

Outline Business Case: 2020 New Velindre Cancer Centre

Strategic Case

STRATEGIC CASE

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1 ORGANISATIONAL OVERVIEW

Introduction

1.1 The purpose of this section is to:

- Provide an overview of Velindre University NHS Trust (the Trust) and Velindre Cancer Centre; and to
- Summarise the role of the Velindre Cancer Centre in delivering non-surgical specialist cancer services to the population of South East Wales.

Velindre University NHS Trust

1.2 The Trust has evolved significantly since its establishment in 1994 and is operationally responsible for the management of the following two divisions:

- Velindre Cancer Centre; and
- Welsh Blood Service.

1.3 The Trust is also responsible for hosting the following organisations on behalf of the Welsh Government (WG) and NHS Wales:

- NHS Wales Informatics Service (NWIS);
- NHS Wales Shared Services Partnership (NWSSP); and
- Health Technology Wales (HTW).

Velindre Cancer Centre

1.4 Velindre Cancer Centre is located in Whitchurch on the North-West edge of Cardiff and is one of the ten largest regional clinical oncology centres in the United Kingdom (UK Radiotherapy Equipment Survey, 2008) and the largest of the three centres in Wales.

1.5 The Trust is the sole provider of non-surgical specialist cancer services to the catchment population of 1.5 million across South East Wales, from Chepstow to Bridgend and from Cardiff to Brecon. Velindre Cancer Centre employs around 700 members of staff and has approximately 70 volunteers who provide a range of 'added value' roles across the centre.

1.6 The Trust also works in partnership with a wide range of third sector and charity organisations to deliver high quality cancer care and undertake clinical research. Partners include:

- Voluntary sector;
- Third sector;
- Higher Education Institutions (HEIs); and
- Industry/Commercial Partners.

Cancer Services in Wales

- 1.7 The planning and delivery of cancer services in Wales is the responsibility of the seven Health Boards (HBs) as part of their statutory responsibility to meet the health needs of the populations they serve. The HBs are supported by the Welsh Health Specialist Services Committee (WHSSC), which commissions specialist cancer services on their behalf.
- 1.8 The seven HBs in Wales are:
- Aneurin Bevan University Health Board;
 - Betsi Cadwaladr University Health Board;
 - Cardiff and Vale University Health Board;
 - Cwm Taf Morgannwg University Health Board;
 - Hywel Dda University Health Board;
 - Powys Teaching Health Board; and
 - Swansea Bay University Health Board.
- 1.9 The HBs also work in partnership with the All Wales Cancer Network, NHS Trusts, Community Health Councils, Voluntary Organisations and Public Health Wales.

Figure 1-1: Map of Local Health Boards across Wales



The Cancer Pathway

- 1.10 The delivery of cancer services across Wales generally conforms to a well-defined pathway of care which includes the following five key stages:

Table 1-1: The Cancer Pathway

Cancer Prevention: Enhancing public awareness and education to make informed decisions about lifestyle choices that promote a healthy, cancer free population.
Cancer Diagnosis: Cancer can be identified through a National Screening Programme or where cancer symptoms are identified by the patient/health care professional. If cancer is suspected the patient is assessed by a multi-disciplinary team in the Health Board (often supported by Velindre Cancer Centre staff) and cancer may be diagnosed.
Treatment: The treatment options for every patient are discussed and considered by multi-disciplinary teams (MDTs). The treatment options include surgery, non-surgical treatment e.g. Radiotherapy or Systemic Anti-Cancer Therapy (SACT), a combination of these treatments and supportive care. Care often straddles organisational boundaries.
Recovery/Follow Up: Regular follow up appointments are important to monitor recovery, manage and reduce the after effects of treatment and to ensure any signs of cancer relapse/recurrence are identified at their earliest stage.
End of Life Care: Sadly, not all patients survive cancer – openness about the need to plan end of life care is essential. A focus on living and dying well, early identification of needs and access to fast, effective palliation are important to reduce distress for both the patient and their family.

Scope of Service Provision

- 1.11 Velindre Cancer Centre is responsible for the delivery of non-surgical treatment, recovery, follow-up and end of life care. Following their specialist cancer treatment, Velindre Cancer Centre supports patients during their recovery and through follow up appointments. A significant proportion of Outpatient and SACT activity is already delivered in HB settings by Velindre Cancer Centre staff. However, all Radiotherapy activity is currently delivered at the Velindre Cancer Centre.

Services provided by Velindre Cancer Centre

- 1.12 Specialist teams provide care using a well-established 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 in line with best practice standards of care.
- 1.13 The range of services delivered by Velindre Cancer Centre includes:
- Radiotherapy;
 - Systemic Anti-Cancer Therapies (SACTs);
 - Inpatients;
 - Ambulatory care;
 - Outpatient services;
 - Pharmacy;

- Diagnostics (specialist radiology);
- Radiology and Nuclear Medicine;
- Specialist Palliative care;
- Acute Oncology Service (AOS);
- Living with the impact of cancer;
- Education and Learning; and
- Research, Development and Innovation.

1.14 The following patient services are delivered away from the Velindre Cancer Centre in HB settings:

- SACT delivery;
- Outpatient reviews;
- Inpatient reviews;
- Health Board MDTs; and
- Research and Education.

Current Service Performance

1.15 The Trust has developed a wide range of metrics which are routinely used to monitor the quality and performance of core services provided by VCC. Appendix OBC/SC1 summarises VCC performance against these metrics over the last four years. The data demonstrates that the Trust performs well against the majority of core performance targets. In summary during 2016-17:

- The Trust achieved its target of seeing 100% of people referred for emergency radiotherapy within two days;
- The Trust achieved its waiting time targets for people referred for radical and palliative radiotherapy;
- The Trust achieved its waiting time targets for emergency and non-emergency SACT;
- The Trust reported zero cases of MRSA; and
- 85% of patients rated their overall experience of services as being nine out of ten and above.

Benchmarking of Service Performance

1.16 Whilst benchmarking data is routinely captured for many sectors of the health service there is no established benchmarking framework within the UK for tertiary cancer services. This has resulted in a lack of easily accessible data for tertiary cancer services and has consequently made it difficult for VCC to benchmark its own performance against other Cancer Centres’.

1.17 In recognition of this, VCC led a benchmarking exercise during 2016/17 with a number of leading Cancer Centres from across the UK. A report summarising the approach and outputs of this benchmarking exercise is attached as Appendix OBC/SC2.

2 STRATEGIC CONTEXT

Introduction

- 2.1 This section of the Outline Business Case (OBC) summarises the strategic context for the new Velindre Cancer Centre (nVCC) Project.

Strategic Context in Wales

- 2.2 The Welsh Government has published a wide range of national strategies which provide the framework for the planning and delivery of public services in Wales. These are supported by a range of policies, frameworks and guidance which relate more specifically to health and social care.
- 2.3 In addition, the Trust continually scans the environment at a population, national, regional and local level to develop our knowledge and intelligence on key issues, which we need to take account of in the strategic planning and delivery of services. We use the Sustainable Development Principles as the basis for our horizon scanning.

Figure 2-1: A Summary of the Strategic Context for Velindre University NHS Trust



- 2.4 The core themes running through the strategic framework within NHS Wales are summarised as:
- Sustainability as the fundamental principle of public services;
 - Putting citizens and patients at the centre of service design and delivery;

- Developing a new relationship with citizens and patients based upon the principles of prudent health and co-production;
- Providing services of the highest quality which meet the needs of individuals consistently;
- Improving the quality of services;
- Delivering outcomes which are comparable with the best elsewhere;
- Reducing all avoidable waste, harm and variation;
- Providing care at home or within the local community wherever and whenever possible;
- Using resources in a sustainable way;
- Treating people individually with dignity and respect;
- Ensuring that every Welsh pound is spent efficiently and effectively; and
- Providing a first class experience for everyone who uses services.

2.5 The TCS Programme Business Case (PBC) outlines the strategic context for the Transforming Cancer Services Programme and describes how the Programme is central to the Trust's ability to deliver key national and local strategic objectives, especially in relation to those outlined in the following strategic documents:

- Well-being of Future Generations (Wales) Act (2015);
- A Healthier Wales: Our Plan for Health and Social Care;
- Prudent Healthcare: Securing Health and Well-being for Future Generations;
- Together for Health – Cancer Delivery Plan; and
- The Velindre University NHS Trust Cancer Strategy.

