter from the pathology report number.

Donation 545
• Samples moved to UHW/Velindre.
• Follow up sheet not created.
Donation 615
• All samples moved to UHW/Velindre.
• Follow up sheet not created.
Donation 645
• All samples in correct place.
• Database shows 16.35 for time placed in formalin but form does not have a time entered.
• QA for paraffin on form shows 0% tumour but database says tumour.
• Follow up sheet not created.
Donation 646
• All samples in correct place.
• Time placed in formalin on database did not match paraffin form.
• Follow up not started yet as newly consented patient.
Donation 653
• All samples in correct place.
• Serum clotting time and separating time were transposed.
• QA had been completed on the form but not entered on to the database.
• H&E slides are shown on the co-ordinate form but not created on database.
• Follow up not started yet as newly consented patient.

ADDITIONAL RANDOM SAMPLE SUMMARY
9 H&E Drawers randomly scanned revealed:
• 4 H&E labelled as a paraffin blocks
Donation 1703
• All samples in correct place.
• Paraffin form in pack but not completed.
• Follow up sheet created.
Donation 1751
• All samples in correct place.
• Stock control storage for underbench freezer does not match actual freezer configuration.
• Follow up not started yet as newly consented patient.
Donation 1807
• All samples in correct place.
• Follow up not started yet as newly consented patient.

ADDITIONAL RANDOM SAMPLE SUMMARY

3 H&E Drawers randomly scanned revealed:
No anomalies

2 Paraffin trays randomly scanned revealed:
No anomalies

3 EDTA racks randomly scanned revealed:
10 cases not ISCO assigned

2 Camlab boxes of Serum randomly scanned revealed:
No anomalies

Velindre
The data queries were run against the live WCB database on 12th November 2012 and the results are outlined below.

1. Donations with missing diagnosis - 127 instances for Velindre consented patients.
2. Donations without any blood samples - 62 instances for Velindre consented patients.
3. No pathology reports for donations over 30 days old - included in the overall Cardiff instances.
4. Samples without a donation - none
5. The ischaemic time query returns results for those donations that have either a negative ischaemic time or the ischaemic time is greater than 3 hours - none

A list of the missing data was sent to the WCB technician to address. In addition, 8 WCB numbers from Velindre were randomly chosen on the 12th November 2012 to check the data and sample tracking. The numbers were 1228, 1239, 1326, 1531, 2024, 2263, 2291 and 2292.

Donation 1228
• All samples in correct place.
• Pathology form in patient pack but not entered on to database.

Donation 1239
• All samples in correct place.
• Pathology form in patient pack but not entered on to database.

Donation 1326
• Consent form completed correctly and matched database.
• Blood form present but not completed and no samples on database.
• Empty consent.

Donation 1531
• All samples in correct place.
• Paraffin form in pack showing available cores but not yet shown on the database.
• Omitted letter on pathology report number.

Donation 2024
• All samples in correct place.
• Blood form dated but not signed.

Donation 2263
• All samples in correct place.
• No blood forms present but blood on database.

Donation 2291
• All samples in correct place.

Donation 2292
• All samples in correct place.

MEDICAL GENETICS
15 records showing EDTA being present in Medical Genetics were randomly chosen for checking.

Donations originated from 3 different collecting sites.

Donations: 409 from Withybush
918, 1124, 1337, 1456, 1473, 1636, 1902, 1954, 2252, 2392 and 2394 from Swansea
All samples were present and in the correct place.

Internal shipment requests are filed in the site file. Extraction worksheets and lists are filed.

Withybush
Donation 409
• All samples in correct place.
• All paperwork present.
• Follow up sheet created and entered.

Royal Gwent
Donation 296
• All samples in correct place.
• Clotting time entered as minutes instead of time on clock.
• Time sample left patient not known and box not ticked on database.
• Follow up sheet created and entered.

Donation 377
• All samples in correct place.
• Clotting time entered as minutes instead of time on clock.
• Time Sample left patient not known and box not ticked on database.
• Follow up sheet created and entered.

Donation 580
• All samples in correct place.
• No tissue taken for WCB.
• All paperwork present.
• Follow up sheet created and entered.

Swansea
Donation 918
• All samples in correct place.
• Time specimen left patient was incorrectly entered on to database from form.
• Time specimen frozen was incorrectly entered on to database from form.

