



**Systemic Anti Cancer Therapy Future Service
Strategic Review and Emerging Future Service Model**

17th April 2018

Executive Summary

The National Strategy ‘Beating Cancer: Ambition and Action’ sets out the aims of improving prevention, detection, diagnosis, treatment and after care for people affected by cancer. The Cancer Strategy highlights the challenging background against which these aims need to be delivered with two out of five people developing cancer at some point in their lives. At the same time, with improved screening, earlier detection, better diagnosis and continuing advances in treatment, more people than ever are surviving cancer.

Drivers for Change

- Incidence of cancer has increased by 14% in last decade and is expected to increase by 27% by 2027.
- Survival continues to improve with advances in treatment and earlier diagnosis.
- There has been a year on year increase in demand for Systemic Anti-Cancer Therapy (SACT), with data demonstrating a 35% increase in total episodes of SACT delivered in the West of Scotland (WoS) from 2013 to 2017.
- Demand for SACT is expected to continue to increase with modelling predicting a further increase of up to 40% in SACT activity by 2025.
- Increases in demand necessitate a significant change in the current capacity otherwise this will result in an unsustainable position and increased pressure on current infrastructure and workforce, leading to impact on waiting times, patient experience and outcomes.
- Mode of treatment delivery is evolving with an increasing number of treatments given orally or subcutaneously instead of, or more often in addition to, the intravenous route.
- Evolution in mode of administration will determine the infrastructure needed for treatment delivery, and influence the configuration of the workforce. This supports a shift in the model of care with more people being treated at, or near, to home.

Strategic Review

In recognition of the need to ensure safe and sustainable services whilst meeting this increasing demand for SACT the WoS NHS Boards and Regional Planning Group (RPG) established a project team to determine the short and medium term developments and redesign required to safely and effectively meet current and future demands.

An interim report on progress with Phase 1 of the project was submitted to RPG in February 2016, this made a number of recommendations which were fully supported. Furthermore, the RPG recommended a strategic review of SACT services and development of a future service model for SACT delivery. This paper provides final output of the phase 2 workstream, which is supported by WoS Boards, Directors of Pharmacy, Nursing and Medicine.

Phase 1 Progress

Phase 1 identified a range of areas where improvement could be made within current resource to ease service pressures in the short term, specifically recommending:

- Review and redesign whole patient system flow, to maximise efficiency and ease pressures by flattening out peaks in activity and optimising use of physical resource;
- Review of skill mix to maximise use of existing nurse and pharmacists resource, including the utilisation of non-medical prescribers; and

- Review current usage of pre-filled products across the Region and bring forward recommendations to maximise use to best support service delivery.

Strategic Vision

The ultimate aim of the West of Scotland Strategic Review of SACT Services is to ensure high quality, safe and sustainable SACT services across the West of Scotland.

The emerging service model aims to:

- Improve patient experience and outcomes;
- Deliver treatment in the most clinically appropriate place;
- Ensure consistency of pathways and processes;
- Provide equitable access to treatment, including access to clinical trials; and
- Optimise resource use.

Emerging Model of Care

There is high quality evidence to support the implementation of a model of care which builds capacity across settings to ensure appropriate level of specialist care available to patients as close to home as possible. A tiered approach to SACT service delivery which expands upon the existing hub and spoke model is proposed.

In the medium term, the emerging service model would result in consolidation of cancer units in the WoS and an increase of SACT outreach and community delivery models. This will be facilitated by the re-profiling of some existing cancer units as outreach services. A decrease in cancer units from the current 10 to 4 or 5 units across the region is envisaged.

This stratified model of care will:

- Allow optimum care with most efficient use of resource;
- Develop community based and outreach SACT services closer to patients home; and
- Consolidate units to improve resilience and optimise resource use, facilitating local treatment of rarer cancers where appropriate.

Patient and carer engagement on the emerging model of care has been undertaken across all four West of Scotland NHS Boards and the principals of the model widely supported.

In order to realise the emerging model of care a number of specific recommendations are proposed:

- Implement non medical prescriber led pre-assessment and prescribing of SACT across all relevant patient groups. This will ensure cost efficient roles and optimisation of both the non medical prescribing and medical workforce.
- Implement models of central assessment and local delivery for some rare cancers, currently treated at cancer centre, to optimise use of existing cancer centre and cancer units estates and infrastructure.
- Assess feasibility of repatriation of some less common cancers from cancer centre to cancer units to release capacity in the cancer centre to focus on more complex treatments and clinical trials.
- Develop outreach services for all relevant treatments, it is estimated that approximately 50% of activity is amenable to outreach delivery. This will maximise the use of existing estates, release capacity in cancer centre/units and ensure patients receive care closer to home, where feasible and safe to do so.

- Implement and further develop shared care models of monitoring and prescribing, to increase efficiency in outpatient clinics and strengthen linkages between secondary and primary care.
- Maximise use of community dispensing of oral SACT to promote integrated working and ease hospital dispensary pressures.

Impact of Emerging Model of Care

Given the observed and predicted increase in demand for SACT, even with an increase in efficiency delivered following implementation of phase 1 recommendations, the resource requirements of treatment delivery will also continue to increase.

Current and projected levels of demand create an unsustainable position and increased pressure on the current infrastructure and workforce, which will ultimately impact upon cancer waiting times, patient experience and outcomes.

Given current shortfall in resource to deliver SACT, as demonstrated by phase 1, investment in resource will be required to fully support implementation of the tiered service model. However, by changing the service model the level of investment is decreased as the increase in demand for SACT will be more effectively and efficiently managed.

Next Steps

The Regional SACT Future Service Delivery Strategic Review sets out the current status of SACT services across the WoS and details a new model of care which will build capacity across settings to ensure appropriate level of specialist care is available to patients as close to home as possible.

The review outlines a number of regional and local actions for the short to medium term. In order to achieve maximum impact of the emerging service model systematic implementation of these actions at both a local and regional level is required.

It is recommended that Boards:

- Consider local implications associated with implementation of the emerging service model; and
- Continue to input to the regionally coordinated SACT future service delivery workstream to ensure systematic and consistent implementation of the recommendations contained in the strategic review.

The Regional Planning Group endorsed the strategic direction for SACT services across the WoS outlined within the review in August 2017. Further work has now been undertaken to engage widely with patients across the WoS, to finalise the recommendations and develop the underpinning resource plan to ensure that this strategic vision is realised.

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1. INTRODUCTION

The National Strategy ‘Beating Cancer: Ambition and Action’¹ sets out the aims of improving prevention, detection, diagnosis, treatment and after care for people affected by cancer. The Cancer Strategy highlights the challenging background against which these aims need to be delivered with two out of five people developing cancer at some point in their lives. At the same time, with improved screening, earlier detection, better diagnosis and continuing advances in treatment, more people than ever are surviving cancer.

In recognition of the need to ensure safe and sustainable services whilst meeting this increasing demand for Systemic Anti-Cancer Therapy (SACT)² the West of Scotland NHS Boards (not including NHS Dumfries and Galloway) and Regional Planning Group (RPG) established a project team to detail the short and medium term developments and redesign required to safely and effectively meet current and future demands for adult daycase and outpatient SACT services. The project plan was divided into two phases, within which Phase 1 of the project was focussed on:

- Reviewing the resource requirements for the safe delivery of SACT for the main tumour types (haemato-oncology, breast, lung, colorectal, prostate and bladder cancers), where treatment is delivered in outpatient or daycase settings, considering how to optimise the current resource; and
- Quantifying any existing gaps in service provision across the WoS Boards.

An interim report on progress with Phase 1 of the project was submitted to RPG in February 2016, this made a number of recommendations (see appendix 1 for a summary) which were fully supported. Furthermore, the RPG recommended a strategic review of SACT services across the WoS and development of a future service model for SACT delivery.

This paper provides final output of the phase 2 workstream.

1.1 Strategic Review Process

The Regional SACT Future Service Delivery Strategic Review has been undertaken by the SACT Future Service Delivery Short Life Working Group (SLWG) which includes clinical and management representation from each of the four WoS NHS Boards, Primary Care, Directors of Pharmacy, Directors of Nursing and Regional Planning (see appendix 2 for membership). The SLWG was chaired by Colin Sloey, Director of Strategic Planning and Performance, NHS Lanarkshire with clinical leadership provided by Mr Seamus Teahan, Regional Cancer Clinical Lead, West of Scotland Cancer Network (WoSCAN).

Operational support and expert clinical opinion to inform the strategic decisions made by the SLWG was provided by medical, pharmacy and nursing subgroups, thus ensuring wider inclusiveness of colleagues from across WoSCAN.

The strategic review and development of the emerging service model has been informed by regionally coordinated work to model future predicted demand for SACT, review skill mix, review and redesign patient pathways and is underpinned by identification of best practice at a local, national and international level. This work has been aligned with the on-going national shared services pharmacy aseptic dispensing programme since the outset to ensure alignment of Pharmacy Aseptic Dispensing strategy in the West of Scotland.

¹ <http://www.gov.scot/Publications/2016/03/9784>

² As cancer is now treated with biological therapies and chemotherapy, treatment is now commonly referred to as Systemic Anti Cancer Therapy (SACT)

2. CASE FOR CHANGE

There are numerous factors influencing the requirement to develop a new service model for future delivery of SACT services across the WoS, principally the unprecedented increase in demand for SACT over recent years. If demand continues to increase at the current rate, even with changes in service provision at a local Board level, significant investment, in both workforce and estates, will be required by WoS Boards, to avoid an adverse impact on waiting times, patient experience and outcomes.

2.1 Strategic Context

There are a number of existing policy frameworks that have been central to the overall strategic context for the delivery of SACT services in the WoS. CEL 30 (2012) 'Guidance for the Safe Delivery of Systemic Anti-Cancer Therapy'³ provides a framework for safe practice in the prescribing, preparation, administration and disposal of SACT which must be adhered to in the development and delivery of SACT services.

The refreshed Cancer Strategy, Beating Cancer: Ambition and Action⁴, outlines the aim of ensuring equity of access to sustainable, high quality, timeous and person centred cancer treatment.

The National Clinical Strategy⁵ describes the aim that, where clinically appropriate, services should be planned and delivered at a local level. Where there is evidence that better outcomes could only be reliably and sustainably produced by planning services on a regional or national level, we must look to the future and plan our services on a population basis regardless of geographical boundary. The Chief Medical Officers report Realistic Medicine⁶ also sets the challenge for services to consider how we can further reduce the burden and harm that patients experience from over treatment and reduce unwarranted variation in clinical practice.

Furthermore, The Modern Outpatient: A Collaborative Approach⁷ details an ambition to deliver care closer to the patients home, providing more person centred care, utilise new and emerging technologies, whilst maximising the role of clinicians across Primary, Secondary and community based services.

National Services Shared Services Portfolio established a programme of work in 2016 to develop the future service model for Aseptic Dispensing to deliver a more integrated service with co-ordination and planning of aseptic dispensing; standardise service provision to increase resilience and sustainability; and make the most efficient use of the resources available. A Shared Services Aseptic Dispensing Business Case was presented to NHS Board Chief Executives in June 2017, where both the principles and preferred new configuration of aseptic services was supported. The SACT Future Service Delivery Strategic Review directly aligns with the proposed revised aseptic dispensing configuration.

2.2 Changing Demographics

The number of people diagnosed with cancer is increasing; in 2015 14,722 people were diagnosed with cancer in the WoS which is an increase of around 14% in a decade⁸. By 2027 cancer incidence is expected to have increased by 26.7% in WoS. This is due in part to an ageing population and increasing survival rates from other diseases.

