VELINDRE NHS TRUST

Delivering Quality, Care and Excellence

SERVICE, WORKFORCE AND FINANCIAL FRAMEWORK
2011/12 – 2015/16
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>FOREWORD</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Section 1</strong></td>
<td><strong>VELINDRE NHS TRUST</strong></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>The Trust</td>
<td>4</td>
</tr>
<tr>
<td>1.2</td>
<td>Velindre Cancer Centre</td>
<td>4</td>
</tr>
<tr>
<td>1.3</td>
<td>The Welsh Blood Service</td>
<td>6</td>
</tr>
<tr>
<td>1.4</td>
<td>Hosted Organisations</td>
<td>8</td>
</tr>
<tr>
<td><strong>Section 2</strong></td>
<td><strong>THE STRATEGIC CONTEXT</strong></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Policy</td>
<td>10</td>
</tr>
<tr>
<td>2.2</td>
<td>The Annual Quality Framework</td>
<td>11</td>
</tr>
<tr>
<td>2.3</td>
<td>The Financial Outlook</td>
<td>13</td>
</tr>
<tr>
<td>2.4</td>
<td>Research and Development</td>
<td>14</td>
</tr>
<tr>
<td>2.5</td>
<td>Investing in our Staff</td>
<td>16</td>
</tr>
<tr>
<td>2.6</td>
<td>Strategic Goals</td>
<td>18</td>
</tr>
<tr>
<td>2.7</td>
<td>Partnership</td>
<td>19</td>
</tr>
<tr>
<td>2.8</td>
<td>Priorities and Pace</td>
<td>19</td>
</tr>
<tr>
<td>2.9</td>
<td>Next Steps</td>
<td>20</td>
</tr>
<tr>
<td><strong>Section 3</strong></td>
<td><strong>STRATEGIES FOR DELIVERY</strong></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Introduction</td>
<td>22</td>
</tr>
<tr>
<td>3.2</td>
<td>Quality and Excellence</td>
<td>22</td>
</tr>
<tr>
<td>3.3</td>
<td>Research and Development</td>
<td>30</td>
</tr>
<tr>
<td>3.4</td>
<td>Workforce and Service Modernisation</td>
<td>32</td>
</tr>
<tr>
<td>3.5</td>
<td>Finance</td>
<td>38</td>
</tr>
<tr>
<td>3.6</td>
<td>Capital and Estates</td>
<td>39</td>
</tr>
<tr>
<td>3.7</td>
<td>Information Management and Technology (IM&amp;T)</td>
<td>42</td>
</tr>
<tr>
<td><strong>Section 4</strong></td>
<td><strong>PRIORITIES FOR 2011/12</strong></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>Introduction</td>
<td>45</td>
</tr>
<tr>
<td>4.2</td>
<td>Priorities for 2011/12</td>
<td>45</td>
</tr>
<tr>
<td><strong>Appendix 1</strong></td>
<td>Service Strategies</td>
<td>60</td>
</tr>
<tr>
<td><strong>Annex 1</strong></td>
<td>Annual Quality Framework Abstract</td>
<td>137</td>
</tr>
</tbody>
</table>
FOREWORD

Velindre NHS Trust provides a range of specialist services which continually deliver outstanding results. Our staff are highly motivated, and work tirelessly to provide high quality, responsive services to patients and donors. Our research is world class, and many of our clinicians and scientists are leaders in their field with international reputations.

Both Velindre Cancer Centre and the Welsh Blood Service are highly regarded by the people they serve, and are extremely well supported by the community. Velindre Cancer Centre enjoys support from many groups and individuals, who work as volunteers or enthusiastically raise substantial sums of money to support improvements at the hospital and to fund research into the causes and treatment of cancer. The Welsh Blood Service is able to provide blood and blood products to hospitals across south Wales thanks to the generosity of thousands of individual donors, and the many organisations which support blood collection sessions.

This Service, Workforce and Financial Framework describes how we intend to build on that success. The public services face challenging times, and Velindre NHS Trust will not be immune from these pressures. We will see continued increases in the numbers of people with cancer, and a growth in demand for high quality blood and blood products. The time is right for us to refresh our medium term plans, and describe how we will make further progress towards our goals and realise our vision.

This document sets out the direction for the Trust over the next five years. It is a roadmap, not a finely detailed blueprint. The Trust is convinced that setting a clear direction will keep us focussed on our goals, and ensure that the efforts of staff and supporters are directed to securing long term and sustainable improvements.

A great deal of work remains to be done to design the future in detail. Being clear about our goals will enable us to plan developments with a sense of direction and purpose. The Trust Board believes that we have exciting opportunities to develop services and improve quality still further despite the challenging financial position. We hope that you find this document helpful in describing the direction, and we look forward to working with you to deliver quality, care and excellence for our patients, donors and communities.

Dr. Rosemary Kennedy                                     Simon Dean
Chairman                                                         Chief Executive
Section 1

VELINDRE NHS TRUST

1.1 The Trust

Velindre NHS Trust is a nationally recognised specialist centre of excellence for the provision of non-surgical oncology including radiotherapy and chemotherapy; specialist palliative care; blood transfusion; specialist immunohaematology; antenatal blood testing reference work; and transplant immunology.

The Trust provides a range of specialist non-surgical oncology services to the people of south east Wales, and to the whole of Wales for some services, working in partnership with the hospitals managed by the Local Health Boards. The Welsh Blood Service collects, processes and delivers blood and blood products to hospitals across south and mid Wales.

The Trust Board provides leadership, direction, governance and support to the Trust and its Divisions. The Board is led by the Chairman, together with six Independent Members, the Chief Executive and four Executive Directors.

The principal role of the Trust Board is to:

• Set the Trust’s strategic direction
• Establish and uphold the Trust’s governance and accountability framework, including its values and standards of behaviour
• Ensure delivery of the Trust’s goals through effective challenge and scrutiny of performance across all areas of activity.

The operational delivery of services is managed through Velindre Cancer Centre and the Welsh Blood Service. The Trust also hosts a number of bodies on behalf of NHS Wales. Brief summaries of their functions are set out below.

1.2 Velindre Cancer Centre

Velindre Cancer Centre is a specialist treatment, teaching, research & development centre for non-surgical oncology, treating patients with chemotherapy, radiotherapy and related treatments, and caring for patients with specialist palliative care needs.

Specialist teams provide care via a well established network multi-disciplinary team (MDT) model of service for oncology and palliative care, working closely with local partners and ensuring services are offered in appropriate locations and to uniform standards of care. Their aim is to improve and extend life, with quality of life at the forefront of all treatment and care.

Through research, Velindre Cancer Centre seeks to continually improve outcomes, and through teaching and development it introduces and disseminates best practice for patients throughout the whole of Wales.
The Velindre Cancer Centre is the largest cancer centre in Wales, and one of the largest dedicated cancer centres in the UK. The centre provides all the non-surgical cancer care to the people of south east Wales (population 1.5m), and also provides many specialist cancer services on an all-Wales basis.

Around 700 multi-disciplinary healthcare professionals and supporting staff deliver specialist care in Velindre Cancer Centre. Chemotherapy, radiotherapy, palliative and supportive care is delivered through extensive inpatient, day case and outpatient services, both at the Cancer Centre and peripheral Cancer Units. Each year there are about 82,000 day case and outpatient visits, 54,000 radiotherapy attendances and over 2,000 inpatient stays.

Velindre Cancer Centre has a very close affiliation with Cardiff University and is the base for its Medical Schools’ Department of Clinical Oncology and Palliative Medicine. It undertakes an active role in the training of healthcare professionals in cancer and palliative care at both undergraduate and postgraduate level. Velindre Cancer Centre is one of two recognised centres in the UK providing a National Course for the FRCR Part 2 Examination.

The Cancer Centre runs a significant R&D programme, and has an international reputation. Many of our research-active professionals are UK and world-renowned as leading investigators, researchers and trialists. Together with Cardiff University and Cardiff and Vale Health Board, Velindre Cancer Centre was awarded prestigious CRUK Cancer Centre status and supports a full “bench to bedside” research programme.

Velindre Cancer Centre, with its specialist and dedicated workforce, leads the delivery of effective evidence-based clinical care, pioneering new treatments and services, providing excellence in cancer research, treatment and education for the benefit of our patients, their carers, families and the community.

Examples of recent achievements at VCC include:

- Specific audits on clinical outcomes 2009-2010 have demonstrated that the results of treatment at Velindre Cancer Centre (VCC) are equivalent to national standards in the following areas:-
  - Survival rates for female Breast cancer treated with radical intent
  - Survival rates and late morbidity - Chemo-radiotherapy for anal cancer
  - 5 year Overall survival for T1N0 glottic laryngeal carcinoma
  - 4 year Overall survival for Diffuse Large B-Cell Lymphoma
  - 5 year Survival rates for medically inoperable endometrial cancer treated with radical radiotherapy
  - Response rates & Toxicity related to carboplatin and vinorelbine chemotherapy in the treatment of Non small cell lung cancer
  - Palliation of symptoms from Non Small Cell Lung Cancer with radiotherapy

- Audits on new developments have revealed that the introduction of US guided placement of peripherally inserted central venous (PICC) lines, has resulted in an improved service

- Consistently achieves excellent feedback from visits by external organisations, such as CHC’s and the Older Persons Commissioner, and also from patient feedback such as the ‘I Want Great Care’ survey in Palliative Care which has consistently reported high scores

- Achieved and sustained significant improvements in Radiotherapy waiting times through service modernisation initiatives
Successful track record in patient involvement through for example the Patient Liaison Group who are actively involved in many aspects of VCC, and through Patient Story initiatives

First Cancer Centre in Wales to develop an Intensity Modulated Radiotherapy (IMRT) service for patients

The only brachytherapy service (gynaecological and prostate) in Wales

Achieved 100% compliance with the generic cancer standards

VCC successfully bid in partnership with Cardiff University and Cardiff & Vale Health Board to become a CRUK Cancer Research Centre, the only CRUK centre in Wales and South West England

Excellent reputation in R&D, with some consultants UK and internationally renowned as leading investigators, researchers and trialists for international and national trials including ZICE and SCOPE

Sponsor for FRAGMATIC, the largest ever study of lung cancer anywhere in the world

VCC is very successful in its recruitment of patients into clinical trials, for example recruitment into clinical trials trebled from 317 patients in 2001 to 953 patients in 2008/09.

1.3 The Welsh Blood Service

The Welsh Blood Service (WBS) plays a fundamental role in the delivery of healthcare in Wales. It works to ensure that the donor’s gift of blood is transformed into safe and effective blood components which allow NHS Wales to improve the quality of life and save the lives of many thousands of people in Wales every year. The Welsh Blood Service:

- recruits blood and stem cell donors from the public in south, mid and west Wales and through voluntary donations encourages them to continue to support the provision of a wide range of specialist clinical services to NHS Wales
- manufactures those donations into safe blood components
- provides blood and stem cell components to hospitals, where they will be transfused to patients
- supports patient care in a range of clinical specialities, for example in the selection and provision of blood components for specific patients, and in the selection of compatible stem cells and kidneys for transplant patients.

The WBS employs almost 500 staff who are committed to delivering the high level of service that NHS Wales and the Welsh population expect.

The remit of the Welsh Blood Service is wide, including the delivery of complex diagnostic services as well as the collection, processing and delivery of blood components. Specialist immunohaematology reference and antenatal blood testing services are provided to hospitals; and the Welsh Transplantation and Immunogenetics Laboratory (WTAIL) ensures that organ donors are a match for patients requiring transplants. WTAIL also administers the Welsh Bone Marrow Donor Registry (WBMDR) and the UK National External Quality Assessment Scheme for Histocompatibility and Immunogenetics (UK NEQAS for H&I).
The Blood Services in the UK, the European Union and in North America are highly regulated to reduce the chances of transmission of infection to very low levels. In the UK, the component elements of the blood supply chain are subject to inspection by the Medicines and Healthcare products Regulatory Agency (MHRA), the government agency responsible for ensuring that medicines and medical devices meet stringent requirements of high quality and are safe. The MHRA undertakes regular inspections of blood establishments and has wide-ranging powers including the ability to close premises. The diagnostic services of the UK blood services are subject to a variety of additional regulatory and accrediting authorities/accreditations, including the Human Tissue Authority (HTA), Clinical Pathology Accreditation UK Ltd (CPA) and the European Federation for Immunogenetics (EFI).

The Welsh Blood Service has lasting relationships with their regular donors, many of whom return time after time to voluntarily give their blood to help others. One donor who has supported the Welsh Blood Service has made almost 800 donations, a mixture of whole blood, plasma and platelets. The upper age limit for donation of 70 was removed 2 years ago, and the oldest donors are now in their early 70’s. Many elderly donors have been donating since they were first able to do so (some started during their national service days), over 50 years ago. Each year around 400 donors reach 50 donations and around 1,000 reach 25 donations.

The Welsh Blood Service has a track record of delivering excellence across the full range of its activities. Recent successes which demonstrate progress towards our goals across the Trust include:

- The Apheresis Clinic at Talbot Green has been significantly redesigned and refurbished to increase its capacity in order to meet a Safety of Blood, Tissues and Organs (SaBTO) recommendation for the UK blood services to issue 80% of platelet components as products of apheresis collection methods.
- The WBS introduced the use of Chloraprep applicators for all blood donor collection teams in June 2009, reducing the risk for the potentially serious contamination of blood components with skin bacterial flora
- The Allele Level Typing project initiated by WTAIL aims to improve the level of matching for patients requiring a stem cell (e.g. bone marrow) transplant, and to provide data to inform on future strategies for HLA typing. The project involves the use of state-of-the-art allele typing technology; the WBS is the first UK blood service to announce its use and is at the forefront of international service development
- A review of the Welsh Blood Service ‘brand’ was undertaken in 2010 to ensure that the image of the Welsh Blood Service supported our efforts to improve donor loyalty at a time when blood services world-wide are struggling to maintain their donor panels.
- The WBS is regulated under the Blood & Safety Quality Regulations (2005) as a Blood Establishment and successfully underwent its most recent inspection in December 2010
- The Welsh Transplant and Immunogenetics Laboratory (WTAIL) within the Welsh Blood Service had its Human Tissue Act (HTA) inspection in August 2009 and successfully maintained its compliance
- The Welsh Bone Marrow Donor Registry is incorporated within the WTAIL service and was the first donor registry world-wide to be re-accredited by the World Marrow Donor Association
- All apheresis and pooled platelets are monitored using BacT/ALERT microbial detection systems to further minimise the risk that a bacterially contaminated component will be transfused
- All platelets are now also irradiated to reduce the likelihood that a patient requiring irradiated blood components will inadvertently be given non-irradiated platelets in the transfusion of the appropriate component. These product safety measures are over and above those mandated in UK requirements and ensure that the WBS is a world-class leading blood service
In May 2009, the WBS commenced in-house Nucleic Acid Testing (NAT), which tests for viral RNA or DNA. This was an excellent example of the Welsh Blood Service working collaboratively with its neighbouring UK blood services in order to maximise the procurement opportunity of a national contract.

A recent inspection by the European Federation for Immunogenetics (EFI) commended the WTAIL commitment to training and service delivery, with one of the inspectors noting that ‘WTAIL was one of the best Laboratories he had inspected across Europe’.

1.4 Hosted Organisations

The Trust successfully hosts a number of organisations on behalf of the Welsh Assembly Government and NHS Wales:

NHS Wales Informatics Services (NWIS)

NWIS operates under the direction of the Chief Information Officer of the Welsh Assembly Government and is responsible for both the strategic development of Information Communications Technology (ICT) and the delivery of operational ICT services and information management. NWIS has a national remit to support NHS Wales, make better use of scarce skills and resources, and facilitate a consistent approach to health informatics and the implementation of common national systems.

NISCHR Clinical Research Centre (NISCHR CRC)

The National Institute for Social Care and Health Research Clinical Research Centre (NISCHR CRC) was established in 2010, and brings together all-Wales research networks in health and social care and cancer (the former Clinical Research Collaboration Cymru and the Wales Cancer Trials Network, now Wales Cancer Research Network). It is hosted by Velindre NHS Trust via a contract from Cardiff University.

NISCHR CRC provides 150 research staff through regional networks in north, south east and south west Wales. These are skilled research professionals with experience of direct patient and service user contact, who work to ensure the quality and delivery of NISCHR research projects. There are also Cardiff-based research network support teams that lead training and development, Involving People, information, communications, finance, management and administration for the organisation.

The aim of NISCHR CRC is to improve people’s health and wellbeing through research.

NISCHR CRC is working to:

- improve relevance by supporting people-centred research studies which benefit health and social care service delivery
- involve people by providing opportunities for patients, service users, carers and the public to participate in research development
- increase capacity by providing a competent and accessible research workforce to increase the quantity of research studies recruiting in Wales
- underpin quality through accredited Wales wide training for researchers
- engage partners in NHS and academic research and explore collaborative opportunities.
National Collaborating Centre for Cancer (NCC-C)

The NCC-C was established in April 2003. The centre is funded and commissioned by the National Institute for Health and Clinical Excellence (NICE) to develop evidence-based clinical guidelines for the NHS in England, Wales and Northern Ireland on treating and caring for people with cancer. Velindre NHS Trust is directly involved in the governance of this UK-wide organisation for improving the care of patients with cancer.

Cancer Services Co-ordinating Group (CSCG)

CSCG is an all-Wales NHS organisation based in Cardiff. It works with the Welsh Assembly Government and the Cancer Networks to ensure delivery of high quality, up-to-date care for cancer patients and their carers. In collaboration with its All Wales Cancer Steering Groups, the group provides expert clinical advice to the Welsh Assembly Government regarding the strategic development of cancer services in Wales. It also supports the development and work of the Cancer Networks in Wales.
2.1 Policy

Velindre NHS Trust operates within the policy framework set by the Welsh Assembly Government. This framework is based on overarching policies for the public services, including *Making the Connections*, and policies which apply specifically to the health service such as *Our Healthy Future* and *The Rural Health Plan*.

**Cancer Policy**

The delivery of non-surgical cancer services is set within the strategic context of a number of planning documents produced by the Welsh Assembly Government, and professional and other organisations in Wales, the UK, Europe and beyond. The main strategic document for cancer in Wales is *Designed to Tackle Cancer*, which sets out WAG’s policy aims and strategic direction to tackle cancer at a national and local level across the country. *Designed to Tackle Cancer* provides the framework to support the delivery of cancer policy.

There are also a number of National Service Frameworks (NSFs), clinical service strategies and clinical guidelines that provide evidence-based standards and which inform the planning, development and delivery of non-surgical cancer services. One example is the *NSF for Older People*.

The key policies and guidance shaping the approach to cancer include:

- *Designed to Tackle Cancer* - which sets out WAGs’ policy aims and strategic direction
- *Cancer Services in Wales* – Cameron report, 1996. This document recommended services for cancer patients should be integrated at 3 cancer centres across Wales, working in association with DGHs, and named Velindre as one of these centres
- *Calman Hine* report, 1995 – this report established the policy framework for commissioning cancer services, and introduced the hub and spoke model of service delivery for cancer
- Royal College of Radiology (RCR) guidance in respect of oncology and radiotherapy. The RCR provides a wide range of guidance on the development and management of radiotherapy services; equipment, workload and staffing provision; and replacement of radiotherapy equipment
- NICE technical appraisals on drugs and NICE service guidance, for example the treatment of prostate cancer
- The *All Wales Cancer Standards* (2005) set standards for both generic cancer services and each cancer site/MDT. These standards set a minimum required level for a range of services, with the assessment based on the MDT providing the service. Velindre Cancer Centre works closely with the Health Boards to deliver services which meet these standards
- More recently, the *All Wales Standards for Palliative Care and Cancer Rehabilitation* have been published. VCC will continue to work with partner organisations to achieve ensure that services comply with these standards.
Blood Policy

The Welsh Blood Service operates under a number of regulatory and statutory policies and requirements.

The introduction of the EU Blood Directive (transposed into UK law in 2005 as the Blood and Safety Quality Regulations (BSQR)) resulted in a phased shift in the extent and stringency of regulatory compliance. The provision of unrelated stem cell donations undertaken by the Welsh Blood Service Welsh Transplantation and Immunogenetics Laboratory (WTAIL) is similarly regulated by the provisions of the Human Tissues Act (HTA).

These developments have meant that the standard of premises in which blood component collection and manufacturing take place, and the quality systems and resources required to support this activity and maintain licences, have significantly increased. Furthermore, the emergence of new infectious agents that can be transmitted by blood and of new technologies that improve blood safety, leads to the need to introduce new tests and technology to keep the blood supply safe.

The amount of testing and processing that blood has undergone has increased dramatically over the years either as a result of emerging clinical and scientific knowledge about transfusion medicine, or as a result of coping with emerging transfusion transmissible threats to the blood supply. The emergence of variant Creutzfeldt-Jakob disease (vCJD) in the UK population as a result of eating contaminated beef has been a huge challenge, as this deadly and unusual disease has proven difficult to detect and to apply countermeasures about which we can be confident. Nevertheless, in common with the other UK blood services, the Welsh Blood Service has introduced a whole range of measures including leucodepletion of all blood components (except granulocytes), banning the use of UK plasma for fractionation, importing some blood components for vulnerable groups of patients and deferring previously transfused donors. It is likely that increased measures will be required under future policy.

The Welsh Blood Service draws heavily on the advice of the Joint UK Blood Transfusion Services and National Institute of Biological Standards and Control Joint Professional Advisory Committee (JPAC) which is funded and managed by all four UK Blood Services acting in concert though the UK [blood services] Forum, a body which co-ordinates UK wide inter-service activity. The Welsh Blood Service and the other UK blood services also participate in the European Blood Alliance (EBA), which has been an effective means of representing the common interests of all member European Blood Services to the EU regulators.

2.2 The Annual Quality Framework

The Annual Quality Framework (AQF) for 2011-12, issued by WAG on 18 January 2011, sets out the policy priorities on which this Framework and the Annual Plan for 2011/12 are founded.

The AQF is based on a set of common values and systems thinking, with a clear emphasis on continuous improvement and a focus on outcomes and quality. This change of emphasis will be supported by a new set of metrics to be developed in the first quarter of 2011/12.
The AQF sets out the key aims for NHS Wales over the next five years as to:

- **Do more to protect and improve health for all**: within 5 years, there must be a significant, measurable improvement in reducing health problems in all the priority areas in *Our Healthy Futures* (OHF), and concentrating efforts on the specific key outcomes identified from the Prevention and Promotion National Programme.

- **Create integrated services**: there must be a significant, measurable improvement in joint working in primary, secondary, and social care services, evidenced in the annual primary care reports and delivery against the priorities identified within *Setting the Direction*.

- **Modernise what the NHS does so that it has systems that deliver and sustain excellent services to meet the needs of patients and maximises clinical outcomes**: there will be a significant, measurable improvement against all the health specialty indicators defined for clinical services areas in Wales.

The immediate steps to support this focus are expected to include:

- Acceptance throughout organisations that delivering and self-monitoring operational effectiveness is a given, which will allow the opportunity to significantly reduce central targets.
- A shift to systems thinking as a means of driving improvement, and continuous improvement embedded into everyday working.
- Clinical leads and managers working together to inject pace into service improvement and innovation. GP’s are also expected to have greater involvement in the planning and management of local services.
- Better use of information.
- Development of integrated health and social care teams, with more joint appointments and pooled budgets with partner bodies.

These changes are expected to be based on values that guide and motivate everyday action. The agreed values for NHS Wales are shown in section 2.6 of this document, and are fully embraced by Velindre NHS Trust.

The key actions for 2011/12 reflect these values and are grouped under the following categories:

- Protecting and improving health for all in 2011/12.
- Integrating services in 2011/12.
- Deliver and sustain excellent services that meet the needs of patients and maximise clinical outcomes.
- System change specific for transforming services in 2011/12.
- Corporate requirements for Finance, Workforce and ICT.

This five-year Framework shows how the Trust will respond to these expectations as part of our strategic approach. The required AQF Abstract is included at Annex 1.
2.3 The Financial Outlook

This Framework covers a period during which there will be an overall contraction in Public Sector spending within Wales and across the rest of the United Kingdom. This follows a decade of consistent growth in Public Sector spending on both capital and revenue.

The following tables show the movement in both capital and revenue cash spending and plans over the period between 1999 and 2015.

**Welsh Assembly Government Revenue Funding**

![Revenue Funding Chart](chart1)

**Welsh Assembly Government Capital Funding**

![Capital Funding Chart](chart2)

This shows that under the Comprehensive Spending Review, revenue funding available to the Welsh Assembly Government will return to the level of funding in 2005/06 and capital funding to below 1999 levels by the end of 2014/15.
Within the above planning framework, the Assembly has assessed its own funding priorities and finalised its budget for the next three years.

Health and Social Services revenue funding has been broadly maintained at 2010/11 levels for the period up to 2014. However, Health and Social Services capital funding will see a decrease of 27.5% over the same period.

This funding framework does not take into account the impact of inflation which will result in pressures on revenue to pay for services, and reduce further capital spending in real terms. The impact of each of these will be determined by the level of ‘real’ inflation on costs within the service, which evidence suggests runs at approximately 4% per annum. If this were to be the case, the NHS would face a real terms reduction of approximately 11% over three years.

The NHS has experienced a decade of significant growth, and the impact of the financial outlook will be challenging. The further modernisation of services and identification of greater efficiencies will be essential if the NHS is to maintain quality and keep pace with developments in medical technologies.

2.4 **Research and Development**

The Trust has a very strong research ethos, and is increasingly integrating its strategy with those of its key partners Cardiff University and Cardiff & Vale University Local Health Board. Integrated working is central to the Trust R&D agenda, with activity conducted, managed and funded with partner organisations.

In 2010 the Trust actively contributed to the establishment of the National Institute of Social Care and Health Research Academic Health Science Collaboration (NISCHR AHSC).

The Trust is fully committed to the NISCHR AHSC strategy. It provides opportunities further to build on strong established links with healthcare organisations and higher education institutes in the delivery of oncology research, which is identified as an area of research excellence in Wales within the AHSC five year strategy.

Four Trust consultants have recently been awarded funding (£92,687 over 3 years) from NISCHR AHSC in a national competition providing protected research time. In a parallel national competition, the pharmacy and radiology departments were awarded funding (£151,061 over 3 years) from NISCHR AHSC to provide R&D infrastructure support for increasing Trust research activity.

The Trust has also been allocated £72,670 from NISCHR AHSC to meet NHS support costs in relation to radiotherapy quality assurance requirements in clinical trials both centrally and locally.

The Trust, in partnership with Cardiff & Vale University LHB and Cardiff University, hosts the Cancer Research UK Centre in Cardiff; one of only nine in the United Kingdom. The Centre supports an interdisciplinary team of researchers and clinicians working to improve the care of cancer patients.

The recently funded Marie Curie Research Centre within Cardiff University’s Wales Clinical Trials Unit (WCTU) further demonstrates integrated working between the Trust, Cardiff University and the third
sector. The Centre provides the infrastructure and expertise to undertake palliative care research, alongside Trust leadership in teaching and service delivery.

Trust Consultant Oncologists were involved in the successful bid for the new Cardiff University Cancer Stem Cell Research Institute, and discussions are already underway on proposed research projects in collaboration with colleagues at the Schools of Medicine, Biosciences and Pharmacy. Once the Director of the new Institute has been appointed, it is expected that the facility will provide further opportunities for laboratory-based studies into cancer stem cells.

Professor Malcolm Mason was recently elected as Chair of the Cancer Interdisciplinary Research Group (IRG) within the School of Medicine, emphasizing the importance of Velindre staff in the cancer collaboration within Cardiff.

The Trust also part-funds the Wales Cancer Bank, which currently holds samples from over 3,000 patients. These samples are available to researchers and are a major resource in the conduct of ethically approved research activities.

In 2007 the Trust underwent a routine MHRA statutory Good Clinical Practice (GCP) Inspection, examining the systems used by the organisation in the conduct of the Trust’s non-commercial clinical trial research. The outcome of the inspection confirmed the Trust to be in the top 2% of NHS organisations in the UK managing the conduct of non-commercial clinical trials. This status, together with excellent collaboration between the Trust R&D office, researchers and the WCTU and VCC trials unit, is attractive to industry, pharmaceutical companies and other stakeholders considering sites to host and recruit to their studies.

In 2011 the Trust received confirmation from the MHRA that following a compliance report submitted to them in 2010 the organisation has been assigned a low compliance risk rating. The inspection frequency associated with this risk rating is approximately every 48 months.

The Trust continues to build capacity locally within R&D, supporting a portfolio of multidisciplinary research activity through small grant funding. This annual funding call aims to pump-prime activity, providing researchers with the opportunity to undertake pilot/feasibility studies in order that they may access future external grant funding for larger projects in accordance with local and national R&D strategies and priorities.

Velindre NHS Trust has held its own five annual Research and Development Conferences, attracting over 100 delegates, with internationally known keynote speakers including Sir Michael Rawlings, Chairman of NICE; Sir Leszek Borysiewicz, Chief Executive of the MRC; and Sir Martin Evans, 2007 Nobel Prize winner in Medicine. The Trust intends to continue holding these events to showcase the range of research activities taking place within Velindre.

Robust processes have been established between Velindre R&D Office and Cardiff University’s WCTU to facilitate the safe and effective conduct of Velindre-lead UK-wide multi-centre studies. Through this important collaboration, Velindre considers sponsorship of all NHS led research coordinated by the WCTU, taking responsibility for the conduct of the research at all NHS hosted sites across the UK. The Trust continues to support the NHS organisations hosting Trust sponsored activity, sharing best practice in its management to ensure regulatory compliance.
2.5 Investing in our Staff

Health care is delivered by people. Our staff are highly committed, and work tirelessly to deliver high quality services to our patients and donors. Our vision and goals will only be achieved if we invest in and support our staff. The Trust must ensure that it has the right staff with the right skills in the right place at the right time to meet changing and increasing demands.

The Trust has a mixture of staff groups who work together to provide treatment, care and support for patients and donors. Every role within the Trust contributes to achieving the objectives of the organisation, and every member of staff is a valued part of the Trust team.