Note: *It has been agreed with commissioners, through the collaborative scrutiny process, that the PBC is extant and for contextual understanding only. However, the PBC will remain a 'live' document, which will be updated at key milestones in the Programme.*

2.6 At the heart of the TCS Programme is the delivery of a patient centred service model that will allow the Trust to provide sufficient capacity to deal with growing and changing demand for services, whilst improving clinical outcomes for the population of South East Wales.

2.7 This Outline Business Case (OBC) will provide the case for a nVCC to replace the existing Velindre Cancer Centre. The nVCC will provide a hub to deliver the majority of specialist non-surgical cancer services for South East Wales. As such, it is critical to the delivery of the overall Programme and is therefore aligned to the wider healthcare strategic context, at both a local and national level.

3 EXISTING ARRANGEMENTS

Introduction

- 3.1 The purpose of this section of the business case is to:
- Describe the current service delivery arrangements for the services covered within the scope of the nVCC Project; and to
 - Provide a description of the existing Velindre Cancer Centre estate and supporting infrastructure.
- 3.2 Providing a summary description of the current service delivery arrangements and the existing Velindre Cancer Centre estate provides the baseline for identifying business needs and for measuring future improvements. The difficulties associated with existing arrangements are explored further in Section 4, the Business Needs of the Project.

Service Delivery Arrangements

- 3.3 The Trust delivers specialist non-surgical cancer services to a catchment population of 1.5 million people using a hub and spoke service model. Services are currently provided across South East Wales from one of two main treatment locations:
- **Velindre Cancer Centre:** The hub of the Trust's specialist cancer services is a specialist treatment, training, research and development Centre for non-surgical oncology; and
 - **Outreach Centres:** Some services are delivered on an outreach basis within facilities across South East Wales, including District General Hospitals and from patients' own homes.
- 3.4 Patients are referred to Velindre Cancer Centre for treatment by the following routes:
- Following referral by a GP to the relevant HB; or
 - Following presentation as an emergency at an A&E department.
- 3.5 Prior to referral to Velindre Cancer Centre, all patients will have been investigated and diagnosed with a solid tumour. Some patients may have already undergone surgery. Velindre Cancer Centre's role is to deliver specialist and tertiary cancer treatment until the patient can be referred back to their host HB for ongoing treatment, management, and follow-up. An overview of the core services delivered by the Trust at the Velindre Cancer Centre and the existing functional capacity of the Velindre Cancer Centre e.g. number of inpatient beds, is provided in Table 3-1.

Table 3-1: Core Services Delivered by Velindre Cancer Centre

Service	Overview	Velindre Cancer Centre	Functional Content (February 2020 Pre-COVID)
Outpatients	<ul style="list-style-type: none"> Outpatient services include consultation, examination, follow-up, SACT assessment, phlebotomy, psychology, clinical trials, therapy services and specialist palliative care. 	<ul style="list-style-type: none"> Outpatient clinics are held five days a week. Outpatient clinics are distributed across morning and afternoon sessions (2 sessions a day). 	<ul style="list-style-type: none"> Velindre Cancer Centre has 26 Outpatient consultation rooms.
Radiotherapy	<ul style="list-style-type: none"> Radiotherapy services include radical, palliative and emergency planning and treatment, brachytherapy, chemo-radiotherapy and radiotherapy research. 	<ul style="list-style-type: none"> The radiotherapy provides core services for 9.5 hours per day, 5 days per week. The service provides an emergency service at weekends. 	<ul style="list-style-type: none"> Velindre Cancer Centre has 8 Linear Accelerators (Linacs).
Systemic Anti-Cancer Therapies	<ul style="list-style-type: none"> SACT services cover a range of biological therapies and cytotoxic chemotherapies. SACT services include: <ul style="list-style-type: none"> Intravenous, oral and subcutaneous treatments; Research including early and late phase trials; and Stratified, targeted and personalised treatments and vaccine therapies. 	<ul style="list-style-type: none"> The SACT service operates Monday to Friday between 08:00 – 18:00 hrs. 	<ul style="list-style-type: none"> Velindre Cancer Centre has 19 SACT chairs across two units.
Inpatients	<ul style="list-style-type: none"> Inpatient services cover elective and non-elective admissions including: <ul style="list-style-type: none"> Elective SACT admissions; Toxicity management of SACT; Outpatients requiring hydration prior to treatment; and Patients receiving Radiotherapy and SACT treatments. 	<ul style="list-style-type: none"> The inpatient service operates a 7 day/24 hour service. 	<ul style="list-style-type: none"> Velindre Cancer Centre has 47 Inpatient beds and 2 isolation beds.

Independent Advice on the Clinical Model

- 3.6 The Nuffield Trust has provided independent advice on the clinical model underpinning its planned changes to Velindre's cancer services contained in its Transforming Cancer Services programme.
- 3.7 The planned model includes delivering more care within patients' homes; development of a number of Velindre@ facilities on Local Health Board sites across South East Wales, providing chemotherapy, outpatient and support services; a radiotherapy satellite centre in Nevill Hall Hospital, Abergavenny; and the redevelopment of the Velindre Cancer Centre on a new site known locally as the 'Northern Meadows' in North Cardiff.
- 3.8 The review will assess the proposals for the planned changes to non-surgical tertiary cancer services across South East Wales and clinical concerns raised about plans to build the new Velindre Cancer Centre on the proposed site.
- 3.9 The full review is reported under separate cover and is a supporting paper to the nVCC OBC.

Activity Levels

- 3.10 An analysis of current activity levels for core services is provided in Table 3-2. This is based on activity levels during the calendar year 2019, which is the most recent activity data available at the time of Business Case submission and is pre-COVID.

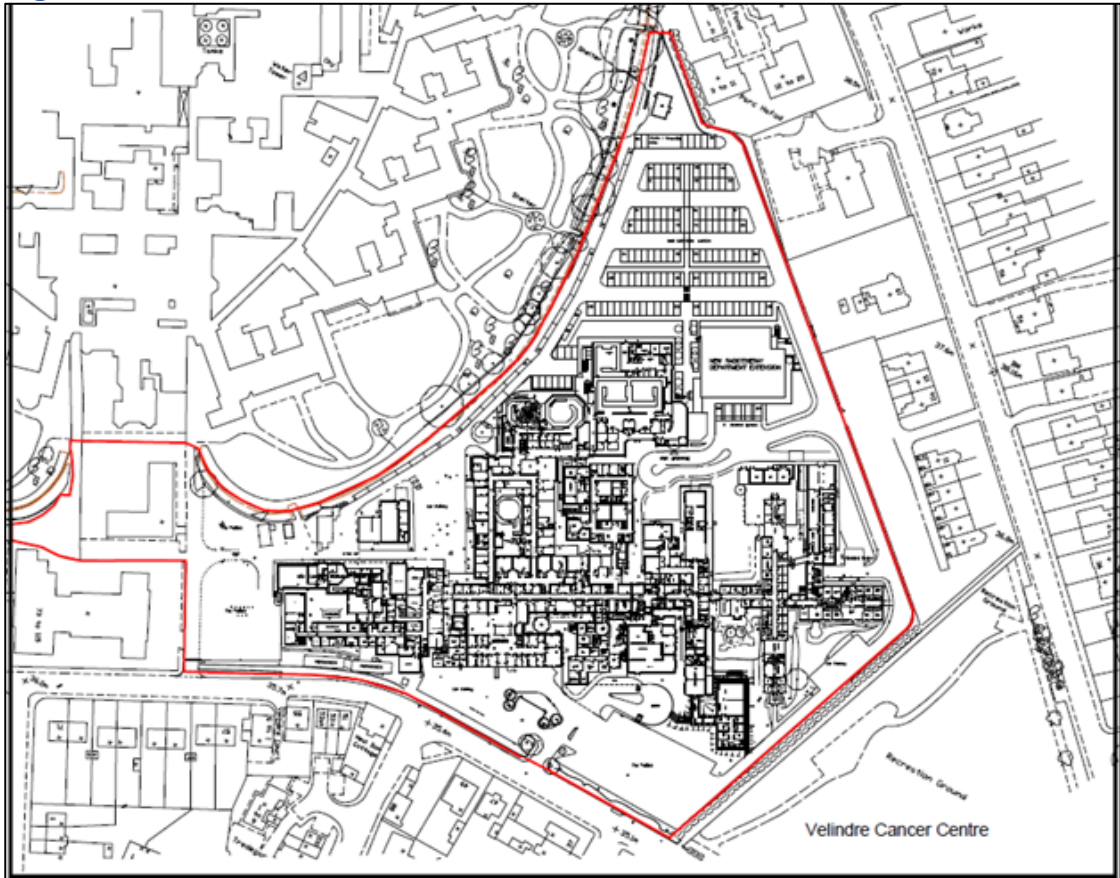
Table 3-2: Activity levels (2019)

Service	Type of activity	VCC 2016-17	VCC 2019	Annual Growth %
Radiotherapy	Fractions	51,915	55,714	2%
SACT	Attendances	22,552	26,311	6%
Inpatients	Admissions	2,008	2,372	6%
	Bed days	10,391	8,282	-7%
Outpatients	Attendances	60,568	67,399	4%

Velindre Cancer Centre Infrastructure

- 3.11 Velindre Cancer Centre was built in 1956 and in the intervening period has been subject to extension and redevelopment. It consists of traditional build, single and two storey accommodation. The current site plan is provided below.