³ http://www.sehd.scot.nhs.uk/mels/CEL2012_30.pdf

⁴ <http://www.gov.scot/Publications/2016/03/9784>

⁵ <http://www.gov.scot/Publications/2016/02/8699>

⁶ <http://www.gov.scot/Resource/0049/00492520.pdf>

⁷ <http://www.gov.scot/Publications/2016/12/2376>

⁸ <http://www.isdscotland.scot.nhs.uk/Health-Topics/Cancer/Cancer-Statistics/>

In addition, given effective population-based screening programmes, earlier detection, better diagnostic methods and advances in treatments, more people are surviving cancer than ever before. This increase in the prevalent population is particularly difficult to quantify.

2.3 Changing Pattern of Demand for SACT

Since the previous WoSCAN Strategic Review of Chemotherapy Services was completed in April 2007, there have been significant changes in service requirements and delivery coupled with the introduction of novel diagnostic and treatment technologies.

There has been a year on year increase in demand for SACT due to increasing cancer incidence and the introduction of new, effective anti cancer medicines. Data demonstrates a 35% increase in total episodes of SACT delivered in the WoS from 2013 to 2017 as highlighted in figure 1, although this varies across Boards with NHS Forth Valley and South Glasgow an increase in activity over 40%. For some tumour types, e.g. skin cancer, haemato-oncology, and urological cancer, this increase is significantly higher (221%, 77% and 69% respectively over the same timeframe), see appendix 3 for Board level overview of data. The impact of this on specialist medical, pharmacy and nursing resource at a Board level has been notable, with reports of an increase in waiting times for patients to be seen by oncologists to begin treatment in some Boards.

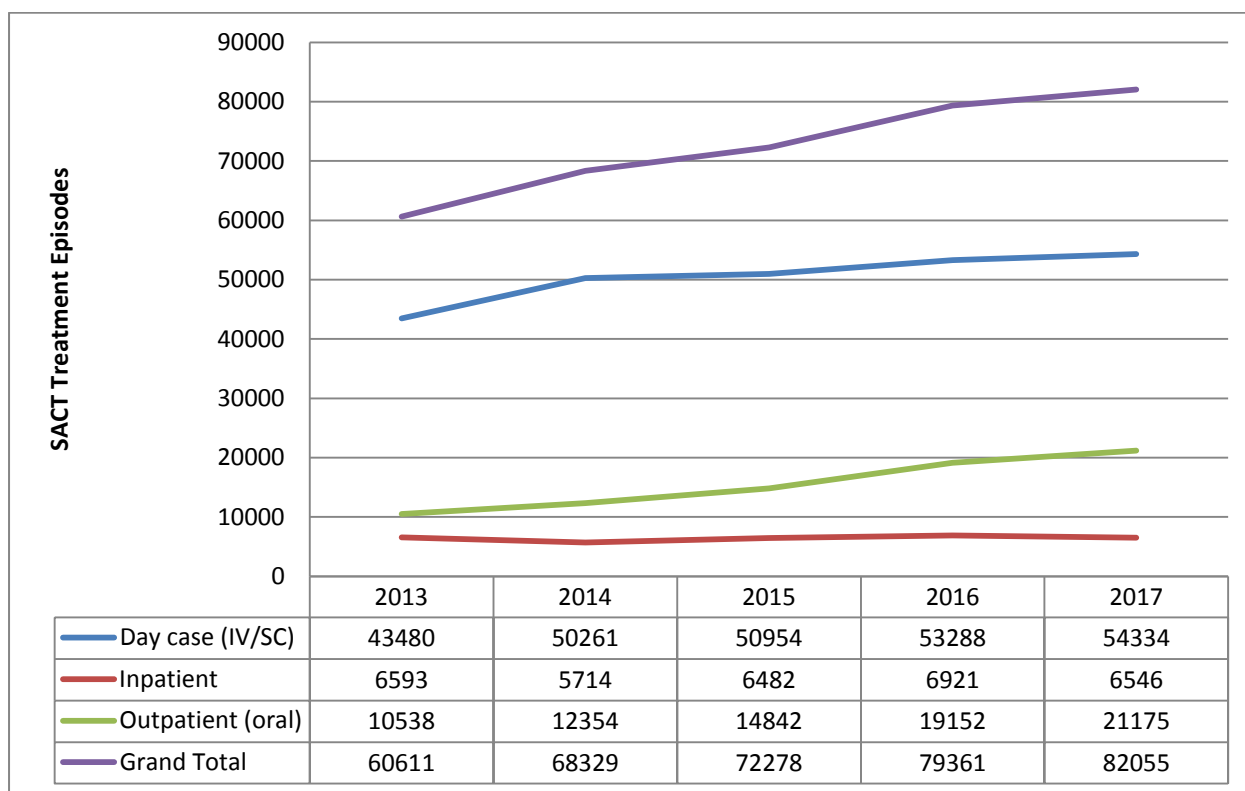


Figure 1: WoS SACT Activity Data (Daycase, Outpatient & Inpatient) 2013 to 2017

The mode of treatment delivery is evolving with many new treatments given orally or subcutaneously (SC) instead of, or more often in addition to, the intravenous (IV) route. Across the WoS there has been a 101% increase in the number of SACT episodes given as an out-patient (oral treatments) from 2013 to 2017, however there was no accompanying decrease in daycase activity. Day case activity has in fact risen by 25% over the same timeframe. This evolution in mode of administration will determine the infrastructure needed for treatment delivery, and influence the configuration of the workforce.

Increase in demand for SACT is also impacted by increasing treatment duration. An increasing number of treatments are given until progression of disease or death, as opposed to the traditional set number of

cycles of treatment. The impact of this on both the service and patient is notable given the frequency of attendance over a long period, which in many cases could be years rather than months of treatment.

2.4 Stakeholder Engagement

A Stakeholder Engagement Plan was developed by WoSCAN (see appendix 4) which put in place a range of activities designed to generate input from key audiences, these included:

- Patient experience survey across all units delivering SACT in WoS;
- Creation of a Stakeholder Reference Group; and
- Patient and Carer Focus Groups.

2.4.1 Patient Experience Survey

To ensure that any future developments take account of patient views, a patient experience survey was undertaken across all WoS units delivering SACT over a two week period in February 2017. There were 802 responses to the survey, an estimated 67% response rate.

Feedback was overwhelmingly positive regarding the quality of treatment and care which patients received. Quality of care was cited by respondents as of highest importance, followed by distance to travel, waiting times and treatment environment. Respondents were asked what they felt could be done to improve chemotherapy services for patients. The most common themes identified were waiting times, staffing levels, comfort of units and keeping services local.

2.4.2 Stakeholder Reference Group

A Stakeholder Reference Group (SRG) was established to support and guide the SACT Future Service Delivery Group in how it informs and engages with people on the emerging service model for SACT.

This group was made up of patients, carers and representatives from cancer charities that have an interest in this area. They offered their perspectives on how WoSCAN can inform and engage with patients, carers and the public on the emerging service model.

2.4.3 Patient and Carer Focus Groups

WoSCAN held 6 patient and carer focus groups across the WoS NHS Boards in February and March 2018. These were designed to offer interested people who have utilised SACT services and their carers the opportunity to contribute their views and opinions. The emerging service model was widely supported by patients and carers, key messages from the focus groups were:

- Closer to home treatment is preferred, wherever possible.
- Infrastructure at all levels of service provision needs to be considered, specifically:
 - Coordination and communication between cancer centre, units and outreach facilities;
 - Safety and quality of care; and
 - Staff training requirements in outreach facilities.
- Non medical prescribing works well and provides much welcomed consistency for patients.

The Stakeholder Engagement Report, containing full details of all engagement activities is available from the WoSCAN website (<https://www.woscan.scot.nhs.uk/regional-groups/sact-future-service-delivery-2/>).

2.5 Capacity Challenges

A key component of the phase 1 workstream was capacity modelling to consider the following areas: outpatient clinic, nursing, pharmacy, medical and physical resources. Phase 1 report is available from the WoSCAN website (<https://www.woscan.scot.nhs.uk/regional-groups/sact-future-service-delivery-2/>). This modelling provided further understanding of the capacity challenges faced by services. Specifically, these included:

- Shortfall in pharmacy, nursing and medical resource to deliver current activity levels,
- Increasing outpatient clinic activity with insufficient time available within existing resource for pre-assessment; and
- Age of aseptic dispensing isolators in majority of units is such that a capacity problem may occur due to failure of existing equipment.

Phase 1 identified a range of areas where improvements could be made within current resource. Notably, however, even with an increase in efficiency across units and the accompanying optimisation of resource, in the context of current and on-going growth in SACT demand, the SLWG concluded this would not be sufficient. Further change and investment will be required to support safe and sustainable SACT services.

3. CURRENT MODEL OF SACT DELIVERY

3.1 Service Delivery

For the six main tumour types (haemato-oncology, breast, lung, colorectal, prostate and bladder cancers) there are 11 sites delivering IV and oral SACT treatments across the region, with an additional two sites delivering only oral SACT treatment (haematology only), appendix 5 provides a summary of Board/unit services. NHS Lanarkshire also treats patients with upper gastrointestinal (GI) and hepatopancreatobiliary (HPB) cancers locally. Patients with all other tumour types, regardless of Board of residence, attend the Beatson West of Scotland Cancer Centre (BWoSCC) for treatment.

SACT treatment is usually initiated and prescribed in outpatient clinics. As per CEL (30) 2012 a consultant oncologist/haematologist will initiate treatment and take patient consent. Thereafter further cycles of treatment may be prescribed by either medical staff or qualified non medical prescribers, with the exception of clinical trials where all cycles of treatment will be prescribed by medical staff, in the main.

Oral SACT will be dispensed at time of prescribing with the patient self-administering at home. For IV and SC treatments there are various models of service delivery utilised across the WoS units. The majority of treatment is delivered as day case treatment, with some SC treatment delivered as an outpatient. All units operate a 'two-stop model': patients attend clinic for review and return the following day to receive treatment. A small number are however treated on the same day where appropriate, for example patients from remote and rural areas. The 'two-stop model' allows for better scheduling of workload and improves turnaround times.

3.2 Day Case Treatment Facilities

Across the WoS there are 166 chairs/beds designated to deliver day case SACT treatment, unit opening hours are, in the main, 8.30am – 6pm. Figure 4 below details breakdown of chairs/beds available by Board for day case treatment.