A summary of staff across the Trust (excluding hosted organisations) is set out in the following Table

<table>
<thead>
<tr>
<th>Staff Group</th>
<th>VCC</th>
<th>WBS</th>
<th>Corporate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical and Dental</td>
<td>68</td>
<td>4</td>
<td></td>
<td>72</td>
</tr>
<tr>
<td>Nursing and Midwifery</td>
<td>145</td>
<td>46</td>
<td>1</td>
<td>192</td>
</tr>
<tr>
<td>Healthcare Scientists</td>
<td>13</td>
<td>76</td>
<td></td>
<td>89</td>
</tr>
<tr>
<td>Additional Professional, Scientific and Technical</td>
<td>80</td>
<td>2</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>Allied Health Professionals</td>
<td>116</td>
<td></td>
<td>116</td>
<td></td>
</tr>
<tr>
<td>Additional Clinical Services</td>
<td>53</td>
<td>154</td>
<td></td>
<td>207</td>
</tr>
<tr>
<td>Estates and Ancillary</td>
<td>65</td>
<td>12</td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>Administrative and Clerical</td>
<td>142</td>
<td>148</td>
<td>80</td>
<td>370</td>
</tr>
<tr>
<td>Total</td>
<td>682</td>
<td>442</td>
<td>81</td>
<td>1205</td>
</tr>
</tbody>
</table>

The staff groups above comprise:

**Medical** - Consultant staff and doctors in training working in the areas of oncology, palliative care and radiology at VCC, and doctors at WBS working in haematology, supporting donors and hospital-based clinicians in the areas of blood transfusion and transplantation.

**Nursing** – Registered nurses working in outpatients, inpatients, out-reach clinics, blood and chemotherapy mobile units, day case areas and clinical trials at VCC, and in mainly senior roles in blood collection teams.

**Healthcare Scientists** - mainly staff in medical physics at VCC and biomedical scientists testing various donations within the laboratories and WTAIL departments at WBS.

**Additional Professional Scientific and Technical** – mainly pharmacists and technicians working in pharmacy, medical physics or nuclear medicine at VCC, and technicians within WTAIL at WBS.

**Allied Health Professions** - primarily therapeutic radiographers, and diagnostic radiographers, with smaller numbers of other therapists – physiotherapists, occupational therapists and dieticians at VCC.
**Additional Clinical Services** - mainly healthcare support workers and assistants working on the wards and in outpatients at VCC, and healthcare support workers within the blood collection teams and support staff in the laboratories.

**Estates and Ancillary** - mainly staff in maintenance, catering, housekeeping and portering roles at VCC, and drivers within the transport department and porters in the WBS.

**Administrative and Clerical** - mainly medical secretaries and medical records staff, supplemented by staff in the Divisional office and other departments, working in support of managers and clinical staff at VCC. WBS has staff in various roles in donor management, recruitment and records, support to clinical and other managers and IT staff maintaining the computer systems. At corporate level, this group comprises Directors and other staff mainly employed within HR, Quality and Safety, and Finance, including staff out-posted to these functions within VCC and WBS.

The Trust has low staff turnover, and is able to recruit high quality staff across all areas. The NHS Wales Values underpin the work of our Trust, with particular emphasis on partnership working and investing in staff. The Trust enjoys very good employee relations, and has achieved and retained its Investors in People status for over 10 years.

The Workforce and OD Strategy and Action Plan (see Section 3) provides further detail on how we will invest further in developing our staff. The Trust has an excellent track record of developing new and extended roles for its staff, both in VCC and in WBS. This is well illustrated by the Designed to Donate project, an element in the WBS Service Strategy. The project, which had been taken forward in partnership with staff, their Trades Union representatives and donors, has led to the creation of new and extended roles for most members of the blood collection teams designed to lead further improvements in service provision. VCC has a significant track record over the past few years in the development of extended and specialist roles for nursing and radiotherapy staff in outpatient clinics, and nursing and pharmacy staff in chemotherapy prescribing. These and other examples have released significant amounts of Consultant medical time and improved services for patients.

Increasing demands and new treatment options mean that we must continually review our service models and care pathways. The aim is to ensure that services are accessible, acceptable and provide high quality outcomes. This approach offers exciting opportunities to develop new roles for our staff, and to provide enhanced career opportunities.

One of the strengths of the Trust lies within the portfolio of quality R&D activity as described in section 3.3. A strategic priority for the Trust will be to continue to increase the level and quality of R&D studies, which is a key factor in the recruitment, motivation and retention of excellent staff.

The Trust has always recognised the importance of leadership within services, rather than a “top down” central model. Delegating leadership encourages ownership, and recognises that those nearest the patient or donor have the greatest insight into their needs. This approach goes hand in hand with clear governance and accountability arrangements, recognising that we all work within an organisational framework.

Clinical leadership is well developed within the Trust. This is illustrated by the Cancer Site Specific Teams which lead the development and management of services for their patients. The Trust has very enthusiastically engaged with both the 1000 Lives and now the 1000 Lives Plus campaigns, and has a
strong spirit of enquiry with well developed processes for learning from events, for example the Serious Clinical Incidents Forum.

The Trust is firmly committed to the health and well-being of its staff. One of our key aims is preventing and managing sickness absence; the Trust met a challenging WAG target for 2010, and is aiming for further progress. In the past year the Trust has successfully achieved the Gold Corporate Health Award, and is now working towards achievement of the Platinum Award.

2.6 Strategic Goals

Velindre NHS Trust fully embraces the NHS Wales Values:

- **Putting quality and safety above all else:** providing high value, evidence based care for our patients at all times
- **Integrating improvement into everyday working** and eliminating harm, variation and waste
- **Focussing on prevention, health improvement and inequality** as key to sustainable development, wellness and wellbeing for future generations of the people of Wales
- **Working in true partnership** with partner organisations and with staff
- **Investing in our staff** through training and development, enabling them to influence decisions and providing them with the tools, systems and environment to work safely and effectively.

The Trust has identified five strategic goals which will guide its work.

<table>
<thead>
<tr>
<th>Our goals are</th>
</tr>
</thead>
<tbody>
<tr>
<td>High quality outcomes</td>
</tr>
<tr>
<td>Improved well-being and quality of life for our patients, donors and staff</td>
</tr>
<tr>
<td>Excellent care for our patients and donors</td>
</tr>
<tr>
<td>World-class Research and Development</td>
</tr>
<tr>
<td>Organisational excellence</td>
</tr>
</tbody>
</table>

Velindre NHS Trust provides a range of specialist services which deliver outstanding outcomes. Our staff are highly motivated, and work tirelessly to provide high quality, responsive services to patients and donors. Our research is world class, and many of our clinicians and scientists are leaders in their field with international reputations.

This document describes how we intend to build on that success. The public services face challenging times, and Velindre NHS Trust will not be immune from these pressures. The time is right for us to refresh our medium term plans, and describe how we will make further progress towards our goals.
2.7 **Partnership**

Velindre NHS Trust operates as part of a complex system, and partnership working is essential to achieving our goals. The nature of cancer care reaches across organisational boundaries, driven by an approach based on multi-disciplinary working and pathways of care. The Welsh Blood Service provides essential services to hospitals, and again the focus is on working in partnership to deliver effective and high quality services.

The Trust has a unique contribution to offer, which must fit seamlessly alongside the contributions of other organisations. This partnership approach will be critical if we are to make best use of skills and resources to provide excellent care. There are examples where partnership works very well, and we will seek to build on this success as our plans and those of partner organisations are aligned. The new South Wales Cancer Network has an important role to play in helping to create strategic coherence in cancer care across south Wales.

We will further develop a range of partnerships, including with:

- Patients, donors and their carers
- Our staff
- Trades Unions and other representative organisations
- NHS organisations
- Academic institutions in the UK and internationally
- NIHSCR WAG
- The Third Sector
- Community Health Councils.

Many of our partnerships are well established; others will be developed as we take forward our 5 year Framework and identify areas for further collaboration.

2.8 **Priorities and Pace**

We have an ambitious agenda and take a long term view. We know that achieving our goals will take time. We must operate within the wider context, and respond to a range of policy requirements set by the Welsh Assembly Government, and by other bodies such as the Medicines and Healthcare products Regulatory Agency (MHRA). Section 2 describes a number of important requirements which influence our planning, including the policy framework and the financial outlook.

Knowing what we want to achieve is an important first step, and will help us determine our priorities for the next few years. Our plans must be flexible enough to respond to changes and opportunities, whilst giving a clear sense of direction which allows us to make real progress. Describing key milestones and the priorities we intend to achieve will help us to confirm that we are making progress.

The essential prerequisite is to understand how demand for the services we provide, available treatments, service models and quality standards are likely to change in each of our service areas. This will enable us to plan our staffing, equipment and buildings. We can be reasonably clear in many areas, whilst in others we have programmes of work underway or planned to determine how best to shape services for the future. This strategic dimension is described in Section 4 and Appendix 1.
Section 4 outlines our priorities for 2011/12. Our plans must be affordable, and we have based our work on assumptions about the financial outlook for the years ahead. Delivery of further efficiencies will be essential as we seek to improve quality and access to services.

We have focussed in the Framework on the “direction of travel” for the next five years, based on the analysis of demand and treatment developments set out in Appendix 1. Health care technologies can develop quickly, and there is a significant volume of research into cancer and its treatment which leads to a continuous flow of new drugs and treatment techniques. We are able to plan ahead for some of these, for example Intensity Modulated Radiotherapy (IMRT) or Image Guided Radiotherapy (IGRT), and we must also be able to respond quickly to innovation if we are to further improve outcomes and the quality of life of people with cancer. New drugs and equipment are often very expensive, however, which presents a challenge in the current financial climate.

Technological developments play a significant part in maintaining a modern and effective blood service. Some of these developments – such as prion filtration – are in the public eye because of questions of blood safety, in the wake of ‘contaminated blood’ news stories. We must maintain an effective dialogue with policy makers, other blood services and NHS users of blood components, about the priority, cost and urgency of change. Planning ahead has been a priority for the Welsh Blood Service, which recognised two years ago the need to fundamentally review all of its services in the light of the challenges resulting from a diminishing donor base and a tightening regulatory framework. The WBS is now implementing a modernised and transformed service to better meet the needs of donors and the NHS.

Health services are delivered by people, and a medium term service plan is essential if we are to ensure that we are developing a workforce with the right skills and in sufficient numbers for the future. This document describes some of the immediate developments, and we know that more work will be required as we review and modernise our care pathways.

In addition, we must plan our buildings and equipment to ensure that they can support the delivery of services in the years ahead. We face significant challenges in this area, especially at the Velindre Cancer Centre, where there is already great strain on space and equipment. Capital funding nationally is under pressure, and we must ensure that we have a viable and affordable plan which deals with the most pressing issues and prepares the way for the future.

The pace of change will be dictated by our priorities, the availability of skilled staff, revenue funding, access to capital for buildings and equipment, and the creativity of our staff in reshaping services and care pathways.

2.9   Next Steps

This document describes our strategic direction, and shows how we intend to make progress towards our organisational goals. We have identified priorities for action, together with areas in which further work is required or which will become priorities later in the planning period. Specific proposals are identified for 2011/12. Proposals for subsequent years are of necessity less specific, and programmes of work are identified which will enable us to develop more precise proposals year by year.
This Framework describes the journey we are on, and places immediate actions within a longer term context. It sets out the direction which will guide service delivery and the pursuit of excellence, with specific indicators of success in the year ahead and programmes of activity which will shape services in subsequent years.

Our intention is to draw the “routemap” clearly enough to provide direction and to identify key waypoints, whilst recognising that services are not static and the details must be kept under continuous review.

The task for the Trust is to continue to deliver high quality, responsive and valued services, whilst also reshaping and developing to ensure that we are ready to take advantage of the opportunities and meet the challenges which lie ahead.
Section 3

STRATEGIES FOR DELIVERY

3.1 Introduction

The Trust seeks to deliver high quality services which meet the present needs of our patients and donors, and to be at the leading edge of service development so that we can offer new services in the future.

We have organised ourselves into teams which work together to deliver excellence in their service areas. Some teams work together on for example treating people with lung cancer or collecting blood. Others provide the radiotherapy service or process the blood into its components. There are teams which provide and manage the infrastructure within which patients and donors are cared for, including catering, transportation, the estate and support services.

The work of the Trust is set within a caring ethos which focuses on quality and innovation. The Trust is building a culture in which the pursuit of excellence, continuous learning and cutting-edge research and development drive the organisation.

Section 3 begins by outlining our overall approach to delivering high quality services. The key overarching strategies of the Trust are then introduced. Included in Appendix 1 are brief strategic outlines for each of our service areas, including an assessment of how demand is likely to change, plans to meet future needs, and priorities for development.

3.2 Quality and Excellence

Velindre NHS Trust recognises that the drive towards quality is about ambition and creating the right environment for optimal care. Quality can only be achieved if clear leadership is given from the very top and built into our structures, values, practices and business processes. This involves developing a culture of continuous improvement through strong and visionary leadership, and by engaging the entire workforce in generating lasting improvements and innovations. The Trust seeks to integrate continuous improvement into everyday working, and will judge the success of the organisation against outcomes and quality measures.

A challenge for the Trust is to develop our current ability to accurately measure the quality of care we provide. Quality health care has a wide variety of meanings and, by necessity, is a multi-factorial and broad ranging concept. In order to ensure the quality of our services, the Trust will seek to define the measurement and communication of quality across our range of services.

If we are to improve patient and donor care, it is essential we can define the relationship between quality standards and outcomes. To achieve this, the Trust will develop indicators of outcomes along with a shared understanding of how quality will be measured. Our quality measures will also need to reflect patient and donor requirements, and link back into services as a means of facilitating quality improvement.
The Trust has identified four main components of a quality service:

**Clinical Excellence**

**Clinical Effectiveness** - The Trust is focused on delivering clinical excellence, and on driving consistent governance and clinical quality across the organisation. New diagnostic tests and treatments are being developed all the time. With the emergence of new technology and treatments comes the promise of new benefits.

Our integrated policies, systems and processes underpin a culture that actively supports review, analysis and evidence-based change to services, based on patient need and best outcomes.

We actively seek accreditation of our services through recognised external healthcare authorities, which demonstrates our confidence in the quality of the services we provide and the desire to learn and improve still further.

Velindre’s clinical effectiveness agenda is driven by robust evidence. This involves the implementation of research evidence through guidelines, protocols and care pathways. Over the next 5 years, clinical excellence will be achieved by:

- Focusing on quality through continuous review of patient outcomes and clinical effectiveness
- Use and review of evidence-based clinical effectiveness and clinical quality information
- Delivering against an internal research and development strategy and maintaining external links with universities and research bodies
- Achieving national standards and quality assurance requirements for all our services (such as MHRA, ISO and CPA)
- Fostering a culture of listening and learning built on communication processes that effectively monitor and respond to the concerns and requirements of patients, donors, clinicians, employees, local communities and other stakeholders
- Supporting teamwork and professional development through accredited programmes and internal and external educational networks.

Clinical effectiveness for Velindre NHS Trust is about improving patient and donors ‘total experience’ of their care, and making clinical practice more explicitly evidence based, with the goal of improving the effectiveness of clinical practice and service delivery.

The main sources of information to support clinical effectiveness include:

- Guidance from the National Institute for Health and Clinical Excellence (NICE)
- National Service Frameworks (NSFs)
- National Enquiries, for example Confidential Inquiries
- Patient Safety Alerts
- Professional Guidelines, for example from Royal Colleges
- Guidelines or standards from other national/local bodies
- Local and national audit
- Research & Development
- Participation in clinical trials.
**Clinical Audit** - Clinical audit within Velindre is carried out by all practitioners involved in the treatment of our patients. Audit requires a multi-disciplinary approach to succeed, and the management for clinical audit at the Velindre Cancer Centre is through the Service Speciality Teams and the Site Specific Teams.

The Welsh Blood Service is highly regulated and audit is embedded into all aspects of its work. The Welsh Blood Service Quality Policy is of continuous improvement to meet the requirements of Good Manufacturing Practice (GMP), the Blood Safety & Quality Regulations (2005), the Human Tissue Authority (HTA), Clinical Pathology Accreditation (CPA) and ISO 9001. A Donor Services Clinical and GMP Governance Group with leadership from senior clinicians including the WBS Medical Director, Consultant Haematologist and Medical Director, is responsible for ensuring that systems for clinical governance are in place, and monitored. A management procedure is in place to ensure that the adequacy and overall effectiveness of the WBS quality system is reviewed annually with regard to internal audits, customer complaints, Good Manufacturing Practice (GMP), observations (incidents), change control, and quality objectives.

Participation in national audits is not mandatory, except in a few cases which form part of inspection by regulatory bodies. The Trust however considers a well designed and effective national audit programme as an essential tool for improving services and assessing performance. The priorities for national audits are set centrally by the Department of Health, and Velindre participates in those national audit programmes which are applicable to our services. In particular, the Trust will participate in audits from the National Confidential Enquiry into Patient Outcome and Death (NCEPOD) and the National College of Radiologists. The Trust will continue to review and assess outcomes from National Audits and include findings in service delivery plans as appropriate.

The Velindre Cancer Centre and Welsh Blood Service local audit programmes involve evaluating aspects of care and services that have been identified as of particular importance. Both services will further develop their annual audit programmes, which will be reported to and monitored by the Trust Quality & Safety Committee.

Patient outcomes monitoring will form part of clinical audit alongside other studies which measure the patient experience as a whole. From 2011 onwards, patient outcomes will be monitored through:

- Mortality reviews
- The Velindre Cancer Centre Serious Clinical Incident Forum
- Global Trigger Tool audits
- Fundamentals of Care audits
- Patient and donor satisfaction surveys
- Monitoring of incidents, complaints and claims (concerns)
- Monitoring and investigation of donor adverse events and observations
- Infection Control and Surveillance Monitoring
- Clinical trials.

Our audit programmes aim to ensure that patients receive the most effective, up-to-date and appropriate treatment, delivered by clinicians and staff with the right skills and experience. During 2011/12, the Trust will strengthen the reporting framework around patient outcomes and the patient experience, which will form a key source of assurance for the Trust Board.
Promoting improvement and innovation is one of the competencies for providing a world class service. Velindre understands the need to innovate to stay ahead. The Trust will seek innovation, knowledge and best practice, applying this locally to improve the quality and outcomes of our services.

**Patient and Donor Safety**

**1000 Lives Plus** - Patient safety and the quality of care are aligned with the over-arching aim of reducing waste, harm and variation. Building on the success of the two-year 1000 Lives campaign, the 1000 Lives Plus will have a transformational impact on the care provided by Velindre. The Trust will continue to integrate practices from the 1000 Lives campaign, and will play an active part in the NHS Wales 5 year programme to reduce avoidable harm. Robust processes are in place to drive the campaign, and the quality and safety agenda will be further aligned to ensure the delivery of service improvements.

A number of developments will be taken forward as part of the 1000 Lives Plus campaign during 2011/12 including:

- Work with Cardiff University to publish the Oncology Global Trigger tool developed by VCC. The Oncology Global Trigger Tool provides a framework for conducting a retrospective review of patient records using 'triggers' to identify possible adverse events
- Multi-disciplinary team reviews of all inpatient deaths at VCC. Feedback including areas of good practice will continue to be widely shared across VCC
- A pathway and care bundle will be developed for bowel care
- The sepsis bundle work will be more widely deployed across VCC
- The Depression and Dementia programme areas will be further developed.

The Welsh Blood Service is included in the Trust 1000 Lives Plus programme and will be considering how they can increase their participation in the various programme areas. During 2011, the Welsh Blood Service will be developing their safety structures and will introduce a Quality Risk Management (QRM) framework for the assessment, control, communication and review of risks where the focus is on patient safety, product quality and data integrity.

The WBS is also developing a robust framework to manage donor adverse events which will ensure that the root cause of such events is defined and that the appropriate corrective and preventative actions are put in place. This will include a system for tracking and undertaking trend analysis of such events to ensure lessons are learned and shared.

The Velindre Cancer Centre has a well established multi-disciplinary group which monitors clinical incidents. The Serious Clinical Incident Forum (SCIF) is consultant led, and undertakes root cause analysis of clinical incidents and leads mortality reviews. The group has been operational since 2007, and continues to evolve. Work will continue over the next year to develop the system for monitoring the implementation of actions and recommendations from the work undertaken by the group.

**Healthcare Acquired Infection Prevention** - In line with the Annual Quality Framework (AQF) and national targets, the Trust is committed to the elimination of preventable healthcare associated infections (HCAI’s) and hospital acquired pressure sores. The Trust will ensure compliance with the appropriate national mandatory surveillance schemes and further reduce cases of C. difficile.

The Trust will continue to use the 1000 Lives Plus improvement methodologies to promote a policy of zero tolerance of preventable HCAI’s. This will include the introduction of bundles for CAUTI and
PVC’s and achievement of 95% hand hygiene compliance. A further priority area will be to improve antimicrobial prescribing through policy, training and medical engagement. The success of this activity will be measured by prevalence of prescribing practices and C. difficile cases.

**Standards for Health Services in Wales** - From their inception in 2005, the Healthcare Standards for Wales provided the Trust with a consistent framework that enabled us to look across the range of services to ensure that services were of the highest quality and we were "doing the right thing, at the right time, for the right patient/donor in the right place and with the right staff". The revised Standards for Health Services provide an opportunity for further alignment with clinical and other professional standards and quality requirements, and the Trust will engage all healthcare teams and departments to embed the revised Standards. Assessment against the Standards will continue to be a key source of assurance for the Board in order to identify areas where we are doing well and those where we can improve.

During 2011/12, the Trust will integrate the Standards for Health Services into service delivery and use assessments against the Standards in the planning and review of services on a routine basis. The Trust will develop the existing reporting arrangements to the Executive Board and the Trust Board, and use them to frame the quality review process for clinical and operational services.

**Standards** - The *National Cancer Standards* (2005) helped to define the core aspects of the service that should be provided for cancer patients in Wales, and detail the key elements of the diagnostic and treatment process that patients should expect to receive. The Velindre Cancer Centre will continue to deliver against the Cancer Standards and use them as a tool for ensuring patient-centred care.

Velindre Cancer Centre works closely with the Cancer Network to assess current services against the Standards, and to develop and implement action plans to improve performance.

The UK is currently undertaking Impact Assessments into the SaBTO recommendation to introduce prion filtration as a risk reduction measure for vCJD. A test for abnormal prions is being researched which would enable blood donors to be screened for the presence/absence of abnormal prions.

**Regulatory Compliance** - The Welsh Blood Service is currently developing its incident investigation framework. During 2011/12, WBS will implement a revised framework with an overall aim of improving the quality of investigation and capturing Corrective and Preventative Actions (CAPA).

Regulatory compliance is an essential element of the Trust’s quality agenda. The Welsh Blood Service is highly regulated to reduce the chances of transmission of infection to very low levels. In the UK, the component elements of the blood supply chain are subject to inspection by the Medicines and Healthcare products Regulatory Agency (MHRA). The MHRA undertakes thorough, regular inspections and has wide-ranging powers including closure of premises. Throughout 2011/12, the Trust will continue to review the establishment and workings of the WBS Quality Assurance Systems in line with MHRA inspection recommendations.

The diagnostic services of the UK blood services are also subject to a variety of regulatory and accrediting authorities/accreditations, including the Human Tissue Authority (HTA), Clinical Pathology Accreditation UK Ltd (CPA) and the European Federation for Immunogenetics.
One separate option for reducing the theoretical risk of transmission of vCJD is to make use of the fact that the UK food chain was declared to be completely free of contamination by vCJD in 1996. All UK residents born after 1996 should have a near-zero risk of infectivity. As blood donors can donate after the age of 17 years, in 2013 it should be possible to collect blood for transfusion to at-risk groups (patients born after 1996, and multi-transfused patients), mitigating this theoretical risk of transmission. SaBTO has yet to formally consider the epidemiological evidence that could lead to a recommendation. The UK Blood Services are calling this concept "Club 96".

There are a number of activities undertaken at the Velindre Cancer Centre which are subject to regulatory review and compliance. The main regulatory bodies and regulations include the Medicines and Healthcare products Regulatory Agency (MHRA); and the Ionising Radiation (Medical Exposure) Regulations 2000. The IRMER Regulations require Trusts undertaking medical exposures to establish diagnostic reference levels (DRL) and to undertake appropriate reviews if these are consistently exceeded.

**Patient and Donor Experience**

**Patient and Donor Involvement** - The Velindre Cancer Centre and the Welsh Blood Service each have an excellent reputation within Wales from a patient, donor and customer hospital perspective. Both services will continue to build upon stakeholder engagement and partnership working to further enhance our comprehensive and complex range of services.

The Trust has a 3 year Service User Involvement (SUI) Strategy which provides the overall framework for consultation/involvement with the public. The strategy will be reviewed and strengthened during 2011/12 to include all areas of public engagement. An important focal point for the Velindre Cancer Centre is the Patient Liaison Group (PLG) which meets on a monthly basis. Their remit is to provide the patients “voice” and to relay the experiences of other patients. The Patient Liaison Group is actively involved in many of the Velindre Cancer Centre management groups, the Trust Quality & Safety Committee and the Trust 1000 Lives Plus Project Board. The PLG Chair attends the full Trust Board meetings.

It is a requirement of the Research Governance Framework for Health and Social Care (Welsh Assembly Government 2009) that service users/patients should be involved in the development and execution of research projects at all stages. In 2005 the Trust introduced service user/patient representation onto the membership of all R&D related committees to ensure that research activity is conducted and managed in an accountable and transparent way.

This has added an important and valuable perspective to organisational R&D activity, and Velindre is one of very few NHS organisations in Wales to have recruited and retained R&D service user representation. In line with the 1000 Lives campaign, the Trust has been developing the use of patient stories. This has provided an opportunity of bringing the patient voice to the Board. The Trust will continue to maximise the use of patient stories and will use them as an indicator of performance to drive the overall quality of care.

Within the WBS, the Board has promoted active involvement of stakeholders through the Designed to Donate project. The WBS will shortly be embedding a revised organisational structure and as part of the revised arrangements, the service will develop the donor relationship by establishing donor panels.
Involving patients and donors has great potential for quality improvement, and in recognition of this the 1000 Lives Plus Project Board is chaired by a patient representative.

The Fundamentals of Care (FoC) audits are an exempla practice for involving the patient in assessing standards of care. Observations of care and fundamentals of care audits also provide a focus for gathering experiences and feedback. The Patient Liaison Group was involved in 2010/11 in undertaking audits, and will continue to play a role, together with the CHC, in 2011/12. The Cancer Centre will continue to undertake FoC audits during 2011/12, and will work to achieve continuous improvement in all areas of patient care and, in particular, dignity and respect.

The successful delivery of the 5 year Framework will depend on strengthening patient and public involvement and providing a mechanism for meaningful engagement with service users. This will help ensure that all views are taken into account when considering the evidence for new service developments.

**Learning Lessons** - Patient and donor satisfaction audits are already widely undertaken across the Trust. Results are reported within the relevant service division, and Trust-wide reporting arrangements are currently being reviewed. Key indicators for assessing the patient experience are being developed.

The Trust recognises the importance of being a ‘learning organisation’. Understanding why things go wrong and learning the lessons from incidents, complaints and claims will help support the culture of continuous improvement. The handling of concerns across the Trust will be taken forward during 2011/12 in accordance with the interim guidance from WAG and the National Health Service (Concerns, Complaints and Redress Arrangements) (Wales) Regulations 2011. The National Patient Safety Agency (NPSA) has developed a *Being Open* framework to strengthen the culture of openness within healthcare organisations. The principles identified within the framework will be integral to this process.

The revised regulations in relation to Handling Concerns will strengthen the current arrangements for investigating complaints and patient safety incidents. There is significant learning to be achieved from the way in which concerns are managed and used across the organization, and the Trust will consider the creation of a Learning Committee to maximise opportunities to identify and share lessons in respect of quality and safety.

**Access to services**

**Community Based Services** - Increasing demands and new treatment options mean that we must continually review our service models and care pathways. The aim is to ensure that services are accessible, acceptable and provide high quality outcomes.

The Velindre Cancer Centre operates a hub and spoke model for the provision of chemotherapy services across the south Wales network. This model is supported by a number of outreach clinics across south Wales, where patients can receive chemotherapy treatment at a range of locations closer to their homes.

Improving access to treatment remains a priority for the Trust. Due to the specialist nature of the Velindre Cancer Centre, patients can travel from west Wales to Cardiff to access our services. VCC has developed a range of local services for outpatient and chemotherapy services, where appropriate and safe to do so. Over the next 5 years, the Trust will be developing new ways of working which will provide treatment closer to home for more patients.
The Trust is working with Powys Health Board to develop appropriate local services for its residents, for whom frequent travel to the Cancer Centre in Cardiff can be difficult, especially when patients are feeling ill.

Work is underway to review the uptake of different treatments to assess if distance from VCC has any effect on the number of patients having treatment. The results of this work will be used to help plan future services and ensure equity.

The Welsh Blood Service is currently implementing its ‘Designed to Donate’ programme which will fundamentally change processes, roles, structure and culture in order to modernise and future-proof the service. One of the strategic objectives of the programme is to arrest the decline in the donor base. A well-developed programme is in place to manage this change, and a number of work-streams have commenced. In order to improve access to services, the programme will be reviewing session opening times to meet local demand and improve efficiency.

**Equality and Diversity** - The Trust is committed to providing equality of services to all service users and staff. The Trust developed its first Single Equality Scheme in 2009, bringing together all equality strands and developing holistic outcome-focused actions. The scheme has been updated in 2011, and the Trust is engaging with staff, external organisations and members of the public to take forward its implementation. The Scheme is supported by a 3 year action plan and contains key objectives which will improve access to services.

The Trust has recently developed a revised Equality Impact Assessment process. As part of this process, a panel has been established to undertake equality impact assessments for all new or revised policies and services. The revised process will be fully implemented during 2011/12 and will lead to more detailed and robust equality assessments.