Figure 3-1: Current Velindre Cancer Centre Site Plan



- 3.12 Approximately 30% of the estate pre-dates 1964 in terms of its construction. This is evident in the value of current backlog maintenance recently recorded in the all Wales Estate Facilities Performance Management System (EFPMS). The definition of condition in terms of backlog can be identified as:

- **Condition A:** as new and can be expected to perform adequately to its full normal life;
- **Condition B:** sound, operationally safe and exhibits only minor deterioration;
- **Condition C:** operational but major repair or replacement is currently needed to bring up to condition B;
- **Condition D:** operationally unsound and in imminent danger of breakdown; and
- **Condition X:** supplementary rating added to C or D to indicate that it is impossible to improve without replacement.

Table 3-3: Backlog Maintenance Position (as at April 2020)

Measure	Unit	Value
Cost to eradicate High Risk Backlog	£	85,013
Cost to eradicate Significant Risk Backlog	£	1,623,329
Cost to eradicate Moderate Risk Backlog	£	4,740,688
Cost to eradicate Low Risk Backlog	£	2,496,082
Risk Adjusted Backlog Cost	£	1,875,521
Cost to achieve Physical Condition B	£	1,257,583
Percentage of total occupied floor area in physical condition C plus D	%	35
Cost to achieve Statutory Health and Safety Compliance Standard B	£	113,121
Cost to achieve Fire Safety Compliance Standard B	£	98,632
Percentage of patient occupied floor area not in Statutory Health and Safety compliance	%	5
Percentage of patient occupied floor area not in Statutory Fire Safety compliance	%	5
Cost to eradicate High Risk Backlog	£	85,013

- 3.13 From the previous EFPMS submission, the cost to eradicate high risk and significant risk backlog has decreased. This is due to the moderate capital investment associated with water infrastructure, at the Velindre Cancer Centre. Over 90% of the Estate fire safety is being managed within category B, a very similar position as the previous year. Risk Adjusted Backlog has also shown a small decrease, since 2015/16. It must be stated that the overall condition of the building is condition B. However, space availability and site restrictions prevent future investment from achieving spatial compliance or functional suitability without considerable investment and disruption to the existing facilities and surrounding community.
- 3.14 To achieve and maintain overall Physical Condition B investment has increased from £0.735m in 2012/13 to £1.3m in 2020-21. This represents a 71% increase over this time frame.

Velindre Cancer Centre Footprint

- 3.11 The existing Velindre Cancer Centre has a footprint of approximately 18,000m² as summarised in Table 3-4.

Table 3-4: Existing Velindre Cancer Centre Footprint (February 2020 Pre-COVID)

Functional Area	m ²
Radiotherapy	5,126
Inpatients	1,879
SACT & Ambulatory Care	1,024
Outpatients & Therapies	1,280
Imaging and Nuclear Medicine	1,069
Pharmacy	637
Hospital Clinical / Non Clinical Administration & Support Services	4,369
Hospital Education, Training and Associated Support Services	349
IM&T	144
SPR & On Call	12
Staff Facilities	299
Mortuary	47
Catering & Restaurant	377
Hospital Main Entrance	581
Central FM Areas	583
Total Gross	17,777

Major Medical Equipment

- 3.15 The delivery of non-surgical cancer services is dependent upon having access to a range of Major medical equipment. This is essential to support the safe and effective delivery of patient care. All Major medical equipment which is currently operational at the Velindre Cancer Centre, and which has a unit value of [REDACTED] is summarised in Table 3-5.

Table 3-5: Summary of Major Medical Equipment - Existing Cancer Centre

Department	Equipment	Total
Radiotherapy	Linear Accelerators	8
Radiotherapy	CT Simulators	2
Radiotherapy	Brachytherapy System	1
Radiology	MRI Scanner	1
Radiology	CT Scanner	1
Radiology	Imaging Systems (Plain Film/Fluoroscopy System)	2
Nuclear Medicine	Gamma Camera	1

4 BUSINESS NEEDS

Introduction

- 4.1 A detailed description of the case for change at a pathway or system level i.e. the need for a South East Wales Programme-based approach is provided in Appendix OBC/SC3. However, and given the scope of the nVCC Project, this OBC will focus on the case to replace the existing Velindre Cancer Centre.

Infrastructure Deficiencies: Overview

- 4.2 Velindre is widely acknowledged as providing high quality, patient focussed cancer services through a compassionate and caring culture where staff consistently go the 'extra mile' to meet the needs of patients.
- 4.3 However, the current Velindre Cancer Centre infrastructure is making it increasingly difficult to maintain this high standard of care, particularly in relation to patient and staff safety and welfare, and in relation to patient privacy and dignity. The following section of the Business Case focuses on the deficiencies of the existing Velindre Cancer Centre and the key factors influencing the need to replace the existing Velindre Cancer Centre.

The Existing Patient Environment at the Velindre Cancer Centre is Sub-optimal and does not Promote Patient Recovery and Well Being

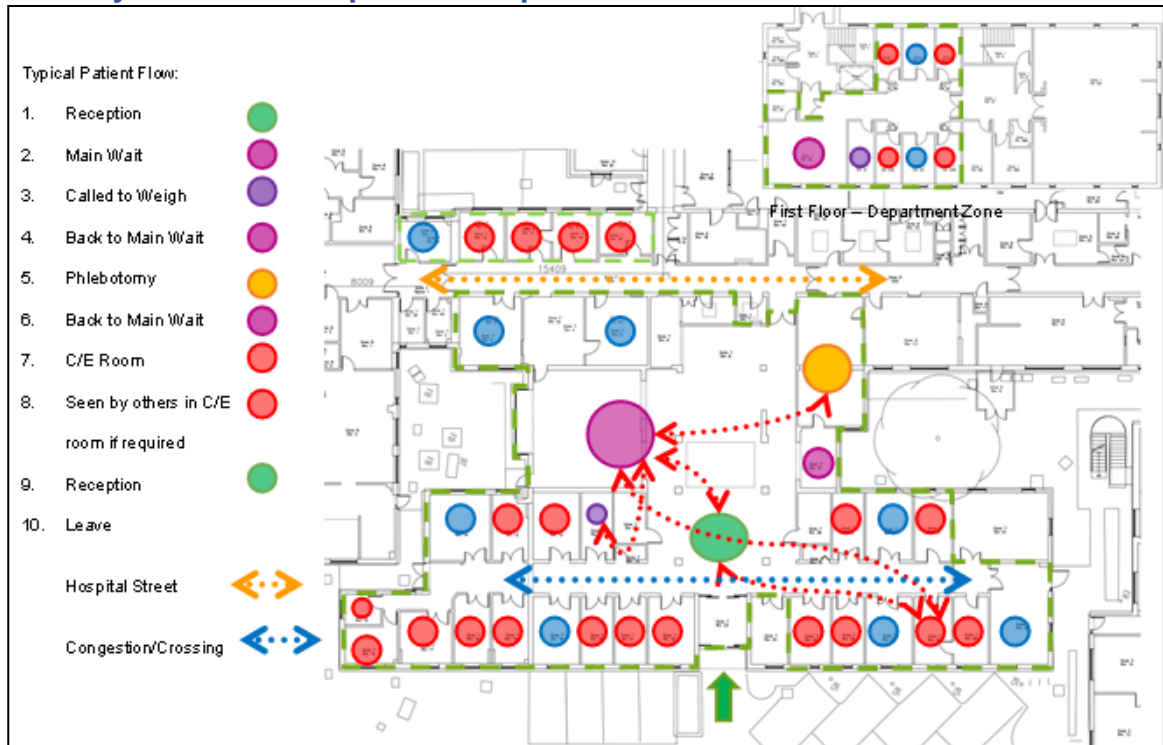
- 4.4 It is widely recognised that the physical environment at the Velindre Cancer Centre is not fit-for-purpose and is not appropriate for providing high quality, patient centre services.
- 4.5 Table 4-1 provides an overview of the asset profile for the current Velindre Cancer Centre. This demonstrates that there has been little modernisation in the existing infrastructure over recent years. This has led to a reduction in the quality of the patient environment and subsequently in the overall patient experience.