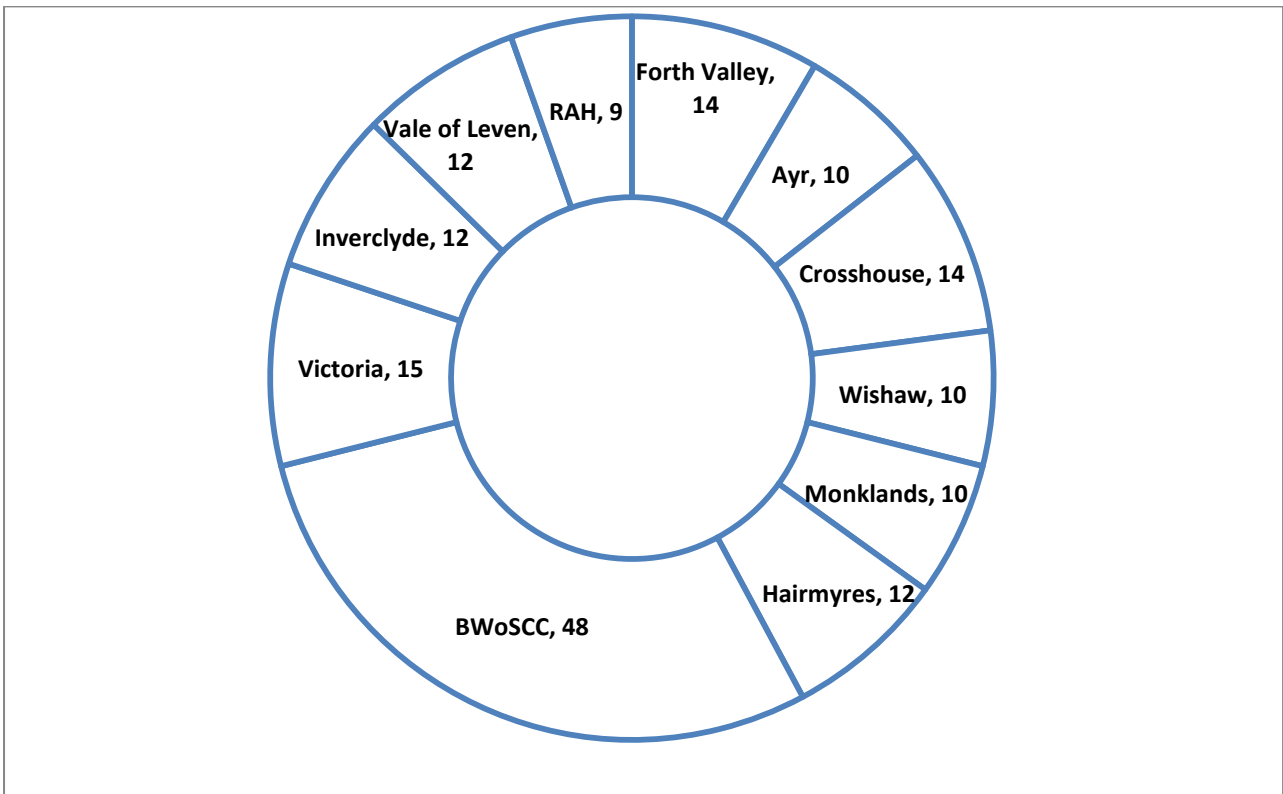


Figure 4: Chairs/Beds Available for SACT Delivery - WoS Units

3.3 Service Demand

In 2017, a total of 82,055 episodes of SACT (inpatient, daycase and outpatient) were delivered across the West of Scotland; figure 5 details a breakdown of total SACT treatment activity by location of delivery.

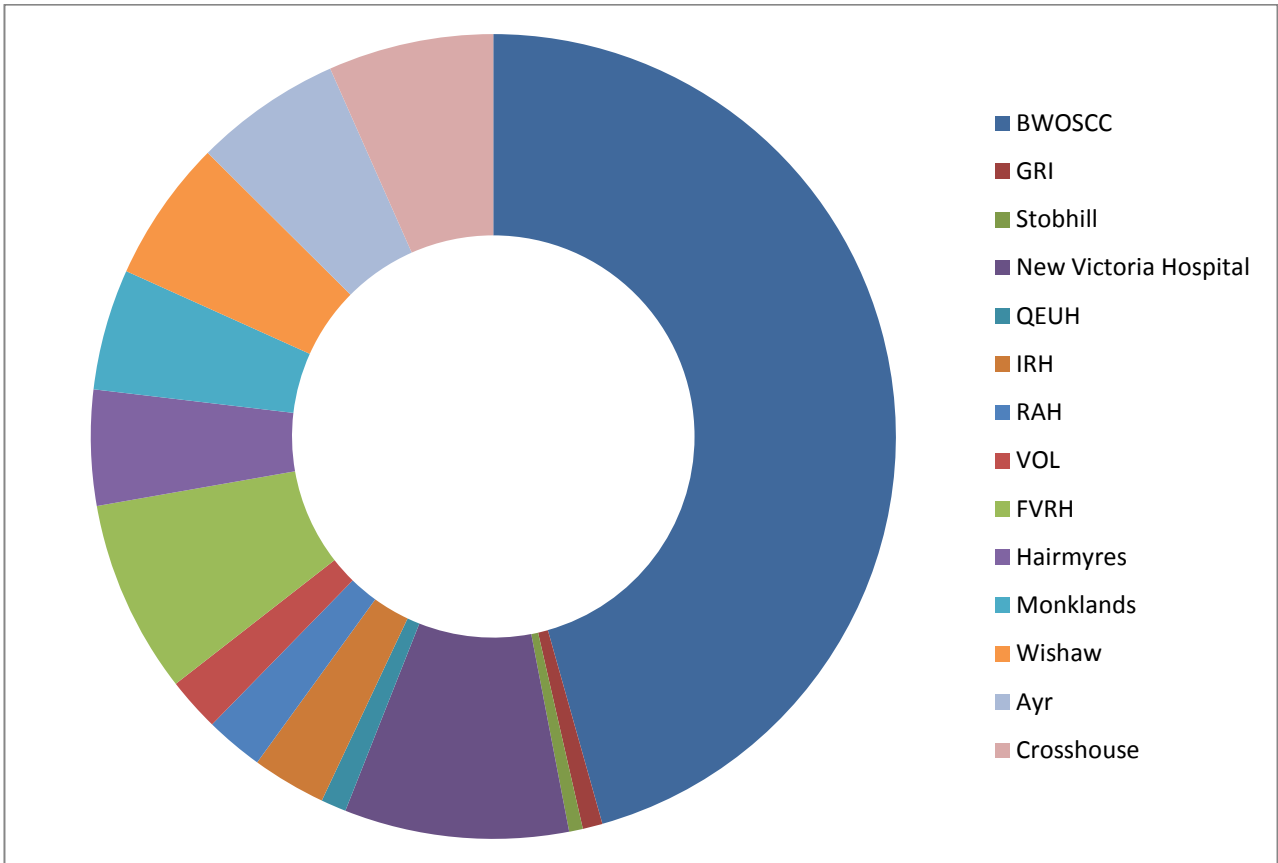


Figure 5: SACT Treatment Episodes 2017

The main tumour types accounted for 82% of total day case and outpatient SACT activity in 2017 across WoS, see figure 6. A significant proportion of the cancer centre activity is for 'less common' cancer types (40%), see figure 7, with the most common of these being gynaecological cancers.

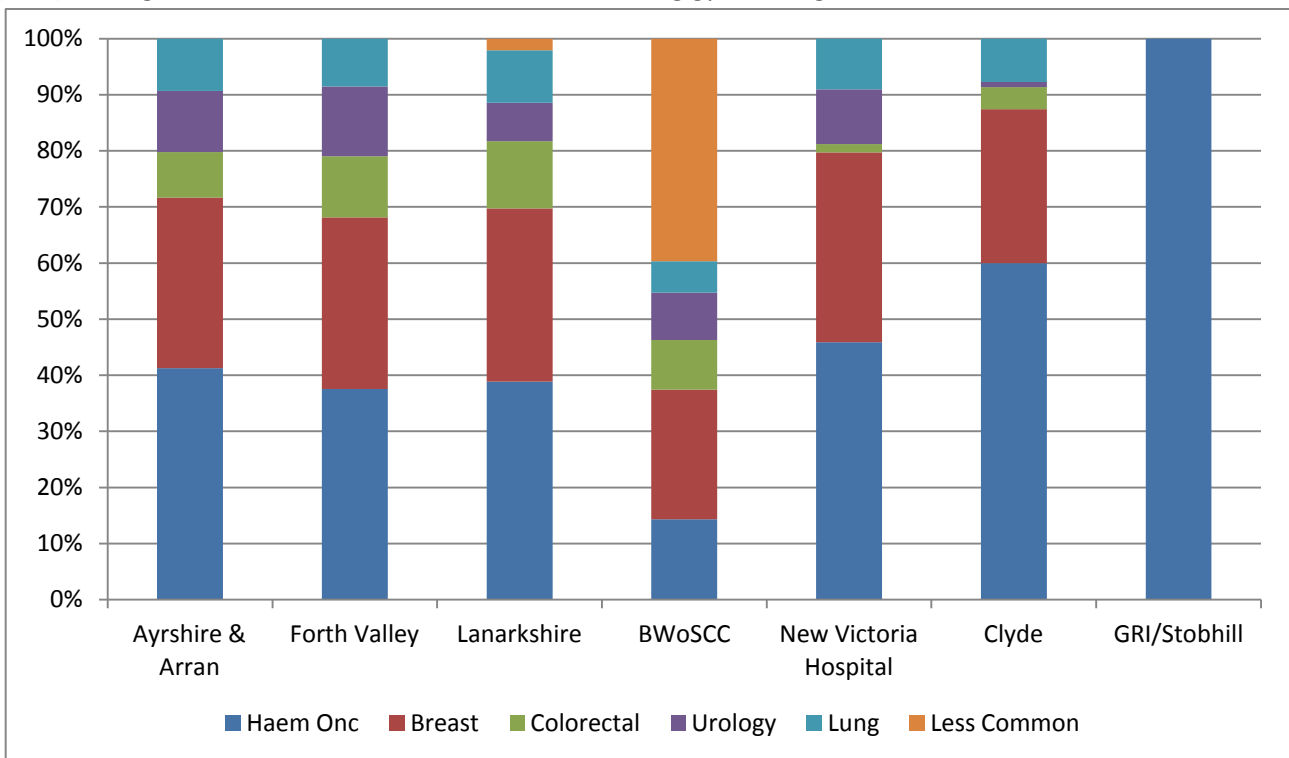


Figure 6: SACT Treatment Activity Main Tumour Types 2017 (Daycase and Outpatient only)