Donation 1124
• All samples in correct place.
• Consent form shows patient signed and dated one month different to that of consenting nurse.

Donation 1337
• All samples in correct place.

Donation 1456
• All samples in correct place.
• Control paperwork in patient pack but not entered on to database.

Donation 1473
• All samples in correct place.
• Time blood taken was not entered correctly onto database from form.

Donation 1636
• All samples in correct place.

Donation 1902
• All samples in correct place.

Donation 1954
• All samples in correct place.

Donation 2252
• All samples in correct place.

Donation 2392
• All samples in correct place.

Donation 2394
• All samples in correct place.

ADDITIONAL RANDOM SAMPLE SUMMARY

2 camlab boxes of DNA randomly scanned revealed:
No anomalies

12 EDTA racks randomly scanned revealed:
No anomalies

Royal Gwent
The data queries were run against the live WCB database on 3rd October 2012 and the results are outlined below.

1. Donations with missing diagnosis - none
2. Donations with no blood samples - 2 instances found
3. No pathology reports for donations over 30 days old - 2 instances found
4. Samples without a donation - none
5. The ischaemic time query returns results for those donations that has either a negative ischaemic time or the ischaemic time is greater than 3 hours - none

A list of the missing data was left with the nurse to address. 10 WCB numbers were randomly chosen to check the data and sample tracking. Numbers generated were 134, 235, 265, 323, 376, 440, 547, 590, 659 and 728. Three further WCB numbers (296, 377 and 580) had their paperwork checked as a result of samples audited in Medical Genetics.

The WCB theatre form is not used in the Royal Gwent.
Donation 134
- All samples in correct place.
- Time placed in formalin was entered on sample form but not entered on database.
- Initial follow up date was not entered on the database.
- Paraffin form does not state how many blocks taken for WCB. One block created on the database and staff confirm this is correct.
- Follow up sheet created and entered.
Donation 235
- All samples in correct place.
- Clotting time entered as minutes instead of time on clock.
- Time sample left patient entered on form but not on database.
- Time sample placed in formalin entered on form but not on database.
- Co-ordinates on form did not match co-ordinates on database.
- Follow up sheet not yet created as new patient.
Donation 265
- All samples in correct place.
- Time EDTA taken completed on form but not entered on database.
- Follow up sheet not yet created as new patient.
Donation 323
- All samples in correct place.
- Time sample left patient not known and box not ticked on database.
- Follow up sheet created and entered.
Donation 376
- All samples in correct place.
- Clotting time entered as minutes instead of the time on the clock e.g. 20 mins not 12.40pm.
- Time EDTA taken entered on form but not on database.
- Follow up date on database was incorrect. Year showed as 2011 but should have been 2010.
Donation 23
- All samples in correct place.
- Clotting time entered as minutes instead of the time on the clock.
- Time taken completed on form but not entered on the database.
- Time sample left patient not known and box not ticked on database.
- Follow up sheet created and entered.
Donation 728
- All samples in correct place.
- Time EDTA taken completed on form but not entered on database.
- Clotting time entered as minutes instead of time on clock.
- Follow up sheet not yet created as new patient.
Donation 348
- All samples in correct place.
- Time EDTA taken completed on form but not entered on database.
- Follow up sheet not yet created as new patient.
Donation 313
- All samples in correct place.
- New patient so had not yet had operation.
- Follow up sheet not yet created as new patient.

ADDITIONAL RANDOM SAMPLE SUMMARY

2 H&E Drawer randomly scanned revealed: 9 slides in alternate location
7 Paraffin trays randomly scanned revealed: 3 blocks requiring new bar code labels
3 blocks in alternate locations
3 EDTA racks randomly scanned revealed: No anomalies
4 Camlab boxes of Serum randomly scanned revealed: 6 samples without barcode labels (written in pen)
Follow up 2012
11 WCB numbers were randomly chosen to check the follow up data. Numbers generated were 1, 3, 23, 88, 115, 137, 225, 226, 229, 313 and 348.
Donation 1
- Follow up sheet created and entered.
Donation 547
- All samples in correct place.
- Clotting time entered as minutes instead of time on clock.
- Time sample left patient entered on form but not on database.
- Time sample placed in formalin entered on form but not on database.
- Co-ordinates on form did not match co-ordinates on database.
- Follow up sheet not yet created as new patient.
Donation 590
- All samples in correct place.
- Time sample left patient entered on form but not on database.
- Follow up sheet not yet created as new patient.
Donation 659
- All samples in correct place.
- Time EDTA taken completed on form but not entered on database.
- Clotting time entered as minutes instead of time on clock.
- Follow up sheet not yet created as new patient.
Donation 728
- All samples in correct place.
- New patient so had not yet had operation.
- Follow up sheet not yet created as new patient.