**Welsh Language** - In line with legislation and the new Welsh Language Measure and Equality duties, Velindre NHS Trust recognises that it has a responsibility to patients and service users to ensure services are fully accessible. The organisation recognises the importance of a bilingual service and the necessity to provide equal status to the Welsh and English language. Delivering a service to the public in their language of choice is not a secondary thought, but has been proven to enhance a patient or service user’s quality of experience.

The new Welsh Language Measure supports a greater provision of a bilingual service. During 2011/12 the Trust will improve the identification and capture of language choice, which is crucial in enabling staff to recognise the needs of individuals who do not necessarily use English as their first language.

Welsh language priority areas over the next few years include:

- Development of a Language Skills Strategy which will enable the Trust to assess the skill mix of staff and improve the provision of a bi-lingual service
- Provision of Welsh language training to front line staff in order to develop linguistic skills
- Developing the recruitment process to improve the current bilingual service
- Improving the capture of language choice for patients, to enable patients to receive services in the language of their choice.
3.3 Research and Development

Velindre Cancer Centre R&D Scientific Strategy - The VCC R&D Scientific Strategy focuses on areas of strength with high quality performance measures and outputs. The following key activity areas are identified within the strategy based on areas of interest and ‘niche’ areas:

- clinical trials
- radiotherapy research
- palliative care research
- biomarker/biospecimen research.

The strategy is directed by a Trust R&D Scientific Strategy Group chaired by Professor Malcolm Mason, Velindre Cancer Centre R&D Director, with membership drawn from the programme leads and the Trust R&D Committee.

Key outcome measures in the strategy will be how the outcomes are used to improve service delivery. Another important outcome measure will be demonstrated in the development of nursing and allied health professional (AHP) research. Nursing and AHP research activity will be linked to the strategy priority activity areas and supported by the leads. This will ensure that the appropriate support is in place in order to conduct research that is relevant to the strategy, robust and publishable and to encourage multidisciplinary working.

Collaborative Research Activity - The Trust Radiotherapy Physics Research Group produces work of international standard in certain areas such as Monte Carlo based dose calculation for RT.

In April 2009, The Wales Office of Research and Development (now NISCHR WAG) awarded Velindre NHS Trust and Cardiff University funding to assess patient dose using novel radioisotopes in Molecular Targeted Radiotherapy.

This is an international collaborative project between Velindre NHS Trust (Dr. E. Spezi and Dr. D. G. Lewis), the Wales Research and Diagnostic Positron Emitted Tomography Imaging Centre (PETIC, Prof. P. Edwards, Dr. S. Daniels) the Department of Oncology & Palliative Medicine (Prof. M. Mason) and the PET Centre of the University Hospital of Bologna in Italy (Prof. S. Fanti and Dr. C. Pettinato). The accurate calculation of patient specific three-dimensional dose will result in better patient management and follow-up allowing for the delivery of a more effective and efficient service.

Present and future collaborative research will also be devoted to searching patterns for the development of new drugs and novel techniques for patient screening and cancer treatment.

A nursing and allied health professional (AHP) research group has been established lead by Sue Acreman, a Marie Curie Consultant AHP, to build capacity in nursing and AHP research activity linking into the VCC scientific R&D strategy. One proposal currently being developed is a study of non-cancer AHPs, and their involvement with cancer patients concerning rehabilitation in the acute hospital setting. Macmillan funding was also awarded in 2010 for the development of the Skills for Living Well education programme with the aim of enabling a cohort of volunteers to provide first line cancer rehabilitation advice.

Within the Welsh Blood Service, the Welsh Transplantation and Immunogenetics Laboratory’s (WTAIL) research and development endeavours are principally undertaken to improve the quality of its laboratory services and assays and to inform its scientific and clinical knowledge base.
The findings of WTAIL’s R&D activities are normally presented to the worldwide Histocompatability & Immunogenetics (H&I) community through peer reviewed scientific literature as full length articles or as abstracts of scientific conference poster or oral presentations. Others are presented as postgraduate diploma or higher degree projects, usually undertaken as part of trainee scientists’ education.

**R&D Office** - A service level agreement is currently in place between Velindre NHS Trust and Public Health Wales Trust to provide R&D Manager sessional time to Public Health Wales to support their R&D office function.

**Clinical Trials** - Clinical trials are a critical part of the research process for advancing medical knowledge and patient care. Greater participation in clinical trials leads to better treatment for all cancers. Involvement in clinical trials enables the Trust to identify whether a new approach works well and is safe, and which treatments or strategies work best for different cancers or groups of people.

A priority area within the strategy is the establishment of a Phase I Clinical Trials Unit to offer cancer patients a treatment opportunity when all therapeutic options have been exhausted. An active Phase I Trials Unit within the Trust would further strengthen the existing NHS/academic collaboration. There is currently very little oncology phase I trial activity in Wales, with the primary route for referral to such studies being outside Wales. This initiative is in the planning stages for implementation in the next two years.

The Velindre Clinical Trials Unit (CTU) is an active unit with an increasing portfolio. Increasing clinical trial activity in head and neck cancer is a priority area for the Trust, as there is evidence to support the assertion that patients benefit from being treated within a research-active clinical environment. In addition, clinical trials for lymphoma are critical in contributing to improving treatments for these patients.

**R&D Grants** - The Trust continues to build capacity locally within R&D, supporting a portfolio of multidisciplinary research activity through small grant funding. This annual funding call aims to pump-prime activity, providing researchers with the opportunity to undertake pilot/feasibility studies in order that they may access future external grant funding for larger projects in accordance with local and national R&D strategies and priorities.

**Charitable Funds** - Charitable funds from both VCC and other charitable organisations are, and will remain, an important source of funds for R&D.

Examples of R&D supported by charitable funds include:

- Over £600,000 has been raised by VCC for the *Stepping Stones* appeal, which is a charitable fund for lung cancer research. Research plans are in place to utilise these funds in projects such as collecting lung cancer tissues samples through the Wales Cancer Bank, as there is little such tissue collected nationally. Similarly there is a plan to undertake qualitative research study to support the trial called FRAGMATIC, the largest lung cancer study in the world.

- *In The Pink* is another charity that has raised more than £1m over recent years to support breast cancer research at Velindre. They have funded a range of projects including oncological and surgical research fellow posts.
Charitable funds at VCC provide a source of funds for staff to work within the Clinical Trials Unit and ensure the Trust remains active in trials.

One-off funding has been provided to support equipment such as lasers for the new PET facility in Cardiff to enable research into the role of PET within Radiotherapy planning.

3.4 Workforce and Service Modernisation

Introduction

The service strategies of the Trust and its Divisions identify the challenges and opportunities over the next 5 years. The priorities for initial action have also been identified, and in some cases work on reshaping services is well advanced for example the Designed to Donate project in the Welsh Blood Service which will introduce more ‘donor focused’ blood collection arrangements, and will mean changes in the way that staff work. It is recognised that delivering the service strategies will bring with it a continuing process of change. Our aim is to work with all colleagues in practically managing these changes and identify opportunities to develop our workforce so that it is better trained, more flexible and appropriate for the future.

The Trust has produced a Workforce Plan which was approved by the Trust Board and NLIAH in January 2011.

In addition, the Trust has an agreed Workforce and OD Strategy and Action Plan which provides a context and a series of actions to improve the productivity, effectiveness and efficiency of the workforce in order to improve the quality of service delivery.

For 2011/12 these include:

- A formal staff appraisal framework reflecting organisational objectives and service priorities
- Supporting the development of effective team working across the Trust
- Provision of a Leadership and Management Development Programme which delivers improved managerial competencies and skills.

Our aim is to ensure that all staff understand their contribution to the work of the Trust, and that they are supported in doing their jobs. This will improve staff competence, flexibility and motivation, and enable the Trust to better plan developments and support its staff.

The Strategy identifies the goals which need to be achieved for the Trust to become an excellent employer. These are integrated with the Trust’s goals, as outlined earlier in the SWFF and include:

- Performance management and strong leadership, with a focus on clinical leadership
- Clear aims and objectives and appraisal at all levels
- Staff engagement and involvement in local decision making
- The development and maintenance of effective and well functioning teams
- Effective partnership working
- A focus on staff health and well-being.
The Workforce and Organisational Development function is changing its scope to better enable it to support the workforce modernisation agenda. Resources will be rebalanced and refocused on delivering this agenda. A number of staff across the Trust have been trained in role and workforce re-design and the application of its tools. These skills will be applied to achieve the service delivery priorities.

**Developing Leadership**

The appointments of a new Trust Medical Director and a Clinical Director for Velindre Cancer Centre are important steps in strengthening clinical leadership, which will be an essential feature of improving care delivery in the coming years. The tumour site leads at VCC have an increasingly important role in planning their services in the future. These plans will rely heavily on redesigning care pathways, and will provide opportunities to improve patient care and offer new roles to staff. This development in clinical leadership is vital for the success of VCC in the future, given the active role of clinical leaders in bringing about change. Strong and visible clinical leadership is required to develop a highly flexible workforce based increasingly in competency-based multi-disciplinary teams with transferable skills.

The Trust is dedicated to supporting and empowering staff to help them achieve their full potential which will lead to more fulfilled and motivated staff. We recognise the important contribution that successful leaders have in enabling this process.

A goal for the Trust is the development of a leadership programme capable of driving and delivering successful change, and supporting the cultural transformations which are essential to the future of the organisation. The Trust has identified as a priority the requirement to focus on leadership and management development and change management skills, and to make full use of the NLIAH suite of leadership and management programmes.

**Developing New Roles**

The Trust has a track record of modernising and re-shaping its’ services and developing new roles for staff which better meet the needs of patients and donors.

**Velindre Cancer Centre**

Within Velindre Cancer Centre, there has been considerable role development work including the introduction of Clinical Nurse Specialists (CNS) within site specific teams. The introduction of such roles has assisted the medical workforce, with the CNS leading clinics within the Outpatients Setting and becoming qualified as Nurse Prescribers. The division is continuing to strengthen the CNS resource, which will further support the medical teams. The prioritised service developments detailed later in this section will require further developments of this nature. Some recent examples of where advanced nursing practice roles and extended Radiotherapy roles have been utilised are listed below:

- Specialist nurses running Outpatient clinics
- Telephone follow-up service for Prostate Cancer patients
- Nurse Led Chemo Clinic for Breast Cancer patients
- Specialist Nurse run telephone service for the Herceptin Pathway
- Specialist Nurse run “Chemo Call Back” service
• Telephone follow-up service for patients with urological cancer
• Mammographic follow-up service led by Radiographers with specialist nurse support
• 7 day a week specialist palliative nursing set up and delivered by the palliative CNS team to improve the care delivered to patients with complex symptom problems and for patients on the All Wales End of Life Pathway and their carers
• Lymphoma/Melanoma telephone call back service run by clinical nurse specialist
• Radiotherapy information and support service run by senior radiographer
• Diagnostic radiographer trained in the harvesting of bone marrow samples
• Development of post of generic therapy support worker.

Other developments include:

• VCC has used non-Medical Prescribers (pharmacy and nursing staff) more than many organisations, especially in oncology settings
• Radiographers in radiotherapy have also taken on advanced skills and roles, such as review radiographers, and breast planning radiographers
• Bone marrow biopsies are undertaken by radiographers and advanced nurse practitioners
• Health Care Assistant support to the dietician in providing nutritional and dietary assessments and advice.

Welsh Blood Service

WTAIL:
• Nurse led workup for donor marrow harvest or stem cell including the administration of GCFS
• Nurses have been trained to undertake the role of first assistant during the harvesting of bone marrow under general anaesthetic

Laboratories:
• A number of roles contained within the laboratory services function have been re-designed resulting in enhanced support roles to replace qualified staff, enabling the service to recruit from a potentially larger pool and align skill mix to service requirements and modernisation.

Collection Services:
The Designed to Donate pilot has identified a number of re-designed roles to support the Collection process:
• Streamlined the roles for the collection function via the removal of a number of differing Blood Collection roles and replaced with a multi-skilled Blood Collection role. This will enhance job satisfaction and optimise multi-skilling and resilience in the service
• Re-defined the supporting management structure to maximise and re-balance professional and vocational skills across blood collection i.e. nursing roles re-focussed on clinical standards and team management being led by non-nursing staff
• Maximise multi-skilling across both collection functions i.e. whole blood and apheresis within static site roles to increase role flexibility and therefore providing added resilience and efficiency for the service
• Aligning a re-structured Clinical Services function with Blood Collection to maximise cross functional team working arrangements, with an emphasis on quality assurance / audit / clinical governance and competency; this will also enable the WBS to meet the increasing regulatory
Delivering Quality, Care and Excellence

service requirements. This will facilitate and provide increased opportunities for career and skills development.

Workforce Modernisation in 2011/12

Multi-disciplinary teams will be established on a task and finish basis to develop new roles, change skill mixes in order to support the required service changes. As this SWFF provides increased clarity for these changes in 2011 and beyond, the ability to pro-actively plan these changes to the workforce is improved. The teams will be established in partnership with staff and their representatives and will maximise the involvement of the staff concerned in these changes.

Velindre Cancer Centre

VCC has a challenging service agenda which includes an increasing demand for services; an increasing range of treatment options; patients living longer with cancer; and a reduced junior medical staff resource. To meet these demands it is essential to modernise and redesign the workforce. This is against a backdrop of reduced financial resources and the requirement to improve productivity and efficiency across all services, whilst maintaining the patient safety and staff development agendas.

The Division has recently appointed two Service Modernisation Managers who will be central to the delivery of its Service Modernisation Strategy. The post holders will develop service plans that clearly link with the SWFF and Cancer Policy. These roles will be supported by integrated teams delivering the workforce modernisation agenda.

The workforce needs to develop so that it is flexible, appropriate and affordable to meet patients’ needs both during and outside of the core working day. There is a need to speed up and streamline the patient’s journey. This will impact on Radiotherapy, Radiology, Pharmacy, Chemotherapy and Therapies departments, where the strategy is to introduce more services beyond the core working day. This will result in a shift in working practice with extended working days and weekend working.

Improved patient pathways will result in even more new and extended roles for staff which will present exciting development opportunities. The Division now intends to develop a more strategic approach to extension of roles with development of a plan to expand further for example Non-Medical Prescribers (NMP), Non Medical Referrers (NMR), Clinical Nurse Specialists (CNS) and other extended roles, to meet the identified service priorities.

In the medium term, the Division is looking at initiatives such as Modernising Scientific Careers, the Healthcare Support Worker guidance and apprenticeship type schemes to develop appropriate roles and competencies with the workforce.

The workforce modernisation actions associated with these include:

- The setting up of and recruitment to a programme to extend the roles of more current nursing and pharmacy staff to work as non-medical prescribers in chemotherapy clinics (VCC and outreach ) and Chemo Day Unit
- The review of current usage of Clinical Nurse Specialists (CNSs) across VCC. This is designed to ensure that best possible use is made of this resource. It has already been identified that there are priority speciality areas such as sarcoma and melanoma where CNS support could be
utilised. If the review process does not identify staff resources to meet this need, then further staff will be developed/rerecruited to carry out these rules if funding can be made available

- Work will be undertaken to review and implement changes to the skill mix within the Nursing (In Patients) workforce by introducing more Health Care Support Workers
- Within Radiotherapy, Assistant Practitioners (band 4) posts will be developed and introduced as part of the implementation process of the 5 tier radiotherapy career structure
- There will be an increasing number of Medical Physics and Radiotherapy staff undertaking extended roles as a result of the proposed increase in the use of IMRT. Learning programmes already exist to implement this
- As part of the review of the chemotherapy pathway, capacity and demand data is being assessed to review utilisation of locations and staff resources at outreach locations. Following benchmarking of “best practice”, a skill mix review late in 2011 may result in changes in staff utilisation
- Within the medical record/secretarial functions there will be further introduction of new “speech recognition” technology which will change the skill mix
- In addition, exploratory work will commence on the introduction of paperless clinics, which will impact on staff roles
- The introduction of an e-rostering system will be considered by the Executive Board and if the business case (which has a significant capital cost) is approved then there would be staffing benefits, both in VCC and WBS. If this is introduced, these benefits would accrue in 2011 and beyond
- Within Operational Services it is planned to introduce generic cover which will release some staff capacity
- Development of a proposal for extended duties for a radiographer (therapeutic) for “outlining”
- Implement centralisation of Chemotherapy services (to include Clinical Trials) into one unit to standardise pathways, improve patient flow and maximize use of staff resources
- Establishment of a DEXA bone densitometry service for patients who have undergone treatment for breast cancer run by a CNS and a band 5 nurse
- Map Powys chemotherapy requirements, including staffing consequences
- Appoint of a new consultant radiologist and assessment of workforce implications for other staff
- Develop plans with the Deanery to include VCC in Specialist Registrar rotation and assess any staffing implications
- Develop “follow up pathways” for various tumour sites including impact on medical/non medical staff.

**Welsh Blood Service**

Over the past 2 years the WBS has had a strategy to change its operating service model. This has included working in partnership in the planning and development of new staffing structures and roles for most Collection staff. The ongoing work is set out below, including the impact on laboratory staff.

- Evaluation and subsequent roll out of new structures and roles for Blood Collection Teams, during 2012 which will significantly modernise the collection service
- Increased use of static sites and blood mobiles
- Revised clinic opening hours for blood and apheresis collection. This will provide opportunities to streamline processing arrangements within laboratories which may result in a reduced workforce
• Planning for the workforce implications of the Laboratory Information Management System (LIMS) rollout in 2011/12
• Planning for the workforce implications of the implementation of the Blood Establishment Computer System (BECS) with expected changes in skill mix and role redesign in 2012
• Potential development of the Welsh Blood Service into North Wales, depending on the results of the Blood Services Review for Wales.

The Longer Term - 2013 /16

In subsequent years, the Trust will continue the drive to modernise services. At this stage broad areas for attention have been identified. During the coming months, programmes of work will be put in place to develop more specific plans for implementation.

Velindre Cancer Centre

• Maximise utilisation of non-medical prescribing in chemotherapy services
• Continue to identify priority areas for deployment of CNS resource funding, training of staff and recruiting to the posts
• Assistant Practitioner posts to be introduced in radiotherapy and outpatients
• Implementation of Modernising Scientific Careers within Medical Physics
• Roll out of “paperless” Clinics leading to changes to medical records/secretary skill mix
• Continued review and development of follow up pathways, with changes to staff utilisation for medical, nursing and radiotherapy staff
• Further work towards increasing chemotherapy administration within outreach locations to 70% across south east Wales. This will result in further role redesign within the chemotherapy services
• Assess the workforce impact of extending the working day/week of Chemotherapy services and negotiate contract accordingly
• Assess the workforce impact of expanding Pharmacy services in support of extending Chemotherapy opening times. Implement workforce redesign accordingly
• Assess the workforce impact of extending the working day of Outpatient clinics. Redesign roles and implement
• Assess the capacity benefits of the introduction of e-rostering
• Continue to implement training programmes with Radiotherapy to create enhanced roles linking to the introduction of IMRT
• Create, enhance and redesign roles within the Radiotherapy department to support the introduction of an additional two Linac’s between 2013-2015
• Undertake review of administration functions across Velindre Cancer Centre to re-design and enhance roles to provide more generic cover.

Welsh Blood Service

• Implementation of Modernising Scientific Careers within Laboratory and WTAIL services
• Continued roll out of the revised multi-skilled blood collection and apheresis roles / process
• Continual evaluation and review of changes embedded in collection service. Future changes may be required to ‘future proof’ the service in line with other UK blood services.
• Review outcomes of Modernising Scientific Careers and implications on scientific and support staff
• Support and review outcomes/opportunities for workforce that may arise as a result of the Blood Services Review for Wales.

3.5 Finance

The financial strategy for the Trust over the 5 years covered by this framework will be built around the overall funding framework set out in section 2.3. When this framework is localised there are several key risk factors which determine the level of financial pressure which the Trust will face:

• Any funding changes identified by LHB’s
• The effect of taxation changes on pay and non-pay costs
• Inflationary pay increases and incremental pay drift as a result of contractual liabilities
• Non-pay inflation.

The impact of these factors varies across the Trust and from year to year, and estimates have been made over the 5 years on a “best” and “worst” case basis.

The latest estimate of the overall cumulative effect of these factors will result in the Trust facing financial pressures of between £4.6m and £8.7m over the next 5 years, or between 5% and 9%. More than a third of this challenge will be faced in the first year.

The Trust achieved breakeven in the year to 2010/11. There is a relatively small level of underlying financial challenge remaining from 2010/11 in area where savings have been non-recurrent.

Clearly these pressures will require the Trust to focus very carefully on the way it delivers services to operate within its expected funding envelope in addition to delivering increased financial efficiencies. It will require operational efficiencies to be delivered across all service areas, and there will be a need to provide innovative service solutions in the future.

A key aspect of delivery will be the development of procurement efficiencies which should benefit from an all-Wales Shared Service and the co-ordinated and consistent approach which this should generate.

The Trust has planned for 2011/12 on the basis of the same level of income as in 2010/11. Detailed financial plans have been developed to take out any cost pressures on existing budgets. These are summarised in section 4.

Incremental funding is expected from LHB’s and WHSSC in relation to the following agreed developments:

• 2011/12 step in funding to commission bunker 7 and 8
• Commissioning of the e-prescribing solution for south east Wales already agreed at the South East Wales Network
In addition the Trust is seeking funding for the implementation of IMRT as set out in the letter from the Director General to NHS Chief Executives on 7 March 2011.

All other actions planned at this stage will be contained within the Trust’s existing funding levels on the assumption that NICE/High Cost Drugs will continue to be fully funded by the LHB’s/WHSSC in line with the current funding regime.

The Trust is in discussion with WAG with respect to the way that it will be funded in the future, with the aim of reducing transaction costs and ensuring that the Trust is able to manage itself in a way which is aligned with the NHS structures as they now operate.

### 3.6 Capital and Estates

The Trust’s estate currently comprises approximately 25,000 square metres of accommodation across five locations. The two largest properties, Velindre Cancer Centre and the Welsh Blood Service facility at Talbot Green, Llantrisant, are the only freehold premises within the Trust’s portfolio. The Velindre Cancer Centre (built c1950s) has approximately £2.5 million of reported backlog, and offers limited quality patient environments. The Welsh Blood Service facility at Talbot Green (built c1996) offers a much higher standard of accommodation. The Trust headquarters at Nantgarw are occupied under lease arrangements which expire in 2017.

In 2011/12, the Trust is planning to conduct a comprehensive review of its estate. The current survey data for the Cancer Centre is five years old, and information on the Welsh Blood Service premises requires updating. The purpose of the review is two-fold:

- to effectively manage statutory and operational risks in the estate, a snapshot of the current position is essential. This data will also inform strategy and feed into business cases which propose investment into the estate.
- to provide accurate up to date information for mandatory annual estate data returns. This requirement is presently limited to the hospital portfolio which in essence is confined to Velindre Cancer Centre. The format of the review will follow published NHS requirements.

#### Velindre Cancer Centre

The Velindre Cancer Centre has been under stringent review and examination in recent years as the Trust developed its strategic outline case for a modernised facility capable of coping with future cancer demands. A business case proposing a world-class cancer treatment facility was submitted to the Welsh Assembly Government in September 2010. Discussions concerning the affordability of the options have been taking place in the light of the significant pressures on the capital budget.

The key constraints at the Centre include outpatient clinics capacity, pharmacy capacity, radiotherapy capacity, quality of inpatient facilities and a constantly deteriorating estate with increasing backlog maintenance. Significant pressure is experienced in areas such as outpatients, which experienced a doubling of clinics between 2006 and 2011; and pharmacy, which has seen a 37% increase in aseptic work.

Capacity in the diagnostic radiology service is being rapidly outstripped by demand, and a continued investment in additional Linacs will be required. Linacs have an operational life of 10-12 years, and a
planned replacement programme is required to minimise the risk of machines breaking down and becoming unreliable. There is a particularly urgent demand for a replacement MRI scanner, and significant pressures in CT scanning. The Cancer Centre relies heavily on expensive items of equipment, and the Trusts’ discretionary capital budget of £1.2m is insufficient to purchase replacements. The Trust has been able to secure capital from WAG for many such items, and will have to do so in future.

The Table below outlines the major capital equipment requirements of the Cancer Centre over the next five years. Most of the items are replacements, required as current equipment reaches the end of its operational life. The approximate capital cost of each item is shown.

**Major Capital Equipment has been defined as items costing in excess of £250,000**

<table>
<thead>
<tr>
<th>Equipment Description</th>
<th>Replacement</th>
<th>Additional</th>
<th>Approximate Capital Cost £000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear Accelerator (No.5)</td>
<td>√</td>
<td></td>
<td>1500 funded</td>
</tr>
<tr>
<td>MRI Scanner</td>
<td>√</td>
<td></td>
<td>900</td>
</tr>
<tr>
<td>Fluoroscopic room</td>
<td>√</td>
<td></td>
<td>300</td>
</tr>
<tr>
<td>Linear Accelerator (No.4)</td>
<td>√</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>Blood Mobile (1)</td>
<td>√</td>
<td></td>
<td>250</td>
</tr>
<tr>
<td>Blood Mobile (2)</td>
<td>√</td>
<td></td>
<td>250</td>
</tr>
<tr>
<td>CT Simulator 1 (Radiotherapy)</td>
<td>√</td>
<td></td>
<td>750</td>
</tr>
<tr>
<td>Linear Accelerator (2)</td>
<td>√</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>Additional Linear Accelerator</td>
<td>√</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>CT Scanner</td>
<td>√</td>
<td></td>
<td>750</td>
</tr>
<tr>
<td>Digital Mammography Unit</td>
<td>√</td>
<td></td>
<td>500</td>
</tr>
<tr>
<td>Additional Linear Accelerator</td>
<td>√</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>Microselectron</td>
<td>√</td>
<td></td>
<td>500</td>
</tr>
<tr>
<td>Linear Accelerator (No.6)</td>
<td>√</td>
<td></td>
<td>1500</td>
</tr>
<tr>
<td>SPECT/CT Gamma Camera</td>
<td>√</td>
<td></td>
<td>700</td>
</tr>
<tr>
<td>CT Simulator 2</td>
<td>√</td>
<td></td>
<td>750</td>
</tr>
</tbody>
</table>

The approximate costs identified above cover the capital costs of the equipment only and do not cover any building / enabling works required.

The Velindre Cancer Centre faces issues including the presence of asbestos, disability discrimination compliance, planning constraints and a generally deteriorating condition in the older areas of the building. As an intensely operated asset, there is little scope for on-site modernisation which does not require significant capital investment.
The Trust is reviewing its investment priorities in light of the significant reduction in the WAG capital budget. Currently the only capital available to the Trust is the sum set aside in the capital programme to fund additional radiotherapy capacity. A range of options was considered in developing the Business Case, including providing additional Linacs at Velindre Cancer Centre or at a satellite unit. A wide range of options was developed, in part given the lack of development land at the Velindre Cancer Centre.

Following changes in the plans of Cardiff and Vale UHB, land on the neighbouring Whitchurch Hospital site has now become available. This potentially provides an opportunity to tackle a number of pressing issues utilising the limited capital available to the Trust, including radiotherapy capacity, outpatients, pharmacy and chemotherapy.

Work is underway to review the way forward, including opportunities to work in partnership with third sector and other partners. Proposals will be developed during 2011.

**Welsh Blood Service**

The Welsh Blood Service is focusing as part of its modernisation programme on moves from mobile to static site blood collections to improve the quality of collection venues in view of increasing regulation; reduce the frequency of manual handing incidents; and to facilitate an increase in apheresis platelet collection capacity. This is likely to bring about a requirement for leased premises, rather than additional demand for capital. There will be capital requirements in 2012/13 for the replacement of vehicular blood collection units. Each unit has an estimated capital cost of £250,000, and at least two units are likely to be required. Velindre NHS Trust will be unable to fund these from its discretionary capital allocation of £1.2m given other pressures for minor but essential capital. Discussions with the Welsh Assembly Government will continue on how such items of significant expenditure can be managed.

In addition, the Welsh Blood Service will be presenting business cases against the Trust discretionary capital programme over the next 5 years given the age of equipment at Talbot Green; the Talbot Green facility itself; and a managed rolling IM&T capital replacement programme. The Welsh Blood Service will consider the potential of introducing an overnight hold facility for the storage of blood and blood components within Talbot Green. The potential introduction of Prion Filtration could necessitate expansion of the current laboratory floor space.

**Trust Headquarters**

The Trust headquarters at Nantgarw are occupied under lease arrangement which comes to a natural end in 2017. The facility was first taken on by the Trust in 2002, when accommodation pressures at the Velindre Cancer Centre began to impact on service delivery. The plans referred to above at the Cancer Centre may present opportunities to co-locate corporate and operational functions once more.

In 2012 the Trust, along with all other health organisations in Wales, will need to attain the Environmental Standard ISO 14001 as mandated by WAG in November 2009. The Trust achieved the Green Dragon Level III Environmental Standard in 2009, and has already commenced planning for attainment of this higher standard and recognises the need to devote new resources to this objective. Initially this will apply to the Cancer Centre only, but during the subsequent two years all Trust properties will be brought into compliance.
3.7 Information Management & Technology (IM&T)

The Trust’s Information Communication and Technology (ICT) strategy was originally developed in 2007 and covered the period up to 2010. An updated ICT strategy is currently being prepared, and will be based on divisional priorities developed in 2010.

This Strategy is being developed within the context of the establishment of NWIS and its co-ordination of “Informatics” programmes of the Five Year Service, Workforce and Financial Strategic Framework for NHS Wales.

In addition the establishment of NWIS has resulted in the Trust being mainly reliant on NWIS staff for the strategic, tactical and operational delivery of both ICT and Information Governance (IG) services across the Trust in line with the policy direction set by the Minister.

The key strategic aims of NWIS are to:

- improve the quality of services
- make relevant information about health available to health care practitioners
- provide doctors, nurses and health professionals with the tools, knowledge and services required to follow best practice
- provide better information about health and healthcare services
- ensure NHS Wales is supported by modern technology and systems.