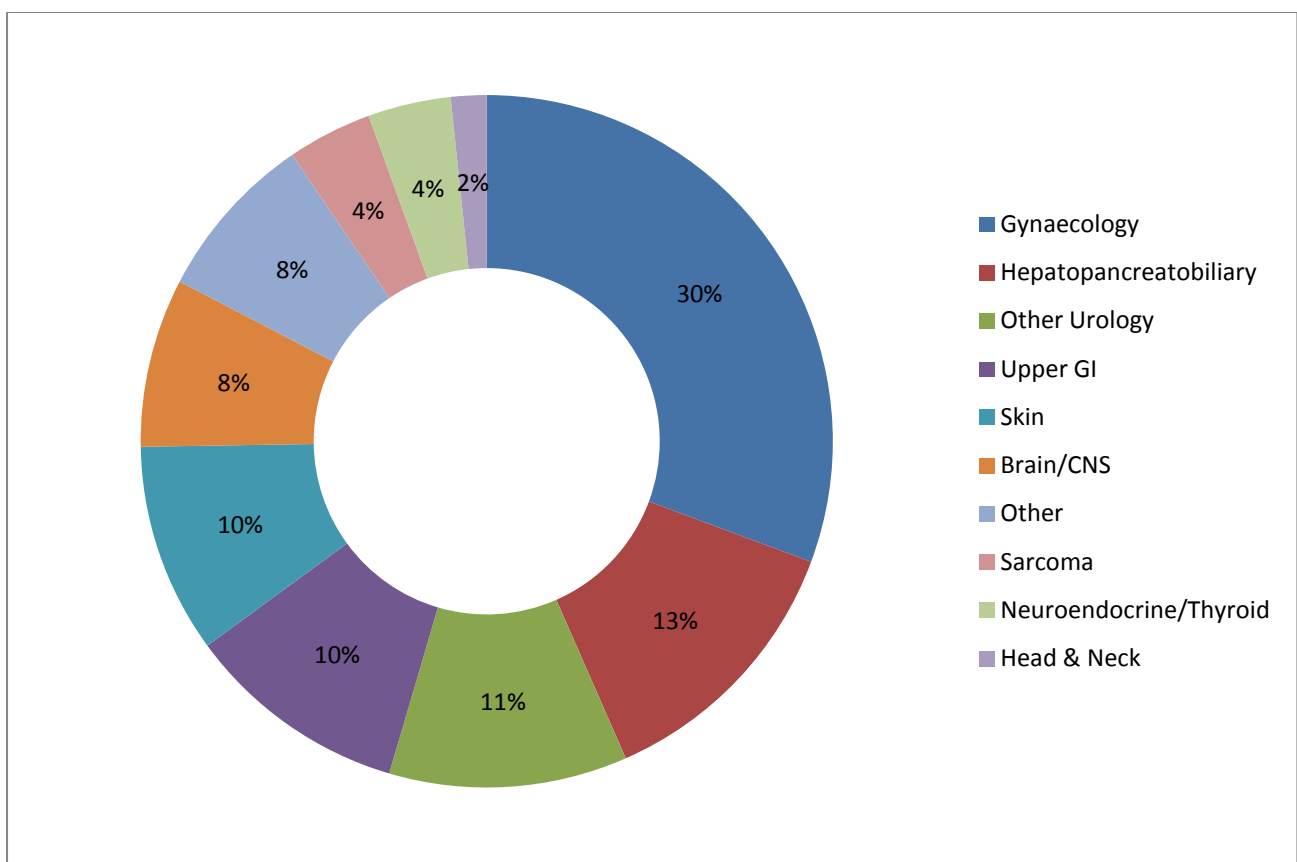


Figure 7: SACT Activity for 'Less Common Cancers' at BWoSCC in 2017

During the first six months of 2017, approximately 470 different regimens were delivered to patients with cancer across the WoS (including clinical trials). The ten most commonly prescribed regimens are highlighted in figure 8 below. Total activity for these regimens accounts for 42% of total SACT activity in the period. Oral, SC preparations and supportive medicines account for 7 of the top 10 most commonly prescribed regimens. Comparison with prescribing data from 2013 demonstrates the shift in mode of treatment delivery over recent years.

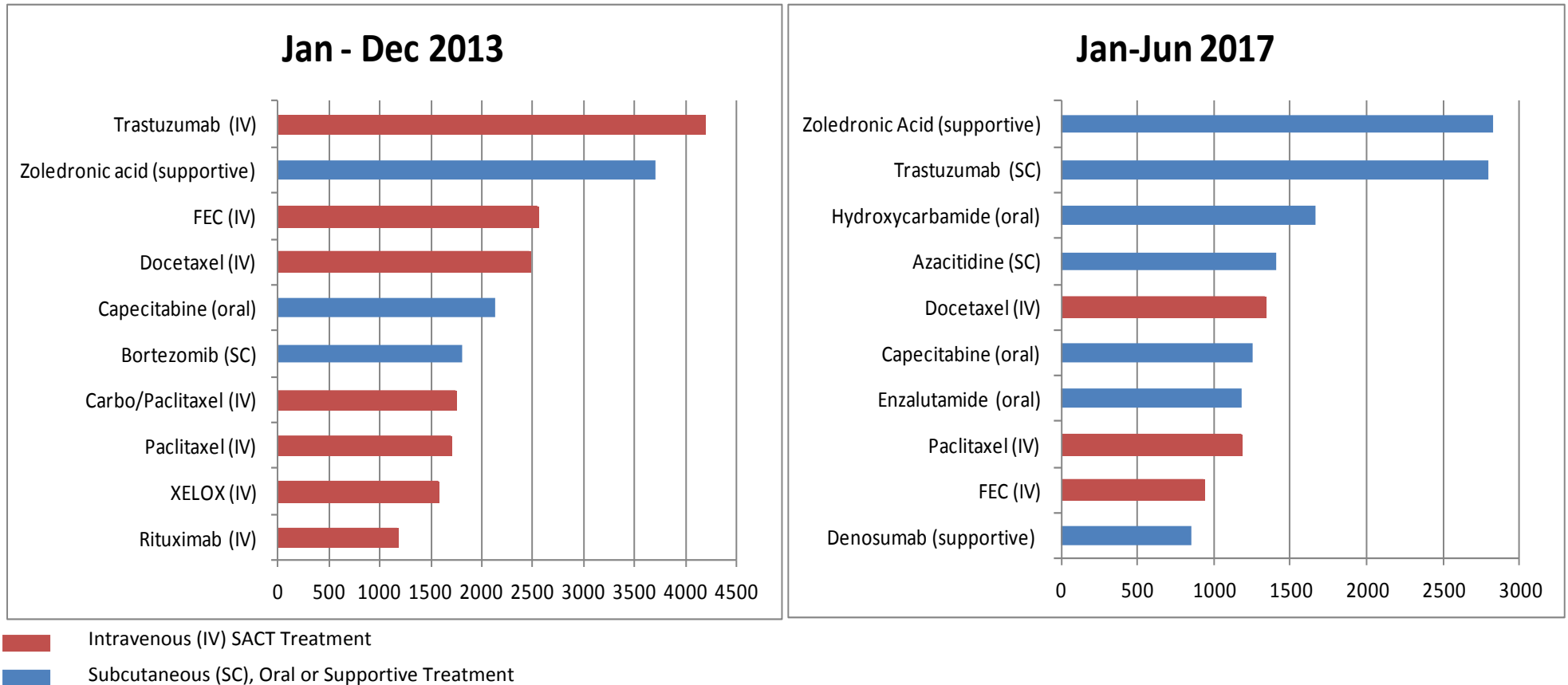


Figure 8: Top 10 Regimens Prescribing from 1st January to 31st December 2013 and 1st January to 30th June 2017

4. FUTURE PROJECTED DEMAND

In conjunction with the University of Strathclyde, work has been undertaken to provide robust projections for demand for SACT services up to 2025 and to quantify the uncertainty in these projections.

Projections are based upon combining the cancer incidence projections provided by the Information Services Division (ISD) with the observed treatment patterns within the ChemoCare data from 2013 to 2016. The ISD cancer projections for Scotland are scaled to the WoS population, by age group, comparing these to the numbers of new patients each year in the ChemoCare data leads to estimates of the proportion of new incident cases each year who receive SACT and the proportion of patients receiving SACT per year who have previously had treatment with SACT (recurrent cases). Future incident cases and new recurrences are assumed to present with the same stages of cancer as is observed in the SACT treatment data.

The treatment regimens that future patients will receive are based upon assumptions that the regimens used in 2016 for new incident and new recurring patients will be the regimens used in the future, while using the full 4 year treatment data for the number of episodes of care for each future patient. This is achieved by repeatedly re-sampling observed treatment patterns in the data. Repeating this process a number of times builds up a distribution of projected treatment regimens and enables a range of values to be presented to encapsulate uncertainty in the projections.

The activity projections for the main cancer types are presented below (figure 9) and include upper and lower confidence intervals of where activity levels are anticipated to fall. The projections have been superimposed on the capacity modelling process to predict the outpatient clinic, clinical pharmacy, nursing and chair capacity required to meet future projected demand. Data below demonstrates the projected steady increase in demand for SACT in the main cancer types (breast, lung, colorectal, prostate, bladder, lymphoma, CLL and myeloma).

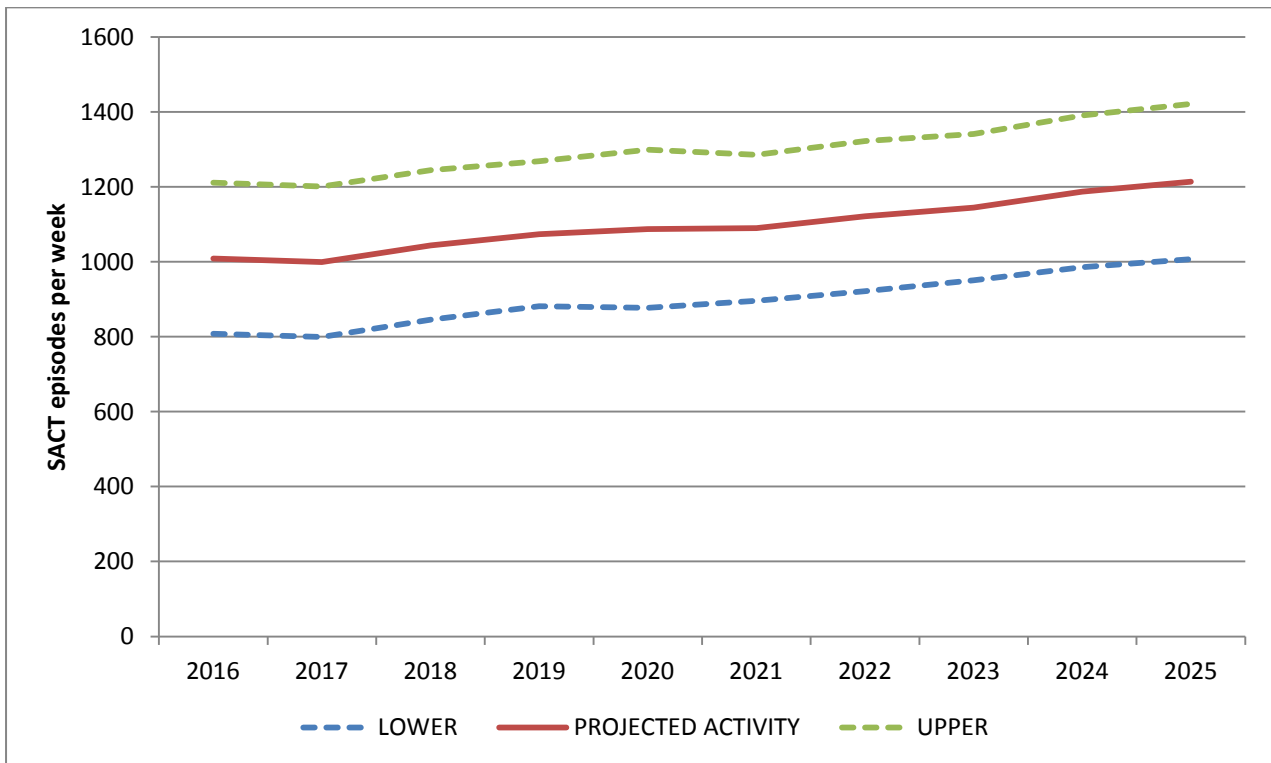


Figure 9: Future projected SACT episodes per week across WoS for main tumour types

5. PHASE 1 PROGRESS

Significant progress to address phase 1 recommendations and increase efficiency within units delivering SACT has been made across WoS Boards. This includes the implementation of the two stop model across all Boards, increasing the number of non-medical prescribers and developing alternative scheduling systems. Review of current usage of pre-filled products across the Region and the development of recommendations to maximise use to best support service delivery action does however remain outstanding. WoS Boards and Directors of Pharmacy are committed to increasing the usage of pre-filled products and have this as part of their work programme.

6. STRATEGIC VISION

The ultimate aim of the West of Scotland Strategic Review of SACT Services is to ensure high quality, safe and sustainable SACT services across the West of Scotland.

The emerging service model aims to:

- Improve patient experience and outcomes;
- Deliver treatment in the most clinically appropriate place;
- Ensure consistency of pathways and processes;
- Provide equitable access to treatment, including access to clinical trials; and
- Optimise resource use.

6.1 Strategic Principles

The following core principles underpin this workstream to ensure it successfully delivers against the agreed strategic vision and aims.