Donation 3
- Follow up sheet completed and entered accurately on to database.
Donation 3
- Follow up sheet completed and entered accurately on to database.
Donation 3
- Follow up sheet completed and entered accurately on to database.
Donation 88
- Follow up sheet completed and entered accurately on to database.
Donation 115
- Follow up sheet completed but date not entered on database.
Donation 137
- Follow up sheet completed. Hormone Therapy details not entered onto database.
Donation 225
- Follow up sheet completed but date not entered on database.
Donation 226
- Follow up sheet completed and entered accurately on to database.
Donation 229
- Follow up sheet completed and entered accurately on to database.
Donation 313
- Follow up sheet completed and entered accurately on to database.
Donation 348
- Follow up sheet completed. Adjuvant treatment entered on follow up sheet but not entered onto the database.

Donation 3
- All follow up sheets completed and entered accurately on to the database but one date of follow up transposed.
Donation 3
- Follow up sheet completed and entered accurately on to database.
Donation 23
- Follow up sheet completed and entered accurately on to database.
Donation 88
- Follow up sheet completed and entered accurately on to database.
Donation 115
- Follow up sheet completed but date not entered on database.
Donation 137
- Follow up sheet completed. Hormone Therapy details not entered onto database.
Donation 225
- Follow up sheet completed but date not entered on database.
Donation 226
- Follow up sheet completed and entered accurately on to database.
Donation 229
- Follow up sheet completed and entered accurately on to database.
Donation 313
- Follow up sheet completed and entered accurately on to database.
Donation 348
- Follow up sheet completed. Adjuvant treatment entered on follow up sheet but not entered onto the database.

Donation 282
- All samples in correct place.
- Time blood taken entered on database did not correspond with blood form.
- QA entered for paraffin samples but no QA form in pack to compare data.
Donation 302
- All samples in correct place.
- Control consent in patient pack but not entered on to database.
- Control had signed but not dated the consent form.
- Time blood taken entered on database for control did not correspond with blood form.
- Time placed in formalin entered on database did not correspond with sample form.
Donation 333
- All samples in correct place.
Donation 449
- All samples in correct place.
- Coordinates for serum did not correspond. Actual aliquots were 7, form only showed coordinates for 5 aliquots.
- Time placed in formalin entered on database did not correspond with sample form.
Donation 458
- All samples in correct place.
Donation 514
- All samples in correct place.
- Coordinates for serum did not correspond. Actual aliquots were 7, form only showed coordinates for 9 aliquots.
- Theatre form present but not completed.
- QA entered for paraffin samples but no QA form in pack to compare data.
Donation 570
- All samples in correct place.
- Date on consent form did not match date on database.

Bangor
The data queries were run against the live WCB database on 18th October 2012 and the results are outlined below.

1. Donations with missing diagnosis - none.
2. Donations without blood samples - 7 instances found.
3. No pathology reports for donations over 30 days old - none.
4. Samples without a donation - none.
5. The Ischaemic time query returns results for those donations that has either a negative ischaemic time or the ischaemic time is greater than 3 hours - 1 instance found.

A list of the missing data was left with the WCB staff to address. In addition, 9 WCB numbers were randomly chosen to check the data and sample tracking. Numbers generated were 282, 302, 353, 449, 458, 514, 533, 570 and 592.
• All samples in correct place.
• QA entered for paraffin samples but no QA form in pack to compare data.

ADDITIONAL RANDOM SAMPLE SUMMARY

2 H&E Drawers randomly scanned revealed:
4 slides in alternate location. It transpired that they had been recut for Mirax quality and no longer required

7 Paraffin trays randomly scanned revealed:
No anomalies

6 EDTA racks randomly scanned revealed:
No anomalies

6 Camlab boxes of Serum randomly scanned revealed:
No anomalies

Follow up 2012
The same 9 WCB numbers chosen for audit were used to check the follow up data. Numbers generated were 282, 302, 353, 449, 514, 533, 570 and 592.