These are realised through the provision of national infrastructure and network connectivity delivered in line with the approach outlined in:

- National Infrastructure Strategy for Wales
- National IT Security Strategy for NHS Wales
- National Architecture Standards.

The overarching IM&T strategy for NHS Wales is the responsibility of NWIS and its long-term goal is the Single integrated Electronic Health Record (SiEHR). For the foreseeable future, the SiEHR will make extensive use of existing information systems, including CANISC that provides Velindre NHS Trust with its electronic health record as reference for all clinical information on cancer patients. The NWIS ICT technical director is working with the Velindre clinical director to provide a roadmap for how CANISC will fit in with the national applications strategy and specifically its integration with the Welsh Clinical Portal (WCP).

It is within the above context that the Trust will develop and implement its IM&T Strategy. The strategy will be complex, involving many projects requiring resources from numerous staff groups. To coordinate the implementation the following overall management arrangements are in place:

- The Velindre NHS Trust Board - responsible for approving the Information Management and Technology (IM&T) Strategy document. The member of the Board with responsibility for IM&T is the Executive Director of Finance.
The Velindre NHS Trust IG & IMT Committee - chaired by an Independent Member of the Trust Board. It will develop the IM&T strategy and co-ordinate links with NWIS.

Velindre IM&T Working Group - to advise the IG & IMT Committee on IM&T issues and responsible for delivering the IM&T strategy.

The key developments for the Trust over the coming years will be:

- In 2008, Informing Healthcare (IHC) (now NWIS) initiated a project to procure and implement an all-Wales Laboratory Information Management System (LIMS) that will manage all disciplines of pathology. In order to support the future needs of the laboratories within the Welsh Blood Service, the opportunity has been taken to include the functionality of existing systems within the Welsh Blood Service as part of the all-Wales LIMS. As a result over the next three years this will remove the need for any bespoke laboratory systems within the service.

- National E-Master Patient Index to take forward the National PACS integration project with Velindre as lead site. E-MPI is also crucial for the national Laboratory Information Management System project. The Cancer Centre will be part of Cardiff and Vale LHB implementation scheduled for December 2012.

- Implementation of the Mosaiq integrated radiotherapy and chemotherapy system across the three LHB’s in south east Wales and Velindre. This system is crucial for patient safety providing e-prescribing for cancer patients and integrating with CANISC short term and hence WCP longer term.

- The greater use of the national application CANISC towards our strategy of moving forward on paperless or paper-light clinical practice.

- The main Welsh Blood Service functions are supported by two in-house designed and developed systems, the Transfusion Computing Environment (TRACE) and the Serology Information Management System (SERIF). These systems cover the Welsh Blood Service donor database, donor session management and related donor, together with the recording and monitoring of laboratory test results and consequent release/non-release of blood components. Although both TRACE and SERIF systems have supported the Welsh Blood Service well over the past 28 years, key strategic decisions were made at the end of 2009 to implement a commercial BECS, called eProgesa, which has been developed by the market leader for blood establishments.

This web based solution will provide the Welsh Blood Service with opportunities to:

- improve and advance its donor services activities (such as marketing, recruitment, and electronic capture of information at donor collection sessions)

- provide more detailed information management reports to support key strategic decisions

- ensure a more responsive approach to service change requirements (regulatory enforced and service improvement)
Delivering Quality, Care and Excellence

- provide management with improved flexibility to advance their current working processes
- enable integration with the all-Wales Laboratory Information Management System (LIMS) to provide enhanced traceability of blood components
- provide on-line ordering for blood and blood components
- enable further integration all departments within the Welsh Blood Service, including the Welsh Bone Marrow Donor Registry (WBMDR)
- improve system resilience through an enhanced architecture design.

The BECS play a key role in the provision of safe and effective blood components and diagnostic services and as they provide safety critical control over the release of product they fall within the scope of the Blood Standards and Quality Regulations.

For these reasons it is essential that such systems are developed within a strictly controlled quality environment and undergo thorough testing and validation in line with the requirements of Good Manufacturing Practice (GMP) and Good Automated Manufacturing Practice (GaMP). In particular all developments must be subject to change control and validation requirements.

The systems are different from any other IT systems or requirements of the remainder of the NHS in Wales, and the implementation of any new commercial systems will need to be strictly controlled, engaging the relevant departments and services to ensure a safe and managed transition.
Section 4

PRIORITIES FOR 2011/12

4.1 Introduction

This document is a Framework for the next 5 years, not a detailed plan. It describes how we will approach delivery of our goals in the medium term, with immediate priorities for 2011/12. Planning is a continuous process, and the longer term proposals should be regarded as “work in progress”. Plans will be further refined as service models are reviewed, for example chemotherapy, and specific requirements crystallise.

The Trust is clear that modernising service delivery is the key to continuing to provide high quality services in the future. This is reinforced by the financial outlook, which requires us to redouble our efforts to ensure that we get the most from our resources. The NHS is a service which is delivered by people for people, and it is inevitable that modernisation and change will have an impact on staff as well as patients.

The Trust believes that there are real opportunities to create new and exciting roles which improve services to patients and also offer professional and personal development for staff. The Trust is committed to working with staff and designing the future together, and our organisational development strategy will be a key feature of our work and planning.

4.2 Priorities for 2011/12

This section highlights some of our key plans and actions for the coming year, together with an outline of priorities for the subsequent years. It should be read in conjunction with the rest of the Framework, which describes a wide range of developments and areas of work in addition to those featured in this section.

More precise dates for delivery of the priorities will be included in the Welsh Blood Service and Velindre Cancer Centre Operational Plans which are currently being developed.

A Board Development Programme is being prepared which will set out the priorities for developing our governance and assurance systems and structures to ensure that the Trust is able to deliver the demanding agenda described in this Framework.

The required Annual Quality Framework Abstract is at Annex 1.
## Radiotherapy

### Plans for 2011/12

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commission and bring into clinical practice Linac 7 &amp; 8</td>
<td>Quarter 3/4 2011/12</td>
</tr>
<tr>
<td>Implement RCR guidance for non category 1 pts rest during service/breakdown</td>
<td>Following commissioning of Linacs 7 &amp; 8</td>
</tr>
<tr>
<td>IMRT business case implementation 80% H&amp;N and Prostate inc nodes</td>
<td>Timescale dependent on approval of funding by Health Boards and availability of Linacs 7 &amp; 8</td>
</tr>
<tr>
<td>Pilot Arc Therapy (VMAT)</td>
<td>Following commissioning of Linacs 7 &amp; 8</td>
</tr>
<tr>
<td>Extend CFRT to Rectal, Gynaecological and Breast</td>
<td>Quarter 3/4 2011/12</td>
</tr>
<tr>
<td>In-vivo dosimeter pilot study</td>
<td>Quarter 2 2011/12</td>
</tr>
<tr>
<td>Portal dosimeter research study</td>
<td>Quarter 2 2011/12</td>
</tr>
<tr>
<td>Stereotactic RT for lung</td>
<td>Following commissioning of Linacs 7 &amp; 8</td>
</tr>
<tr>
<td>IGRT- expansion of cone beam CT imaging pilot</td>
<td>Quarter 4 2011/12</td>
</tr>
<tr>
<td>Develop a proposal for radiographer outlining in conjunction with medical staff.</td>
<td>Quarter 4 2011/12</td>
</tr>
</tbody>
</table>

### Outline Priorities for 2012-2016

<table>
<thead>
<tr>
<th>Activity</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Further expansion of IMRT provision for Anal, Rectal (selected) Gynaecological &amp; Breast Cancers and other cancers. Full implementation of the Business Case by 2014/15 subject to funding</td>
<td></td>
</tr>
<tr>
<td>Image guided brachytherapy for gynaecological cancers.</td>
<td></td>
</tr>
<tr>
<td>Further expansion of IGRT (cone beam) to other cancer sites</td>
<td></td>
</tr>
<tr>
<td>Extend CFRT for rectal and breast cancers</td>
<td></td>
</tr>
<tr>
<td>Explore integration of PET-based planning. Trial to commence 2012/13</td>
<td></td>
</tr>
<tr>
<td>Consider extending the role of stereotactic therapy to other sites</td>
<td></td>
</tr>
<tr>
<td>Adaptive Image Guided Radiotherapy – gold seeds, respiratory gating and 4D planning</td>
<td></td>
</tr>
<tr>
<td>Assess the requirement for Velindre to provide a stereotactic radiotherapy service for the population of south Wales</td>
<td></td>
</tr>
</tbody>
</table>
### Systemic Anti-Cancer Therapies (SACTS)

#### Plans for 2011/12

<table>
<thead>
<tr>
<th>Task</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review local provision of SACT’s and associated therapies to ensure an efficient and effective model of delivery.</td>
<td>Quarter 3/4  2011/12</td>
</tr>
<tr>
<td>Fully open the service at PCH in line with the Business Case.</td>
<td>Quarter 2  2011/12</td>
</tr>
<tr>
<td>Submit a proposal for capital funding to centralise chemotherapy services and trials activity into one unit to standardise pathways, maximise staff resources and improve patient flow</td>
<td>Quarter 1  2011/12</td>
</tr>
<tr>
<td>Work with the Network to develop a pilot project for Acute Oncology Services</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Map Powys chemotherapy requirements to ensure patient access closer to home in a cost-effective service model.</td>
<td>Quarter 3  2011/12</td>
</tr>
<tr>
<td>Once Powys mapping exercise is complete, work with Powys LHB to deliver an implementation plan</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Review and implement changes to the chemotherapy education process and advice line to incorporate best practice from the UK Oncology Nurse Society (UKONS).</td>
<td>Quarter 3  2011/12</td>
</tr>
<tr>
<td>Review and redesign referral pathways and booking processes to reduce variation and ensure equity of access</td>
<td>Quarter 4  2011/12</td>
</tr>
<tr>
<td>Develop a Business Case to increase capacity within the Pharmacy Department</td>
<td>Quarter 2  2011/12</td>
</tr>
<tr>
<td>Implement new e-prescribing system within Velindre Cancer Centre</td>
<td>Quarter 4  2011/12 and subsequent years</td>
</tr>
<tr>
<td>Work with the Network to repatriate where appropriate associated procedures to local hospitals – e.g. blood transfusions</td>
<td>Quarter 3  2011/12</td>
</tr>
</tbody>
</table>

#### Outline Priorities for 2012-2016

<table>
<thead>
<tr>
<th>Task</th>
<th>Timeframe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue to develop local services to support care closer to home. The aim will be for half of the service to be provided at local hospitals and half at Velindre in five years.</td>
<td></td>
</tr>
<tr>
<td>Develop services for Powys to ensure patient access closer to home in a cost effective service model.</td>
<td></td>
</tr>
</tbody>
</table>
**Inpatients**

<table>
<thead>
<tr>
<th>Plans for 2011/12</th>
<th>Further roll-out e-prescribing across Velindre and the Network</th>
<th>Quarter 3 2011/12</th>
</tr>
</thead>
</table>

| Continuation of the bed management project to identify specialist palliative care needs and usage of beds for discussion with potential partners about the development of specialist palliative care beds | Quarter 3 2011/12 |
| Develop a rehabilitation area within the inpatient environment to enhance safe discharge addressing the ‘Survivorship’ agenda | Quarter 3 2011/12 |

**Outline Priorities for 2012-2016**

| Further roll-out of bed management strategy including discussion with potential partners about different models of provision | |
| Continue to ensure the physical accommodation is fit for purpose for example meetings the privacy and dignity requirements for our patients and their families | |

**Rehabilitation**

<table>
<thead>
<tr>
<th>Plans for 2011/12</th>
<th>Work with Health Boards to implement plans for the All Wales Lymphoedema Strategy</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work with Health Boards to implement plans for the All Wales Cancer Rehabilitation Standards</td>
<td>Ongoing</td>
<td></td>
</tr>
<tr>
<td>Repatriate Lymphoedema services to Health Boards and other settings</td>
<td>Quarter 3 2011/12</td>
<td></td>
</tr>
<tr>
<td>Work with LHB’s and charitable sector to introduce roles across organisational boundaries for the provision of rehabilitation services e.g. physiotherapy support for breast cancer patients</td>
<td>Ongoing</td>
<td></td>
</tr>
</tbody>
</table>

**Outline Priorities for 2012-2016**

| Explore opportunities for 7/7 working for therapists | |
| Increase therapy services to Velindre Outpatients | |

**Radiology and Imaging**

<table>
<thead>
<tr>
<th>Plans for 2011/12</th>
<th>Appoint 3rd consultant radiologist</th>
<th>Quarter 3 2011/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work with the SE Wales Imaging Collaboration to improve access to imaging facilities</td>
<td>Ongoing</td>
<td></td>
</tr>
</tbody>
</table>
Delivering Quality, Care and Excellence

<table>
<thead>
<tr>
<th>Establish pathways within the Network to access the interventional radiology service</th>
<th>Quarter 4 2011/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Review non-medical requisition of imaging</td>
<td>Ongoing in line with role development</td>
</tr>
<tr>
<td>Work with the Deanery to assess the viability of VCC in the Specialist Registrar rotation</td>
<td>Quarter 2 2011/12</td>
</tr>
<tr>
<td>Work with Cardiff &amp; Vale to develop a project plan for implementation of ISO with nuclear medicine</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Work with the Network to strengthen Radiology input to all MDT’s</td>
<td>Ongoing</td>
</tr>
</tbody>
</table>

Outline Priorities for 2012-2016

Develop plans to increase Radiologist input into Radiotherapy Planning

Outpatients

<table>
<thead>
<tr>
<th>Plans for 2011/12</th>
<th>Ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve DNA Rate to within the WAG target</td>
<td></td>
</tr>
<tr>
<td>Move to paperless clinics at VCC</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Establish a pilot project in gynaecological cancers to assess follow-up models of service and implement recommendations.</td>
<td>Quarter 1 2011/12</td>
</tr>
<tr>
<td>Develop plans for tumour sites to assess current follow-up models</td>
<td>Quarter 4 2011/12</td>
</tr>
<tr>
<td>Develop the DEXA scanner service for breast cancer patients</td>
<td>Quarter 2 2011/12</td>
</tr>
<tr>
<td>Research and develop options to increase outpatient capacity</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Review the administrative processes for outpatient bookings and considered modernisation initiatives, e.g. partial booking</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Develop a business case (subject to capital funding) to implement automatic check-in facilities in outpatient areas</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Roll-out the Herceptin Pathway across south east Wales</td>
<td>Quarter 4 2011/12</td>
</tr>
</tbody>
</table>

Outline Priorities for 2012-2016

Continue to review and develop follow up pathways for tumour sites

Assess the impact of Phase I trial activity on outpatient clinics and phlebotomy/pathology services
### Palliative Care

**Plans for 2011/12**
- Review the placements for junior medical staff to give a palliative care experience.  
  - **Quarter 2 2011/12**
- Assess Velindre’s performance against the HIW Specialist Palliative Care Standards (to be launched during 2011), and develop appropriate action plans as required.  
  - **Quarter 4 2011/12**
- Scope the provision of specialist palliative clinical nurse specialist attendance in outpatient settings, and appropriate MDT’s.  
  - **Quarter 3 2011/12**

### Outline Priorities for 2012-2016

**Safety and Quality**

**Plans for 2011/12**
- Develop psychological support services for patients in conjunction with Aneurin Bevan LHB.  
  - **Quarter 2 2011/12**
- Develop welfare advice service for patients  
  - **Quarter 3 2011/12**
- Continue to implement all relevant interventions and measure from the 1000 Lives Plus Programme e.g. HAI, HAT, mortality reviews, dementia, depression etc.  
  - **Ongoing**
- Continue working with the National Programme Board on Transport Modernisation and the Welsh Ambulance Service Trust to modernise patient transport services.  
  - **Ongoing**
- Assess compliance against *Dignified Care – the experiences of older people in hospital in Wales* and develop an action plan for improving performance where required.  
  - **Quarter 2 2011/12**
- Reinvigorate the Transforming Caring at the Bedside initiative.  
  - **Ongoing**
- Develop a process for publishing outcome data and audit results with the aim of completing for one Site Specific Team  
  - **Quarter 3 2011/12**
- Assess Velindre against the Investors in Volunteers Standard and work towards full achievement of the Standard.  
  - **Quarter 4 2011/12**
- Continue to develop site/estate plans to meet present and future capacity requirements, as well as achieving an  
  - **Ongoing**
### Delivering Quality, Care and Excellence

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>appropriate environment for patients and staff whilst meeting Technical Estate Advice</td>
<td></td>
</tr>
<tr>
<td>Work with the Charitable Funds Committee to develop a Fundraising Strategy and review Governance Arrangements</td>
<td>Quarter 2 2011/12</td>
</tr>
</tbody>
</table>

### Outline Priorities for 2012-2016

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continue with implementation, and sustain performance against interventions. New interventions will be assessed for applicability within the Trust.</td>
<td></td>
</tr>
</tbody>
</table>

### Cancer Centre Workforce

#### Plans for 2011/12

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop a proposal for radiographer outlining in conjunction with medical staff</td>
<td>Quarter 4 2011/12</td>
</tr>
<tr>
<td>Consider the opportunities to implement the 4-tier structure within radiotherapy</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Implement key worker initiative in line WAG standard</td>
<td>Quarter 2 2011/12</td>
</tr>
<tr>
<td>Within medical physics to continue to review the skill mix in line with modernising scientific careers, e.g. ratio of scientists to technicians, explore opportunities for delegation of clinical tasks</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Develop a strategy for the further development of NMP’s for prescribing services</td>
<td>Quarter 2 2011/12</td>
</tr>
<tr>
<td>Review the current clinical workforce within SACT’s to ensure appropriate skill mix e.g., advanced and assistant practitioner roles, accreditation of pharmacy technicians, ATO’s trained in dispensing</td>
<td>Quarter 3/4 2011/12</td>
</tr>
<tr>
<td>Development of Advanced Nurse Practitioners and consideration of nurse led beds for oncology related procedures, and treatment rescue</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Develop a proposal to move towards extending the Clinical Scientist role in reporting of quantitative nuclear medicine investigations</td>
<td>Quarter 4 2011/12</td>
</tr>
<tr>
<td>Review the potential roles for volunteers within the Cancer Centre and develop a recruitment strategy</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Develop a tiered educational programme for modernisation skills</td>
<td>Quarter 3 2011/12</td>
</tr>
<tr>
<td>Plans for 2011/12</td>
<td>Quarter 2 2011/12</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------</td>
<td>------------------</td>
</tr>
<tr>
<td>Assess the feasibility of establishing a Quality Improvement Faculty or working in partnership with a larger LHB faculty</td>
<td></td>
</tr>
<tr>
<td>Review and develop the strategy for Clinical Nurse Specialists to identify and seek funding to minimise gaps in provision</td>
<td></td>
</tr>
</tbody>
</table>

**Outline Priorities for 2012-2016**

**Research and Development**

**Plans for 2011/12**

<table>
<thead>
<tr>
<th>Plan</th>
<th>Quarter 2 2011/12</th>
<th>Quarter 3 2011/12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Implement VCC Clinical R&amp;D Strategy</td>
<td></td>
<td>Ongoing</td>
</tr>
<tr>
<td>Increase the Pharmacy infrastructure following AHSC bids to support phase 1 trials</td>
<td>Quarter 3 2011/12</td>
<td></td>
</tr>
<tr>
<td>Increase the Radiology infrastructure following AHSC bids to support phase 1 trials</td>
<td>Quarter 3 2011/12</td>
<td></td>
</tr>
<tr>
<td>Work with the Wales Cancer Bank to facilitate the collection of lung cancer tissue for future research (Stepping Stones Appeal)</td>
<td>Quarter 2 2011/12</td>
<td></td>
</tr>
<tr>
<td>Utilise WCTN funded posts to develop capacity and expertise to take forward Phase I trials in line with the Research &amp; Development Strategy</td>
<td>Ongoing</td>
<td></td>
</tr>
</tbody>
</table>

**Outline Priorities for 2012-2016**

**Designed to Donate Programme (D2D)**

**Plans for 2011/12**

<table>
<thead>
<tr>
<th>Plan</th>
<th>July 2011- February 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengthen Donor Relationship Management including a new marketing and donor retention strategy to increase the donor base and donation frequency to support the new process of collection.</td>
<td>July 2011- February 2012</td>
</tr>
<tr>
<td>Redesign processes to improve productivity, efficiency and quality</td>
<td>Pilot to test and confirm design of new collection process (July 2011). Phased roll out of new processes team by team (February 2012 - October 2012)</td>
</tr>
<tr>
<td>Redesign roles to ensure that the service is fit for the future, and increase the focus on the overall medical safety of sessions, as the session nurses become more specialised. Creating a multi-skilled and more flexible workforce will</td>
<td>Staff Consultation (October 2011 for 60 days) Phased role out of new roles team by team (February 2012 - October 2012)</td>
</tr>
</tbody>
</table>
**Delivering Quality, Care and Excellence**

<table>
<thead>
<tr>
<th>Priority</th>
<th>Implementation Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Develop skills and offer broader career opportunities to collection staff</td>
<td>New Structures presented to Modernisation Board for agreement in preparation for staff consultation (August 2011)</td>
</tr>
<tr>
<td>Redesign the Collection and Clinical Services structure to ensure expertise and knowledge is developed and utilised across the service, building on staff competency and donor safety</td>
<td>Staff Consultation (October 2011 for 60 days) Implement new structure (December 2011)</td>
</tr>
<tr>
<td>Review opening times to maximise opportunities to donate, and to improve donor recruitment and retention</td>
<td>Review completed (June 2011) Phased implementation in line with phased roll out of new roles team by team (February 2012 - October 2012)</td>
</tr>
<tr>
<td>Review transport arrangements to support the modernisation of the collection service and ensure it remains fit for purpose</td>
<td>Three new equipment vehicles (September – December 2011) New Transportation Equipment (September – December 2011) New Bloodmobile(s) – Highlighted as part of Trust Capital Programme April 2012. Funding discussions taking place.</td>
</tr>
<tr>
<td>Develop Static Collection Site options to provide a controlled environment and meet increasing regulatory (MHRA) requirements.</td>
<td>To be considered in 2012 post roll-out of the new process</td>
</tr>
</tbody>
</table>

**Outline priorities for 2012-2016**

<table>
<thead>
<tr>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consider static site model options</td>
</tr>
<tr>
<td>Increase blood mobile usage</td>
</tr>
<tr>
<td>Support collection workforce and donors with IT solutions for donor questionnaire/clerking completion</td>
</tr>
<tr>
<td>Evaluate the collection model implemented in 2012 making additional service changes as necessary.</td>
</tr>
<tr>
<td>Establish and sustain targeted donor base to support reconfiguration of collection to optimise productivity and efficiency</td>
</tr>
<tr>
<td>Support introduction of hemocue Hb screening</td>
</tr>
<tr>
<td>Develop integrated demand/supply model to support redesigned planning</td>
</tr>
<tr>
<td><strong>Support the introduction and development of online appointments</strong></td>
</tr>
<tr>
<td>---</td>
</tr>
</tbody>
</table>

**Blood Establishment Computer System (BECS)**

| Plans for 2011/12 | Continue to work with the Supplier and key stakeholders with regards to system configuration and implementation within controlled project management arrangements. | Build onto development environment to start System Integration Testing December 2011 |
| | Ensure current BECS is supported within the organisation to ensure a safe and sufficient supply of blood. | Formal validation May – November 2012 |
| | Develop robust training plans for staff | Ongoing throughout year |
| | Develop validation documentation in line with MHRA requirements | January – May 2012 |

| Outline Priorities for 2012-16 | Implement Phase 1 of the BECS, which will include functionality to support donor management, donation collection, testing, component production, labelling and issue to hospitals | Ongoing throughout project lifecycle |
| | Implement Phase 2 of the BECS which will include enhanced donor records functionality and the bone marrow registry | Develop information reporting framework to support operational decision making August 2011 |
| | Ensure service fully integrated within new BECS. |  |
| | Enhance donor relationships through new and improved communication mechanisms |  |
| | Develop and support supplier international user group relationship |  |

**Plan Wales Laboratory Information Management System (LIMS)**

| Plans for 2011/12 | Continue to support the Quality Framework and Validation practices embedded within the All Wales, NWIS project to support the implementation of the blood transfusion, results reporting and H&I service modules for the LIMS. | Ongoing throughout the project lifecycle |
Delivering Quality, Care and Excellence

<table>
<thead>
<tr>
<th>Activity</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work with the supplier to develop functional specifications for H&amp;I functionality</td>
<td>Date yet to be confirmed with supplier as currently focusing on North Wales implementation.</td>
</tr>
<tr>
<td>Continues to support the project on the following work streams:</td>
<td></td>
</tr>
<tr>
<td>• Change Advisory Board</td>
<td>To be determined</td>
</tr>
<tr>
<td>• LIMS Implementation Board</td>
<td>Monthly</td>
</tr>
<tr>
<td>• Clinical Strategy Group</td>
<td>Monthly</td>
</tr>
<tr>
<td>• Standardisation Group (Blood Transfusion)</td>
<td>Monthly</td>
</tr>
<tr>
<td>• Data Migration Group</td>
<td>To be determined</td>
</tr>
</tbody>
</table>

Outline Priorities for 2012-16

<table>
<thead>
<tr>
<th>Priority</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ensure delivery of all Wales LIMS to support:</td>
<td></td>
</tr>
<tr>
<td>• Electronic Test Requesting and Results Reporting (TRRR) via the Welsh Clinical Portal</td>
<td></td>
</tr>
<tr>
<td>• Reduction in unnecessary testing</td>
<td></td>
</tr>
<tr>
<td>• Standardisation of working practices across blood transfusion activities</td>
<td></td>
</tr>
<tr>
<td>• Improved patient care through visibility of transfusion records</td>
<td></td>
</tr>
<tr>
<td>• Visibility of hospital blood stocks</td>
<td></td>
</tr>
<tr>
<td>• Specific delivery of H&amp;I developed functionality within the LIMS 2013/14 to replace current bespoke systems.</td>
<td></td>
</tr>
</tbody>
</table>

Laboratories and Pathology Modernisation

<table>
<thead>
<tr>
<th>Plans for 2011/12</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Support delivery and configuration of the BECS</td>
<td>Ongoing (refer to BECS target dates above)</td>
</tr>
<tr>
<td>Support delivery of the LIMS</td>
<td>Ongoing (refer to LIMS target dates above)</td>
</tr>
<tr>
<td>Adapt to changes where necessary to support changes made to blood collection opening times via the Designed to Donate project</td>
<td>Commence February – October 2012 in line with Designed to Donate training programme</td>
</tr>
<tr>
<td>Readiness work for SaBTO recommendations that could be mandated by WAG for example prion filtration, double dose red cells, importation of non UK plasma</td>
<td>Clinical trials work as directed via UK Forum ongoing throughout the year</td>
</tr>
</tbody>
</table>
**Outline Priorities for 2012-16**

- Readiness work for SaBTO recommendations that could be mandated by WAG for example prion filtration, double dose red cells, importation of non UK plasma
- Explore national joint procurement opportunities with other UK blood services
- Support All Wales review of blood services work streams, particular impacts anticipated in terms of North Wales model for process and testing, and expansion of ante natal testing services
- Following trial consider providing Welsh Hospital screening test of maternal plasma for Rh D positive foetuses
- Review of laboratory service structures in support of the implementation of Modernising Scientific Careers

**Welsh Transplantation and Immunogenetics Laboratory (WTAIL)**

<table>
<thead>
<tr>
<th>Plans for 2011/12</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Support the delivery and configuration of the BECS for Phase1 and 2</td>
<td>Ongoing (refer to BECS target dates above)</td>
<td></td>
</tr>
<tr>
<td>Support the delivery and configuration of the LIMS</td>
<td>Ongoing (refer to LIMS target dates above)</td>
<td></td>
</tr>
<tr>
<td>Agree staffing structure with commissioners for current renal transplantation service</td>
<td>June 2011</td>
<td></td>
</tr>
<tr>
<td>Work with WHSSC and University Hospital Wales on business case to expand renal transplantation service, with a view to ensuring all supporting testing costs are recovered</td>
<td>May 2011- March 2012</td>
<td></td>
</tr>
</tbody>
</table>

**Outline Priorities for 2012-16**

- Implement BECS functionality
- Implement LIMS functionality
- Implement changes required to support outcomes of Modernising Scientific Careers
- Allele Level Typing (ALT) strategy to be developed following project trial, to support recruitment of stem cell donors by the Welsh Bone Marrow Donor Registry
- Support delivery of agreed UK Stem Cell Forum recommendations
### Review of Blood Services for Wales

**Plan for 2011/12**
- Undertake feasibility study with commissioners and stakeholders of WBS providing blood collection, processing and testing of blood for the North Wales region
  - April 2011 – December 2011
- Support additional work streams to report on funding model, Blood grouping and Ante Natal Screening Service opportunities, Blood Bank/Hospital Transfusion practitioner options and Governance structure for Wales on UJK wide policy matters
  - April 2011 – December 2011

### Outline Priorities for 2012-16
- Yet to be determined as feasibility work not yet concluded/reported

### Reduced Blood Usage

**Plan for 2011/12**
- Establish pilot programme for nurse authorisation of blood transfusion (UK wide initiative) within Cardiff & Vale, Aneurin Bevan and Abertawe Bro Morgannwg University Health Boards
  - October 2011 – March 2012
- Standardisation of transfusion record in Wales
  - December 2011
- Clinical Advisory Group to include GP representative
  - December 2011
- Support National and Regional Clinical Audit programmes
  - Ongoing throughout year

### Outline Priorities for 2012-16
- Standardisation of patient information regarding blood transfusion throughout Wales
- Explore e learning training and educational opportunities
- Explore opportunities with primary care on supporting pre assessment clinics and transfusion at the home
- Support results of the All Wales review of blood services regarding blood banks and transfusion practitioner

### Quality and Regulatory Compliance Welsh Blood Service

**Plan for 2011/12**
- Review and implementation of new Change Management system
  - September 2011
- Review of Adverse Event Investigation - Robust and appropriate identification of the root cause of all critical and significant events - through the establishment of an
  - April 2011 ongoing
<table>
<thead>
<tr>
<th>Task Description</th>
<th>Start Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adverse event investigation team (complete), development of supporting documentation (complete), and review of DATIX coding and reporting (March 2011), with organisational awareness and training sessions being delivered</td>
<td></td>
</tr>
<tr>
<td>Review of Quality Risk Management System to include Develop a QRM policy, tools, training strategy and implement training</td>
<td>September 2011</td>
</tr>
<tr>
<td>Compliance with Mandatory GMP Awareness through foundation and advanced assessment papers, completion of workbook for new starters and those returning after absences of greater than 3 months</td>
<td>Ongoing throughout 2011/12</td>
</tr>
<tr>
<td>Support and advise on the delivery and configuration of the BECS for Phase 1 and 2 in terms of quality framework and validation</td>
<td>Ongoing (refer to BECS target dates above)</td>
</tr>
<tr>
<td>Support and advise NWIS on the delivery and configuration of the LIMS in terms of quality and validation</td>
<td>Ongoing (refer to LIMS target dates above)</td>
</tr>
<tr>
<td>Manage MHRA action plan and support responsible persons and service leads in fulfilling the regulatory compliance requirements in order to maintain the blood licence, in accordance with the Blood Safety and Quality Regulations</td>
<td>Ongoing – MHRA inspection due December 2011</td>
</tr>
<tr>
<td>Provide support to WTAIL to ensure readiness for the move from HTA to MHRA inspections. Gap analysis between the requirements of HTA (&amp; CPA) of the current inspection process under HTA to proposed joint inspections by HTA/MHRA</td>
<td>Ongoing throughout year</td>
</tr>
<tr>
<td>Develop appropriate key performance indicators (KPI’s) and review monitor and manage via the Quality Systems and Standards Governance Board</td>
<td>September 2011</td>
</tr>
</tbody>
</table>
APPENDIX 1

SERVICE STRATEGIES
1. **Lung Cancer**

Lung cancer is a disease which consists of uncontrolled cell growth in tissues of the lung. Lung cancer is the most common cause of cancer-related death in men and women. The most common symptoms are shortness of breath, coughing (including coughing up blood), and weight loss. Below are the commonest types of lung cancer:

- Adenocarcinoma
- Squamous cell carcinoma
- Non-small cell carcinoma not otherwise specified
- Large cell carcinoma
- Small cell carcinoma
- Mesothelioma

2. **Demand for services**

Cigarette smoking appears to be the main cause of 80-90% of lung cancers, although it is being diagnosed in an increasing number of non-smokers. Mesothelioma is a cancer of the lung lining (pleura) associated with previous exposure to asbestos. On average, over the last 10 years VCC received about 630 patient referrals each year for lung cancer.