- Appropriate level of specialist care available to patients as close to home as possible;
- Redesign how we deliver services to generate the capacity to meet future demands;
- Emphasise competency based roles and enhancing the role of the wider multi disciplinary team;
- Optimise the use of existing estates;
- Minimise over treatment;
- Provide high quality, safe SACT services across the region, ensuring requirements of CEL 30 (2012) are met; and
- Value for money (future investment targeted at clearly identified need).

6.2 Success Factors

The following metrics will be utilised to demonstrate success of implementation:

- An improvement in patient experience and outcomes;
- Improved consistency of treatment provision, including access to clinical trials;
- A reduction in waiting times for SACT;
- An increase in level of non-medical prescribing (NMP) led clinics across WoS;
- A reduction in medicines wastage and increase in use of pre-filled products; and
- An even spread of activity across the working week for both SACT pre-assessment clinics and treatment delivery.

7. EMERGING MODEL OF CARE

There is high quality evidence to support the implementation of a model of care which builds capacity across settings to ensure appropriate level of specialist care available to patients as close to home as possible. A tiered approach to SACT service delivery which significantly expands upon the existing hub and spoke model is proposed. In the medium term, the emerging service model would result in consolidation of cancer units in the WoS and an increase of SACT outreach and community delivery models. This will be facilitated by the re-profiling of some existing cancer units as outreach services. A decrease in cancer units from the current 10 units to 4 or 5 across the region is envisaged, this would not impact on other elements of the patient pathway, e.g. surgical treatment. In order to implement this emerging model of care a number of specific recommendations are proposed.

	What	Services offered	
1	Cancer Centre	<ul style="list-style-type: none"> Specialised centre providing tertiary/complex services at a regional level Assesses and initiates inpatient, outpatient and daycase treatment for patients with cancer Onsite specialist oncology medical team (24/7) Delivering approx. 20% total SACT activity Serving a population of ~2.5 million (1 for WoS) 	<ul style="list-style-type: none"> Treatment for rare cancers Complex treatments Chemoradiotherapy Phase 1 and phase 2 clinical trials National services for some very rare cancer types <i>All services delivered at tiers below</i>
2	Cancer Unit	<ul style="list-style-type: none"> Large unit, which assesses and initiates outpatient and daycase treatment for a defined cohort of patients Delivers daycase treatment locally for patients centrally assessed, as appropriate Provides inpatient haemato-oncology facility Onsite specialist oncology medical team (Mon-Fri, 9am-5pm) Delivering approx. 30% total SACT activity Serving a population of ~300,000-600,000 (4/5 for WoS) 	<ul style="list-style-type: none"> Treatment for main tumour types and some less common cancers Phase 3 clinical trials Long infusions Consultant and NMP led prescribing <i>All services delivered at tiers below</i>
3	Outreach Service	<ul style="list-style-type: none"> Small to medium sized facility delivering daycase treatment to patients assessed and prescribed in cancer unit/centre Delivering approx. 50% total SACT activity Serving a population of ~150,000-300,000 (10-15 for WoS) 	<ul style="list-style-type: none"> Simple short infusions Subcutaneous treatments Supportive medicines (e.g. bisphosphonates) Chemotherapy Specialist Nurse led delivery
4	Community	<ul style="list-style-type: none"> Primary/ community care facilities providing care to cancer patients locally 	<ul style="list-style-type: none"> Dispensing of selected oral SACT Primary care shared care Delivery of SC/supportive medicines Community staff delivery

Figure 9: Emerging Model of Care

Recommendation 1: Non Medical Prescribing

Recommendation

Implement NMP led pre-assessment and prescribing of SACT across all relevant patient groups

There is good evidence to demonstrate that nurses and pharmacists can prescribe as effectively as doctors, in appropriate patient populations detailed within defined standard operating procedures. A NMP is a highly specialised role, particularly in prescribing SACT, given governance requirements; therefore it is crucial that the learning curve is acknowledged (see appendix 6 for NMP best practice principles).

In order for successful NMP led pre-assessment and prescribing of SACT, the NMP role must be a distinct component of the individuals existing role, with protected time assigned within individual job plans to undertake NMP duties. Capacity modelling demonstrates that there is a significant shortfall in consultant time to complete patient pre-assessment and prescribe SACT. In addition there is currently an underutilisation of trained NMP (nursing and pharmacy) across WoS NHS Boards.

It is anticipated that approximately 50% of total SACT prescribing activity could be undertaken by NMPs (see appendix 7 for detail). Currently there are 69 NMPs across WoS Boards trained to prescribe SACT (28 pharmacists and 41 nurses). In 2016 NMPs prescribed 24% of total SACT daycase and outpatient activity (on average this represents 4 prescriptions being generated per NMP per week).

NMP resource is not currently optimised as the majority of trained NMP do not have prescribing as a core component of their job plans. With appropriate backfill, there is a sufficient number of trained NMP across the region to deliver 50% of SACT prescribing at current activity levels. This would free up considerable oncologist/haematologist clinic time. It is estimated that the backfill resource required to deliver optimal NMP activity at present is approximately 6 WTE nurses and 4 WTE pharmacists across the region.

There is, however, variation across Boards and units in the number of trained NMP available. To fully realise the benefits of this model a regional workforce which worked across Board boundaries would be required.

Consultant oncologists currently work regionally within defined site specific teams (SSTs). Ensuring SSTs are multi disciplinary with NMPs appropriately aligned would enhance the role of the wider multi disciplinary team.

Objectives / Benefits:

- Optimisation of both NMP and medical workforce i.e. ensuring clinical resource is targeted at most appropriate patient groups.
- Optimising the use of consultant oncologist resource.
- Ensure cost efficient roles.
- Develop NMP career pathway and expand training opportunities.
- Sustainability of services as SSTs will work across the Region allowing for staff to be deployed as per patient requirement, and providing cross cover where necessary.

Success Factors:

- Improved patient experience across the service given the focus of specialist skills on appropriate patient groups.
- Increase in level of non medical prescribing and NMP led clinics across WoS.

- Increased job satisfaction across NMP teams.
- Evidence of a regional SST approach to the NMP workforce.

Delivery Plan / Actions Required:

Short Term (1-2 years)	Lead	Progress to Date
Develop and implement NMP best practice principles	Regional	<ul style="list-style-type: none"> • NMP Best Practice Principles developed and approved.
Develop tiered competency framework to ensure consistent and comparable assessment of pre-assessment and prescribing by NMPs	Regional	<ul style="list-style-type: none"> • Competency Framework approved and published for local Board implementation.
Assess required investment in back fill resource to enable expansion of current NMP pre-assessment within existing workforce	Regional/ Local	<ul style="list-style-type: none"> • Scottish Government Cancer Plan recurring funding secured for backfill of trained NMPs. • Local Board plans in place to achieve 50% NMP led prescribing target, with progress being monitored regionally.
Align NMP resource within SSTs, ensuring these are multi-disciplinary	Local	
Medium Term (3-5 years)		
Further develop NMP role and train/recruit additional NMP staff to ensure sustainability of service provision	Regional	<ul style="list-style-type: none"> • Regional funding agreed for 16 additional places on NMP course, over 2 years.

Recommendation 2: Repatriation of Less Common Cancers

Recommendations

- a. Implement models of central assessment and local delivery for some rare cancers
- b. Assess feasibility of repatriation of some less common cancers

Since review of Specialist Oncology Services in 2002, treatment for the main tumour types, namely: haemato-oncology, breast, lung, colorectal, prostate and bladder cancer, has been delivered locally across WoS with patients assessed and treated under the care of the regional oncology/local haematology team. Patients with less common cancer types are assessed and treated at the BWoSCC.

The main tumour types account for approximately 80% of SACT activity, however a significant increase in the SACT activity related to some of the rarer cancer types has been noted over recent years. This is principally due to changes in treatment approach.

Capacity modelling highlights significant variance in chair utilisation rate across the BWoSCC and cancer units in WoS, with significant capacity challenges noted at the cancer centre. Average chair utilisation rate across WoS units is 44%, which ranges from 22% (Vale of Leven) to 85% (BWoSCC).

Implementation of a model of central assessment at the cancer centre with delivery of treatment at local cancer unit or outreach centre, for some patient groups, would allow for care of patients to remain under the appropriate specialist team whilst receiving treatment closer to home. For example, patients with melanoma are currently treated at BWoSCC however the majority of treatments delivered for this patient group are suitable for local delivery, as these treatments are already being provided at local units for other patient groups.

Treatment for some of the less common tumour types which are currently treated centrally may be better repatriated to local Boards given the increase in associated activity over recent years. For example, at present, although renal cancer is treated at BWoSCC this patient group generate more SACT activity than bladder cancer patients, who are treated locally by the urology SST. Repatriation has significant implications for both cancer unit resource and SSTs however given the clear benefit for patients, coupled with the challenges with capacity at the cancer centre, this may provide a useful opportunity.

What does this mean for patients?

Mr McGregor (72) retired welder, from Blantyre, was diagnosed with lung cancer in August 2017, and is currently receiving immunotherapy treatment.

As part of his treatment pathway, Mr McGregor currently attends the Lanarkshire Lung Oncology clinic at University Hospital Monklands for SACT assessment.

Mr McGregor said “Although I have to travel further from home to see the Oncologist and Lung Cancer Nurse to be assessed, I am however able to have my chemotherapy at my local hospital – University Hospital Hairmyres.”

Mr McGregor said “When I was initially diagnosed, I did ask why I could not see the Oncologist at Hairmyres and had to go the Monklands?” Once this was explained I could see the benefits having the clinic in one hospital, especially knowing if my oncologist was not there I could see someone else” I got to know everyone and was reassured it would be the same team there every time I went and that the clinic would always be on.

The advantage of having my treatment locally; significantly reduces my travel time as I could potentially be on this treatment for a long time, so having close to home is important to me. However, I can use the volunteer drivers who would drop me at the door and collect me when I am finished which is an added bonus.

Objectives / Benefits:

- Move care closer to home for patients, where feasible and safe to do so.
- Optimise use of existing cancer centre and cancer unit's estates and infrastructure.
- Release capacity in cancer centre to focus on more complex treatments and clinical trials.

Success Factors:

- Improved patient experience whilst maintaining high quality outcomes.
- Shortened waiting times for SACT.
- Increased capacity to support clinical trials.
- Efficient use of existing resource.

Delivery Plan / Actions Required:

Short Term (1-2 years)	Lead	Progress to Date
Consider critical mass (population basis) to optimise services at each level of delivery	Regional	<ul style="list-style-type: none">• Postcode mapping work undertaken.
Undertake risk stratification exercise to determine what patient groups / regimens would be suitable for a central assessment and local delivery model	Regional	<ul style="list-style-type: none">• Risk stratification undertaken and shared with Boards to inform local development work.
Assess feasibility of repatriation of some less common cancer types, e.g. renal cancer, gynaecological cancer	Regional	<ul style="list-style-type: none">• Initial focus on gynaecological cancer agreed by SLWG.
Assess medical workforce requirements to ensure optimisation of cancer units	Local	
Implement central assessment and local delivery models where appropriate	Local	<ul style="list-style-type: none">• Work to move towards repatriation of gynaecological cancer SACT treatment for patients from the south side of Glasgow from BWoSCC to the New Victoria Hospital is underway and would serve as a test of change for wider repatriation.
Medium Term (3-5 years)		
Repatriate relevant patient groups from cancer centre to cancer unit	Local	

Recommendation 3: Outreach Service Delivery

Recommendation

Develop outreach services for all relevant treatments

There are a number of different examples of ‘near patient’ or ‘outreach’ delivery models across the WoS, UK and further afield, all demonstrating significant patient benefit. Given the number of day units currently working at, or near, capacity, delivering a proportion of treatments via outreach services would release capacity in day units to focus on more complex treatments and clinical trials. To ensure outreach services were compliant with CEL 30 (2012) cancer centre/unit chemotherapy trained nurses should deliver the outreach services.