Table 4-1: Overview of the Asset Profile

Age and Asset Profile	%
Age Profile - 2005 to present	14
Age Profile - 1995 to 2004	18
Age Profile - 1985 to 1994	22
Age Profile - 1975 to 1984	6
Age Profile - 1965 to 1974	12
Age Profile - 1955 to 1964	29
Age Profile - 1948 to 1954	0
Age Profile - pre 1948	0

- 4.6 The current estate has also been extensively developed over its lifecycle. This has been in incremental fashion and without a 'development control plan'. This has left the Velindre Cancer Centre with a number of 'add-ons' leading to deficiencies in circulation and service adjacencies, which are not consistent with current health care design standards and efficient means of patient care. For example, Figure 4-1 illustrates the current poor adjacency between the current pharmacy and outpatients department. These would ideally be immediately adjacent to each other.

Figure 4-1: Example of a Typical Inefficient and Inconvenient Patient Journey within the Outpatients Department at the Velindre Cancer Centre



- 4.7 The example provided, which is replicated across the hospital, shows that:

- There is no separation between patients, visitors, staff and external workers;
- There are multiple crossovers in terms of the movement of patients, visitors, staff and goods. This provides a poor patient and visitor experience, is inefficient for staff and provides a potential safety risk;
- The adjacencies of services are inappropriately located and this results in poor service flow and workforce inefficiencies;
- The locations of those services, which a patient may need to access, are sub-optimal. Patients are required to make multiple journeys to access such services e.g. to be weighed, and
- The main entrance to the outpatient department is located immediately outside a doctor's consultation room.

- 4.8 Examples of the infrastructure deficiencies across the Velindre Cancer Centre estate are provided from Figure 4-2 through to Figure 4-4.

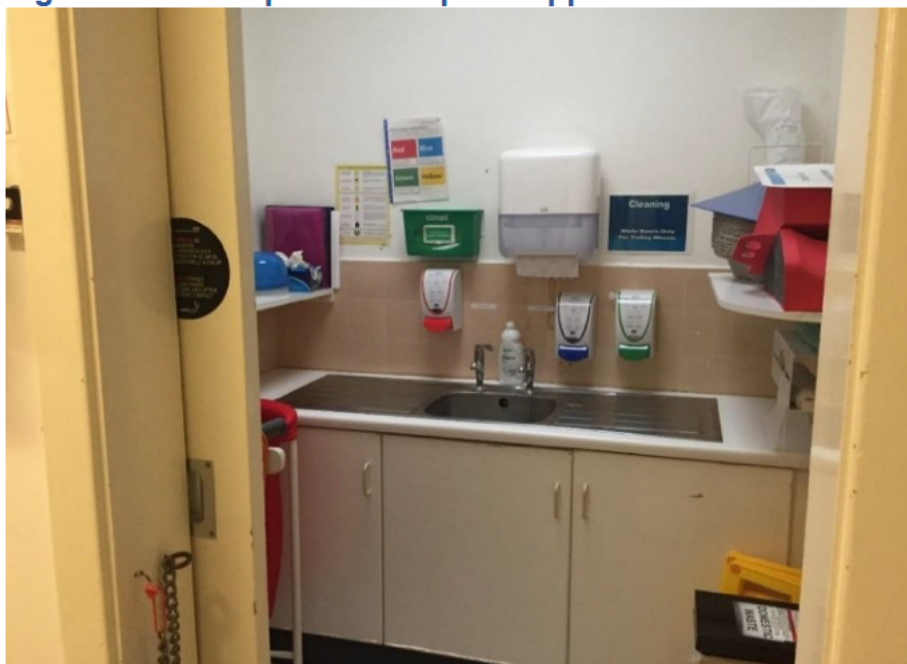
Figure 4-2: Example of Narrow Circulation Space



Figure 4-3: Example of Crossover of Patient and Working Areas



Figure 4-4: Example of Cramped Support Accommodation



- 4.9 Another major challenge for the Velindre Cancer Centre site relates to car parking. Table 4-2 identifies the current allocation of parking 'on site'.

Table 4-2: Parking Arrangements (as at February 2020 Pre-COVID)

Type of Parking Space	No of spaces
Visitor/patients spaces	165
Emergency vehicle parking spaces	4
Visitor Cycle parking	10
Staff parking spaces	176
Consultant parking spaces	25
Staff Cycle parking	25
Total	405

- 4.10 The Trust's Technical Advisors have recently undertaken a traffic analysis based upon existing activity levels. This demonstrated that the Trust has a significant shortfall in the availability of both patient and staff car parking.

Summary – Infrastructure Deficiencies

- 4.11 In summary, the main physical challenges related to the patient environment include the following:
- 100% of the current inpatient accommodation is well below the required standard for modern healthcare.

- There is no overnight accommodation available for families and visitors.
- The majority of circulation routes are too narrow for the volume of traffic and patients and staff/families have to stand tight to the wall in the main corridor if a trolley or wheelchair is passing, as there is insufficient room for two-way traffic.
- Patients, staff and services have to cover large distances due to the poor adjacencies that have resulted from piecemeal design and developments e.g. the pharmacy department at the furthest point away from the outpatients department.
- The main outpatient reception area is located in direct visual line with a vast number of consultant rooms leading to privacy issues during consultation/treatment.
- The relatively short distances between patient waiting areas and clinical areas presents difficulties when communicating sensitive or confidential information.
- The hot and cold-water infrastructure across the estate is insufficient and there is no spare capacity to accommodate any increases in demand for services.
- The current backup power generation resilience of the site is insufficient and only covers approximately 55% of the site, mainly clinical areas, but excluding the Linac treatment machines.
- The existing working environment often causes staff to make compromises as they deliver care. For example, using smaller hoists in patient rooms due to the limited space.

4.12 The facilities also present a range of challenges for patients and families:

- The facilities do not always provide patients with their basic and fundamental needs e.g. the showers on the 1st floor ward are shared.
- Patient dignity is compromised due to the lack of space and privacy for inpatients. For example, there is little space between beds on the first floor. There is a similar picture for outpatients where the design of the consulting rooms does not allow for total privacy.
- The majority of the inpatient, outpatient and therapies environment is not synonymous with a Cancer Centre that supports well-being and healing.
- There is insufficient car parking available for patients and their families. This results in patients having long waits on occasions trying to find a space to park. This causes additional stress during what can already be a challenging time for patients and families and at worst can result in patients being late for their appointments.

A High Proportion of the Accommodation at the Existing Velindre Cancer Centre is Non-Compliant with Statutory Requirements

4.13 VCC has a strong track record in providing safe services. This is at the forefront of everything we do, with a relentless focus on the continuous reduction of harm and unnecessary variation in clinical practice and care. One of the greatest

risks to providing safe services is the current patient environment across the Velindre Cancer Centre.