Donation 282
• Follow up sheet completed and entered accurately on to database.
Donation 302
• Follow up sheet completed and entered accurately on to database.
Donation 353
• Follow up sheet completed and entered accurately on to database.
Donation 449
• Follow up sheet completed but chemotherapy start and finish dates not entered on to the database.
Donation 458
• Follow up sheet completed but name of oncologist was entered on to database but not shown on form to compare.
Donation 514
• Follow up sheet completed but name of oncologist was entered on to database but not shown on form to compare.
Donation 533
• Follow up sheet completed but name of oncologist was entered on to database but not shown on form to compare.
Donation 570
• Follow up sheet completed and entered accurately on to database.
Donation 592
• Follow up sheet completed but date for 1st year follow up was one year out.

Swansea
The data queries were run against the live WCB database on 9th October 2012 and the results are outlined below.

1. Donations with missing diagnosis - 37 instances for Swansea consented patients.
2. Donations without blood samples - 83 instances for Swansea consented patients.
3. No pathology reports for donations over 30 days old - 18 instances in Swansea.
4. Samples without a donation - none.
5. The Ischaemic time query returns results for those donations that has either a negative ischaemic time or the ischaemic time is greater than 3 hours - 5 instances.

A list of the missing data was left with the WCB staff to address. In addition, 7 WCB numbers from Singleton and 8 WCB numbers from Morriston were randomly chosen to check the data and sample tracking. Numbers generated for Singleton were 592, 1034, 1478, 1607, 1766, 2137 and 2310. Numbers generated for Morriston were 542, 884, 1368, 1405, 1672, 1727, 1949 and 2274.

The WCB Theatre form is not used in Swansea. The control consent form not routinely barcoded.

Singleton
Donation 592
• All samples in correct place.
Donation 1034
• All samples in correct place.
• QA for paraffin shown on database but no individual QA form in patient pack.
Donation 1487
• All samples in correct place.
Donation 1607
• All samples in correct place.

Donation 1766
• All samples in correct place.
• Control in pack to compare data.
Donation 2137
• All samples in correct place.

Donation 2310
• All samples in correct place.
• A paraffin normal block has been reclassified as a tumour but the paperwork has not been amended to reflect the change.
• QA on reclassified normal to tumour block has not included percentage tumour for it.

Donation 458
• All samples in correct place.

Donation 514
• All samples in correct place.
Donation 878
• All samples in correct place.
Donation 923
• All samples in correct place.
Donation 1026
• All samples in correct place.

ADDITIONAL RANDOM SAMPLE AUDIT

14 H&E Drawers randomly scanned revealed:
No anomalies

15 Paraffin trays randomly scanned revealed:
No anomalies

3 EDTA racks randomly scanned revealed:
No anomalies

4 Camlab boxes of Serum randomly scanned revealed:
No anomalies

8 Camlab boxes of Frozen Tissue randomly scanned revealed:
I sample appeared to be missing but later found to have already been extracted but database not recorded it as a used sample. Extraction worksheet provided evidence

7 boxes of DNA / RNA randomly scanned revealed:
I case without barcode labels (written in pen)

Morriston
Donation 542
• All samples in correct place.
Donation 100
• All samples in correct place.
Donation 216
• All samples in correct place.
Donation 267
• Date for follow up on database but form not in file. Data not checked.
Donation 375
• Follow up sheet completed and entered accurately on the database.
Donation 613
• Follow up sheet completed and entered accurately on the database.
Donation 708
• Follow up sheet completed and entered accurately on the database.
Donation 878
• Follow up sheet completed and entered accurately on the database.
Donation 923
• Follow up sheet completed and entered accurately on the database.
Donation 1026
• All samples in correct place.

Swansea Follow up 2012
14 WCB numbers were randomly chosen to check the follow up data. Numbers generated were 1, 24, 100, 216, 267, 375, 613, 708, 878, 923, 1026, 1181, 1274 and 1399.

Donation 1
• Follow up sheet completed and entered accurately on the database.
Donation 24
• Follow up sheet completed and entered accurately on the database.
Donation 100
• Follow up sheet completed and entered accurately on the database.
Donation 216
• Follow up sheet completed and entered accurately on the database.
Donation 267
• Date for follow up on database but form not in file. Data not checked.
Donation 375
• Follow up sheet completed and entered accurately on the database.
Donation 613
• Follow up sheet completed and entered accurately on the database.
Donation 708
• Follow up sheet completed and entered accurately on the database.
Donation 878
• Follow up sheet completed and entered accurately on the database.
Donation 923
• Follow up sheet completed and entered accurately on the database.
Donation 1026
• All samples in correct place.