As highlighted by figure 8, between January and June 2017 oral, SC preparations or supportive medicines accounted for 7 of the top 10 most commonly prescribed regimens. This presents significant opportunity for service redesign given these regimens fit clearly within the parameters outlined for outreach delivery (as per figure 8).

Initial work undertaken to risk stratify the breast cancer clinical management guideline demonstrates that approximately 81% of current activity could be safely and appropriately delivered in an outreach setting (see appendix 8). This would account for 446 hours of chair time released from cancer units per week across the WoS, based on 2016 data. This does not take into account patient specific characteristics; therefore these figures will represent a slight overestimation.

Objectives / Benefits:

- Move care closer to home for patients, where feasible and safe to do so.
- Maximise use of existing estates by utilising facilities with appropriate infrastructure to deliver outreach services, e.g. ambulatory care/community hospitals, medical centres.
- Release capacity in cancer centre/units to focus on the more complex treatments and clinical trials.
- Increase job satisfaction and staff retention.

Success Factors:

- Improved patient experience whilst maintaining high quality outcomes.
- Shortened waiting times for SACT.
- Increased access to clinical trials.
- Efficient use of existing resource.

What does this mean for patients?

Colin Welsh, 73, from Kilwinning in North Ayrshire was diagnosed with Myeloma in July 2017; he received various medications which concluded in December 2017.

Since his initial diagnosis Mr Welsh has been receiving zoledronic acid. To begin with Mr Welsh received this at University Hospital Crosshouse. However, following the introduction of locally accessible nurse-led treatment, Mr Welsh could access his treatment at his local hospital, Ayrshire Central Hospital.

Mr Welsh, said: “There have been two main advantages of receiving my treatment at Ayrshire Central Hospital. Firstly, the travelling has been so much easier. Before I would have to get public transport from where I live to University Hospital Crosshouse as the parking is sometimes an issue at that hospital. This meant a lengthy journey on two buses. However, Ayrshire Central Hospital is only one mile away from my home which made the journey so much convenient.

“Secondly, and most importantly, my treatment was provided by the same team at Ayrshire Central Hospital. I got to know everyone which meant it was a very relaxed and friendly experience.

Delivery Plan / Actions Required:

Short Term (1-2 years)	Lead	Progress to Date
Undertake risk stratification exercise to quantify what treatments could be safely and appropriately delivered outside of the cancer centre / units.	Regional	<ul style="list-style-type: none">• Risk stratification exercise undertaken and output shared with local Boards.
Assess existing estates for suitability of outreach service provision	Regional	<ul style="list-style-type: none">• SLWG agreed that existing cancer units should be utilised in short to medium term.
Re-profile relevant existing cancer unit services to outreach facilities	Local	
Pilot outreach service provision	Local	
Evaluate feasibility for roll-out of outreach service provision	Local	
Medium Term (3-5 years)		
Implement outreach service provision for all cancer types	Local	

Recommendation 4: Shared Care Models

Recommendation

Implement and further develop shared care models of monitoring and prescribing

The chronic nature of a number of cancer types means that some patients are followed up on a long term basis as outpatients. Monitoring and prescribing within a primary care setting without the necessity of regular hospital visits for appropriate patients, receiving some oral SACT regimens or supportive treatments (e.g. bisphosphonates), has proven to be a successful model of care.

The NHS Forth Valley model of care demonstrates that such a model can improve patient experience, release significant capacity in outpatient clinics, and ease dispensary pressures (see appendix 9 for summary of project evaluation). Table 2, below, provides an overview of the potential efficiency saving in terms of outpatient appointments and dispensing episodes if this model were implemented for the monitoring and prescribing of hydroxycarbamide for patients with essential thrombocythaemia (ET) and polycythaemia rubra vera (PRV) across WoS. This is based on a number of assumptions drawn from the NHS Forth Valley model.

Implementation of hydroxycarbamide shared care across the WoS could save at least 1000 haemato-oncology outpatient appointments per year, which equates to approximately 18 appointments per week. Furthermore, implementation would also result in a significant reduction in hospital dispensary workload with a reduction of approximately 25 dispensing episodes per week. Wider roll out of this model of care across WoS is however dependant on appropriate planning and resourcing/capacity in primary care.

Objectives / Benefits:

- Improve patient experience by safely managing their condition via primary care and removing inconvenience of regular hospital attendance.
- Increase efficiency within outpatient clinics by reducing the number of review appointments.
- Release capacity in hospital dispensaries and/or daycase units.
- Strengthen linkages between secondary and primary care providers.

Success Factors:

- Improved patient experience whilst maintaining high quality outcomes.
- Quicker turnaround times in hospital dispensary.
- Efficient use of specialist outpatient clinic resource.
- Closer working between secondary and primary care providers.

What does this mean for patients?

Shared care patient David Fairlie said the innovative model has benefited him.

Retired storeman David, 71, from Grangemouth, said: "I have had my condition for a number of years and I used to go to the old Stirling Royal Infirmary every three months for my blood test.

"I was in and out in five minutes so it's much more convenient now that I can have the test at my local GP practice every three months.

"They provide a great service, there's no problem getting an appointment with the phlebotomist and I'm more than happy to be looked after there instead of the hospital.

"They review the test and tell me if I need to change how many tablets I take.

"As well as the care at the GP, I go to the hospital once a year to see the haematology team."

Unit/Board	Patients Eligible for SCP	Outpatient Appts Saved per year (week)	Hospital Dispensing Episodes Saved per year (week)
Ayrshire & Arran	89	268 (5)	357 (7)
BWoSCC	71	214 (4)	285 (5)
New Victoria Hospital	56	167 (3)	222 (4)
GRI/Stobhill	83	248 (5)	330 (6)
Clyde	21	63 (1)	84 (2)
Total	320	959 (18)	1278 (25)

Table 1: Potential Impact of Hydroxycarbamide Shared Care

NB. NHS Forth Valley and Lanarkshire figures not included as electronic prescribing are not utilised for prescribing of hydroxycarbamide.

Delivery Plan / Actions Required:

Short Term (1-2 years)	Lead	Progress to Date
Roll out implementation of shared care model for monitoring and prescribing of hydroxycarbamide for patients with ET and PRV across WoS.	Local	<ul style="list-style-type: none"> The NHS Forth Valley model of care demonstrates successful implementation of shared care - see appendix 6 for summary of project evaluation
Develop further shared care models of monitoring and prescribing and establish test of change projects.	Regional / Local	<ul style="list-style-type: none"> A number of tests of change initiatives are being taken forward by WoS Boards, e.g. community delivery of bisphosphonates.
Medium Term (3-5 years)		
Monitor and audit implementation of shared care models	Regional / Local	
Further roll out successful models across WoS	Local	

Recommendation 5: Community Dispensing

Recommendation

Maximise use of community dispensing of oral SACT

The current model for the supply of oral SACT medications requires the patient to routinely attend the acute hospital pharmacy to collect their prescribed therapy. A model of supply which utilises the expertise and accessibility of the community pharmacy network is an alternative approach which is person centred and mutually beneficial between service users and those delivering healthcare which demonstrates continuity of care, clear communication and shared decision making.

A number of test of change initiatives are being taken forward by WoS NHS Boards at present, specifically work in both NHS Ayrshire & Arran and NHS GGC to dispense enzalutamide and abiraterone in the community for suitable patients with prostate cancer. Prescribing data for 2016 (see table 1) demonstrates that approximately 60 hospital dispensary episodes per week, across WoS, could be moved to community pharmacy. This would help to ease hospital dispensary pressures and improve the patient experience by allowing patients to collect their medication at a time and location of their choosing.

Objectives / Benefits:

- Build relationship between community pharmacy and patient which has significant potential benefit regarding adherence and management of potential interactions given the community pharmacist's enhanced knowledge of the patient.
- Promote integrated working between community pharmacy and the specialist service.
- Ease hospital dispensary pressures given large increase in demand for oral SACT due to reduction in the number of outpatient prescriptions required to go through the dispensary. These are usually prioritised and can impact on discharge prescriptions in the hospital.

Success Factors:

- Improved patient experience whilst maintaining high quality outcomes.
- Quicker turnaround times in hospital dispensary.
- Closer working between secondary and primary care providers.
- Increased continuity of care and access to a wider healthcare provider team.

What does this mean for patients?

Michael is an 85 year old man with prostate cancer.

He attends the Tuesday uro-oncology clinic in BWoSCC every 4 or 8 weeks with his daughter for review and his medication. Michael has been receiving his enzalutamide capsules from the hospitals dispensary following his clinic appointment since January 2017.

In September 2017 Michael was enrolled onto the pilot scheme where patients can get their medication dispensed from their nominated local community pharmacy. Michael still attends clinic regularly and in clinic he is issued with an HBP prescription for his medication which he takes to his chosen pharmacy.

In his own words he finds this scheme "much more convenient and quicker for the patient. It also eases the work in the hospital pharmacy".

	Total Patients (2016)	Total Episodes (2016)	Average Episodes/week
Ayr Hospital	101	730	14
FVRH	67	348	7
Wishaw General Hospital	43	263	5
BWoSCC	209	1316	25
New Victoria Hospital	49	341	7
IRH	10	97	2
WoS TOTAL	479	3095	60

Table 2: Abiraterone and Enzalutamide Episodes 2016 (WoS)

Delivery Plan / Actions Required:

Short Term (1-2 years)	Lead	Progress to Date
Determine how pharmacy services can best support the delivery of care closer to home through more local and/or community delivery models of treatment.	Regional	<ul style="list-style-type: none"> A number of test of change initiatives are being taken forward by WoS NHS Boards at present.
Explore the potential for increased community pharmacy contribution to the delivery of pharmaceutical care and support for ongoing monitoring	Regional / Local	<ul style="list-style-type: none"> Meeting with community and specialist oncology pharmacy colleagues scheduled. National framework in development for locally enhanced pharmaceutical care of patients receiving medicines under the supervision of secondary care
Development of education / training materials for community pharmacists	Regional	<ul style="list-style-type: none"> The use of on-line interactive training materials/videos is currently being scoped.
Medium Term (3-5 years)		
Establish community delivery as default option for all appropriate oral SACT	Local	

8. IMPACT OF EMERGING SERVICE MODEL

SACT treatment activity is projected to continue increasing. These levels of demand create an unsustainable position and increased pressure on the current infrastructure and workforce, likely impacting upon cancer waiting times, patient experience and outcomes. Cancer drug spend is also increasing, this is currently estimated at £65 million per annum for the WoS, however drug costs are not considered within resource plan given existing local and regional processes for managing financial impact of new medicines.

Investment in resource will therefore be required to fully support implementation of the tiered service model. By changing the service model however the level of investment will decrease as the increase in demand is more effectively and efficiently managed. The resource requirements associated with both daycase treatment delivery and pre-assessment and prescribing of SACT are detailed below.

8.1 Daycase Treatment Delivery Resource Requirements

SACT treatment activity is projected to increase by 40% by 2025, as reported on section 4. Within the current service model this would result in some units running overcapacity (see figure 10) thus requiring capital investment to build additional daycase facility and associated staff costs.

Implementing the tiered service model, facilitated by repatriation of gynaecological cancer activity to local units and implementation of outreach treatment delivery for the common cancer types, would however create capacity within existing facilities to better manage this increase in demand (see figures 11 and 12).