The number of referrals per year has remained consistent over this period. The recent increase in the number of young people smoking, especially teenage girls, may cause an increase over time but the smoking ban in Wales may reduce future demand for lung cancer treatment. The impact of the smoking ban is not likely to be seen for at least 10 years.

**Lung Cancer incidence in Wales by age**
Lung Cancer Survival Rates in Wales

Lung cancer has a poor prognosis. Survival is similar for both sexes. One year survival for men diagnosed in the period 1992-1996 was 18.67% compared to 19.16% for women. These figures modestly improved for the period 1997-2001 to 21.97% and 22.33% for men and women respectively.

3. Current services provided by Velindre Cancer Centre

VCC consultants participate in the local lung multi-disciplinary team (MDT) meetings where the key health professionals involved in managing lung cancer meet every week to discuss the most appropriate treatment for their patients.

Velindre provides radiotherapy and some chemotherapy for lung cancer patients in South East Wales. VCC is one of approximately 10 Cancer Centres in the UK to offer CHART for lung cancer which is an effective form of radiotherapy for certain types of lung cancer.

Lung cancer services differ slightly from many other cancer services provided by VCC; chemotherapy services are generally provided by local hospitals, with less chemotherapy being delivered by VCC.

4. Future Developments

Future developments in the treatment of lung cancer include:

- Work with the Wales Cancer Bank to facilitate collection of lung cancer tissue for future research. This programme is funded by the Stepping Stones Appeal
- Stereotactic Radiotherapy for the radical treatment of localised non-small cell lung cancer is planned to start in summer 2011, and development planning including staff training has begun.
- Dose escalation in locally advanced non-small cell lung cancer will be a medium term development
- The integration of PET imaging into radiotherapy planning will be explored. VCC has purchased a CT/PET based radiotherapy planning system, and R&D activity is planned to explore the possibility of integrating PET into Radiotherapy planning techniques
- Concurrent chemo-radiotherapy is the international standard of care for some patients with small cell lung cancer, and will be developed at Velindre over the next 12 to 18 months

5. Developing the Workforce

There are currently 6 consultants with a special interest in lung cancer, with Clinical Nurse Specialist (CNS) and Non-Medical Prescriber (NMP) support provided by local lung cancer clinics in DGHs. The MDT will in future require more radiology input for discussing complex radiotherapy planning cases.

The workforce is adequate to manage current clinical demand, and the team will continue to seek ways to modernise, for example pathway development, expansion of the NMP role and streamlining of follow-up protocols. It is likely that any extra capacity in the service created by these developments will be taken up by increasingly complex treatment planning and delivery for lung cancer patients.
BRAIN CANCER & CENTRAL NERVOUS SYSTEM (CNS)

1. Brain Cancer

A brain tumour is any intracranial mass created by an abnormal and uncontrolled growth of cells either normally found in the brain itself, in the cranial nerves, in the brain envelopes skull, pituitary and pineal gland, or spread from cancers primarily located in other organs (metastatic tumours). There are nearly 100 different types of brain tumour, and they are normally named after the type of cell they developed from. These tumours are labelled either malignant or benign.

2. Demand for Services

The cause of most benign brain tumours and primary malignant brain tumours is not known. Genetic factors may be a 'risk factor' in some cases - perhaps in about 5% of cases. Radiotherapy to the brain is thought to increase the risk of a brain tumour. This would only account for a small minority of cases.

Over the last 10 years, Velindre has received an average of about 100 referrals each year. The number of referrals is predicted to grow over the next 5 years.

**Predicted figures for the next 5 years**

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>113</td>
<td>117</td>
<td>121</td>
<td>125</td>
<td>129</td>
</tr>
</tbody>
</table>

Brain Cancer Survival Rates in Wales

Survival from cancers of the brain and CNS overall is poor. There is some evidence that survival has improved: five-year relative survival increased from 17.48% diagnosed in the period 1992-1996 to 19.17% in the period 1997-2001. Survival time falls sharply with age.

According to the Brain Tumour Manifesto (2010), during 2007/08 the Medical Research Council (MRC) invested less than £1 million in brain tumour research, compared to £14 million in leukaemia research. Yet brain tumours claim the lives of more children, and young men and women, than leukaemia. There is clearly a deficit in brain tumour research funding that must be urgently addressed. VCC will consider this as part of its Research Strategy.

3. Current services provided by Velindre Cancer Centre

VCC consultants and CNS participate in the South Wales MDT meeting. Velindre currently provides Chemotherapy and Radiotherapy for the treatment of Brain Cancer, including stereotactic radiotherapy.
4. Future Developments

Further development of Stereotactic Therapy is a priority in improving treatment for brain cancer. Stereotactic radiation therapy is a type of external radiation therapy that uses special equipment to position the patient and precisely deliver radiation to a tumor. The total dose of radiation is divided into several smaller doses given over several days. Stereotactic radiation therapy is used to treat brain tumors and other brain disorders.

VCC has recently started doing 3D plans for these patients and this development should be considered in line with stereotactic radiotherapy – more conformed (3D plans) radiotherapy for all brain patients.

As proton beam therapy develops across the UK for paediatric patients (see paediatric section) Velindre will assess the impact this will have on the treatment of paediatric brain cancer patients.

5. Developing the Workforce

Velindre currently has 1 Consultant with a specialist interest in brain and central nervous system cancer, and 1 Clinical Nurse Specialist to support patients in the MDT. The MDT has become more time consuming as the current consultant now has to attend both the SE Wales and the SW Wales MDTs. This level of consultant cover for this service is not sustainable, and plans are in place to increase medical staffing input to address this shortfall and improve the service.

This patient group often has very complex needs, and the new psychological and welfare rights advisor post (funded by Macmillan) is a welcome initiative which will be of particular benefit.

As survival of patients with Brain Cancer has increased, more patients are receiving chemotherapy. This increase will in the next few years result in the need for extra support. The impact of these changes is currently being assessed, and it is likely that there will be a need to increase the number of consultants with an interest in brain/CNS in the near future.
**1. Childhood Cancer**

Childhood cancer is rare, and about 1 in every 600 children develop cancer before the age of 15. Relatively little is known about its causes.

Childhood cancer is not a single disease - there are many different types. Among the 12 major types of childhood cancers, leukaemia’s (blood cell cancers) and cancers of the brain and central nervous system account for more than half of the new cases. About one-third of childhood cancers are leukaemias. The most common type of leukaemia in children is acute lymphoblastic leukaemia. The most common solid tumours are brain tumours (e.g., gliomas and medulloblastomas), with other solid tumours (e.g., neuroblastomas, Wilms tumours, and sarcomas such as rhabdomyosarcoma and osteosarcoma) being less common.

**2. Demand for services**

The Table below shows the number of referrals to Velindre Cancer Centre since 2001. The number is relatively constant, at between 60 and 70 cases each year.

![Number of Childhood Cancer referrals](image)

**3. Current services provided by Velindre Cancer Centre**

VCCs role in treating children is in provision of radiotherapy only, with chemotherapy provided via the paediatric team at Cardiff and Vale University Health Board.

VCC consultants participate in the regular MDT meetings where key health professionals involved in managing paediatric cancers meet to discuss the most appropriate treatment options for their patients.
Input is also provided by VCC into patients cared for in The Teenage Cancer Trust Unit for patients in the 18 – 23 age group.

4. **Future Developments**

Proton therapy is described as "the most precise form of radiation therapy" as it pinpoints the cancer, and is a very specialised service.

Plans have been put forward to create The National Centre for Proton Therapy, a £20m centre at the Wirral's Clatterbridge Centre for Oncology. If successful, more than 1,400 patients across the UK would benefit from treatment of cancers that need low energy dose and high energy dose protons. VCC will develop appropriate referral pathways to enable Welsh patients to access this service.

At the moment, patients with some brain tumours, particularly in children, have to be treated in centres in America, with treatment costing more than £100,000.

5. **Developing the Workforce**

Currently VCC has 2 consultants with an interest in paediatric cancer.

Given Velindre’s specific role in treatment of paediatric patients, the CNS support is provided via paediatric oncology services and The Teenage Cancer Trust unit. VCC has radiographers who are specifically trained in supporting paediatric patients and making the experience less fearful.

It is estimated that in 5 years, 600 adults will be survivors of paediatric cancer in Wales. Careful consideration needs to be given to how Velindre follows up these patients. There will be a need to develop the workforce and possibly expand if we are to deliver long-term follow-up and support to our patients. Appropriate methods of follow-up will be developed over the coming years and factored into future workforce plans.
UPPER GI CANCER

1. Upper GI Cancer

Upper gastrointestinal (GI) cancer is cancer which affects the upper part of the digestive system, including the:

- oesophagus (the tube between the throat and stomach)
- stomach
- liver
- pancreas
- gall bladder

2. Demand for services

Oesophageal cancer is the 4th most common cause of cancer death and represents 4% of new cancers. From 2001 – 2010, VCC received 3,919 Upper GI referrals. Referrals have increased in the last 5 years, and currently average about 440 each year.

There has been a dramatic increase in the incidence of cancers affecting the gastro-oesophageal junction. It would appear that this may be related to gastro-oesophageal reflux disease. Drinking, smoking, obesity and a poor diet also contribute to the risk of Upper GI cancer.

The factors associated with gastro-oesophageal cancer would predict a continued increase in incidence. Whilst the relative incidence of oesophageal squamous carcinoma and distal gastric cancer remains stable or even falling, the incidence of lower oesophageal and proximal gastric cancers continues to rise.

Predicted figures for next 5 years

We anticipate that patient referrals for Upper GI Cancer will continue to increase for the reasons outlined above. Below are the predicted Upper GI Cancer patient referrals for the next five years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>455</td>
<td>466</td>
<td>477</td>
<td>488</td>
<td>499</td>
</tr>
</tbody>
</table>

Upper GI Cancer Survival Rates in Wales

One-year relative survival for people in Wales increased from 26.25% for the period 1992-1996 to 33.89% for the period 1997-2001. Five-year relative survival also improved between the two time periods from 9.75% to 14.52% for men and women combined.
3. **Current services provided by Velindre Cancer Centre**

VCC consultants participate in the Regional MDT meetings where the key health professionals involved in imaging upper GI cancers discuss the most appropriate treatment for patients.

Velindre currently provides Radiotherapy and Chemotherapy services for Upper GI cancers.

4. **Future Developments**

There is a steady move towards non surgical treatment for localised disease in this patient group, that is towards primary chemo-radiation with selected surgery if required. Over the next 5-10 years there will be a drive to earlier diagnosis through patient awareness and work with primary care.

Developments include:

- Change from Category 2 to 1 for oesophageal adenocarcinoma – this will impact on waiting times for these patients, but will not impact on overall radiotherapy capacity
- Develop IMRT for Upper 1/3rd cancer, in line with the IMRT business case
- Increased use of primary/pre-op CRT by approx 10% per year, but relevant numbers are small (2 or 3 increase pa) and can be absorbed
- Further development of CRT technique in pancreatic cancer – Research into the impact of this is planned, but the total numbers are only estimated to be 10 – 12 a year
- Routine testing of patients with metastatic GO cancer for Her-2 positivity to assess suitability for treatment with Herceptin concurrent with 1st line chemotherapy. Tests funded and provided through genetic services Treatment of IHC 3+ patients with herceptin concurrent with 1st line chemotherapy
- Exploration of IMRT and IGRT for certain patient groups – This will be done through a research programme and would not be expected to impact on capacity.

5. **Developing the Workforce**

The 3 consultants with an interest in Upper GI cancers are supported by a 0.8wte CNS who is training to be a non-medical prescriber. The current consultant workforce is adequate for current demand, but an increase is likely to be required during the next 5 years.

The role of a research fellow, possibly sharing with another tumour site, could provide exciting possibilities to strengthen the research profile and increase medical staff time.

There is the potential to develop more non medical support; including non medical prescribing, nurse led follow up and consent clinics. There is also a requirement for the development of specialist nurse support for HPB cancer. VCC will explore funding opportunities for these posts.
1. Gynaecological Cancer

Cancers that start in a woman's reproductive system are called 'Gynaecological cancers'. The most common gynaecological cancers are: Cervical cancer, Cancer of the ovary, Cancer of the womb (also called uterine cancer or endometrial cancer) and Cancer of the external genitals (vulval cancer).

Cervical cancer is linked to the Human Papilloma Virus (HPV), a common viral infection that is passed on during sexual intercourse. Other risk factors for gynaecological cancers include being overweight, having diabetes or high blood pressure.

Uterine cancer was the 5th most common cancer in women in Wales for the diagnosis period 1992-2006, and the incidence rate is increasing.

Gynaecological cancers affect women of all ages and every walk of life. Patients may themselves be carers for other people, such as an elderly partner, or they may be mothers with young children.

Treatments for gynaecological cancers frequently cause infertility or psychosexual problems, for which women need support.

2. Demand for services

In the decade from 2001 – 2010, VCC received 3,158 Gynaecological Cancer referrals. Referrals increased in the last five years, following a dip in 2004-2006. In 2010, 359 referrals were received compared to 340 the previous year.

Predicted figures for next 5 years

Patient referrals for Gynaecological Cancer are expected to continue to increase. This will have an impact on the service that Velindre can provide.

The incidence of cervical cancer is decreasing due to screening, and is expected to continue to decrease in the long term (20 years) because of the effects of vaccine programmes. However the incidence of endometrial cancer is increasing.

Below are the predicted Gynaecological Cancer patient referrals for the next five years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>383</td>
<td>407</td>
<td>431</td>
<td>455</td>
<td>479</td>
</tr>
</tbody>
</table>
Gynaecological Cancer Survival Rates in Wales

<table>
<thead>
<tr>
<th>Type</th>
<th>1 year relative survival</th>
<th>5 year relative survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical</td>
<td>75.8%</td>
<td>78.29%</td>
</tr>
<tr>
<td>Ovary</td>
<td>56.18%</td>
<td>61.22%</td>
</tr>
<tr>
<td>Uterus</td>
<td>88.2%</td>
<td>92.25%</td>
</tr>
</tbody>
</table>

Between 1992-1996 and 1997-2001, there has been an increase in both 1 and 5 year relative survival rates for the 3 main gynaecological cancers.

3. **Current services provided by Velindre Cancer Centre**

Velindre currently provides Radiotherapy, Chemotherapy, Hormone therapy and Brachytherapy for Gynaecology Cancer. The latter service is provided for patients across south Wales.

4. **Future Developments**

As Gynaecology referrals are increasing, there is a need to develop the service and ensure that VCC maintains its excellence.

VCC is developing image guided brachytherapy and has recently implemented ultrasound scanning during brachytherapy and a CT scan with the first brachytherapy fraction. The next step is to extend this to include individualised MRI planning during treatment, as is occurring in other UK centres. This will require substantial funds to purchase MRI compatible applicators. A business case is being developed.

Developing radiotherapy planning for external beam radiotherapy is another priority. We have implemented conformal radiotherapy planning for cervical cancer, and aim to extend this to endometrial cancer with the aim of introducing intensity-modulated radiation therapy (IMRT). This is part of the IMRT business case.

On a south Wales basis, improving access to treatment is a priority, as some patients travel long distances from west Wales to Cardiff, for treatment that could be delivered closer to home. This is being addressed through the Network, and will result in a small decrease in numbers but improve quality of care for patients from west Wales.

In the longer term, the aim is to work closely with the new PET scanner to ensure optimum use of this new facility for gynaecological cancer patients.
5. Developing the Workforce

There are 3 consultants with an interest in gynaecology (1 medical oncologist and 2 clinical oncologists), supported by 2 clinical nurse specialists, including a non-medical prescriber.

The team has recently appointed two Gynaecological Oncology Nurse Specialists. Their roles will develop to include nurse-led follow-up clinics and the provision of psychosexual support. The team has commenced training to implement image-guided brachytherapy and developments in external beam treatments.
HEAD AND NECK CANCER

1. Head and Neck Cancer

There are over 30 different places that cancer can develop in the head and neck area including the oral cavity (lip, mouth and tongue), oropharynx (tonsils, soft palate and back of tongue), nose, paranasal sinuses and nasopharynx, voice box (larynx), salivary glands, eyes, ears and thyroid gland. Most head and neck cancers (apart from thyroid cancer) are squamous cell carcinomas.

Head and neck cancer is more common in males than females. The main risk factors are tobacco smoking and alcohol consumption. Another important risk factor is viral infection; Human Papillomavirus (HPV) is associated with the development of a significant proportion (~50%) of cancers that arise in the oropharynx, and Epstein Barr virus is associated with cancers of the nasopharynx.

Head and neck cancers rarely spread to other parts of the body (only 5-10% of cases) and are usually treated with local therapies such as surgery and/or radiotherapy with or without chemotherapy.

2. Current services provided by Velindre Cancer Centre

Velindre provides radiotherapy and chemotherapy services for head and neck cancer patients in southeast Wales. About 70% of head and neck patients receive radiotherapy as part of their radical treatment.

Velindre hosts the South East Wales Network Multidisciplinary Team (MDT) meeting, where all key health professionals (including surgeons, oncologists and nurses) involved in managing head and neck cancer meet every week to discuss the most appropriate treatment for their patients.

VCC also provides IMRT to a small number of Head and Neck patients each month.

3. Demand for services

From 2001 – 2010, Velindre Cancer Centre received 2,224 referrals for head and neck cancer. There has been a steady increase in patient referrals during that period, with a steep rise in the last five years, reaching 257 cases in 2010.

Predicted figures for the next 5 years

Based on the referral trends over the last few years and risk factors, we anticipate that the number of referrals will continue to increase. Below are the predicted head and neck cancer patient referrals for the next five years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>269</td>
<td>281</td>
<td>293</td>
<td>305</td>
<td>317</td>
</tr>
</tbody>
</table>
Head and Neck Cancer Survival Rates in Wales

There has been a slight improvement in one-year relative survival from head and neck cancer in Wales between 1992-96 and 1997-2001, from 74.80% to 76.51%. The rate has fallen slightly for five year relative survival from 54.64% to 54.40%.

4. Future Developments

Radiotherapy

Increased access to the latest radiotherapy planning techniques, including Intensity Modulated Radiotherapy (IMRT), is a priority. A business case has been developed, supported by professional advice which has been accepted nationally. An implementation plan is now being developed.

IMRT is a conformal radiotherapy technique that improves the quality of radiotherapy delivery; it allows improved tumour coverage and better sparing of normal tissues (e.g. salivary glands) which may be irreversibly damaged by the effects of radiotherapy. It is particularly important in the head and neck area where complex tumour volumes lie in close proximity to organs at risk. Significant reduction in late toxicity has been shown in clinical trials, and future UK radiotherapy trials will incorporate IMRT as standard treatment for head and neck cancer.

Other important radiotherapy developments for head and neck cancer patients include:

- improved monitoring of patients during radiotherapy using imaging techniques such as Cone Beam CT (CBCT) – this will result in radiotherapy being re-planned for some patients (‘adaptive planning’), for example if they lose weight. The use of CBCT is being implemented in summer 2011

- improved accuracy of tumour delineation by incorporating functional imaging (PET scanning) into radiotherapy planning protocols – a study to develop this for head and neck radiotherapy planning has recently been funded by Cancer Research Wales (CRW) and once study results are known VCC will consider any implications for services.

Systemic therapy

As well as chemotherapy, there will be greater use of biological therapies including monoclonal antibodies and Tyrosine Kinase Inhibitors in the future management of head and neck cancer. This will impact upon Systemic Anti-Cancer Therapies (SACT) activity, and appropriate business cases will be produced as agents become licensed.
Increased clinical trial activity

Increasing clinical trial activity in head and neck cancer is a priority area, as there is evidence to support the assertion that patients benefit from being treated within a research-active clinical environment. In 2010, about 2% of head and neck cancer patients at Velindre were enrolled into randomised trials; ‘Designed to Tackle Cancer in Wales Strategic Framework 2008-2011’ recommends that at least 6% of our patients should be entered into such trials and the SEW Network MDT and support from the SEW Cancer Research Network will be critical in achieving this. We are committed to supporting early phase (Phase I and II) clinical trials as well as Phase III UK and International trials evaluating new systemic therapies and improved radiotherapy techniques.

The incidence of oropharyngeal cancer (tonsil and tongue base cancers) has increased more than threefold in men in Wales over the last 20 years (WCISU data), as a result of Human Papillomavirus (HPV) infection. The Velindre head and neck team, in collaboration with researchers at Cardiff University, are leading research in Wales and the UK in this area as well as informing public opinion.

South East Wales Network Head and Neck Cancer MDM development

The SEW Network MDM was set up in September 2010 to help ensure that management decisions are based on best available evidence and best practice. Standardized protocols for the work-up and management of head and neck cancers (for all tumour subsites) will be developed through the MDM as well as regular audit of clinical practice and outcomes.

Thyroid

Velindre has one of the most active thyroid cancer clinical trial units in the UK and are involved in trials of radioactive iodine regimes, epidemiology and systemic therapies including various tyrosine kinase inhibitors. We plan to expand the clinical trial portfolio (as part of CTU plans) and to continue to be a specialist referral centre for other UK cancer centres.

Thyroid Cancer Support Group Wales, a registered patient charity, was developed here and continues to expand locally. The Group also has input on a UK-wide basis to national research meetings and to trial protocol developments along with other thyroid patient organisations.

5. Developing the Workforce

Currently, 3 consultant clinical oncologists work within the Site Specific head and neck team at Velindre, with excellent support from Allied Health Professionals (AHPs) including specialist nurses, speech and language therapists, diéticians and radiographers. Proposals to increase specialist nurse support for patients with head and neck cancer and for patients with thyroid cancer at Velindre and throughout Wales are currently being considered.

Extending the role of AHP's and radiographers to chemotherapy prescribing, follow-up of patients with cancer and radiotherapy planning is supported by the team to help manage the predicted increase in demand and as survival improves.
LYMPHOMA

1. Lymphoma

Lymphoma is a cancer of the lymphatic system. In lymphoma, a lump or tumour forms in one or more groups of lymph nodes.

The World Health Organisation classification is used to classify the different types of lymphoma. There are two main types of lymphoma: Hodgkin Lymphoma (formerly known as Hodgkin’s disease) and Non-Hodgkin Lymphoma, of which there are many different types, including aggressive life-threatening variants such as Burkitt’s lymphoma, or slow-growing types which do not always even need treatment, like marginal zone lymphoma.

2. Demand for services

From 2001 to 2010, Velindre Cancer Centre received 1,686 referrals for Lymphoma. There has been a slight decrease in referrals for Lymphoma to VCC, due to changes in treating patients nearer their home. For example, patients from the Royal Gwent Hospital are now no longer referred to VCC for their treatment and instead are treated locally.

The risk factors for lymphoma are multifactorial and include immunodeficiency, certain virus and bacterial infections such as EBV, HHV8 and H pylori infection.

Overall the incidence of lymphoma is increasing, especially non-Hodgkin’s lymphoma, although the reasons for this are not clear. Locally, referral patterns have changed with time, as more haematology consultants at DGH’s are now treating lymphoma.

3. Current services provided by Velindre Cancer Centre

Velindre currently provides radiotherapy and chemotherapy (including intrathecal chemotherapy) for lymphomas and radiotherapy for other haematological malignancies such as plasmacytoma, myeloma and leukaemia.

VCC provides 2nd line chemotherapy as part of the service for Cardiff patients, but refers across to UHW for high dose chemotherapy and autologous stem cell transplants. The Lymphoma team are currently liaising with the clinicians at UHW to review the model for the Cardiff lymphoma service.

For the wider south east Wales community, VCC provides the radiotherapy services for treatment of all haematological malignancies, including definitive treatment as part of combined modality treatment, or for relapsed/refractory patients as part of 2nd line treatment, palliative treatment as required such as bone pain or cord compression for myeloma, cutaneous lymphoma radiotherapy, and total body irradiation as part of the bone marrow transplant conditioning regimen. We also provide a tertiary referral service for management of cutaneous lymphomas with systemic therapy and/or radiotherapy as this is a rare group of lymphomas.
VCC has a good lymphoma trial portfolio to offer other centres as well, supported by the very active Velindre Clinical Trials Unit.

4. Future Developments

A range of developments will have an impact on the service over the next few years including:

- 3D radiotherapy planning is being phased in, and IMRT may be useful for certain patient’s, for example parotid involvement. This is included in the IMRT business case under ‘other sites’
- Access to PET is important for staging and reassessment
- Clinical trial service is critical for contributing to improvements for patients, as the subtypes of lymphoma are all relatively uncommon, and treating patients within trials is the only way to further knowledge and improve outcomes
- Haematology dataset has yet to be agreed nationally, and this is a priority to enable accurate data capture and audit. This is being taken forward through CSCG and the Cancer Information Framework.

5. Developing the Workforce

There are currently two consultants with an interest in lymphoma, 1 of whom is leaving and plans are being developed to cover this service. They are supported by a Clinical Nurse Specialist.

Discussions are underway with Cardiff & Vale UHB about a review of the service model, and plans for the future will be developed once the review is completed.

There is currently only 0.5WTE Specialist nurse input, and this may need to be reviewed depending upon the service model that arises out of the review of the lymphoma service with Cardiff & Vale Health Board.

There are many safety/risk issues around the delivery of intrathecal chemotherapy, and ongoing training for Specialist Registrars and other staff who are on the register to be able to deliver this type of treatment is a challenge and will be an important consideration for purposes of training the workforce.
MELANOMA

1. Melanoma

Melanoma is a type of cancer of the skin. There are four main types of malignant melanoma which occur in the skin.

- Superficial spreading melanoma, which accounts for about 70% of cases
- Nodular melanoma occurs most often on the chest or back.
- Lentigo maligna melanoma is most commonly found on the face
- Acral melanoma is usually found on the palms of the hands, soles of the feet or around the toenails.

2. Demand for services

The number of patients referred for treatment of Melanoma Cancer has dramatically increased. In 2001 Velindre cancer Centre received 15 referrals, however in the last three years referrals have averaged around 90 patients per year.

Predicted figures for next 5 years

The table below shows a projected increase of about 10% in cases in each of the next 5 years.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>102</td>
<td>112</td>
<td>122</td>
<td>132</td>
<td>142</td>
</tr>
</tbody>
</table>

Skin Cancer Survival Rates in Wales

Women tend to have a better prognosis from malignant melanoma than men. The five year relative survival in the 1997-2001 diagnosis period was 82.34% in women compared to 71.05% in men. This was the highest survival rate of all female cancer sites.

3. Current services provided by Velindre Cancer Centre

Velindre consultants participate in local MDT meetings where the key healthcare professionals involved in managing skin cancer meet to discuss most appropriate treatment for patients.

Velindre currently provides radiotherapy and chemotherapy for melanoma. Surgical treatments are provided in the referring DGHs.
4. **Future Developments**

**Radiotherapy**

The projected increase in referrals will lead to a slow and steady but ultimately small increase in the use of adjuvant radiotherapy treatments for this tumour group. This has been factored into the planned increase in demand for radiotherapy.

**Systemic therapy**

This is an area where there will be major developments as more active treatments emerge. Currently agents are being trialled and early signs are optimistic. At least 2 or 3 new agents for the metastatic patients should become available in the next 2-3 years. The introduction of these treatments will require genetic testing and this will need to be considered in business cases for introduction of new drugs/treatments.