• Not all dates that follow up was carried out was entered onto the database.
• Some radiology details shown on follow up form not entered onto the database.

Donation 1181
• Follow up sheet completed and entered accurately onto the database.
Donation 1274
• Follow up sheet completed and entered accurately onto the database.
Donation 1399
• Comment of ‘Hairy Cell Leukaemia’ on follow up form will be double checked at next follow up.

Withybush
The data queries were run against the live WCB database on 9th October 2012 and the results are outlined below.

1. Donations with missing diagnosis - 2 instances.
2. Donations without blood samples - 1 instance.
3. No pathology reports for donations over 30 days old - 3 instances.
4. Samples without a donation - none
5. The Ischaemic time query returns results for those donations that has either a negative ischaemic time or the ischaemic time is greater than 3 hours - 6 instances found.

A list of the missing data was left with the WCB staff to address. In addition, 9 WCB numbers from Withybush and 2 from Carmarthen were randomly chosen to check the data and sample tracking. Withybush numbers generated were 448, 488, 490, 546, 584, 682, 727, 737 and 802. Carmarthen numbers generated were 890 and 981.

Donation 448
• All samples in correct place.
• All paperwork present.
• Follow up sheet created and entered.
Donation 488
• All samples in correct place.
• All paperwork present.
• Follow up sheet created and entered.
Donation 490
• All samples in correct place.
• All paperwork present.
• Follow up sheet created and entered.
Donation 546
• All samples in correct place.
• All paperwork present.

Paraffin form showed 4 tumour blocks but database shows 5. PT1 created twice.
• Follow up sheet created and entered.
Donation 584
• All samples in correct place.
• All paperwork present.
• Follow up sheet created and entered.
Donation 682
• All samples in correct place.
• Theatre form completed but not signed.
• Follow up sheet created and entered.
Donation 727
• All samples in correct place.
• All paperwork present.
• Follow up sheet created and entered.
Donation 737
• All samples in correct place.
• All paperwork present.
• Follow up sheet created and entered.

Carmarthen
Donation 890
• All samples in correct place.
• All paperwork present.
• Follow up sheet not yet created as new patient.

Donation 56
• Follow up sheet completed and entered accurately onto the database.
Donation 122
• Date on which follow up was carried out was entered in to date of relapse field.
Donation 193
• Follow up sheet completed and entered accurately onto the database.
Donation 236
• Follow up sheet completed and entered accurately onto the database.
Donation 334
• Follow up sheet completed and entered accurately onto the database.
Donation 393
• Follow up sheet completed and entered accurately onto the database.
Donation 474
• Follow up sheet completed and entered accurately onto the database.
Donation 547
• Follow up sheet completed and entered accurately onto the database.
Donation 585
• Follow up sheet completed and entered accurately onto the database.

• I case labelled as paraffin blocks
• I slide incorrectly labelled as AH1 needed to be AH2

10 Paraffin trays randomly scanned revealed:
• I sample requiring new barcode label
• I sample incorrectly labelled as PN1A needed to be PN1C

7 EDTA racks randomly scanned revealed:
No anomalies

8 Camlab boxes of Serum randomly scanned revealed:
No anomalies

3 Camlab boxes of Frozen Tissue randomly scanned revealed:
No anomalies

Follow up 2012
10 WCB numbers were randomly chosen to check the follow up data. Numbers generated were 1, 56, 122, 193, 236, 334, 393, 474, 547 and 585.

Donation 1
• Follow up sheet completed and entered accurately onto the database.
Donation 56
• Follow up sheet completed and entered accurately onto the database.
Donation 122
• Date on which follow up was carried out was entered in to date of relapse field.
Donation 193
• Follow up sheet completed and entered accurately onto the database.
Donation 236
• Follow up sheet completed and entered accurately onto the database.
Donation 334
• Follow up sheet completed and entered accurately onto the database.
Donation 393
• Follow up sheet completed and entered accurately onto the database.
Donation 474
• Follow up sheet completed and entered accurately onto the database.
Donation 547
• Follow up sheet completed and entered accurately onto the database.
Donation 585
• Follow up sheet completed and entered accurately onto the database.