- 4.14 With the age, design and construction of the current Velindre Cancer Centre accommodation, the trend appears to be one of increasing challenges to sustain a safe patient and staff environment given the limited Welsh Capital investment available.
- 4.15 If the Velindre Cancer Centre is to maintain standards for the longer term, it will not only need the major arteries of infrastructure to be upgraded and/or replaced, but also the secondary, more localised infrastructure. There are many risks associated with these works. Phasing, decant and isolation issues will have a major impact on patient care and experience. With limited space, decant facilities are not guaranteed to be on the Velindre Cancer Centre site. With this in mind, the feasibility of this would need to be assessed.
- 4.16 The performance in terms of functional suitability and space utilisation has generally been maintained at status quo over the last three years. However, this does not identify key areas of concern in relation to non-compliance against Health Building Notes (HBN).
- 4.17 It is evidenced that approximately 75% of the existing estate does not comply with current space standards. As an example existing outpatient consultation rooms range from as low as 9m² compared to guidance, which identifies a 16m² requirement.
- 4.18 To demonstrate and evidence the high-level 'non-compliance' of the existing Velindre Cancer Centre, the Trust undertook a comparative sizing exercise. This involved comparing the current hospital footprint against the required footprint for a new hospital as if it was built in compliance with HBNs and current relevant standards. This analysis showed that the footprint of the existing Velindre Cancer Centre would increase from the current footprint of 17,777m² to circa 28,000m² if it was built today on a 'like for like' basis i.e. same functional content e.g. number of inpatient beds. This analysis, which is summarised in Table 4-3, has been presented to, and validated by, NHS Wales Shared Services and WG Officers.

Table 4-3: Comparison of the Existing Velindre Cancer Centre Footprint versus a New Build Velindre Cancer Centre on an Equivalent Basis

Functional Area	Current VCC (m ²)	VCC built 'in line' with HBNs
Radiotherapy	5,126	8,046
Inpatients	1,879	3,183
SACT & Ambulatory Care	1,024	1,873
Outpatients & Therapies	1,280	1,720
Imaging and Nuclear Medicine	1,069	1,840
Pharmacy	637	1,106
Hospital Clinical / Non Clinical Administration & Support Services	4,369	4,491
Hospital Education, Training and associated Support Services	349	497
IM&T	144	439
SPR & On Call	12	91
Staff Facilities	299	891
Mortuary	47	171
Catering & Restaurant	377	1,022
Hospital Main Entrance	581	1,380
Central FM Areas	583	1,360
Total Gross	17,777	28,110

4.19 In many cases, there is poor quality accommodation, inadequate, non-compliant facilities and a lack of basic patient amenities, which seriously compromises patient confidentiality, privacy, and dignity, which is to the detriment of patient experience.

4.20 The current arrangements result in a number of major constraints:

- The vast majority of the site accommodation does not comply with current HBN guidance;
- The outpatients department has insufficient space to facilitate the implementation of digital check in;
- Providing effective infection control is more difficult due to the lack of space within the inpatient wards and the high bed utilisation rates;
- There are a lack of adequate showers and toilet facilities within current inpatient areas;

- The existing showers and toilet facilities are in sub-optimal locations across inpatient areas;
- The fabric and materials contained within areas of high infection risk such as showers and toilets are often not in line with best practice;
- The isolation areas in the hospital are inadequate;
- The inpatient ward layout is sub-optimal as it incorporates a number of cubicles which are not easily visible to staff when monitoring patients;
- The inpatient rooms on the first floor are well below the requirements of HBNs and this makes it more difficult for nurses to assist patients in and out of bed using hoists for example;
- The corridors within the hospital are narrow and it is not easy to move around the hospital, thus increasing the risk of slips and falls; and
- Water quality and distribution within the Velindre Cancer Centre has inadequacies and pose serious risk of increased legionella counts, which could have serious consequences for immuno-compromised patients.

4.21 There are arrangements in place to manage the risks identified above in a safe manner. However, it may not be possible to maintain the current high levels of safety as demand for services increase over time and as the building and supporting infrastructure gets older and more difficult to maintain.

4.22 Current backlog maintenance costs equate to £2.2m, (2016/17 EFPMS figures). Although, this investment would bring the current estate up to condition B (Estate Code), it does not reflect the significant investment needed to provide facilities to current National standards, nor does it reflect the expansion of the existing site footprint that would be needed to facilitate these works. It is not feasible for the current site to provide the required level of expansion whilst maintaining adequate and appropriate services.

There is No Space to Expand on the Existing Velindre Cancer Centre Estate

4.23 It is evident from the clinical growth assumptions (see Appendix OBC/SC4) that the Velindre Cancer Centre needs to have sufficient capacity to meet forecast increases in demand. However, the options for expanding on the existing estate are severely limited. The site is landlocked by building and infrastructure owned by the Trust, which renders any expansion of the site boundary unviable. The only possible option for expansion would be onto the staff and patient car park but this has been discounted, as it would impact on an already sub-optimal parking facility.

4.24 This therefore represents a very immediate and high risk issue for the Trust given the current pressure on the system. This is compounded by the anticipated growth in demand for services. While planning is underway to mitigate capacity limitations in the short term, it is imperative that a long-term solution is established urgently. Without significant transformation, the Velindre Cancer Centre faces a very immediate and high risk in our ability to continue to deliver services and to maintain current performance levels.

5 KEY SERVICE AND CAPACITY REQUIREMENTS

Introduction

5.1 The purpose of this section is to:

- Summarise the methodology which has been applied for forecasting future capacity requirements at the nVCC; and to
- Provide an overview of the service and capacity requirements in relation to the following:
 - The building footprint;
 - The functional requirements; and
 - The Major Medical equipment requirements.

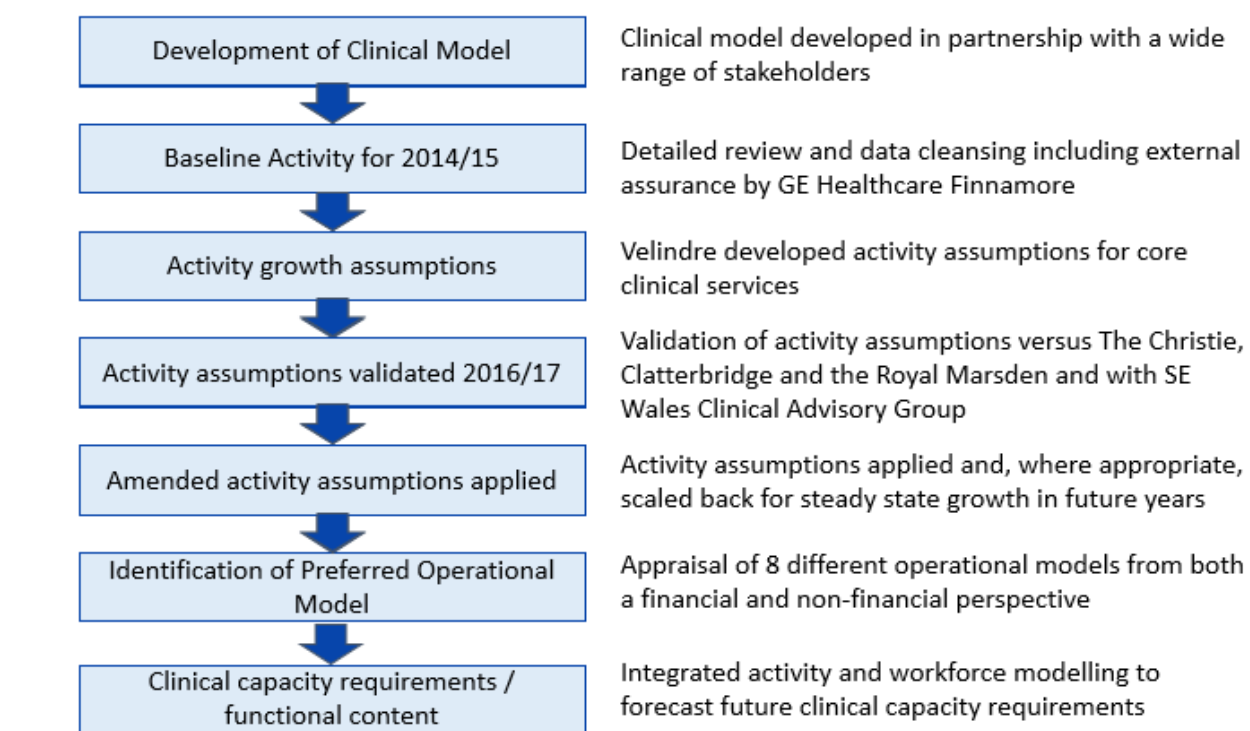
Modelling Future Capacity Requirements

5.2 The Trust has developed a comprehensive activity model to forecast future capacity requirements for the nVCC. 2016/17 has been used as the baseline activity year for the model. The 2016/17 data set has been subject to rigorous review, including external validation, to ensure the accuracy of the data.