5. **Developing the Workforce**

There are currently 2 consultants with an interest in melanoma, 1 clinical oncologist and 1 medical oncologist.

There is no dedicated oncology melanoma specialist nurse, since the collapse of the charity that was previously funding this post. This has been identified as a gap and VCC is exploring funding opportunities.

Melanoma continues to see amongst the highest rises in incidence rates. Trends will require monitoring to consider a whether a further oncologist is required for the south east Wales area.

The establishment of a metastatic melanoma MDT for those patients where complicated discussions and decisions can be made would provide a significant improvement in team working across pathways. A South Wales MDT of Swansea and Cardiff meeting monthly or fortnightly would be a tremendous boost in quality of service, and with relatively few oncologists specialising in this area, is almost imperative. This issue will be discussed through the new Cancer Network.
UROLOGICAL CANCER

1. Urological Cancer

There are a number of different types of Urological Cancers:

- Prostate Cancer
- Urinary Tract Cancer
- Cancer of the bladder
- Cancer of the kidney
- Testicular Cancer
- Penile cancer

2. Demand for services

In the period 2001 – 2010, VCC received 8,246 urology referrals. Referrals have increased significantly in the last 5 years, from 790 in 2005 to 1009 in 2010. Prostate cancer is the most common form of cancer in men in Wales.

A diet high in fats and low in fruit and vegetables may increase the risk of urological cancer. Cancer-causing chemicals in tobacco smoke are absorbed into the blood, filtered out by the kidneys and then, as part of the urine, stored in the bladder. In the long term, this appears to cause damage to the bladder lining.

Predicted figures for next 5 years

The table below indicates the projected further increase in referrals over the next 5 years.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>1037</td>
<td>1065</td>
<td>1093</td>
<td>1121</td>
<td>1149</td>
</tr>
</tbody>
</table>

An ageing population and increased use of screening for prostate cancer is likely to increase demand for radical radiotherapy and brachytherapy for urological cancers.

3. Current services provided by Velindre Cancer Centre

Velindre consultants participate in the local MDTs across south east Wales where the key healthcare profession involved in managing urological cancer meet every week to discuss appropriate treatment for patients.

Velindre currently provides radiotherapy, chemotherapy, hormone therapy and brachytherapy for urological cancers. The brachytherapy service is provided on an all-Wales basis.
4. **Future Developments**

Future developments include:

- Castrate-Refractory Metastatic Prostate Cancer supra-regional MDT
- High dose rate brachytherapy for locally advanced prostate cancer. This is available at other centres in England including Bristol, but not in Wales. It is believed this is a service that should be available at VCC. The Urology team is exploring the scope of such a service, and if appropriate will develop a business case in due course.
- IMRT for pelvic nodal radiotherapy treatment for high risk prostate cancer. This is part of the IMRT business case which has been submitted to Health Boards for funding.

5. **Developing the Workforce**

There are currently 6 consultants with an interest in urological cancer, with support from 2 CNSs, 1 of whom is a non-medical prescriber.

The team have developed an expanded role for the CNSs, for example telephone follow-up clinics.

The team will explore further advanced roles/responsibilities for the non-medical prescriber within the team.

The dramatic increase in systemic treatment options for advanced prostate cancer is likely to require additional personnel in the next 2-5 years. Alongside this, an increase in the number of patients treated with radical radiotherapy for prostate cancer and an increase in the complexity of treatment delivered may mean that additional personnel are required in the future.
1. Breast Cancer

Breast cancer is a malignant tumour that starts from cells of the breast. The disease occurs mainly in women but rarely can occur in men. There are several types of breast cancer and they can be invasive or non-invasive. The most common types of invasive carcinoma are ductal carcinoma, which arises from the breast ducts; and lobular carcinoma, which arises from the breast lobules.

Breast cancer is defined by several pathological features. The TNM Classification used to stage breast cancer uses tumour size, nodal spread and whether or not the tumour has spread to other parts of the body (Metastases). Grade of the tumour, oestrogen and progesterone receptor status and HER 2 status are important biological features which determine treatment options and outcome.

2. Demand for services

Breast cancer is the commonest cancer affecting women in Wales and the UK.

From 2001 – 2010, Velindre Cancer Centre received 10,414 referrals for Breast Cancer. There has been a significant increase in patient referrals within the last five years, with 1,126 referrals in 2010.

The strongest risk factor for breast cancer is age. The disease is rare in women under 30. Prolonged used of hormone replacement therapy (HRT) causes a small increase in risk. Women with a family history of breast cancer are at slightly increased risk. Time inherited genetic risks only account for less than 10% of all cases.

Predicted figures for next 5 years

Based on the trends in referrals received, we anticipate that referrals will continue to increase. Below are the predicted Breast Cancer patient referrals for the next five years:

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>1145</td>
<td>1164</td>
<td>1183</td>
<td>1202</td>
<td>1221</td>
</tr>
</tbody>
</table>

Factors affecting demand

An increased awareness of breast cancer and increased uptake of screening (Breast Test Wales) has affected the number of patients diagnosed per year. Patients are also being diagnosed earlier through initiatives such as the Increased Risk Family History Screening Programme, which tests women with significant family histories from the age of 35.

There are more available treatment options and lines of therapy, for example the use of Herceptin which has had a huge impact on demand. The improved survival of patients with metastatic or secondary breast cancer is also an important factor affecting the demand for resources.
3. **Current services provided by Velindre Cancer Centre**

Velindre currently provides Radiotherapy and Systemic therapy for Breast Cancer patients. This may include chemotherapy, antibody therapy, endocrine therapy and bisphosphonate therapy. Patients may be adjuvant (curative or radical intent) or metastatic (palliative). There are also many active clinical trials offering research treatment options for breast cancer at Velindre.

Recent innovations in breast cancer at Velindre Cancer Centre:
- The award winning Herceptin Pathway Project: Nurse led delivery of adjuvant Herceptin at home
- The Secondary Breast Cancer Multidisciplinary Forum: first of its kind in the UK aimed at coordinating the treatment, care and registration of secondary breast cancer
- Development of a novel bone health service for Early breast cancer

4. **Future Developments**

It is anticipated that there will be a number of main areas of development:

- **Individualisation of therapy** - molecular profiling of individual breast cancers using oncotype dx or mammoprint scores to determine the benefits of specific therapies
- **Follow-up of Early Breast Cancer** - managing the huge numbers of patients followed-up after diagnosis of early breast cancer; and clarifying the oncologist’s responsibility. Follow-up Pathways will be more defined for patients, and will fall into various categories. For example, a Herceptin Pathway, a Clinical Trials Pathway, a Radiotherapy Pathway and a Bone Health Pathway
- **Secondary Breast Cancer** - improving our understanding/management and support for this complex patient group. Prospective collection of statistics to plan for resources is needed. A holistic approach to patient centred treatment is the aim.
- **Expansion of Early Phase research in Breast Cancer**
- **Radiotherapy Developments** – including IMRT, the extension of Conformal Radiotherapy (CFRT) and Partial Breast Irradiation. This will be part of the radiotherapy plan.

5. **Developing the Workforce**

The 7 consultants with an interest in breast cancer are supported by 2 CNS who are trained as Non-Medical Prescribers. There is also a CNS who specialises in metastatic breast cancer, supporting the metastatic breast cancer MDT and running the Dexa service.

The impact of greater numbers of patients will be a requirement for

- More trained medical and nursing staff
- Non-medical prescribers
- Oncology breast Specialist nurses/practitioners
- Radiotherapy personnel including Physics and Radiographers
There is the potential for donated funds to support the training of 4 breast cancer CNS. This would assist in addressing the need to increase non-medical staff for breast cancer services.
COLORECTAL CANCER (LOWER GI CANCER)

1. Colorectal Cancer

Lower gastrointestinal cancer (or lower GI) is cancer affecting the lower digestive system including the small bowel (small intestine) and the large bowel (colon, rectum and appendix).

2. Demand for services

Bowel cancer is the 3rd most common cancer in terms of overall numbers in the UK, and the 2nd most common cancer in men and in women (overtaking lung).

From 2001 – 2010, Velindre Cancer Centre received 5,216 referrals for Colorectal Cancer. There has been a significant increase in patient referrals within the last five years, reaching 663 referrals in 2010.

Colorectal cancer is more common in older people. Obesity increases the risk of colorectal cancer, as do lifestyle factors such as little exercise, eating a lot of red meat, drinking a lot of alcohol, and smoking. It is anticipated that the introduction of bowel screening will result in better outcomes by reducing the number of patients presenting with locally advanced or metastatic disease.

Predicted figures for next 5 years

Based on the trends, we anticipate that referrals will continue to increase. Predicted Colorectal Cancer patient referrals for the next five years are shown in the table below.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Referrals</td>
<td>710</td>
<td>757</td>
<td>804</td>
<td>851</td>
<td>898</td>
</tr>
</tbody>
</table>

Colorectal Cancer Survival Rates in Wales

There was some improvement in five-year relative survival from 41.03% in the period 1992-1996 to 46.83% in 1997-2001.

3. Current services provided by Velindre Cancer Centre

VCC consultants provide input into the local MDTs across south east Wales where key healthcare professionals involved in managing breast cancer patients meet each week to discuss appropriate treatments.

Velindre currently provides Radiotherapy and Chemotherapy for Colorectal Cancer.
4. Future Developments

VCC clinicians are working closely with colleagues across the network to integrate non-surgical approaches as early and effectively as possible. This has been supported by the development of CANISC which is being rolled out across MDT’s within the network.

Work is underway to improve the patient’s journey from presentation through to treatment, by linking with both the community and hospital teams through the appointment of specialist oncology nurses. We are working closely with the pathology and genetics unit in UHW to profile tumours to allow the introduction of targeted treatments.

The development of a Phase I and II Trials Unit will offer our patients the benefit of promising new agents and develop treatments for the future.

By banking tumour tissue, we hope to move towards offering personalised treatment based on molecular profiling.

Further developments include:

- Extending the use of Conformal Radiotherapy to the treatment of all patients with rectal and anal cancer. This is included in the radiotherapy development plan
- Integrating new treatment initiatives to improve patient set-up and comfort such as the ‘belly board’
- Integrate IMRT into the routine management of anal cancer; this is included in the IMRT business case
- Develop intraluminal radiotherapy treatments such as brachytherapy for both pre-operative treatment and to boost external beam radiotherapy for those patients not suitable for surgery. A business case will be produced in due course, but brachytherapy for lower GI is included in the radiotherapy development plan
- Routine testing of MSI for patients with stage II colon cancer
- Integration of newer agents such as bevacizumab into standard clinical care.

5. Developing the Workforce

The 5 consultants with an interest in lower GI cancers are supported by 1.4wte CNS. Support is also received from pharmacy undertaking the role of non-medical prescriber in chemotherapy clinics. Planned developments in the Lower GI workforce include:

- Develop the role of the specialist nurse to co-ordinate patient care and provide psychosocial support during treatment
- Further developments in the role of the non medical prescriber to enhance patient care, for example CNS to be trained as non-medical prescribers
- Increase number of consultant sessions in order to deal with the increased referrals and greater complexities of treatment
- Succession planning by training new consultants for the future
Delivering Quality, Care and Excellence

- Introduce new techniques for the improved outcome and quality of life of patients and ensuring the team are trained and developed to deliver these new services
- Work with departments such as pathology and molecular biology at UHW to provide rapid and comprehensive molecular profiling to target treatment.
1. Sarcoma

There are 2 main types of sarcoma; bone sarcoma, and soft tissue sarcomas which develop from soft tissues like fat, muscle, nerves, fibrous tissues, blood vessels, or deep skin tissues. There are about 50 different types of soft tissue sarcomas.

2. Demand for services

The risk of sarcoma increases with age. Several chemicals are thought to be linked to sarcomas. People who have HIV or AIDS and people who take medicines to suppress their immune system after an organ transplant may have an increased risk of a type of sarcoma called Kaposi’s sarcoma.

Soft tissue sarcomas are rare cancers. Their exact cause is unknown, but there are a number of risk factors. The risk of soft tissue sarcoma increases as people get older and two thirds develop in people over the age of 50. Radiotherapy in the past for another cancer increases the risk of sarcoma in the treated area.

The most recent UK figures about survival after a diagnosis of soft tissue sarcoma are from patients diagnosed between 1971 and 1999. These figures show that more than half (50%) of the people diagnosed with soft tissue sarcoma will live for more than 5 years. The figure is slightly higher for women than men. Individual outlook will depend on various factors such as age, the type of sarcoma and its position in the body.

3. Current services provided by Velindre Cancer Centre

Velindre consultants provide oncology medicine input into regional MDTs where patients diagnosed with sarcoma are discussed and appropriate treatments are planned for patients.

Surgery is the main treatment for most types of soft tissue sarcoma. It is most often combined with radiotherapy. Chemotherapy can be given before or after surgery for some types of sarcoma.

Velindre currently provides radiotherapy for soft tissue sarcoma, and chemotherapy and radiotherapy for bone sarcomas.

4. Future Developments

It is believed that cases of sarcoma have been under-referred in south east Wales, as some patients are not referred at all, and some may be treated elsewhere for example Birmingham.

The All Wales Sarcoma standards have recently been published and WHSSC have led a process to assess requirements to meet the standards. Adherence to the standards will have an impact in the following areas:
Collaboration with Swansea to develop a network-wide South Wales sarcoma service
Shift to weekly sarcoma clinics which will increase workload in the next few years, especially as only 50% patients with soft tissue sarcoma are being referred at present
The development of ‘lump and bump’ services or clinics are likely to increase the incidence of sarcoma being diagnosed earlier and patients receiving appropriate treatment including referral to VCC.

We expect to have to increase capacity at VCC for sarcoma, and this will be funded through WHSSC who have a funded allocation for sarcoma services.

5. Developing the Workforce

There is currently only 1 consultant with an interest in sarcoma. There is likely to be a need to increase medical input to meet increased demand. Funding for consultant/medical sessions will come from WHSSC, who have identified money for the implementation of the standards.

There is a requirement for Specialist Nurse input, and a bid has been submitted to Macmillan for 2 regional CNSs to support the whole patient pathway from drugs to treatment.
DIAGNOSTICS AND IMAGING

1. Diagnostics and Imaging

A comprehensive radio diagnostic imaging service is provided for patients attending Velindre Cancer Centre, with the Nuclear Medicine department undertaking imaging, non-imaging investigations and Radionuclide Therapies.

The Nuclear Medicine department provides a range of diagnostic investigations and radiotherapy procedures using radiopharmaceuticals.

Diagnostic procedures include imaging of metastatic bone disease, monitoring cardiac and renal function prior to and during chemotherapy (e.g. Herceptin) and thyroid remnant imaging in thyroid cancer. These procedures are also utilised extensively for monitoring patients within clinical trials. Radiotherapy procedures are performed for the treatment of thyroid cancer, neuroendocrine tumours, thyrotoxicosis and for palliative treatment of metastatic bone pain.

Within Radiology these include imaging for:
- New referrals
- Those on follow up
- Those in the acute phase of their disease
- In addition the department provides imaging for clinical trial studies
- A weekly private patient imaging service
- A small number of external commercial clinical studies
- Out of hours service provision at weeknights, weekends and bank holidays.

2. Demand and activity

Exam activity 2007-2010

![Exam activity 2007-2010 graph](image-url)
This table includes CT, MRI, mammograms and ultrasound examinations.

All examinations are reported by a Consultant Radiologist or Ultrasonographer, with 95% of inpatient examinations reported within 1 day and 95% of outpatient examinations reported within 7 days. Emergency examinations are performed on the day of request, and Urgent examinations are undertaken within one week.

All diagnostic procedures are currently performed within 5 working days. All therapies are undertaken within appropriate clinical timescales.

Nuclear Medicine current activity figures for 2010 show that 1,997 diagnostic and 139 therapeutic procedures were undertaken, which is at least a 10% increase per annum over the last 4 years.

Demand for diagnostics and imaging will increase in the future, with a number of key drivers:

- Increase in demands for radiological investigations as a result of screening initiatives, the ageing population, increased survival rates, more complex treatment regimens as well as an increase in the number of referring clinicians
- Year on year increase in demand, with a 25% increase in activity over the past 4 years
- Increasing role of the CTU (Phase 1 trials initiative) will lead to an increase in demand for imaging services
- Potential move towards three clinic sessions per day in Outpatients and the subsequent need for imaging in Radiology
- Within nuclear medicine, an annual increase of about 10% per annum, based on the last three years workload
- Greater numbers of patients in clinical trials, requiring up to 3-4 Nuclear Medicine imaging procedures per patient
Delivering Quality, Care and Excellence

- Greater number of clinical trials involving therapy procedures, either with radiopharmaceuticals yet to be given a license, or in combination with other treatment regimes e.g. chemotherapy
- An increase in the availability and use of tumour receptor agents.

3. Current service provision

Radiological imaging modalities provided to the centre:

- Computed radiography
- Computed Tomography
- Magnetic resonance imaging
- Ultrasound
- Mammography
- Fluoroscopic imaging
- Interventional procedures such as biopsies, central venous catheter implants
- PACS/IT support for 7 site specific MDT’s importing approximately 7,500 studies per year.

4. Future Developments

A number of areas of future development are set out below which will have an impact on diagnostic and imaging services:

- Introduction of phase 1 trials within VCC
- Increase in the use of MRI planning for brachytherapy treatments
- Greater input of Radiologists in support for radiotherapy planning and involvement with CTU in trial protocol development
- NICE guidance on Metastatic Spinal Cord Compression management including the requirement for additional MRI scanning sessions. This will have staff and resource implications
- Potential impact of expanded screening programmes, for example NICE guidance 41-MR surveillance in Wales of women with a family history of breast cancer
- Impact of the south east Wales Imaging Collaboration initiative which is aimed at pooling capacity of imaging across the Network
- Centralisation of the south east Wales Interventional Radiology services which is currently managed via Aneurin Bevan LHB. The impact upon Velindre is minimal, but it is a key development for cancer patients.
- Development of SPECT/CT procedures has been hindered by ongoing equipment reliability issues, which should be resolved in the very near future. Whilst this will not greatly increase the number of procedures, SPECT/CT does add a level of procedural complexity
- Routine SPECT/CT will facilitate the greater use of tumour receptor agents
- SPECT/CT could also be used to develop improvements in individual dosimetry for targeted Radionuclide Therapies.

These developments bring a range of financial pressures with them, and plans are being discussed for how these can be managed. Saving initiatives for 2011 are being explored, including recurrent savings on intravenous contrast material for CT and ceasing use of oral contrast material for CT.
The major immediate financial issue is a predicted cost increase of over 20% for radiopharmaceuticals. The cost of $^{131}I$ has already increased by 33%, and $^{99m}Tc$ agents are expected to increase by a similar amount, as a direct consequence of the worldwide shortages experienced during the last 18 months.

5. **Developing the Workforce**

Plans for developing the workforce include:

- Remodel the workforce to introduce new and extended roles for AHP’s, for example in the bone marrow sampling service or to provide H&S support
- Introduction of band 5 radiographer post funded through retirement of two 0.6 WTE band 6 radiographers to aid with developing an appropriate skill mix and development opportunities for newly qualified diagnostic radiographers
- Replacement of a Consultant Radiologist following a retirement
- Recruitment of a third Consultant Radiologist
- Requirement to recruit 0.5 WTE band 5 PACS support for site specific MDT’s
- A number of skill mix projects focused on routine image processing by Clinical Technologists and quantitative image reporting by Clinical Scientists are being developed.
1. Systemic Anti-Cancer Therapies

Velindre Cancer Centre (VCC) operates a hub and spoke model for the provision of chemotherapy services across south east Wales. This provides easier access to patients and reduces travel times. The number of chemotherapy patient attendances across the Velindre service in 2009/10 was approximately 18,000.

The well-established chemotherapy model is via a hub and spoke system for the provision of chemotherapy across the Network. Daily chemotherapy clinics are held at Velindre Hospital. The current model is based upon an 80/20 split of provision at Velindre and outreach settings. The strategy is to increase activity in outreach settings over the next 12 months, and to continue this over the coming years to reach a 50/50 split.

Currently clinics provide chemotherapy in the following hospitals or locations:

- Ystrad Mynach Hospital
- Tredegar Hospital
- Princess of Wales Hospital
- Bronllys Hospital
- Royal Glamorgan Hospital
- Nevill Hall Hospital
- Prince Charles Hospital
- The Tenovus Bus

The historical perspective on chemotherapy is that it is only provided via an intravenous (IV) route. However, it is also important to note that over 3,900 patients received Oral Chemotherapy during 2009/10. The provision of oral chemotherapy still requires the same level of support and education for patients as it is just as toxic as some IV chemotherapy agents. Research shows that 25% of all new anti-cancer drugs in development are designed for oral administration.

Pharmacy provision varies according to each site, with the majority being provided by Velindre and transported by the outreach teams to the clinic. Some chemotherapy is provided directly by the local General Hospitals for local treatment delivery, as well as being sent out to other hospitals via hospital transport.

2. Demand for services

Demand for non-surgical cancer services systemic anti-cancer therapies (SACTS) will continue to increase due to factors such as the ageing population, increased complexity of treatments, increased survival rates and cancer standards and guidelines produced by the National Institute for Clinical Excellence (NICE).
The future of systemic anti-cancer therapies lies in the increasing knowledge of molecular events that cause cancer and that work to ensure cancer cells behave abnormally. With the introduction of targeted biological therapy the improvement in knowledge has translated into significant patient benefits. The future will see similar therapies becoming mainstream treatment over the next decade. An important point to consider is that these therapies will be given in combination with traditional chemotherapy over a prolonged period of time, which means that cancer care facilities will see an ever-increasing demand impact for patients with advanced disease. Newer agents are increasingly being added to existing systemic regimens, rather than replacing them.

There is an absence of robust data to identify the demand for chemotherapy services, and this makes capacity planning difficult. The research available has shown that chemotherapy services are describing an exponential growth of between 10-15% per annum nationally. However, there is a view that this increase will potentially accelerate more rapidly than the current 10% over the next few years.

Activity data for 2010/11 projected for dispensary services indicates that about 187,000 items will be dispensed, including SACT’s, supportive care items and other general medicinal products.

Within the aseptic unit, 2,700 cytotoxic agents and monoclonal antibodies are dispensed on average each month.

Within pharmacy services, demand data shows that the current workload is uneven with significant variation across days, which causes difficulties for workload planning. Capacity on the 2 current isolators is at the optimum level within current resources and safety constraints. The supporting accommodation within the aseptic unit and the remainder of the department is also insufficient to meet capacity and patient safety demands.

**Actual activity data calculations**

Internal capacity and demand data has been collected since June 2010 and in line with the predicted 10% increase in activity the following levels are predicted.

Caution must be applied when using this data as only 6 months has been used as the baseline.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemotherapy (actual)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td>17124</td>
<td>18836</td>
<td>20720</td>
<td>22792</td>
<td>25071</td>
<td>27578</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Blood Transfusions (actual)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td>740</td>
<td>814</td>
<td>895</td>
<td>985</td>
<td>1083</td>
<td>1192</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Chemo &amp; BT predicted increases</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10%</td>
<td>17864</td>
<td>19650</td>
<td>21615</td>
<td>23777</td>
<td>26155</td>
<td>28770</td>
</tr>
</tbody>
</table>
3. Future Developments

A formal SACT modernisation project has been established to concentrate modernisation resources and increase the pace of progress. The work streams for this project are shown below.

Key future developments include;

- Mapping of Powys chemotherapy requirements to ensure patient access closer to home and cost effectiveness
- Centralising chemotherapy services and trials activity into one unit to standardise pathways, maximise staff resources and improve patient flow
- Develop capacity and expertise to take forward Phase I trials in line with the Research & Development Strategy
- Moving capacity to increase the proportion of chemotherapy provided on an outreach basis by 10% per annum
- Review of the chemotherapy education process and advice line to incorporate best practice from the UK Oncology Nurse Society (UKONS)
- Scoping and developing proposals to pilot Acute Oncology Services
- Standardising referral pathways and booking processes to reduce variation and ensure equity of access
- Benchmarking with other centres to adopt best practice
- Development of a Business Case to increase capacity within the Pharmacy Department.

4. Developing the Workforce

Developing the workforce is a key priority for the department. Initiatives planned include:

- Reconfiguring the current clinical workforce within chemotherapy to ensure appropriate skill mix and banding
Delivering Quality, Care and Excellence

- Developing Assistant Practitioners to assist chemotherapy nurses with the preparation of records (for example checking blood results are within parameters), and undertaking specific clinical tasks (including cannulation, vital sign observations)
- Continue the up-skilling of pharmacy staff to take on increased responsibilities, for example Pharmacists to become non-medical prescribers
- Developing Pharmacy Technicians to become Accredited Checking and Medicines Management Technicians and NVQ assessors
- Training Assistant Technical Officers to dispense simple oral and parenteral items.

Reshaping the workforce will make a significant contribution to responding to increases and changes in demand. The department will however face a number of financial challenges, in particular continued growth in the cost of drugs as a result of increasing patient numbers.

A draft business case has been produced to meet accommodation pressures, which are a significant constraint to development of the service.
INPATIENTS

1. Inpatients

VCC currently has 17 general oncology, 13 chemotherapy and 17 palliative care beds, together with 2 dedicated isotope cubicles.

During the financial year 2009/2010 there were 2,216 inpatient admissions. Admissions have remained consistent over the years.

2. Demand for services

The following data shows activity and reasons for admission to the First Floor Ward and the Active Support Unit from January 2010-December 2010. This does not include admission data for the Princess Margaret Ward chemotherapy unit. A separate project will review the use of inpatient chemotherapy beds in conjunction with the wider SACT project.

The above table analyses the 12 months admission data by tumour site, and categorised into emergency or planned admissions. Further work is required to analyse this data further.
The table above identifies the number of admissions each month of those patients admitted for symptom control or ‘other admissions’. This data is crude due to the lack of current data collection systems which is now been rectified to capture standardised reasons for admissions with agreed principles on what constitutes an admission type. The table below provides further information on the reason for admission by symptom or the procedure required.

3. Current Performance

Current performance is measured via delayed transfers of care, and various quality and safety measures that are mentioned in previous sections. There is a need during 2011 to identify some more specific measures in line with the All Wales Nursing Dashboard working group.

4. Future Developments

Changes in the way in which patients with cancer are cared for and treated mean that we need to keep the balance between inpatient and day care under constant review.

A bed management project led by the Head of Nursing is reviewing processes for admission and bed usage. The project will deliver its findings in Spring 2011. There may be a further reduction in beds to reflect the changing patterns of care, dependent on further analysis of admission data.

Currently there is no dedicated area for patient rehabilitation therapies (including OT and physiotherapy). There are plans to develop a rehabilitation area within the inpatient environment to enhance safe discharge addressing the ‘Survivorship’ agenda.
Delivering Quality, Care and Excellence

The bed management project will identify specialist palliative care needs/usage of beds. The intention is to discuss the funding and provision of specialist palliative care beds with potential partners, for example Marie Curie.

Velindre will look to develop further the role of Advanced Nurse Practitioners that provide advanced nursing practices to support junior medical staff.

In line with the Cancer Reform Strategy it is expected that the South Wales Cancer Network will develop plans to implement a model of “Acute Oncology”. This is the provision of specialist oncology professionals in all hospitals to work with non-oncology clinicians in triaging and treating both diagnosed patients undergoing treatments and emergency patients (both known and unknown cancers). This initiative would significantly improve the pathway for patients presenting in hospitals throughout the Network, therefore it is important that Velindre as the lead cancer centre in conjunction with the Network and LHB’s assesses the model for south east Wales. Evidence shows a reduction in emergency admissions which would impact on admissions at Velindre Cancer. Sufficient specialist resources will be required to provide a hub and spoke model of care led by the VCC team.

5. Developing the Workforce

The nursing workforce is kept under constant review to ensure that skills and processes match the changing nature of cancer care. Specific developments planned or under consideration include:

- Implementation of Health Care Support Workers (HCSW’s) at band 4 to supplement the qualified workforce
- Currently there are insufficient staff within the chemotherapy booking team. The future direction will be to centralise all bookings of treatments such as blood transfusions to minimise workload for doctors in outpatient clinics
- Strengthening out of hour’s clinical support through Advanced Nurse Practitioners
- Rationalisation of band 6 posts.

A key challenge will be to manage within the anticipated budget, and to ensure that the use of Agency nurses is avoided.
RADIOThERAPY

1. Radiotherapy

Radiotherapy is the use of ‘radiation’, usually x-rays, to treat cancer. Patients have radiotherapy at different stages of their cancer treatment. Radiotherapy can be given alone, or in combination with other treatments such as drugs or surgery. It is a multi-disciplinary service, involving Clinical Oncologists, Therapy Radiographers and Medical Physicists in the planning, delivery and verification of radiotherapy to cancer patients. In addition there is a key requirement for development and implementation of new techniques and facilities in line with rapid international innovation, leading to significant improvement of outcome for the patient.

Facilities currently include 6 Linear Accelerators with verification systems, HDR Brachytherapy supported by 2 CT simulators, MRI, and Treatment Planning Systems.

2. Demand for services

Medical physics:

Approximately 4,000 new patients are treated each year, of which 2,500 receive computerised plans.

Over the past years there has been an increase of

- 6% per year in the number of patients requiring computerised plans
- 10% in the complexity and workload of planning.

There is a national plan to increase the number of IMRT treatments in line with national recommendations. This will result in more complex and longer treatment planning processes.

Radiotherapy:

Radiotherapy comes second only to surgery as a means of curing cancer. It is involved in the management of over 40% of cancer patients who are cured for their disease.

Demand for radiotherapy has been monitored since September 2006. Since that time a significant amount of work has been undertaken to modernise referral and treatment processes to improve quality and reduce variation. Using the annual median demand values in this time period to calculate the change, a total increase in demand of 13.2% (3.2% per year) can be demonstrated.

Demand has been suppressed since June 2009 due to reduced fractionation for radical prostate referrals. If this change had not taken place the current 80% demand value would be 56.9 hours per day and the total annual median increase in demand would be 21% (5.3% per year).