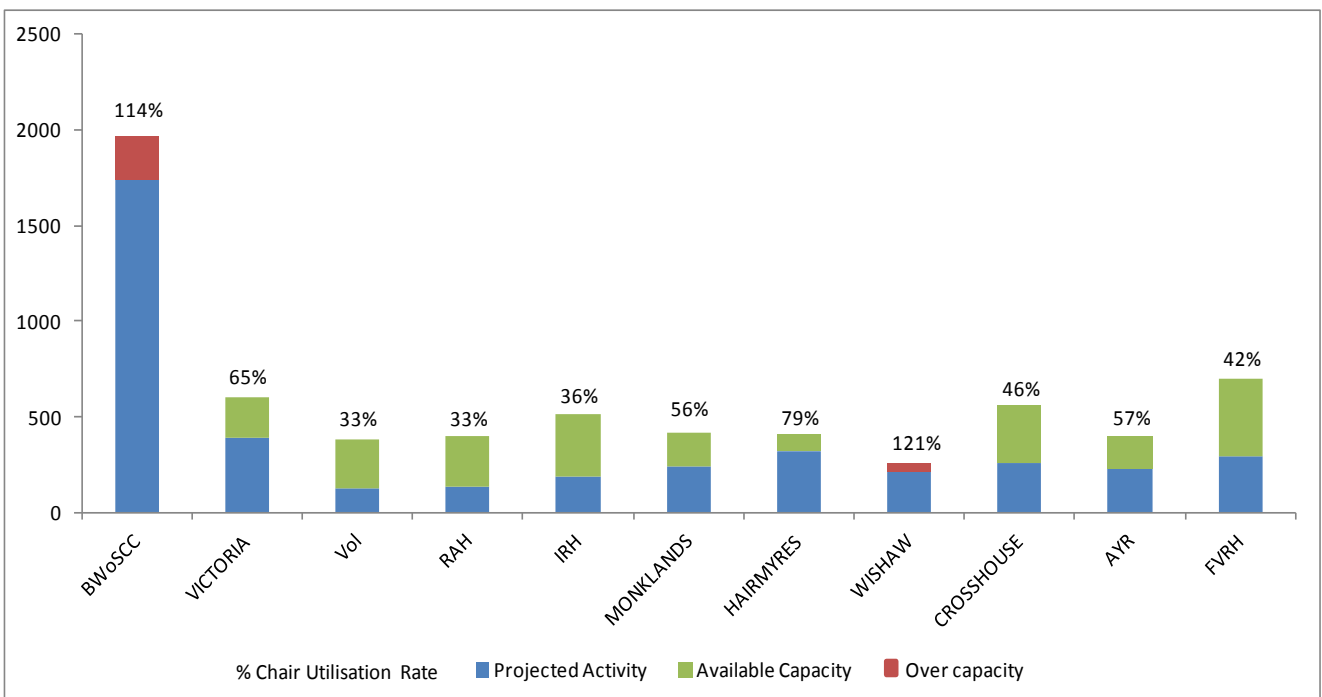


Figure 10: Day Case Treatment Delivery in WoS SACT Units at 2025 Projected Demand (chair time/week)

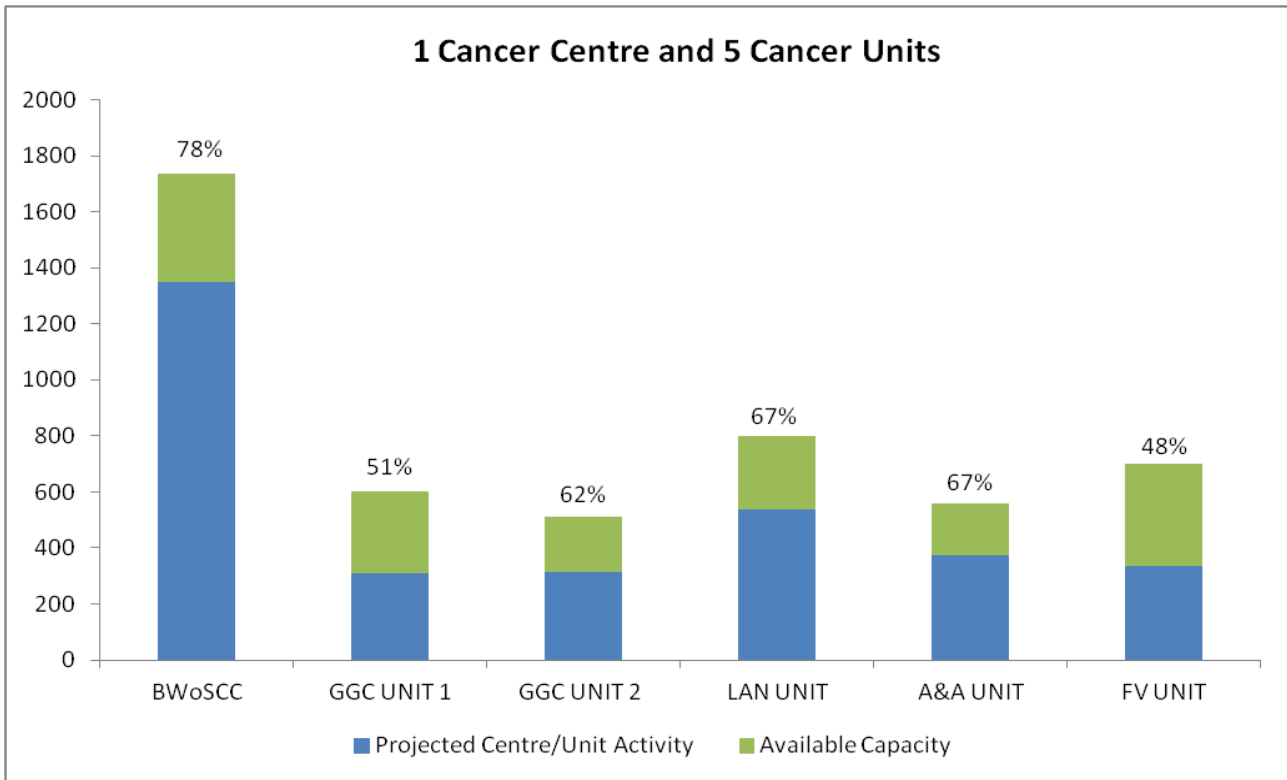


Figure 11: Cancer Centre and Cancer Unit Day Case Treatment Delivery at 2025 Projected Demand

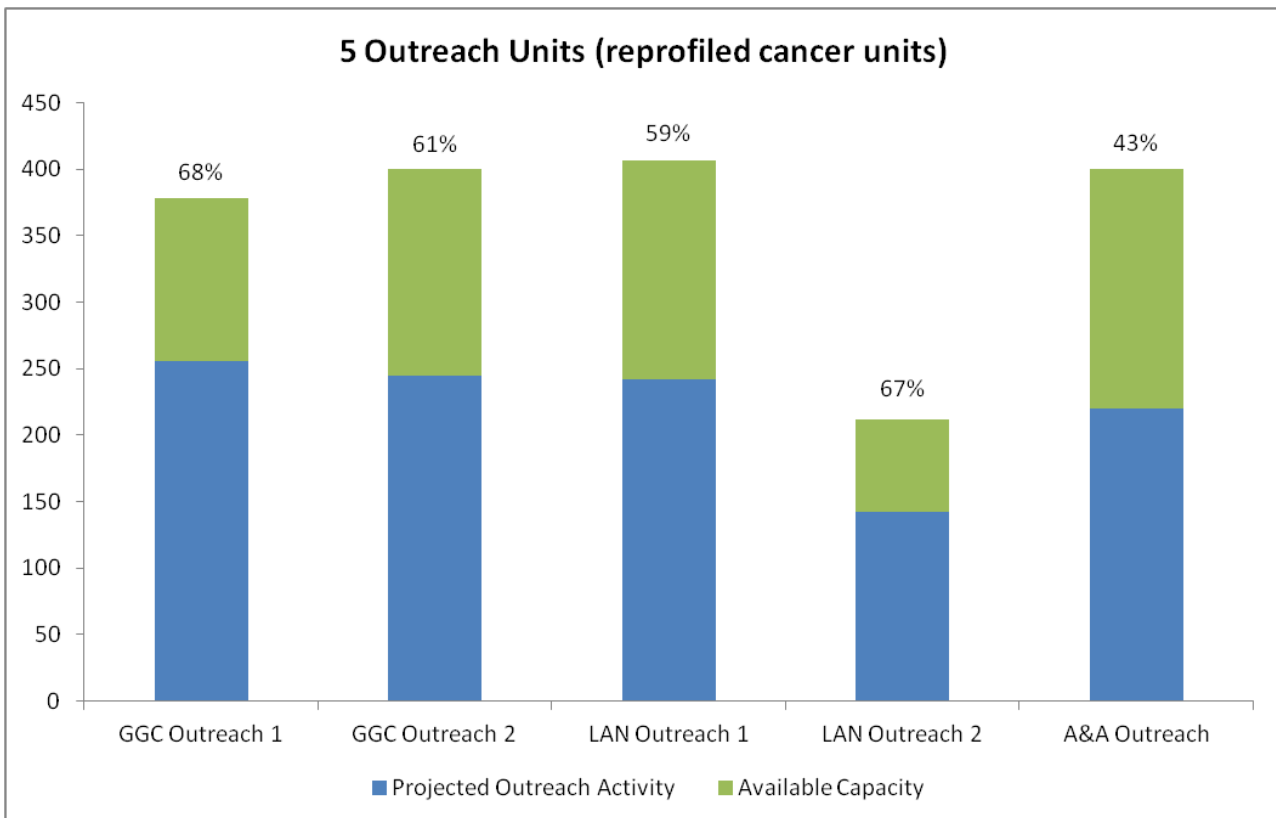


Figure 12: Outreach Unit Day Case Treatment Delivery at 2025 Projected Demand (see appendix 10 for assumptions)

In addition, implementation of the emerging model would consolidate medical, clinical pharmacy and NMP staff in 4/5 cancer units thereby utilising cost avoidance whilst building sustainability and resilience.

8.1.1 Growth Trajectory and Investment Required

Investment in staff for SACT delivery (nursing and clinical pharmacy) would be required on an incremental basis linked to trajectory for growth in demand for SACT.

It is anticipated that 2.9 WTE nursing resource (£99,912) and 0.9 WTE clinical pharmacy resource (£44,933) would be required per annum regionally.