5.3 The functionality of the model has been subjected to quality assurance tests by the Trust's Technical Advisors, by GE Healthcare Finnamore and by the Trust's Programme Team.

5.4 A summary of the process followed in forecasting future capacity requirements is shown in Figure 5-1 (see Appendix OBC/SC5 for full methodology).

Figure 5-1: Methodology for Forecasting Future Capacity Requirements



Clinical Growth Assumptions

- 5.5 The Trust has developed a set of clinical growth assumptions for its core services. These clinical growth assumptions have been developed in partnership with clinical colleagues from across South East Wales and are informed by cancer incidence projections provided by the Welsh Cancer Intelligence and Surveillance Unit (WCISU).
- 5.6 The assumptions, following the availability and validation of 2016/17 activity data, have recently been reviewed by the VCC Senior Management Team and by the VCC service and clinical leads respectively. The main output of this review was a reduction in assumed growth rate for Radiotherapy from 4% to 2% between 2016/17 and 2022/23.
- 5.7 The clinical growth assumptions have been approved by the TCS Programme Management Board and by the TCS Programme Clinical Advisory Board.

Table 5-1: Clinical Growth Assumptions for Core Services

Service	Annual Clinical Growth Assumption
	2016/17 - 2022/23
Radiotherapy	2%
SACT	5%
Inpatients	2%
Outpatients and Ambulatory Care	2%
Radiology (CT & MRI) and Nuclear Medicine	9%

- 5.8 In addition, a validation exercise has been undertaken to compare the Trust's clinical growth assumptions against the following Cancer Centres from across the UK.
- The Beatson West of Scotland Cancer Centre;
 - The Clatterbridge Cancer Centre NHS Foundation Trust;
 - The Christie Cancer NHS Foundation Trust;
 - Leeds Teaching Hospital NHS Trust; and
 - The Royal Marsden NHS Foundation Trust.
- 5.9 This validation exercise demonstrated that the Trust's clinical growth assumptions were in line with those from other Cancer Centres across the UK, where comparable data is available.

Preferred Operational Model

- 5.10 The Trust undertook a combined financial and non-financial appraisal (see Appendix OBC/SC6) of a wide range of operational delivery models. The primary objective of this appraisal was to identify the option, which provided best value for money.
- 5.11 Eight different operating scenarios, including the current model, were evaluated by a multidisciplinary group. The different scenarios that were considered included extended working hours as well as five, six and seven day operational models.
- 5.12 The evaluation workshop, which was externally facilitated, was attended by TCS Programme representatives and Clinical Service Leads. The assessment was undertaken based upon:
- A non-financial assessment of options against the Projects Spending Objectives and Critical Success Factors; and
 - A financial (capital and revenue) assessment of options.
- 5.13 The preferred operating scenario (Scenario 8) scored the highest based on a combined non-financial and financial score. This scenario included the following components for core patient services:
- Radiotherapy service – 5 days a week, 9.5 hours a day;
 - 7-day Radiotherapy service for category 1 emergency patients and for urgent palliative patients;
 - Outpatient service – 5 days a week, 2 sessions a day;
 - SACT service – 5 days a week, 12 hours a day; and
 - Inpatient service – 7 days a week, 24 hours a day

Forecast Capacity Requirements

- 5.14 Following the activity and capacity modelling process outlined above, the Trust has been able to establish its core capacity requirements, referred to hereafter as the 'Do Minimum' requirements, in relation to:
- Building footprint requirement for the nVCC;
 - Functional content requirements e.g. number of Inpatient beds, for the nVCC; and
 - Major Medical equipment requirements for the nVCC.

Building Footprint for the New Velindre Cancer Centre – Do Minimum

- 5.15 The activity and capacity analysis has demonstrated that the required building footprint for the nVCC, based upon the Do Minimum service requirements, is 30,689m² compared to the existing Velindre Cancer Centre footprint of

17,777m². This analysis, which is summarised in Table 5-2 has been presented to, and validated by, NHS Wales Shared Services and WG Officers.

Table 5-2: Do Minimum Building Footprint for the New Velindre Cancer Centre

Functional Area	m ²
Radiotherapy	8,090
Inpatients	3,534
SACT & Ambulatory Care	2,067
Outpatients & Therapies	2,034
Imaging and Nuclear Medicine	2,073
Pharmacy	1,518
Hospital Clinical / Non Clinical Administration & Support Services	4,726
Hospital Education, Training and associated Support Services	669
IM&T	439
SPR & On Call	91
Staff Facilities	1,41
Mortuary	171
Catering & Restaurant	1,022
Hospital Main Entrance	1,855
Total Gross	30,689

Functional Content Requirements for the New Velindre Cancer Centre – Do Minimum

- 5.16 The activity and capacity analysis has demonstrated the following Functional Content requirements for core service delivery at the nVCC, based upon the Do Minimum service requirements. Table 5-3 summarises these requirements compared against functional capacity, which is currently available at the existing Velindre Cancer Centre (Feb 2020 Pre-COVID).

Table 5-3: Functional Content Requirements for Core Services within the New Velindre Cancer Centre

Department	Existing (Feb 2020 Pre-COVID)	nVCC	Variance
Radiotherapy Linear Accelerators	8	8	0
Outpatient Consultation Rooms	26	28	+ 2 rooms
SACT Chairs	19	16	- 3 chair
Inpatient Beds	49	50	+ 1 beds

Note: Inpatient beds reflects capacity that is subject to the confirmation of the clinical model but could represent 'flexible' bed capacity.

Major Medical Equipment Requirements for the New Velindre Cancer Centre – Do Minimum

- 5.17 The activity and capacity analysis has identified the Major Medical equipment requirements for the nVCC, based upon the Do Minimum service requirements. The Major Medical equipment requirements for the nVCC, with a unit value of [REDACTED] compared to Major Medical equipment, which is currently operational at the existing Velindre Cancer Centre (Feb 2019 Pre-COVID) are summarised in Table 5-4.

Table 5-4: Major Medical Equipment Requirements for the New Velindre Cancer Centre

Department	Equipment	Existing (2018)	nVCC	Additionality
Radiotherapy	Linear Accelerator / Treatment Machines	8	8	0
Radiotherapy	CT Simulator	2	2	0
Radiotherapy	Papillon System	0	1	1
Radiotherapy	Brachytherapy System	1	1	0
Radiology	MRI Scanner	1	2	1
Radiology	CT Scanner	1	2	1
Radiology	Imaging System (Plain Film/Fluoroscopy System)	2	2	0
Nuclear Medicine	Gamma Camera	1	1	0
Pharmacy	Robotic Dispensing System	0	1	1

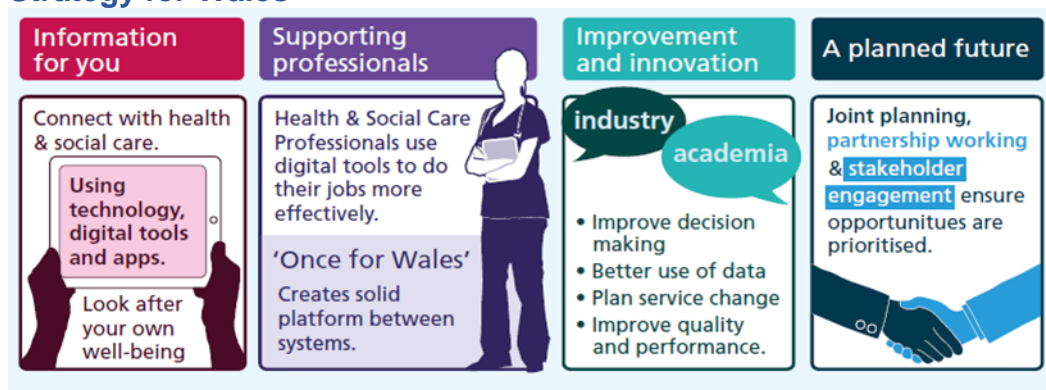
6 DIGITAL VISION OF THE NEW VELINDRE CANCER CENTRE – COGNITIVE BY DESIGN

Adopting a ‘digital first’ philosophy when designing and delivering new services, to promote mobile, flexible, digitally-enabled service & workforce models

Digital Context

- 6.1 The Trust has built a proud history of significant developments in Information Management and Technology (IM&T) systems. These developments have been a combination of national programmes, internationally used systems and bespoke local developments, all of which have enabled the initiation of service transformation for professionals and patients. Velindre must continue to develop its IM&T to support the organisational and clinical priorities. This will ensure that next generation IM&T is used to further enhance service delivery, transformation and patient experience.
- 6.2 As a renowned tertiary centre of excellence for cancer care, Velindre must now focus on a greater integration with the national systems and architecture. The construction of the nVCC necessitates that some existing services will be replaced, some will be refreshed, and some will be remodelled in order to ensure that all services are aligned. At the heart of the informatics vision are the four principles from the “Informed Health and Care: A Digital Health and Social Care Strategy for Wales” (2015).