6 H&E Drawers randomly scanned revealed:

I case labelled as paraffin blocks
I slide incorrectly labelled as AH1 needed to be AH2

10 Paraffin trays randomly scanned revealed:
• I sample requiring new barcode label
• I sample incorrectly labelled as PN1A needed to be PN1C

7 EDTA racks randomly scanned revealed:
• No anomalies

8 Camlab boxes of Serum randomly scanned revealed:
• No anomalies

3 Camlab boxes of Frozen Tissue randomly scanned revealed:
• No anomalies

Follow up 2012
10 WCB numbers were randomly chosen to check the follow up data. Numbers generated were 1, 56, 122, 193, 236, 334, 393, 474, 547 and 585.

Donation 1
• Follow up sheet completed and entered accurately onto the database.
Donation 56
• Follow up sheet completed and entered accurately onto the database.
Donation 122
• Date on which follow up was carried out was entered in to date of relapse field.
Donation 193
• Follow up sheet completed and entered accurately onto the database.
Donation 236
• Follow up sheet completed and entered accurately onto the database.
Donation 334
• Follow up sheet completed and entered accurately onto the database.
Donation 393
• Follow up sheet completed and entered accurately onto the database.
Donation 474
• Follow up sheet completed and entered accurately onto the database.
Donation 547
• Follow up sheet completed and entered accurately onto the database.
Donation 585
• Follow up sheet completed and entered accurately onto the database.

6 H&E Drawers randomly scanned revealed:
## APPENDIX B

### CONFERENCES, WORKSHOPS AND COURSES ATTENDED

| April 2012 | 25th | Cryogenic Gases, Dry Ice and Carbon Dioxide safety training | Cardiff |
| May 2012 | 9th | CCB Symposium on Biosample Quality | London |
| | 11th | Peninsula Cancer Network R&D Symposium | Plymouth |
| | 11th | Cancer Biomarking in Diagnostic Pathology and Translation Medicine: Past 30 years | Cardiff |
| | 15th – 18th | ISBER Annual meeting | Vancouver, Canada |
| | 17th | Annual Colorectal MDT educational evening in North Wales | Deganwy |
| | 23rd | Tissue Viability NHS on trial | Swansea |
| June 2012 | 22nd | WCB for theatre staff | Cardiff |
| July 2012 | 11th | Valid Informed Consent in Research | Cardiff |
| August 2012 | | Chinese anti-cancer association conference | Beijing |
| | 6th – 10th | Prof Mason gave an oral presentation | Cardiff |
| | 15th | Issues with Tissues Day Symposium | London |
| | 19th | Tissue pathology seminar | Cardiff |
| October 2012 | 5th | Lung Cancer: Quality in Lung Cancer | Swansea |
| 10th | | | Cardiff |
| 31st | | | Newport |
| November 2012 | 1st | Annual Gynaecological MDT in North Wales | Llandudno |
| | 4th – 7th | NCRI Annual Conference | Liverpool |
| | 7th – 9th | ESBB conference | Granada, Spain |
| | 9th | Norwich research seminar | Norwich |
| | 21st | Mesothelioma Matters | Llantrisant |
| | 22nd – 23rd | NISCHR symposium | Cardiff |
| December 2012 | 3rd | HTA – legal requirements | Swansea |
| | 25th | South Wales Cancer Network Breast Cancer MDT | Bridgend |
| January 2013 | 2nd | Cancer Research Wales open day | Cardiff |
| | 21st | Introduction to Good Clinical Practice | Swansea |
| | 28th | Cardiff/Peking Cancer Symposium 2013 | Cardiff |
| | | Prof Chester gave a talk on 'Systematic therapy for lung cancer' | Cardiff |
| March 2013 | 1st | Targeted Treatments and the Changing Face of Cancer Clinical Trials | Cardiff |
| | 2nd | Targeted Treatments and the Changing Face of cancer Trials | Bridgend |
| | 4th | Procare meeting | Cardiff |
| | | Clare Jones gave a presentation | Cardiff |
| | 6th | Cancer Research Wales symposium | Cardiff |
| | | WCB exhibited | Cardiff |
Suzanne Williams regularly lectures to pre and post-registration nursing students at Swansea University about communication, WCB and clinical Trials.

All staff have attended courses to update GCP, communication and skill sets relevant to their post.