There is a national expectation that demand for radiotherapy will increase by 5% per annum. If the variation in demand remains at the current level and no additional developments are incorporated into the current workload, it is possible to predict the capacity that will be required to cover the annual increase in demand over the next five years. The table assumes no change in the current treatment regime for prostate cancer based on reduced numbers of fractionations.
**Impact of an annual increase of 5% in cancer incidence**

<table>
<thead>
<tr>
<th>Assumes 5% ↑ in cancer incidence</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily capacity hours required (includes daily QA)</td>
<td>56.5</td>
<td>60</td>
<td>62.7</td>
<td>65.7</td>
<td>68.7</td>
<td>71.9</td>
</tr>
<tr>
<td>Number of 9hr/day LA’s required.</td>
<td>6.3</td>
<td>6.7</td>
<td>7</td>
<td>7.3</td>
<td>7.6</td>
<td>8</td>
</tr>
</tbody>
</table>

“The Year of Radiotherapy” national radiotherapy awareness initiative commenced in February 2011. An international evidence based review has estimated that 52% of cancer patients should receive radiotherapy at some time in their illness, either for cure or palliation. The current access rate for Wales is 38%. This factor has not been incorporated into the calculations due to the uncertainly of the impact of the national initiative on public awareness and therefore demand.

### 3. Current Performance

Since April 2010, following a waiting times initiative, the average compliance with Royal College of Radiologists (RCR) 14/28 day target guidelines has improved to 96.9%. The provision of more advanced radiotherapy (for example IMRT and IGRT) is however significantly below the national recommendations.

Current Linac Capacity is 59 hours per day total capacity. The current 80% demand value is 53 hours per day plus 3.5 hours a day QA requirements. The position is monitored weekly.

Linac “up-time” performance has improved significantly in recent years, and is currently above 98% which is well above manufacturer recommendations. This has assisted in the reduction of waiting times.

The radiotherapy department at VCC has maintained over 9 hours per linac per day since prior to the funding was provided via the Welsh Assembly Government. A measure of fractions is currently used to reflect performance and it is clear that not all linear accelerators at Velindre have achieved the equivalent of 9000 fractions. It has never been the intention of VCC to provide 9000 fractions per linac but an average across all the linacs. It is operationally unsound due to casemix, aging equipment and different equipment capabilities to do otherwise e.g. linear accelerator number 2 can provide significantly more fractions per year than linear accelerator number 5 due to its simpler casemix which allows for a higher throughput.
4. Future Developments

A number of future developments will have an impact on the Radiotherapy service.

Medical Physics department:

The Radiotherapy Development Group Plan (2010) identified a number of priorities for the next five years including:

- Introduction of the 7th Linac (2011)
- Advanced Verification (for example IVD / portal dosimetry) (2011 – 2013)
- Extend conformal planning (2011-12)
- Extend inversely planned treatments (IMRT) (2011-2015)
- Stereotactic Whole Body treatments (2011-12 pilot with implementation to follow)
- Image Guided Brachytherapy (2011-15)
- PET-based radiotherapy planning (2011-15)
- Service expansion to meet demand (currently planned to 2015)

A continual change from simpler treatments to more targeted therapy is required, together with the provision of the appropriate skill sets to meet these service demands.

Radiotherapy department:

Priorities for Radiotherapy include:

- Increasing Linac capacity to meet the projected increase in demand and implementation of NICE radical prostate fractionation guidelines.

**Assumes 5% annual increase in cancer incidence plus implementation of NICE prostate recommendations**

<table>
<thead>
<tr>
<th>Assumes 5% ( \uparrow ) in cancer incidence</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily capacity hours required (includes daily QA)</td>
<td>60.4</td>
<td>64</td>
<td>66.9</td>
<td>70</td>
<td>73.3</td>
<td>76.7</td>
</tr>
<tr>
<td>Number of 9hr/day LA's required.</td>
<td>6.7</td>
<td>7.1</td>
<td>7.4</td>
<td>7.8</td>
<td>8.1</td>
<td>8.5</td>
</tr>
</tbody>
</table>

- Extend inversely planned treatments (IMRT) as defined in the business case.
- Stereotactic body radiotherapy will be implemented which has no impact upon capacity but highlights the development of an additional technique.
Recent RCR guidelines recommend the reduction of interruptions for all patients within a course of a patient’s radiotherapy to be no more than 2 days. Previous guidance has been 5 days with a Velindre policy of no more than 3 days interruptions. Therefore there will be resource implications for Velindre in moving towards this recommendation. This is currently being modelled.

**Assumes 5% annual increase in cancer incidence plus implementation of NICE prostate recommendations, plus IMRT requirements as detailed in business case, plus stereotactic & RCR interruptions guideline implications on daily demand**

<table>
<thead>
<tr>
<th>Assumes 5% ↑ in cancer incidence</th>
<th>2010/11</th>
<th>2011/12</th>
<th>2012/13</th>
<th>2013/14</th>
<th>2014/15</th>
<th>2015/16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily capacity hours required (includes daily QA)</td>
<td>60.4</td>
<td>64</td>
<td>66.9</td>
<td>70</td>
<td>73.3</td>
<td>76.7</td>
</tr>
<tr>
<td>IMRT</td>
<td>None</td>
<td>+2.35</td>
<td>+7.6</td>
<td>+8.8</td>
<td>+8.8</td>
<td>+8.8</td>
</tr>
<tr>
<td>Stereotactic</td>
<td>None</td>
<td>+0.1</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>RCR Interruptions</td>
<td>None</td>
<td>+1</td>
<td>+1.05</td>
<td>+1.1</td>
<td>+1.2</td>
<td>+1.2</td>
</tr>
<tr>
<td>Number of 9hr/day LA’s required.</td>
<td>6.7</td>
<td>7.5</td>
<td>8.4</td>
<td>8.9</td>
<td>9.2</td>
<td>9.6</td>
</tr>
</tbody>
</table>

The impact of the following developments on radiotherapy demand and capacity requires further calculation:

1. A pilot of In-Vivo Dosimetry advanced verification will be undertaken in the second quarter of 2011. As a recommendation in Towards Safer Radiotherapy, an all-Wales policy will be required from the Clinical Oncology Sub-Group (COSG)
2. Adaptive Image Guided Radiotherapy – definition is required before the impact can be assessed and calculated
3. VMAT - there are conflicting reports on the impact on radiotherapy provision, and VCC will assess the impact as part of forward planning work.

**5. Developing the Workforce**

A number of workforce developments are underway or planned.

**Medical Physics:**

- Role development requirements are being aligned with service need and national initiatives (for example Modernising Scientific Careers)
- Current skill mix enhancement plans in physics are to increase the technologist-scientist ratio, introduce assistant roles and explore opportunities for delegation of certain clinical tasks such as conformal radiotherapy plan approval for some tumour sites.
Radiotherapy:

- The integration of PET imaging into radiotherapy planning is current being explored. R&D activity is underway which will assess the impact for the radiotherapy workforce.
- A variety of roles can be developed further, for example radiotherapy led planning for breast and palliative planning and outlining. These will be discussed with medical staff and prioritised via the Radiotherapy Planning Group and the Workforce Plan.
CANCER REHABILITATION

1. Cancer Rehabilitation

Cancer rehabilitation assists patients to adjust to the changes which are occurring as a result of a cancer diagnosis, cancer treatments, disease progression, long term survival and end of life.

Rehabilitation for cancer patients is now recognised as an essential component of the cancer pathway and integral to patient care (NICE supportive and palliative care 2004).

Cancer rehabilitation must be holistic and cover the 8 domains of care which are Physical, Nutritional, Psychological, Informational, Spiritual, Practical, Social and Financial (NCCN2002).

A multidisciplinary approach is provided to patients and their families to cope with cancer and its treatment throughout their experience of the disease.

The objectives for the provision of rehabilitative care are:
1. Rehabilitative needs assessment for all patients
2. Active and planned approach to rehabilitation
3. Prompt access to rehabilitative services
4. Education and training programme for all staff providing cancer rehabilitation.

2. Demand for services

The figures for cancer incidence in Wales as provided by the WICISU 2008 report show an almost doubling and statistics show that there are 170,000 people living with and beyond cancer. National indications are that this number is increasing by 3% each year.

The Table below shows the number of patient contacts per year since 2001.
However as treatments become more successful there is an unwelcome harvest of unexpected and varied consequences, and patients are not necessarily living well. Cancer rehabilitation interventions are currently insufficient to ensure that the 8 domains of care are being addressed.

There are also unmet needs in all disciplines in the inpatient setting.

<table>
<thead>
<tr>
<th>Department</th>
<th>New Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2009</td>
</tr>
<tr>
<td>Complementary Therapies</td>
<td>379</td>
</tr>
<tr>
<td>Dietetics</td>
<td>751</td>
</tr>
<tr>
<td>Lymphoedema *</td>
<td>108</td>
</tr>
<tr>
<td>Occupational Therapy ~</td>
<td>409</td>
</tr>
<tr>
<td>Physiotherapy</td>
<td>600</td>
</tr>
<tr>
<td>Speech and Language Therapy</td>
<td>94</td>
</tr>
</tbody>
</table>

* outpatient service only
~ inpatient service only

3. **Current services provided by Velindre NHS Trust**

The fully integrated Therapies team of Physiotherapists, Occupational Therapists, Dieticians, Speech and Language Therapists, Lymphoedema Therapists, and Complementary Therapists currently provides rehabilitative treatment interventions to inpatients at VCC, with a limited service to out-patients.

In general terms, the inpatient service focuses on improving or maintaining function, healthy weight and psychological wellbeing to enable effective and efficient discharge planning while maximising a patient’s potential and quality of life.

The limited service to out-patients similarly focuses on the needs of patients to maintain independence and limit hospital admissions.

The Therapies team, in collaboration with other disciplines, offers educational and advice sessions based on the 8 domains of rehabilitative care through various projects and schemes.

4. **Future Developments**

Implementation of the cancer rehabilitation standards, survivorship agenda and key worker roles will form the strategic direction for the VCC therapies department. Collaborative working will be further developed with primary care and community services, secondary care and the voluntary sector (including independent hospices and trained volunteers) to provide active ongoing rehabilitation throughout the patient’s cancer journey as they make adjustment to the changes that their disease and its treatment impose on them.
Implementation of the cancer rehabilitation standards places a demand on screening and assessment for appropriate entrance of patients onto rehabilitation pathways. The ethos of commencing rehabilitation at diagnosis, plus the increase in survival statistics, will increase this demand. Implementation of the cancer key worker places a requirement on a level 1 training programme for all healthcare professionals and specialist training for individual AHP disciplines.

VCC are working with the Network and LHB’s on implementation of the cancer rehabilitation standards. Early discussions are taking place regarding joint posts with LHB’s, for example the provision of physiotherapists within breast clinics to aid shoulder rehabilitation. VCC are participating in the Network wide implementation group for the WAG Lymphoedema Strategy. Many of the actions will require funding via LHB’s for both cancer and non-cancer patients.

Other potential developments include:

- Out of hours or 7 day working for any of the Therapy disciplines. This is particularly important for the physiotherapy department as they provide treatment interventions such as the management of metastatic spinal cord compressions and respiratory care which should be carried out over 7 days
- Physiotherapy service for general outpatients
- Occupational Therapy service for any outpatients
- Speech and Language therapy for general outpatients
- Reduction in the lymphoedema service waiting list for cancer related and non-cancer related lymphoedema patients.

Specific current projects are:

- A 2 year project which commenced in January 2010 researching the involvement of Occupational Therapy (OT) in lymphoedema has already demonstrated an increased demand for an OT service within the lymphoedema service
- Research will commence in late 2011 on the effect of body mass index (BMI) on lymphoedema which could result in the need for a dietetic service within the lymphoedema service
- The BeINSPIRED respiratory project for self management of breathlessness has resulted in an increase in physiotherapy service and a bid has been made to Macmillan to spread the pathway to outpatient settings. If this bid is unsuccessful, the service can only be provided to Velindre inpatients with other patients being referred to local providers
- The Macmillan Health and Wellbeing project has resulted in the requirement for a self management assessment of needs for patients who complete their active cancer treatment. This project is currently being evaluated and the implications for Velindre will need to be reviewed.

5. Developing the Workforce

Priorities include:

- Developing training packages for unqualified workers to develop increased competencies
- Cancer rehabilitation education to be delivered to all health care professionals, to ensure that all disciplines have achieved a minimum of level 1 to ensure that the cancer key worker programme can be developed.
OUTPATIENTS

1. Outpatients

Site specific outpatient based consultation services with support from phlebotomy services, therapy services and appliance provision led by medical and non medical staff are provided to:

- New referrals
- Those on follow up or on active treatments
- Those in the acute phase of their disease
- Palliative care and symptom control services
- Support for clinical trial studies.

2. Demand for services

VCC has experienced a 61% increase in the number of Outpatient clinics in 4 years as a result of an increase in demand and greater survival rates. This has resulted in an increase from 43 clinics per week in 2006 to 88 clinics per week in 2011 which is reflected in the graph below.

This has placed significant strain on the current accommodation which is no longer fit for purpose. Work has recently commenced on exploring the use of 3 session outpatient days to utilise the space during out of hour’s periods. A dedicated Outpatient and Rehabilitation Planning and Development Group will be established in April 2011 to develop models of service, capacity and demand planning, and modernisation projects.

3. Future Developments

A number of developments are currently under discussion which will impact upon outpatient services:

- Phase 1 clinical trials - increased demands on phlebotomy and laboratory services
- Proposed increase to more three clinic sessions a day
• Development of DEXA service over the next two years
• Greater emphasis on the need for alternative models for follow-up, which will require detailed mapping and change management. Work has commenced in establishing systems for telephone follow-up which will be evaluated. A project on gynaecological outpatient follow-ups will commence in May 2011 and identify pathways for follow-up based around patient requirements and involve all members of the MDT
• Increase in the number of supplementary and independent prescribers
• Increase in the amount of CNS support
• Extended roles for Health Care Assistants (HCA’s) including recording ECG traces, flushing of central venous catheters, dietetic assessments
• Qualified nurse support for Outpatient therapies such as the Be Inspired project.

4. Developing the Workforce

• A Specialist Nurse has been recruited via charitable funds to implement a DEXA scanning service
• Use of qualified nurses to develop telephone follow up services has already commenced for gynaecological and prostate cancer patients
• A clearly defined route to develop HCA band 2 to band 3-4 will be developed in line with the All Wales healthcare worker initiative over the next 12 months.
• Band 2 phlebotomists will be developed to take on additional roles such as basic peripherally inserted catheters in line with the above development.
PALLIATIVE CARE

1. Palliative Care

A palliative care service is provided by 2 consultants, 2 wte specialist registrars and 2.1 wte specialist nurses. The team operates a consultative service to patients in the oncology setting, pre-dominantly in the ward areas but they can attend patients in the outpatient and radiotherapy departments. The Specialist nurses provide a 7 day a week face-to-face service, while the medical service is provided on a face-to-face basis Monday to Friday and 24/7 on an on-call basis. There is also a weekly palliative medicine outpatient clinic.

2. Demand for services

During the financial year January 2010 to December 2010 there were 537 patients seen by the palliative care team. As the 7/7 working initiative has only been implemented since January 2011 it is not possible at this stage to provide any trends that may be emerging. The sheer number of contacts themselves identifies the previously unmet need during out of hour’s periods which will clearly be monitored on an ongoing basis.

The 7/7 palliative care nursing service started on 16th January 2010 and the nursing numbers have continued to grow now there are significant numbers of patient contacts each weekend. The table below demonstrates the palliative nursing activity on weekends and bank holidays from January 2010 to January 2011.
The table above indicates the analysis of interventions provided.

**Current Performance**

The performance monitoring of the palliative care service has been established by the Sugar Implementation Board to include data collection of the numbers of patient contacts, complaints and compliments, I Want Great Care (patient anonymised survey), Dying Well Matters, and annual submission of a report to the Sugar Implementation Board.

3. **Future Developments**

Consideration will be given to the placement of junior medical staff to give a palliative care experience and to support the medical SHO’s in their experience of acute oncology. Funding to the level of 50% would be required and this has not yet been identified.

The Sugar Implementation Board has provided financial support across Wales for the developments in palliative care over the last three years.
4. Developing the Workforce

The large numbers of palliative care patients indicate that there could be an opportunity for the development of junior medical staff in palliative medicine.

A new project to introduce Health Care Assistants to the palliative care team has been set up and will be evaluated throughout the year; their purpose is to improve support to dying patients and their families.

The national developments and the career Framework for Nurses in Wales (WAG September 2009) will ensure that the specialist nurses are educated to and practicing at Advanced level.
CLINICAL TRIALS UNIT (CTU)

1. Clinical Trials Unit

The CTU run and coordinate Clinical Trials at VCC. This ensures that VCC patients are able to access good quality cancer research within south east Wales.

Clinical Trials cannot be run in isolation by CTU however, and impact greatly on other departments. The departments that provide support services for clinical trials are Pharmacy, Radiology, Nuclear Medicine, Nursing, Phlebotomy and Cardiff & Vale UHB laboratory services. Any support services required that are not available within VCC, are sought from local LHBs.

Complementing the services of the CTU staff, are staff based within CTU employed directly by the National Institute for Social and Healthcare Research (NISCHR), Cancer Research Council (CRC), providing patients with access to clinical trials in the outreach setting and the palliative setting.

There is also a small radiotherapy research team providing patients with access to radiotherapy clinical trials.

The CTU runs good quality local, national and international studies, the great majority of which are identified by the NCRI as of high importance and therefore adopted onto the national portfolio. The studies are a mixture of commercial and non-commercial, much of the non-commercial research being generated from organizations such as the Medical Research Council (MRC), Cancer Research UK (CRUK), and the European Organisation for Research and Treatment of Cancer (EORTC).

Velindre Cancer Centre (VCC) currently runs a portfolio of 258 studies (new and follow-up studies). This includes those in set-up, those currently recruiting and studies that are on follow-up.

Treatment of trial patients with chemotherapies, monoclonal therapies, and immunotherapies is currently provided by VCC nursing staff and the CTU link nurse. The patients receive treatment on Rhosyn, Chemotherapy Out Patients (COP), and Chemotherapy Day Unit (CDU).

2. Demand for Services

The demand for the service is based on several factors:

- Patients desire to be offered a clinical trial
- Clinical expectation for the provision of treatment within the context of a trial
- Designed to Tackle Cancer in Wales Strategic Framework 2008-2011
- Generation of income from commercial studies.

Patients are becoming more aware of research, and will frequently seek access to clinical trials through their disease pathway. This is particularly evident when a patient is faced with progressive disease and wishes to access a trial as their previous treatment was also in the context of a clinical trial. The desire to access a Phase 1 trial has, in the past, required patients to be referred to alternative UK centres running those trials, if convenient to the patient.
The employment of new Consultants also impacts on demand. VCC Consultants are extremely research active, and seek the support of CTU team to facilitate their research activity. While the increased workload is supported by a redistribution of resources, staff in the CTU are currently stretched.

*Designed to Tackle Cancer* requires that 10% of all cancer patients be recruited to a clinical trial. Of this 10%, there is an expectation that 6% are recruited to a randomised controlled trial (RCT). In line with the forecast increase in cancer incidence of 5%, the expectation is that this increase would affect the demand for a clinical trial by the same level. The rising incidence will necessitate a service that can deliver the increased demand.

The targets for south east Wales are 10% of newly diagnosed and 6% in randomised clinical trials. The expectation of the South East Wales Cancer Research Network is that VCC should contribute 80% of the target as the highest recruiter in Wales. Data regarding recruitment is only available per centre for individual studies, and the NCRI reports recruitment through cancer networks only.

**Current Activity**

Activity figures for April 2010-March 2011 (as at 8th March) show the following number of people recruited into trials:

- CTU = 728
- Outreach = 155
- Palliative Care = 59
- Radiotherapy = 61

Activity within CTU in the same period is:

- Studies open to recruitment - currently 71
- Total Recruitment to date 470 patients or 5.91% towards the target for south east Wales.
- Recruitment to 6% target – 195 patients or 2.45% towards the target for south east Wales.

These figures translate into the treatment of between 130 and 150 patients per month as part of a clinical trial.

**3. Future Developments**

In line with the VCC R&D strategy, the Cancer Centre is building a portfolio of phase 1 studies. To deliver phase 1 clinical trial treatment there will be 4 dedicated beds, and 2 new, early phase research nurse posts funded via bids to research organisations.

To further enhance the provision of treatment and care not only for phase 1 patients, but for all patients in a clinical trial, which includes phase II and III studies, all treatments will be given in one unit. This will be located adjacent to all outpatient chemotherapy treatments which will provide a much improved way of resourcing outpatient treatments, both trial and standard.
The CTU steering group will in the future recommend areas that commercial income should be re-invested in, to further the centre’s research activity.

Within the CTU there is a non medical prescriber. There are two senior research nurses currently undergoing training in patient assessment. Once completed, CTU will be in a position to run nurse led clinics, which will enhance the service to patients especially in light of the current limited Specialist Registrar cover in clinic.

4. Developing the Workforce

The WCRN is committed to funding 2 wte early phase Research Nurses for two years. These are south east Wales posts employed and line managed via Velindre NHS Trust. Funding is already in place supporting 1 nurse who is currently developing the phase 1 service.

Future opportunities will be sought to fund further training of non-medical prescribers and assessors if the current cohort evaluates well. These plans will be for 2012/13 intakes.

Continued development of the non-clinical band 5 post enables recruitment into non clinical studies, and provides clinic cover for follow-up work. This releases band 6 nurses to concentrate on the clinical aspects of the research role. The work on evaluating skill mix is ongoing as vacancies and funding opportunities arise.

The reconfiguration of the clinical workforce within chemotherapy, will impact on how and where trial patients are treated. This will provide an opportunity for chemotherapy nurses to gain a greater insight into the treatment and overarching governance of trial patients. A wider understanding will enhance the safety of the patient.

Funding Streams

The Academic Health Science Collaboration (AHSC) has supported the increased work that both pharmacy and radiology will experience with the expansion into phase 1 work.

The income from phase 1 commercial studies will need to support the early phase research nurses from year 3 onwards, as WCRN funding is for the first 2 years only. The service will therefore need to be developed opportunistically to both support the nurses and bring in an income to the VCC.

Increased service demand as cancer incidence rises will require an increased staffing complement to support the service. Opportunities will be sought to fund these through WCRN, commercial income, and AHSC depending on the criteria for the bid calls each year.

Development of the workforce and constant review of skill mix and any opportunities to improve accommodation provision, in the administrative and clinical setting for both CTU and the support departments, will provide opportunities to attract further commercial studies to VCC. In turn this would increase the income opportunities into the VCC.

CRW provide an annual grant to CTU to fund staff to support local research. Any increase to local Welsh research that impacts on CTU could be resourced by developing a business case to present to CRW seeking further support.
BLOOD COLLECTION - DESIGNED TO DONATE (D2D) PROGRAMME

1. Blood Collection

The Welsh Blood Service has historically collected whole blood from community based teams throughout south and mid Wales, from a mixture of community based venues and bloodmobile clinics. These clinics are held in the heart of small communities, co-ordinated from commercial company venues or set up in popular retail park areas.

In addition, the Welsh Blood Service provides donors with the opportunity to donate platelets via automated apheresis technology from its clinic at Talbot Green. This activity has assumed particular importance following on from a recent recommendation from SaBTO, which has advised the UK health administrations that blood establishments should move towards 80% of platelets issued being prepared by apheresis.

2. Demand for Services

Transformational redesign of the blood collection process was initiated early in 2010, as a direct result of a Strategic Review that identified where specific improvements to the service could be made. The redesign work was undertaken to ensure that the Welsh Blood Service is successful in:

- Meeting the changing needs of our donors and hospitals
- Compliance with increasing regulatory requirements
- Improving health and safety standards of its staff
- Provision of a modern “Best in Class” blood collection service

Current demand in South and Mid Wales for whole blood is as follows:

<table>
<thead>
<tr>
<th>Targets for whole blood, platelet and apheresis collections 2010/11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole Blood collections required</td>
</tr>
<tr>
<td>Platelet units required (ATDs)</td>
</tr>
</tbody>
</table>

Whilst performance has been good within the service with collection meeting clinical need in terms of hospital demand, there has been a year on year reduction in the size of the donor panel in recent times. Although this has been roughly parallel to a reduction in demand for red cells because of the success of the Better Blood Transfusion team, it is anticipated that there will be an increase in demand for red cells to meet the needs of an ageing population. The demand for platelets has shown an increasing trend since 2005 and this is not expected to fall off in the near future.
The Welsh Blood Service is therefore assuming steady state +/-1% over the forthcoming 5 years in terms of demand for whole blood. A priority for the service is to stem the loss of long term donors from the established panels, by putting in place a modernised service that meets the needs of changing demographics and lifestyles, and by employing recruitment strategies that will improve donor loyalty.

Figure showing the change in whole blood collection 1998 – 2011.
3. Future Developments

The D2D programme is fundamentally changing processes, roles and structure. In doing so it will modernise and future-proof the service. Strategic objectives include:

- meeting the continually increasing demands of the regulator
- improvement of productivity and efficiency
- arresting the decline in the donor base by providing a better donor experience at more convenient times
- ensuring that the collection teams and supporting operational departments are capable of collecting to target to meet changing demand.

A well developed programme is in place to manage this change within Good Manufacturing Practice (GMP) requirements. The programme is subdivided into a number of work-streams to ensure that the transformational work has sufficient breadth and depth.

The scope of these work-streams is as follows:

- Review session opening times to meet local demand and improve efficiency
- Identify higher minimum standards for session venues
- Feasibility study of providing additional static site facilities for whole blood and apheresis collection
- Review of transport arrangements inclusive of recommendations set out in the 2008 Welsh Audit Office report on Fleet Management in the Public Sector
Delivering Quality, Care and Excellence

- Review of process and role redesign within collection teams
- Rebranding exercise
- Redesign the donor experience and strategic relationship management.

During 2010/11, a new process for whole blood donation was piloted in the Talbot Green clinic. Collection staff enthusiastically volunteered to be part of this pilot, and the new process has been shown to be successful. Currently, new roles for collection staff are being piloted with an intention to extend the work to apheresis collection. The priority for 2011/12 will be to consolidate this work by beginning a programme of change for all blood collection to the new process with the new roles. Clinics will be planned with new opening hours that will, in the medium to long term, provide more opportunities for donors. The work on planning one or more static sites will continue at a steady pace, the focus being to ensure that whole blood and platelet apheresis collection is optimised at the Talbot Green site. Learning points will be transferred to planning new static facilities.

4. Developing the Workforce

D2D is a complex programme that places quality and safety at its forefront, and models of service delivery will be tested (when possible) and thoroughly evaluated. Detailed staff consultation, in line with the Organisational Change Policy for NHS Wales, will take place on the future configuration of the service, staffing structure, process and role redesign. A ‘route map’ describing the move towards increased blood mobile usage and static site provision will be outlined.

New roles and operational processes will be introduced as a result of the modernisation programme that will:

- Improve career pathways for blood collection staff
- Improve flexibility and resilience amongst collection staff (optimise multi-skilling)
- Rebalance operational, managerial and clinical skill set requirements
- Improve the performance management system
- Support and deliver leadership from the frontline upwards
- Develop change capabilities to lead ongoing continuous service improvement beyond the transformation programme.
LABORATORIES AND PATHOLOGY MODERNISATION

1. Overview

Within the Welsh Blood Service, laboratory work can be categorized as:

1. Immunohaematological, microbiological and quality assurance testing of blood donations
2. Processing, verification, storage and issue of blood components
3. Immunohaematological screening of blood samples from pregnant women (‘antenatal samples’)
4. Complex immunohaematology on referred patient and antenatal samples from hospital blood banks
5. Production of an external quality assessment (EQA) scheme for immunohaematology
6. Histocompatibility & immunogenetics (H&I) typing and antibody screening, in particular to meet the renal and stem cell transplantation needs of hospitals in south Wales.
7. Production of an EQA scheme for H&I.

The last two items are discussed in more detail in the following section. However, it should be noted that there are several alignments within the WBS laboratories. Categories 1-5 above are discussed in this section together because of the link to the discipline of blood transfusion and immunohaematology. However, all categories could be considered as ‘pathology’ disciplines that will be influenced by the pathology modernization programme, such as the introduction of an all-Wales LIMS and the implementation of Modernising Scientific Careers.

The WBS Laboratory Services department is divided into five main laboratory areas:

- Automated serology
- Processing Verification and Testing
- Patient Diagnostics
- Immunohaematology
- Quality Assurance

There are approximately 100 staff working in the Welsh Blood Service laboratories. Of these, about 65% are registered Biomedical Scientists (BMS) with the remaining staff being Biomedical Support workers (BMSW) and administration staff.

Laboratory staff are supported by a laboratory training and development team who support a variety of training opportunities for staff. In addition, they ensure that as a blood establishment the Welsh Blood Service laboratory training complies with a range of regulatory bodies including: MHRA, CPA, HPC & IBMS. Failure to do this could result in the Welsh Blood Service losing its status as a training laboratory.
2. Description of services

**Automated Serology** - Olympus & Microplate Serology are mainly responsible for the grouping of donor and antenatal blood samples.

Approximately 500 donor samples are tested daily to determine the ABO and Rh blood groups and the presence or absence of red cell antibodies. In addition, this department tests selected donor samples for other red cell blood groups, so that these donations are available for cross matching for specific patients. Blood for neonatal use is also subjected to further testing and the department also screens donor samples for antibodies to syphilis.

Approximately 100 samples daily from antenatal patients from hospitals within south Wales are also tested for blood groups and antibodies, which could affect the unborn child.

The microbiology department is responsible for the screening of all donations for 4 of the 5 mandatory markers of diseases transmissible by blood. At present these include HIV antibody and antigen, Hepatitis B surface antigen (HBsAg), antibody to Hepatitis C (HCV), human T-cell Lymphotrophic virus (HTLV). Donations are also tested for HBC, HBsAg & HIV by NAT to detect any “window” infectious viral particles.