Figure 6-1: Informed Health and Care: A Digital Health and Social Care Strategy for Wales



- 6.3 The Trust has produced an ambitious strategic programme, “Digital Excellence”, which over the next five years will implement a range of national digital solutions, while growing our capacity and capability to embrace innovative technologies. The nVCC Project will further enhance our ability to realise this ambition, based on the fundamental principle that high quality healthcare in the 21st century can only be delivered by a radical step change in digital thinking.
- 6.4 To this end, the nVCC Project can therefore aim to take a lead on building international partnerships and working in collaboration with NHS Wales

Informatics Service (NWIS) and other Health Boards to develop robust, shared designs for modern health information systems delivered “Once for Wales”. This will allow nVCC to accommodate the latest digital technology, which for the first time will enable patient information to be visible across organisational boundaries within NHS Wales.

- 6.5 The nVCC Project provides Velindre with the opportunity to transform our current working practices, empowering our staff to work in an agile and more effective manner, building new digital relationships with patients, and attracting digital industry partnerships to utilise nVCC as a state of the art centre for digital innovation. It also provides the opportunity for national systems to be developed with a primary focus on sharing information across organisational boundaries, putting patients in control of their care.

Note: A full description of the digital vision for the nVCC is attached as Appendix OBC/SC7.

- 6.6 To support the digital transformation opportunities that the nVCC provides, Velindre commissioned an extensive review of its digital ambition, “Cognitive by Design”, from a digital strategy and transformation consultancy expert, Channel 3.

- 6.7 The requirements of the consultancy were split into three key elements:

- Understanding the Digital Vision and ensuring that it reflects the clinical vision and the needs of all stakeholders (national, local, staff and patients);
- Assessing our approach to implementation in order to ensure that:
 - The procurement reflects our vision;
 - Innovation is at the forefront of our plans; and
 - We have a robust plan for delivery and implementation of a high quality digital service.
- Ensuring that the necessary capacity and capability is in place to support the transformation from procurement through transition, implementation to business as usual.

Note: A full version of the Channel 3 Report is attached at Appendix OBC/SC8

- 6.8 The review process lasted approximately 8 weeks during February and March 2019 and the Channel 3 findings were as follows:

- The **digital vision** aligns with the clinical vision providing clarity in objectives which are generally well understood;
- The **programme plan** is being built on solid foundations; and
- The **skills and capabilities** of the existing team are high.

- 6.9 The Report also identifies opportunities to further strengthen our position going forward. Specifically, in relation to our Radiotherapy Solution Programme Business Case the Channel 3 Report confirms that:

‘The procurement of the new LINACS is being well managed according to best practice. The use of a competitive dialogue process enables value to be driven out of the procurement. The Programme is engaging expert advice to compliment the “in house” expertise available. Engagement with national Advisory Services is efficient and consistent’.

- 6.10 The Channel 3 report identifies a series of recommendations for the TCS project to consider in the future. A detailed response to these recommendations is attached in Appendix OBC/SC9.

7 SPENDING OBJECTIVES

Introduction

- 7.1 The purpose of this section is to outline the Spending Objectives for the nVCC Project. The Project Spending Objectives (PSOs) provide a basis for appraising potential options and for post-project evaluation.

Project Spending Objectives

- 7.2 The following nVCC PSOs were developed in partnership at a stakeholder workshop, which was attended by representatives with a broad range of service views. In presenting the nVCC PSOs it is important to emphasise that:
- The scope of the OBC is limited to the replacement of the existing VCC with a new VCC; and
 - The OBC for the new VCC will focus only on the additional infrastructure costs directly attributable to the new VCC. The rationale is that variable clinical costs as a result of modelled demand is a cost pressure that will need to be addressed irrespective of the decision on the replacement of the VCC.

Table 7-1: Project Spending Objectives

Project Spending Objective	Description
Project Spending Objective 1	To build a new hospital that supports quality and safe services.
Project Spending Objective 2	To provide sufficient capacity to meet future demand for services.
Project Spending Objective 3	To improve patient, carer and staff experience .
Project Spending Objective 4	To provide capacity and facilities to support the delivery of high quality education, research, technology and innovation .

- 7.3 The PSOs were approved by the nVCC Project Board who provided assurance to the Trust Board that they were:
- Aligned with the national context for healthcare developments in Wales;
 - Aligned with the scope and strategic context of the nVCC Project;
 - Specific, measureable, achievable relevant and time-constrained (SMART); and
 - Focused on business needs and vital outcomes rather than potential solutions.
- 7.4 The PSOs were subsequently shared and agreed with WG officers.

Performance Metrics

- 7.5 To support the delivery of these objectives a number of key performance metrics have been developed and mapped against the five drivers for investment outlined within the Welsh Governments Business Case guidance.

Table 7-2: nVCC OBC Project Spending Objectives – Key Performance Metrics

Project Spending Objective	Performance Metrics
PSO1 - To build a new hospital that supports quality and safe services	<ul style="list-style-type: none"> • Number of Velindre Acquired Healthcare Associated Infections • Percentage compliance with Health Building Notes • Compliance assessment against BREAM • Percentage assessment against WHTM Estate Code (Category A Condition of Buildings)
PSO2 – To provide sufficient capacity to meet future demand for services	<ul style="list-style-type: none"> • Percentage of patients receiving radical radiotherapy treated within 28 Days • Percentage of patients receiving palliative radiotherapy treated within 14 Days • Percentage of patients receiving emergency radiotherapy treated within 2 Days • Percentage of non-emergency chemotherapy patients treated within 21 Days • Percentage of urgent therapies outpatients seen within 2 Weeks • Percentage utilisation of equipment / accommodation: <ul style="list-style-type: none"> ○ Linear accelerator utilisation ○ SACT chair utilisation ○ Inpatient bed utilisation ○ Non-clinical accommodation utilisation
PSO3 – To improve patient, carer and staff experience	<ul style="list-style-type: none"> • Percentage of patients rating their experience as excellent • Distance (m2) between key clinical functions • Percentage staff satisfaction • Percentage recruitment of workforce • Percentage retention of workforce

Project Spending Objective	Performance Metrics
<p>PSO4 - To provide capacity and facilities to support the delivery of high quality education, research, technology and innovation</p>	<ul style="list-style-type: none"> • Percentage of patients who have the opportunity to participate in clinical research trials at VCC • Percentage of VCC Site Specific Teams (SSTs) to include national or international leaders • Percentage of patients recruited into interventional clinical trials for each cancer site • Percentage of patients for each cancer site entered into clinical trials each year • Percentage of clinical trials sponsored by VCC • Percentage of portfolio trials who have a VCC chief investigator

8 POTENTIAL SCOPE OF THE NEW VELINDRE CANCER CENTRE PROJECT

Introduction

8.1 The scope of the Project is limited to the building of a nVCC. In taking forwards this scope, the Trust will be seeking formal approval from commissioners and from the Welsh Government in relation to the Outline Business Case (OBC) for a nVCC. In seeking approval of the OBC the Trust must provide assurance in relation to:

- The need for a nVCC;
- The Preferred Option identified within the OBC;
- The building footprint of the nVCC;
- The additional costs directly attributable to the nVCC; and
- The Project Management and Governance arrangements for delivering the nVCC Project.