### APPENDIX C

#### WALES CANCER BANK PERSONNEL LIST AS AT 31ST MARCH 2012

**STAFF**

<table>
<thead>
<tr>
<th>NAME</th>
<th>SITE</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professor Malcolm Mason</td>
<td>Central</td>
<td>Director</td>
</tr>
<tr>
<td>Professor Gerry Thomas</td>
<td>Central</td>
<td>Director of Scientific Services</td>
</tr>
<tr>
<td>Professor John Chester</td>
<td>Central</td>
<td>Deputy Director</td>
</tr>
<tr>
<td>Dr Alison Parry-Jones</td>
<td>Central</td>
<td>Manager</td>
</tr>
<tr>
<td>Sarah Phillips</td>
<td>Central</td>
<td>Project Officer</td>
</tr>
<tr>
<td>Abigail MacArthur</td>
<td>Central</td>
<td>SMP Administrator</td>
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<tr>
<td>Debbie Way</td>
<td>Central</td>
<td>Clerical officer</td>
</tr>
<tr>
<td>Monica Willis</td>
<td>Central</td>
<td>Clerical officer</td>
</tr>
<tr>
<td>Michaela John</td>
<td>Central</td>
<td>PR/Marketing</td>
</tr>
<tr>
<td>Daniel Naeh</td>
<td>Swansea University</td>
<td>IT Manager</td>
</tr>
<tr>
<td>Robert</td>
<td>Swansea University</td>
<td>Database</td>
</tr>
<tr>
<td>Charles</td>
<td>Swansea University</td>
<td>Programmer</td>
</tr>
<tr>
<td>Suzanne Williams</td>
<td>Swansea</td>
<td>Lead nurse</td>
</tr>
<tr>
<td>Helen Bevan</td>
<td>Swansea</td>
<td>Nurse</td>
</tr>
<tr>
<td>Pam Hayward</td>
<td>Swansea</td>
<td>Nurse</td>
</tr>
<tr>
<td>Amanda Hewitt</td>
<td>Swansea</td>
<td>Nurse</td>
</tr>
<tr>
<td>Colleen Lloyd</td>
<td>Swansea</td>
<td>Biomedical Scientist</td>
</tr>
<tr>
<td>Emma Miles</td>
<td>Swansea</td>
<td>Biomedical Scientist</td>
</tr>
<tr>
<td>Gary Ash</td>
<td>Swansea</td>
<td>Medical Laboratory Assistant</td>
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<tr>
<td>Kevin Pearse</td>
<td>Cardiff</td>
<td>Nurse</td>
</tr>
<tr>
<td>Peita-Lee Ambrose</td>
<td>Cardiff</td>
<td>Nurse</td>
</tr>
<tr>
<td>Heather Hyatt</td>
<td>Cardiff</td>
<td>Nurse</td>
</tr>
<tr>
<td>Zoe Davies</td>
<td>Cardiff</td>
<td>Nurse</td>
</tr>
<tr>
<td>Vicki Woods</td>
<td>Cardiff</td>
<td>Biomedical Scientist</td>
</tr>
<tr>
<td>Fiona Morgan</td>
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<td>Biomedical Scientist</td>
</tr>
<tr>
<td>Jane Greenwell</td>
<td>Cardiff</td>
<td>Trials Technician</td>
</tr>
<tr>
<td>Dr Chi Lee</td>
<td>Cardiff</td>
<td>Technician</td>
</tr>
<tr>
<td>Julie Maynard</td>
<td>Cardiff</td>
<td>Genetics technician</td>
</tr>
<tr>
<td>Jennifer Jones</td>
<td>Bangor</td>
<td>Nurse</td>
</tr>
<tr>
<td>Alex Makanga</td>
<td>Bangor</td>
<td>Biomedical Scientist</td>
</tr>
<tr>
<td>Rachel Hughes</td>
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<td>Biomedical Scientist</td>
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<tr>
<td>Professor Malcolm Mason</td>
<td>Central</td>
<td>HTA Licence holder</td>
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<tr>
<td>Professor Gerry Thomas</td>
<td>Central</td>
<td>Director of Scientific Services</td>
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<td>Dr Alison Parry-Jones</td>
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<td>Professor Julian Sampson</td>
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<td>Dr Paul Griffiths</td>
<td>Swansea - Morriston</td>
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<td>Mr Adam Carter</td>
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<td>Dr Meleri Morgan</td>
<td>Llandough</td>
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</tr>
</tbody>
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