At the donor session each donor will have separate samples of blood taken, in addition to the unit of blood collected from them. One of these is used for blood grouping, the second for microbiology screening and a third is pooled for nucleic acid test (NAT) HBV, HCV, HIV1 and HTLV testing by ELISA.

A proportion of the donations are also tested for antibodies to cytomegalovirus (CMV). Blood from donations which is negative to anti-CMV can be used to transfuse immunocompromised patients (e.g. transplant patients and immature infants).

Malaria and Chagas tests are performed on donors who have visited areas in which these diseases are prevalent and donors having recent tattoos or piercings are tested for HB core antibodies.

**Processing, Verification and Testing Department** - Whole blood is separated by centrifugation before further processing into individual components – red cells, platelets and plasma.

Each component is filtered to remove the leucocytes (white blood cells), in a process called Leucodepletion to support vCJD risk reduction as mandated by the Department of Health (DoH).

In addition, the department is responsible for maintaining a stock of commercial/wholesale therapeutic products as required by customer hospitals. The Welsh Blood Service fulfils this role as a Licensed Wholesale Dealer.

Irradiation of blood and platelets is performed, as required, for transfusion to patients at risk of graft versus disease.

**Patient Diagnostics** - provides a 24/7 reference service for the hospitals served by the Welsh Blood Service to resolve complex RBC antibody problems. The section is responsible for providing compatible blood for patients for whom the local hospital is finding difficulty. This may be due to the rarity of the blood type or the presence of red cell antibodies.
Delivering Quality, Care and Excellence

Within this laboratory reagent production takes place and supplies a wide range of products for the extensive work carried out by all other sections within the Patient Diagnostic Services department. The CPA EQA accredited Welsh Assessment of Serological Proficiency Scheme (WASPS) is also prepared and dispatched by the staff of the Reagents Section.

Immunohaematology - provides a reference service for a number of specialist tests including estimation of feto-maternal haemorrhage, study of the clinical significance of red cell antibodies and anti-D and anti-c quantitation. The department has a key role in performing research and development work in line with new developments within the field of red cell immunohaematology.

Quality Assurance Laboratory - has quality testing and monitoring functions in Haematology, Flow Cytometry and Bacteriology sections. There is also a calibration section that ensures that all equipment used at the Welsh Blood Service operates to a high level of accuracy. All the above sections together give the Welsh Blood Service assurance that blood components meet requirements documented by the EU and National UK Guidelines.

The Haematology Section is also responsible for performing full blood counts on samples from donors that fail the copper sulphate test for haemoglobin level. To be able to donate, a donor must have an acceptable haemoglobin level. For apheresis platelets, full blood counts are carried out on samples prior to donation to confirm their suitability to donate. This helps maximise the platelet yield from the donor.

Flowcytometry/Leucodepletion Section monitors the leucodepletion process by using flowcytometry to count residual white cells. A blood component is not suitable for issue if the leucodepletion process has failed. Test procedures have also been set up to measure stem cells using flowcytometry.

In addition to the above, the QA Lab has a developmental role in investigating new blood packs, components or processes that will improve the quality of blood components required for transfusion.

The Bacteriology Section of the Q.A. Laboratory houses the BactAlert system. This system detects bacterial contamination in blood, especially platelets. Samples from all platelet concentrates are tested, in line with best practice (NHSBT is only now starting to introduce this practice). These samples are incubated in the automated detection system, which will alarm if any bacteriology positive donations are identified and prevent them from being issued. The section also monitors the effectiveness of arm cleansing prior to donation as well as monitoring the cleanliness of areas where blood is processed and stored.

3. Demand for Services

As indicated in the previous section, the annual demand for red cells has reduced in recent years as a consequence of the ‘better blood transfusion’ initiative, whereas demand for platelets has increased. However, blood components – particularly platelets - are labile products, with further restrictions because of the need to match blood group, and day-to-day variations in demand cause significant problems in planning supply. Over-supply can increase the age of red cells issued to hospitals, and potentially increase the wastage rate of platelets. The WBS has targets for these metrics; the following graphs show performance for red cell age at issue, and wastage (time expired or T/E) during 2010-11 being well within target. There will be occasions where targets are not met, however, as it is essential that Welsh hospitals always have an adequate supply of blood components.
4. Future Developments

The priority areas in 2011-12 for Laboratory Services are:

- Implementation of the Blood Establishment Computer System (BECS) and Laboratory Information Management System (LIMS). Both systems will provide significant benefits for the WBS including Laboratory Services – see below.

- The Designed to Donate (D2D) programme has an indirect impact on Laboratory Services. To make full use of the modernisation plans for blood collection, work will focus on designing a laboratory process that is more flexible in terms of the maximum interval between collection and processing into components. Laboratory Services will undertake a validation exercise to confirm published findings that the quality of blood components is maintained or improved following an overnight hold of whole blood at ambient temperature. Overnight hold has the potential to facilitate changes in clinic locations and opening hours, and would also be beneficial in the event that the WBS operates blood collection in north Wales.

- SaBTO has made a number of recommendations to the UK health administrations. If agreed by WAG, three of these would have a significant impact on Laboratory Services: prion filtration of red cells; the use of double dose red cells; and the requirement to import non-UK plasma. It is unlikely that double dose red cells will be introduced as a risk reduction measure, but it is quite possible that prion filtration will be a requirement for at risk recipients of blood transfusion. There would be significant additional costs in such a measure but the operational impact on the department will be limited. Similarly, the universal use of non-UK plasma would have introduced a net cost to NHS Wales.

- The Welsh Blood Service has benefited by joint procurement opportunities with the UK Blood Services, a recent example being a beneficiary of a UK tender for nucleic acid technology (NAT) testing. The recent Arms Length Body review undertaken by the DH concluded that further benefits could be explored between the UK blood services, and it will be prudent to explore other procurement opportunities such as the purchase of blood packs, and apheresis equipment and consumables.

- The Welsh Blood Service Automation laboratory utilises state of the art technology automation, with a capacity to absorb any likely increase in activity. The current use of this technology for antenatal screening spreads the costs, and the Blood Services in Wales review (see below) could result in recommendations relating to antenatal screening and north Wales service provision that will further reduce the fixed costs of overheads to NHS Wales.

- The Immunohaematology department has been at the forefront of several improvements to the way that laboratory services are provided to hospital clinical and scientific staff. The department is currently undertaking a two year trial on the identification of Rh D negative mothers who carry an Rh D positive foetus, by screening the maternal plasma for small amounts of fetal DNA using real-time PCR. If this trial is successful, a business case will be made to provide the screening test as a routine service to Welsh hospital clinicians, as there will be a reduced antenatal usage of prophylactic anti-D with concomitant economic and ethical benefits.
The high level of exposure of laboratory services to the regulator will require any changes to be undertaken in a carefully controlled manner. Although there are usually time penalties in this, the approach ensures that quality is maintained throughout the breadth and depth of service provision. The Welsh Blood Service has made recent improvements to its Quality System and the benefits of these will be needed for the challenging programme ahead.

5. Developing the Workforce

Given the scientific base of the workforce in Laboratory Services, Modernising Scientific Careers (MSC) will have a significant medium to long term impact on the department. Although it is not yet clear what the precise implications of MSC will be, Laboratory Services has maximised the benefits of automation by incremental changes to skill mix, a direction that MSC will facilitate further with the introduction of new practitioner roles. During 2011/12, a review of laboratory staffing structures will be undertaken to identify what improvements could be made with a view to increasing flexibility and efficiency, and containing staff costs in an environment of increasingly burdensome regulation, without reducing the availability of technical expertise that is essential to a blood establishment and diagnostic laboratory. For example, as noted above, the Immunohaematology Department is undertaking a trial that could have long term benefits for women’s services. Changing the way that the routine immunohaematology service is internally managed should allow faster progression of the trial without any compromise to service quality.

Training within Laboratory Services has an excellent track record, for example in the introduction of NVQ 2 & 3 assessment, and support for a wide range of scientific qualifications including HNC, BSC (Part time & placement), IBMS Certificate and Specialist Diploma, and MSc. There is a professional link to higher education institutions and professional/regulatory bodies such as the IBMS, BBTS and HPC, and the Welsh Blood Service laboratories are accredited within a formal framework for training scientists to achieve fitness to practise. With the proposed introduction of Modernising Scientific Careers it is essential that the Welsh Blood Service maintains this training expertise with sufficient resource.
1. Welsh Transplantation and Immunogenetics Laboratory (WTAIL)

The Welsh Transplantation and Immunogenetics Laboratory (WTAIL), operated by the Welsh Blood Service, provides several specialist clinical laboratory services for local clinicians which includes testing and matching of potential kidney, pancreas and haemopoietic stem cell (HSC) donors and their recipients, Human Leucocyte Antigen (HLA) ‘tissue’ typing patients as an aid to disease diagnosis and identifying patients who require transfusions of specially matched platelets. It also identifies and supplies matched donations through the Welsh Bone Marrow Donor Registry (WBMDR) for patients worldwide.

Renal Transplantation Service - Provision of a 24 hour typing service for patients in south and west Wales who require a kidney transplant. This service is primarily provided to the Renal Transplant Unit based at UHW. The services include:

- HLA typing of recipients and potential deceased and live kidney donors
- Antibody screening to detect and identify antibodies in the recipient which could cause rejection of the transplanted organ
- Cross-matching between recipients and potential live and deceased donors
- Registration of recipients on the national transplant register

Haematopoietic Stem Cell (HSC) Transplantation - Provision of a molecular typing service for patients in south and west Wales who require a HSC transplant. This service is primarily provided to the Bone Marrow Transplant (BMT) Unit based at the University Hospital of Wales. This service includes:

- HLA typing of recipient and potential related donor
- Searching of UK and International registries for patients requiring an unrelated HSC transplant
- A ‘graft identification advisory service’ provided by Welsh Blood Service Clinical Scientists, working in close collaboration with the Director of the BMT Unit at University Hospital of Wales to select appropriate unrelated donors
- HLA typing of selected unrelated donors for possible HSC transplantation.

Platelet Immunology
A full range of platelet immunology investigations are offered that can be used by clinicians to assist in both the diagnosis and treatment of certain conditions, e.g. neonatal thrombocytopenia and post-transfusion purpura. The service provides a comprehensive antibody investigation service and if required, HLA ‘matched’ blood products can be supplied in conjunction with the Welsh Blood Service.
**Miscellaneous Diseases**

Associations of HLA-B27 with rheumatic diseases have been well established and we provide a B27 typing service on request to Consultant Rheumatologists and GP’s. In consultation with our customers we can undertake any specific HLA typing request or family studies. We also undertake disease association projects.

**Welsh Bone Marrow Donor Registry (WBMDR) service**

The WBMDR is licensed by the Human Tissue Authority providing a comprehensive service for unrelated haemopoietic progenitor cell (HPC) donor transplants. Including searches for prospective donors plus appropriate advice on donor selection from the Welsh, UK (British Marrow Donor Registry and Anthony Nolan Trust) and all International panels that are part of Bone Marrow Donors Worldwide. The WBMDR has been accredited by the World Marrow Donor Association since 2004. We can liaise and co-ordinate samples requested from the appropriate panels. In addition, if a suitable donor is found we will make any arrangements required, including HPC collection and transportation, if appropriate. The Welsh donor panel is regularly used throughout the UK, Europe and North America.

**NEQAS**

The UK National Quality Assessment Service for Histocompatibility and Immunogenetics (UK NEQAS for H&I) provides a comprehensive range of External Quality Assessment (EQA) Schemes for laboratories operating clinical histocompatibility and immunogenetics (H&I) services. Schemes are available to all clinical laboratories in the UK and overseas and appropriate biotechnology.

2. **Demand for Services**

**Renal Transplantation Service** - The requirement for renal replacement therapy has increased year on year since 1999 and Mathematical modelling, estimating future demand for renal replacement therapy has consistently shown that the steady state is unlikely to be reached within the next 10 years and anticipates a rise of 50-100% (Kidney Alliance 2001). For the purposes of this report this is considered the business critical element of the WTAIL service.

Transplantation is the preferred treatment for many patients with end stage renal failure. It improves quality of life and has economic benefits in comparison to dialysis. Consequently the demand for kidney transplant has risen year on year but with a concurrent decrease in the number of organs available for transplant, largely due to a decline in deceased donors.

To address this deficit focus has been on expanding the donor pool through the use of living donors, cardiac death donors, paired-exchange, altruistic donation and antibody incompatible donors. Recognising the cost pressures that this would bring a business case was prepared by the University Hospital of Wales in 2006 to support expansion of its renal transplant services which was approved by the Welsh Assembly Government in 2007.

Some funding for the Welsh Transplantation and Immunogenetics Laboratory (WTAIL) was included in the University Hospital of Wales business case but this was to cover additional costs for providing support for the ABO incompatible transplants. This was specifically to fund a member of staff and the consumables associated with the increased testing required for these specialised transplants. Calculations were performed assuming no additional transplants, simply a change in case mix. However, UHW have since indicated that the overall number of transplants will increase, predominantly
by expansion of the live donor programme. This is particularly pertinent for WTAIL as in live donor transplants several donors for a single recipient may require laboratory testing with some or all not being progressed to transplant. In recovering costs from UHW for this additional laboratory work, the Trust will need to ensure that a charging model is agreed that takes into account best practice in laboratory methodology (e.g. Luminex) and clinical management. However the predicted rise indicates that the overall number of transplants will increase, predominantly by expansion of the live donor programme. This is particularly pertinent as in live donor transplants several donors for a single recipient may be tested with some or all not being progressed to transplant.

3. Future Developments

**Allele level typing (ALT) project.** This project has the following objectives:

- To trial a semi-automated system using sequence based ‘high resolution’ allele level typing of stem cell donors recruited by the Welsh Bone Marrow Donor Registry (WBMDR);
- To analyse the typing data using population genetics methods, and to identify a future typing strategy that would ensure maximum benefit to patients.

It should be noted that since the business case for ALT typing has been prepared and actioned, the UK Stem Cell Forum, reporting on behalf of the Department of Health, has documented a clear need for high resolution typing of UK stem cell donors. The use of ALT for newly registered stem cell donors will be a significant step forward for clinicians in identifying the best match for stem cell patients, and will improve the efficiency and effectiveness of WBMDR.
The project will identify how ALT is best introduced into the routine typing of new stem cell donors. Additional costs consequent upon the new technology will require a business case to go forward to WHSSC for consideration.

**Stem Cell Transplantation** - Discussions are currently ongoing with WAG relating to the recommendations of the UK Stem Cell Forum. The outcome of these discussions will determine the future development of this service. The Welsh Blood Service is fully supportive of the UK Stem Cell Forum recommendations related to improvement in finding an acceptable match within a clinically appropriate time period for unrelated adult donor stem cell transplants. Several of these recommendations are already in place or are about to be implemented by the Welsh Blood Service. The implications of the proposed collaboration between NHSBT and the Anthony Nolan Trust will need to be carefully considered.

The recommended ‘graft identification advisory service’ is already provided by Welsh Blood Service Clinical Scientists, with considerable expertise in HSC transplantation immunogenetics, working in close collaboration with the Director of the Bone Marrow Transplant Unit at University Hospital of Wales (UHW). This provides invaluable education and training for both medical and scientific staff. This close interaction provides a service that is able to tailor donor selection not only to an individual’s HLA type but to other, often unique, requirements such as time-frame and transplant protocol.
REVIEW OF BLOOD SERVICES FOR WALES

1. Description of Services

As part of the Welsh Blood Service Strategic Review final report, the WBS highlighted to WAG in May 2009 a number of further strategic issues about the future of the Welsh Blood Service such as expanding its remit to include:

- Collecting and providing blood for transfusion to north Wales to create an all-Wales service
- Centralised management of hospital blood banks
- Central employment and management of the locally employed hospital transfusion practitioners, who are responsible for promoting the better use of blood in hospitals and encouraging alternative approaches to using blood donation
- Provision of an all Wales blood grouping and antibody antenatal screening service.

2. Demand for Services

Blood services for north Wales are currently provided by NHS Blood and Transplant (NHSBT), a Special Health Authority accountable to the Department of Health.

Blood Services for south Wales are provided by the Welsh Blood Service. Welsh Blood Service collects blood from the volunteering public in south, east, west and mid Wales, tests it, processes it into several blood components, and stores it before delivery to Welsh hospitals.

The Welsh Blood Service also hosts a range of diagnostic services. It provides specialist immunohaematology reference and antenatal blood testing services to hospitals; and the Welsh Transplantation and Immunogenetics Laboratory (WTAIL) based in the Welsh Blood Service undertakes complex scientific testing to ensure that tissue (organ and haemopoietic cell) donors are a match for the patients requiring transplants. WTAIL also administers the Welsh Bone Marrow Donor Registry and the National External Quality Assessment Scheme for Histocompatibility and Immunogenetics.

NHSBT provides a similar range of services for north Wales with the exception of diagnostic services, as north Wales hospitals do not refer pre- and post-transplant samples to NHSBT for testing, using instead the service provided by the relevant hospital Trust (e.g. Manchester Royal Infirmary). In addition, NHSBT will not be providing any antenatal screening services after March 2011. It should also be noted that NHSBT does not currently undertake routine bacterial screening on platelet components.

Current Performance/Provision

As measured by the use of whole blood per 100,000 head of population, Wales has a significantly higher usage of blood than does England. This is of some concern because of the guidance provided by the Department of Health and the Welsh Assembly Government on ‘Better Blood Transfusion’. An all-Wales policy to address this issue is required. Similarly, other blood policy / strategy issues, such as the introduction of risk reduction measures for vCJD, would greatly benefit from an all-Wales approach.
3. Future Developments

The Review of Blood Services for Wales has the following aims:

- To review and make recommendations on the costs and benefits of commissioning a blood transfusion service for the whole of Wales from Velindre NHS Trust, including collecting and providing blood for transfusion to north Wales to create an all-Wales service.
- To review and make recommendations on the cost and benefits of centralising within Welsh Blood Service responsibility for hospital blood banks and blood transfusion practitioners.
- To consider whether the quota system for blood used by Welsh Blood Service should continue or whether alternative charging systems should be implemented.
- To review and make recommendations on the cost and benefits of providing an all-Wales blood grouping and antenatal screening service.
- Review the linkages that need to be put in place on UK-wide issues recommended by SaBTO on protecting against the transmission of vCJD within an ever increasing regulatory framework.
- Review the future arrangements for the planning and funding of the Welsh Blood Service.

Each of the high level deliverables affects north Wales. While the review of the collection and provision of blood services for north Wales is the principal strategic question, the timescale for that work stream need not be the rate-limiting step for each of the other work streams.

The objective of the work streams is to evaluate the costs and benefits of options, and does not extend to implementation. Each work stream is designed to:

- Support improvements in health outcomes
- Improve system performance
- Reduce costs
- Improve the quality of service through reduction in variation, waste, harm
- Transform services.

**Perceived high level benefits within the review include:**

**North Wales**

- Significantly reduced costs to north Wales
- Utilisation of spare processing capacity within the Welsh Blood Service
- Fits strategically with WAG’s One Wales agenda
- Supports standardisation of WAG Blood Policy and quality framework
- Facilitates introduction of the All Wales Laboratory Information Management System
- Supports the Pathology Modernisation Board Strategy
Future model for planning and funding of blood
- Significantly reduced costs of services on an all-Wales level
- Incentivises better blood usage
- Enable the introduction of mandatory and non mandatory testing and processing developments and provide consistency at an all-Wales level
- Uniform transactional arrangements
- Maximise value for money

Blood grouping and antibody Ante Natal Screening Service
- Utilises Welsh Blood Service capacity, provides consistency, quality assurance and minimises regulatory overheads
- Potential to release capacity within Health Board Pathology services
- Simplifies pathway for complex results and reduces costs
- Simplify interfaces with Public Health Wales ante-natal screening service

Blood Bank /Hospital Transfusion Practitioner Options
- Move towards standardised practice in accordance with increasing burden of regulatory compliance
- Reduction in blood usage in Wales
- Clinical quality and regulatory improvements from critical mass of expertise available

Governance Structure for UK-wide Policy issues
- Clear and consistent all-Wales framework helps clarify blood policy related issues
- Improved advice to WAG on policy and implementation.
REDUCED BLOOD USAGE

1. Description of Services

The Hospital Transfusion Practitioner Scheme was initiated in January 2004 to address requirements for the implementation of the Welsh Health Circular (WHC), Better Blood Transfusion Initiative in Wales (WHC 2002/137). The project was initially conceived as a pilot, but was made permanent as a consequence of concerns over blood shortages and the recognition that improvements in the quality of Blood Transfusion practice in Wales required strategic vision and a long-term commitment.

The original structure of the team was:

- Three Transfusion Practitioner (TP) posts embedded within the three largest Trusts accounting for 70% of blood supplied by Welsh Blood Service
- A manager to supervise and develop these new roles
- A lead Consultant to support the manager in facilitating the scheme and develop a strategic plan for the implementation of Better Blood Transfusion in Wales.

Other hospitals in Wales appointed their own TPs who are supported by the Welsh Blood Service Team. Gradually, the Hospital Transfusion Practitioner Scheme became known as the Better Blood Transfusion Team (BBTT), which better reflected activity and matched the titles of similar teams from the other UK countries. The UK and Ireland Better Blood Transfusion Network has become well established, resulting in collaborative working and shared practice throughout the four UK countries and the Republic of Ireland.

The overall function of the BBTT remains as stated in the WHC (2002/137). Additionally, the strategic plan for blood transfusion defines the overall work-plan for the BBTT. The work of the team can be translated into common practice themes.

- Raising awareness
- Appropriate transfusion and alternatives
- Supporting education, training and competence assessment
- Risk management and incident reporting (transfusion specific)
- Practice and policy development
- Clinical audit
- Emergency planning

On a day to day basis, the TPs work primarily to the agenda of their host organisation with additional Regional or National remit as determined by the Team Manager and Lead Consultant. The Cell Salvage Coordinator supports surgical teams in all hospitals in Wales while the data analyst and data input clerk support the function of the whole team.

Examples of specific projects in which the team is involved include:

- Nurse Authorisation of Blood Transfusion (UK-wide initiative, led by WAG in Wales)
- Standardisation of transfusion documentation in Wales
Delivering Quality, Care and Excellence

- Standardised clinical consolidation days (transfusion) for Y5 medical students across Wales prior to commencing substantive F1 posts
- Audits (Regional and National)
  a. ‘Where does blood go?’ cycle 4 (Wales)
  b. Platelet usage
  c. National Comparative Audit programme (UK)
- Development of National education and assessment material with the UK Cell Salvage Action Group
- Maintenance of all-Wales cell salvage database
- Maintenance of registries for off-licence use of fibrinogen and recombinant factor VIIa
- Ongoing support for incident reporting and analysis, competency assessment and education to achieve regulatory compliance.

2. Demand for Services

Current Performance

The above chart demonstrates the changes in red cell usage across England, Scotland and Wales since 2008/09.

Since 2009 Wales has seen an increased support of cell salvage techniques, improved education to clinicians on the appropriate use of blood and the use of alternatives to blood transfusion. Wales historically uses more blood per 100,000 head of population and whilst the above is encouraging at a national level, further work is required at a Better Blood Transfusion team level within Wales to improve upon this position.
3. **Future Developments**

The safe and appropriate transfusion agenda remains active and since the implementation of the BBTT a progressive reduction in red cell use has occurred. Threats to the blood supply remain a practical reality, as evidenced by the impact of recent adverse weather and seasonal flu. The BBTT continues to deliver an appropriate and relevant message to clinical teams, encouraging them to consider alternatives where suitable. Addressing the needs of current and future patients in Wales and supporting clinical staff in planning for delivery of care must remain a priority. The merger of primary and secondary care into Local Health Boards in Wales presents new opportunities alongside the continuing challenges.

Primary care has had little attention from the BBTT previously, but this new structure provides an ideal opportunity to engage with General Practitioners and other Primary Care Teams to enhance the development of appropriate patient pathways. Pre-assessment clinics within the hospitals attempt to optimise the patient’s condition before surgery. This preparation could begin either whilst the patient is waiting for surgery or before the referral is made, but will require input from primary care in addressing anaemia and the investigation and management of its causes.

Nurse-led anaemia management clinics within the hospital setting offer the opportunity to develop new service delivery models from which both hospital and primary care clinicians could benefit. The BBTT is ideally placed to advise and support Health Boards who might wish to implement this service.

Out of hospital transfusion has been implemented sporadically across the UK and depends on existing services to facilitate delivery. This is another area where TPs can work with Primary Care to implement transfusion in the community, particularly improving the quality of life for those with major transfusion dependency or in whom symptomatic support can contribute significantly to the end of life experience.
KEEPING THE BLOOD SUPPLY SAFE FOR PATIENTS

1. Background

Blood transfusion is extremely safe compared with many other medical interventions. As late as 1996, 12 deaths in that year were reported to the Serious Hazards of Transfusion haemovigilance scheme as being definitely attributable to transfusion. Even though this is a small number in comparison to the number of transfusions given in the UK, by 2009 the figure had steadily reduced to one. Furthermore, as a result of the efforts of the Better Blood Transfusion initiative, the number of blood component transfusions per year has reduced from 3.4 million in 1999-2000 to 2.9 million in 2008-09. However, blood transfusion is not, and cannot be, zero risk, and blood services have a responsibility to ensure the blood supply is as safe as possible.

2. Welsh Blood Service Local Initiatives

The amount of testing and processing that blood has undergone has increased dramatically over the years either as a result of emerging clinical and scientific knowledge about transfusion medicine or as a result of coping with emerging transfusion transmissible threats to the blood supply. The emergence of vCJD in the UK population as a result of eating contaminated beef has been a huge challenge, as this deadly and unusual disease has proven difficult to detect and to apply countermeasures about which we can be confident. Nevertheless, in common with the other UK blood services, the WBS has introduced a whole range of measures including leucodepletion of all blood components (except granulocytes), banning the use of UK plasma for fractionation, importing some blood components for vulnerable groups of patients and deferring previously transfused donors. The WBS has also introduced some non-mandatory precautionary measures, such as the use of Chloraprep for cleaning the venepuncture site, the universal irradiation of platelets and the bacterial testing of platelets – all of these in line with best practice and focused on priority areas of potential risk.

So far, the number of transmissions of vCJD with blood and tissues has been very low despite the Spongiform Encephalopathy Advisory Committee estimation that up to 1:4000 of the population could be “carriers”. However, based on the difficulty of proving their efficacy and the precautionary principle, the WBS must anticipate instructions to deploy further vCJD countermeasures over the next few years as they become demonstrably effective and available for routine use.

3. National Initiatives

The UK Advisory Committee on the Safety of Blood, Tissues and Organs (SaBTO) provides expert advice on these matters to WAG. In these matters, the WBS does not rely solely on its own expertise but draws heavily on the advice of the UK Joint Professional Advisory Committee (JPAC), which is funded and managed by all four UK Blood Services acting in concert though the UK [blood services] Forum, a body which co-ordinates UK wide inter-service activity. The WBS and the other UK blood services also participate in the European Blood Alliance, which has been an effective means of representing the common interests of all the member European Blood Services to the EU regulators.
For transmissible diseases such as HIV or Hepatitis C, the presence of infectious agent (virus) can be reliably detected or inferred through laboratory screening tests. The discovery that vCJD can probably be transmitted through blood transfusion has presented a considerable scientific challenge as no widely available screening test for prion proteins has been developed. One screening test (developed by Amorfix) was recently released for assessment, but withdrawn because of problems over performance. Interest is now directed towards two prototype tests, one developed by the MRC Prion Unit and one by the SNBTS. However, even if their specificity and sensitivity are found suitable for screening by a blood service, it seems highly unlikely that their routine introduction could be sooner than 2012-13, and possibly much later. The cost would be considerable, e.g. £5m - £10M p.a. for the WBS, if a test was mandated for all blood donations.

Two companies are developing blood filters that could be used by blood establishments to reduce the vCJD load in blood components. Even though one prion filter manufacturer (MacoPharma) has obtained CE marking relating to the essential safety standards of medical devices, their efficacies are not yet proven, and hence the UK blood services are funding an R&D programme to collect more data. There is already a recommendation by SaBTO to introduce prion filtration to at risk groups (children and haemoglobinopathy patients), but the DH and devolved health administrations have not implemented this recommendation, pending an impact assessment by DH. Progress has been made during the last year on the efficacy studies, and these are likely to be considered by SaBTO this year. Given the roll-out time required to undertake prion filtration, it is possible but unlikely that prion filtration will need to be introduced during 2011-12. Furthermore, their long-term requirement may be diminished or obviated by the ‘Club 96’ model (see below). If introduced for at risk groups only, the annual cost for the WBS would be in the region of £300K per annum.

SaBTO have also considered that the safety of transfusion would be enhanced by sourcing all fresh frozen plasma (FFP) from the US, where the incidence of vCJD is much lower. At risk groups in the UK currently receive pathogen inactivated plasma from the US and Europe, but the recommendation is that the use of imported plasma should be extended to all UK recipients. Again, the DH is undertaking an impact assessment on the recommendation. Replacing UK FFP with imported plasma would reduce the efficiency of blood centres, would significantly increase the amount of plasma that would have to be discarded and would incur new costs for hospitals, which would need to source commercial plasma.

**4. UK Blood Services**

One separate option for reducing the theoretical risk of transmission of vCJD is to make use of the fact that the UK food chain was declared to be completely free of contamination by vCJD in 1996. Therefore, all UK residents born after 1996 should have a near zero risk of infectivity. As blood donors can donate after the age of 17 years, in 2013 it should be possible to collect blood that is used for transfusion to at risk groups (patients born after 1996, and multi-transfused patients), mitigating the theoretical risk of transmission. SaBTO has yet to formally consider the epidemiological evidence that could lead to a recommendation. The UK Blood Services are calling this concept "Club 96". No feasibility study has yet been undertaken, but the likelihood is that although there would be set-up costs, the recurring costs for the Blood Services would be low compared to universal testing or filtration.
ANNEX 1

ANNUAL QUALITY FRAMEWORK 2011/12