8.2 The following is outside of the scope of the nVCC Infrastructure Project:

- All variable clinical costs of modelled demand which will be considered through the development of the commissioning LTA framework and therefore excluded from the nVCC OBC;
- All service development Projects e.g. Acute Oncology Service, which will be subject to separate Business Cases and therefore excluded from the nVCC OBC;
- All outreach capital Projects e.g. Radiotherapy Satellite Centre, which will be subject to separate Business Cases and therefore excluded from the nVCC OBC; and
- All Digital Projects which the Trust needs to complete irrespective of the nVCC Project. These will be the subject of separate Business Cases.

Potential Business Case Options

8.3 Although the scope of the Project is well defined, there is the potential to develop a range of options for delivering the objectives of the Project. The range of options have been considered against a continuum of need ranging from:

- **Minimum scope:** Core and essential service requirements/outcomes which are currently provided by VCC;
- **Intermediate scope:** Core and desirable service requirements/outcomes which the Project can potentially justify on a cost/benefit and thus value for money basis; and
- **Maximum scope:** Core, desirable and optional service requirements/outcomes which the Project can potentially justify on a cost/benefit and thus value for money basis.

- 8.4 The outcome of this is outlined in Table 8-1 and is used as the starting point to develop the longlist of options within the Economic Case.

Table 8-1: Potential Project scope

Service / Function	Minimum	Intermediate	Maximum
Radiotherapy	✓	✓	✓
SACT	✓	✓	✓
Inpatients	✓	✓	✓
Specialist Palliative Care	✓	✓	✓
Outpatients	✓	✓	✓
Ambulatory Care	✓	✓	✓
Radiology and Nuclear Medicine	✓	✓	✓
Pharmacy	✓	✓	✓
Acute Oncology Service (existing arrangements)	✓	✓	✓
Research and Development (existing arrangements)	✓	✓	✓
Learning, Technology and Innovation (existing arrangements)	✓	✓	✓
Research and Development (enhanced scope)		✓	✓
Learning, Education and Innovation (enhanced scope)		✓	✓
Capacity to introduce PET CT Service		✓	✓
Capacity to introduce Proton Beam Service			✓
Capacity to introduce Advanced Technologies, including: <ul style="list-style-type: none"> • Platform specific stereotactic service • Cyclotron service 			✓
Relocation of Trust Corporate Function			✓

9 PROJECT RISKS, CONSTRAINTS, DEPENDENCIES AND ASSUMPTIONS

Risks

- 9.1 Identifying, mitigating and managing the key risks is crucial to successful delivery, since the key risks are likely to be that the Project will not deliver its intended outcomes and benefits within the anticipated timescales and spend.
- 9.2 A full risk register for the nVCC Project has been developed which includes the following categories:
- **Business risks:** Risks that remain 100% with the Trust and include political and reputational risks;
 - **Service risks:** Risks associated with the design, build, financing and operational phases of the project and may be shared with other organisations; and
 - **External Non System risks:** Risks that affect all society and are not connected directly with the proposal. They are inherently unpredictable and random in nature.
- 9.3 The nVCC risk register is managed by the Project Management Office (PMO). The exact role of the PMO in managing risks is described within the Management Case.

Constraints

- 9.4 The main constraints in relation to the nVCC Project are outlined in Table 9-1.

Table 9-1: Main Constraints of the nVCC Project

Constraint	Overview
Financial Constraints	The infrastructure solution for the nVCC would be ideally deliverable within the affordability threshold of [REDACTED] [REDACTED] funding cap agreed with the WG.
Timescale Constraints	The nVCC must be operational in line with the Programme agreed with the Welsh Government.
Service Continuity	Delivery of patient services must be maintained during the period of construction.
Compliance with Statutory Requirements	The nVCC must be fully compliant with all relevant statutory compliance requirements.

Dependencies

- 9.5 A number of dependencies have been identified in relation to the nVCC Project. These are provided in Table 9-2.

Table 9-2: Main Dependencies of the nVCC Project

Dependency	Overview
Capital Funding Availability	Access to capital funding is critical to deliver the Project, especially in relation to the procurement of Major Medical equipment and IM&T.
Revenue Funding Availability	Access to revenue funding is essential to support the recurring revenue implications associated with the nVCC Project.
Welsh Government Approval	The Outline Business Case must be approved by the WG.
Partnership Working	Co-production in the design and implementation of the Project that involves all stakeholders from across the health and social care economy is essential to the Project's success.
Wider Health Strategy and Governance	It is important that general health strategy and governance in Wales, that underpins the nVCC Project remains broadly consistent over the period of change.
Site Enabling Works	The site enabling works Project, which is outside of the scope of this OBC, must be completed by the start of construction for the nVCC.

Assumptions

- 9.6 The key assumptions underpinning the nVCC Project are provided in Table 9-3.

Table 9-3: Main Assumptions for the nVCC Project

Assumption	Overview
Implementation of the wider TCS programme	<p>It is assumed that the following capital Projects identified within the TCS Programme are funded and the nVCC has been 'sized' based on this assumption.</p> <ul style="list-style-type: none"> • Radiotherapy Satellite Centre at Nevill Hall Hospital; and • Non-surgical cancer Outreach centres across South East Wales delivering SACT and Outpatient services.
Clinical Growth Assumptions	<p>The nVCC has been 'sized' on the basis of a number of clinical growth assumptions, summarised below:</p> <ul style="list-style-type: none"> • Radiotherapy activity will increase by 2% per annum through to 2025; • SACT activity will increase by 5% per annum through to 2025; • Outpatient activity will increase by 2% per annum through to 2025; • Inpatient activity will increase by 2% per annum through to 2025; and

Assumption	Overview
	<ul style="list-style-type: none"> Radiology and Nuclear Medicine activity will increase by 9% per annum through to 2025.

Flexibility for Expansion on the Site of the New Velindre Cancer Centre

- 9.7 It is important to highlight that there is approximately 6,500 m² of expansion space (compared to the approved Outline Planning Application) on the identified site for the nVCC. This expansion capacity is fundamental to the Trust's mitigation strategy in the event that either:
- The other capital Projects within the TCS Programme are not supported; or
 - The clinical growth assumptions prove to be understated.
- 9.8 Conversely, the Trust has identified alternative uses for some of the proposed nVCC accommodation in the event that clinical growth assumptions do not fully materialise.

10 COLLABORATIVE SCRUTINY PROCESS

- 10.1 A process of Collaborative Scrutiny Process was undertaken by commissioners at the request of HB Chief Executives.
- 10.2 The process was led by the Director of Planning and Director of Finance from Powys Teaching Health Board and supported by two collaborative scrutiny workshops held on Monday 8th and 15th January 2018 respectively. The Project will ensure ongoing engagement with LHB colleagues regarding the nVCC development.
- 10.3 Senior Health Board Finance and Planning Officers from all impacted commissioners were represented at these workshops. Following the completion of this scrutiny process there was agreement and support regarding:
- The need for a nVCC to replace the existing centre which is over 60 years old;
 - The methodology for forecasting future clinical capacity requirements;
 - The clinical growth assumptions used in forecasting future service capacity requirements;
 - The proposed service operational model which will be deployed within the nVCC;
 - The methodology used for sizing the nVCC; and
 - The scope of the Do Minimum option and of the 'Do Minimum' Plus option.
- 10.4 A collaborative scrutiny response was then submitted to the All Wales Chief Executives Group, in partnership with the Directors of Finance and Directors of Planning, following submission of the OBC to the WG. The response made a number of recommendations. This included the recommendation that a Regional Collaborative Leadership Group should be established to oversee the Transforming Cancer Services Programme Business Case (PBC). The Group has now been established and any refinements to the nVCC development will be submitted to the Group.

11 CONCLUSION

11.1 The Strategic Case has demonstrated a compelling case for investment to support the replacement of the existing Velindre Cancer Centre. The key factors supporting the case for investment are:

- The existing patient environment at the Velindre Cancer Centre is sub-optimal and does not promote patient recovery and well-being;
- There is insufficient patient and family car parking at the existing Velindre Cancer Centre;
- A high proportion of accommodation at the existing Velindre Cancer Centre is non-compliant with statutory requirements and creates challenges in maintaining high levels of patient safety;
- The existing Velindre Cancer Centre, built on a 'like for like' basis and in line with Health Building Notes, would have a footprint of circa 28,000m² compared to the existing building footprint of 17,777m²; and
- There is no expansion space on the existing Velindre Cancer Centre to, for example, install any additional linear accelerators, which limits the Trust's ability to expand its capacity in response to increasing demand for clinical services.