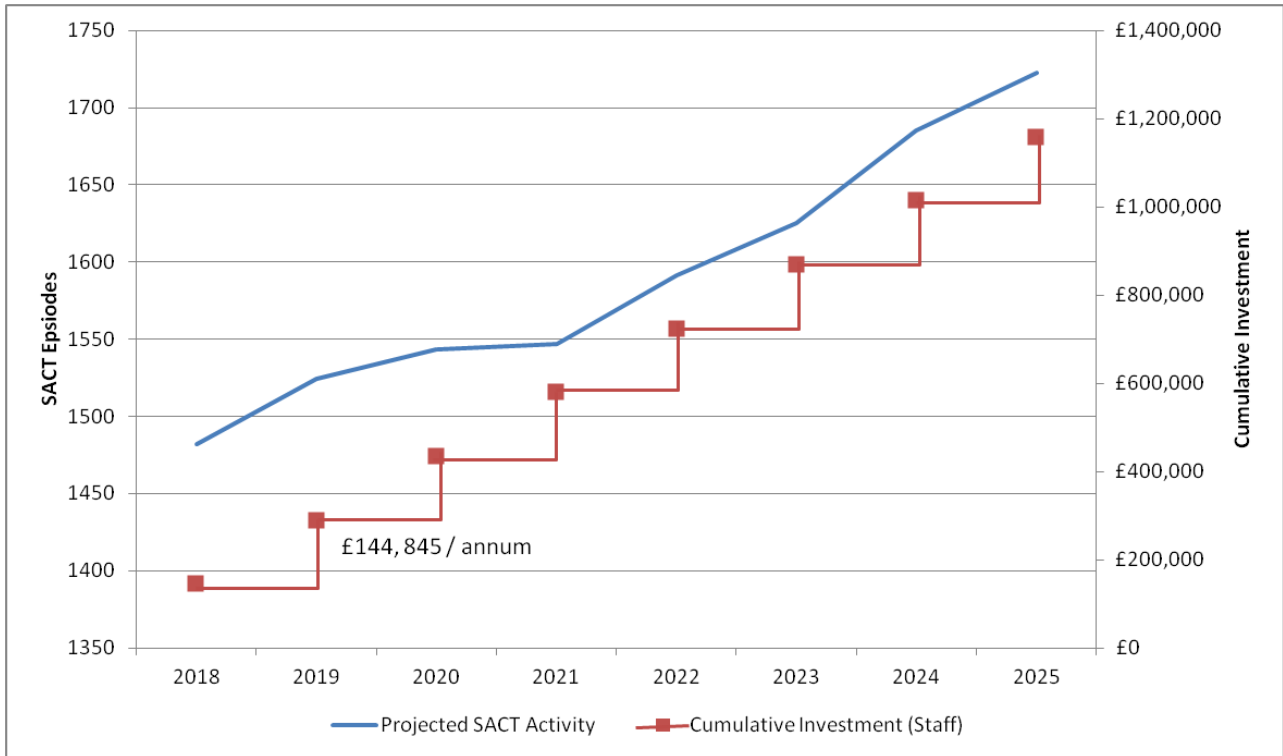


Figure 13: Cumulative Investment to 2025

Growth in activity would require to be reviewed each year in line with expected trajectory to determine accurate on-going resource requirements.

Optimisation of cancer units and outreach facilities would also result in a decrease in cost per case given the productivity gains across existing facilities. For example, Inverclyde Royal Hospital (cancer unit) cost per hour SACT delivery decrease from £9.33 to £5.50, whilst Beatson WoS Cancer Centre cost per hour of SACT delivery would increase slightly from £7.57 to £8.87 as capacity was built within the centre. Please note this includes only staff costs as consumable costs are standard regardless of treatment location (see appendix 11 for further detail).

8.2 Pre-Assessment and Prescribing Resource Requirements

At present the majority (74%) of pre-assessment and prescribing of SACT is currently undertaken by medical staff across all WoS units, therefore the projected increase in demand for SACT will require additional consultant sessions for pre-assessment and prescribing of SACT.

The emerging model recommends an increase in NMP led pre-assessment and prescribing, with an aim of 50% of SACT pre-assessment and prescribing being undertaken by NMPs by 2020. The increase in NMP negates requirement for additional consultant sessions for pre-assessment and prescribing (see figure 14).

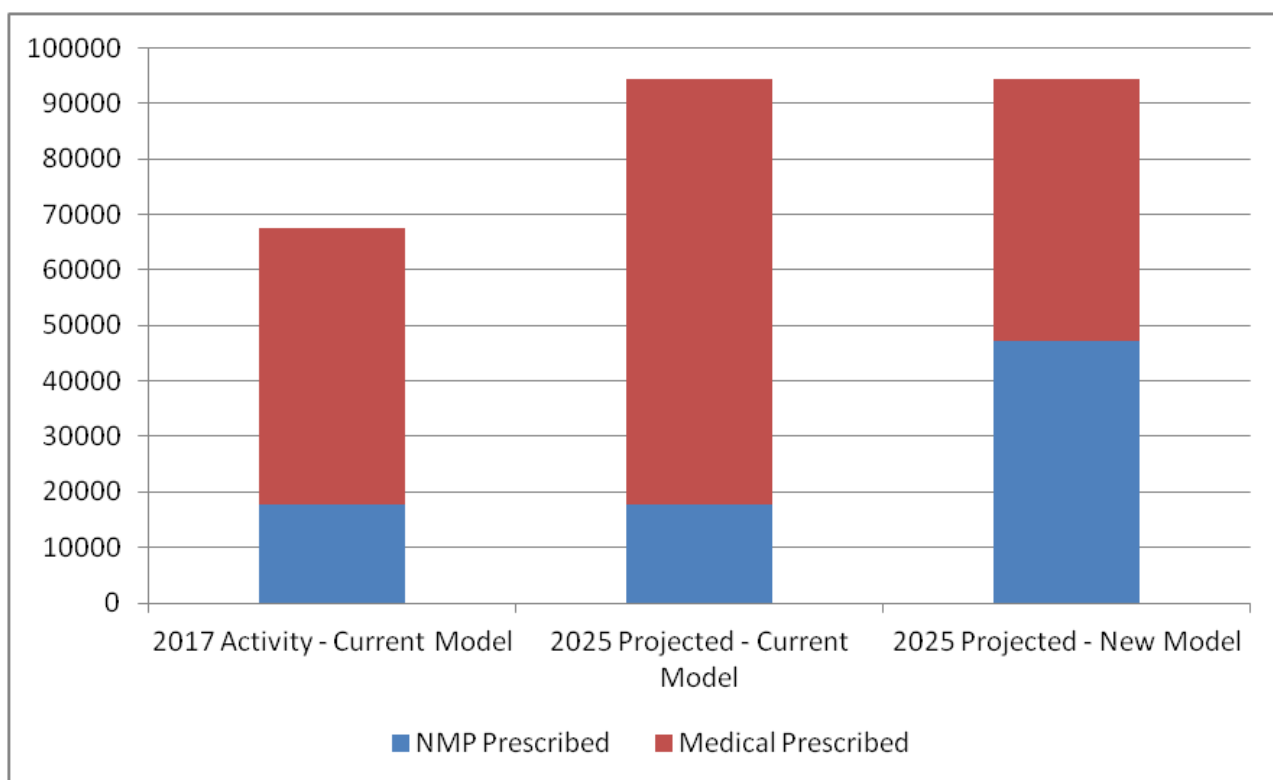


Figure 14: Prescribing Activity 2017 and Projected 2025 by Service Model

Central funding has been secured for SACT nurse and pharmacist backfill to support additional NMP sessions from currently qualified NMPs, at 2017 activity levels.

8.3 Resource Requirements Summary

Section 8 sets out the resource requirements to deliver the future projected demand for SACT services across the WoS.

The total costs associated with delivering 2025 projected activity levels within both the current and emerging service model are outlined in table 3 below (these are calculated at 2017/18 prices).

RESOURCE	CURRENT MODEL COSTS (2017/18 Prices)	EMERGING MODEL COSTS (2017/18 Prices)
CAPITAL		
Facilities	£2,200,000	£0
REVENUE		
SACT Delivery Staff	£1,588,414	£1,158,760
Consultant Staff	£ 2,321,040	£0
NMP Training/Backfill	£0	£186,264
TOTAL COSTS (WoS)	CAPITAL £2,200,000	CAPITAL £0
	REVENUE £3,909,454	REVENUE £1,345,024

Table 3: Resource Requirements Summary

8.3.1 Infrastructure Resource Requirements

To fully realise benefits of implementation of the emerging service model investment in infrastructure to support safe delivery of SACT outwith a cancer centre/unit will be required. This will potentially include some capital equipment costs, however utilising existing estates should minimise capital investment required. IT infrastructure and eHealth are key enablers of the recommendations detailed.

Any potential investment in IT will be informed by the agreed implementation model. It should be noted that there will be implications for ChemoCare (electronic prescribing and scheduling system) contract, given the potential to increase the number of users/sites accessing the system.

Short Term (1-2 years)	Lead	Progress to Date
Local assessment of facilities to support agreed service model e.g. capital equipment requirements etc.	Local	
Commence contract discussions to ascertain implications and costs associated with increasing the numbers of users/sites of ChemoCare.	Regional	
Medium Term (3-5 years)		
Improve interfaces between secondary care and primary care/community services	Regional / Local	

8.4 Workforce Development

A flexible and multi-skilled workforce that provides the staffing needed to manage future demand, in keeping with the proposed model, will be developed. Workforce rotation, at all levels of staff including: medical, clinical pharmacist, chemotherapy nurses and NMPs, around units to ensure safe and controlled services which fully comply with CEL 30 (2012) and would allow for development of a flexible workforce which works across the Region rather than within traditional Board specific boundaries thus providing a safeguard against local staffing issues. There is already some cross-site working of nursing and pharmacy staff within Board boundaries.

Short Term (1-2 years)	Lead	Progress to Date
Optimise use of chemotherapy support workers (CSW) to release chemotherapy nurse capacity	Local	<ul style="list-style-type: none"> Regional agreement has been reached regarding tasks which can safely and appropriately be undertaken by CSW along with a competency framework to support Boards in optimising this role. Audit in NHS Ayrshire & Arran has demonstrated that full use of this role could release approximately 39 hours of nursing time per week.
Revise clinical pharmacy, SACT dispensary and aseptic services opening/working hours to complement clinic and day unit operating times to ensure patients have access to pharmacy services and aseptic capacity is maximised	Local	
Optimise existing NMP workforce to deliver pre-assessment and prescribing of SACT by backfilling current (chemotherapy nurse/clinical pharmacist) roles	Local	<ul style="list-style-type: none"> Backfill requirements quantified at a regional level and funding secured.

Short Term (1-2 years)	Lead	Progress to Date
Progress NMP training of existing nursing and pharmacy team members to develop workforce to implement recommendations of the strategic review	Local	
Further develop the role of pharmacy technicians, including the use of their specialist knowledge in patient scheduling	Regional / Local	
Develop pharmaceutical care bundles to support safe delivery of less complex/lower risk regimens by the wider pharmacy team	National / Regional	
Work with NES to ensure training programmes are suitable and appropriate for future workforce requirements	Regional	
Medium Term (3-5years)		
Increase complement of NMP	Local	
Develop regional governance and operational management structure	Regional	

9. STRATEGIC REVIEW SUMMARY

The Regional SACT Future Service Delivery Strategic Review (see figure 10) sets out the current status of SACT services across the WoS and sets out an emerging model of care which will build capacity across settings to ensure appropriate level of specialist care is available to patients as close to home as possible.

Patient and carer engagement on the emerging model of care has been undertaken across all four West of Scotland NHS Boards and the principals of the model widely supported.

This paper outlines a number of regional and local actions for the short to medium term; however regional and local implementation plans will be developed following agreement of the service model.

The Regional Planning Group endorsed the strategic direction for SACT services across the WoS outlined within the review in August 2017. Further work has now been undertaken to engage widely with patients across the WoS, to finalise the recommendations and develop the underpinning resource plan to ensure that this strategic vision is realised.

9.1 Summary of Recommendations

	Strategic recommendation	Long term goals	Deliverables
1	Implement NMP led pre-assessment and prescribing of SACT across all relevant patient groups	<ul style="list-style-type: none"> Improve patient experience Increase job satisfaction and staff retention Ensure cost efficient roles Develop flexible workforce which works across traditional Board boundaries 	<ul style="list-style-type: none"> Optimise existing NMP and medical workforce by implementing a model of NMP pre-assessment and prescribing of SACT Match skills to tasks to ensure cost efficient roles and minimise investment in consultant oncologist resource Develop NMP career pathway and expand training opportunities
2a	Implement models of central assessment and local delivery for some rare cancers	<ul style="list-style-type: none"> Move care closer to home for patients Optimise use of cancer centre and cancer units Improve cancer units ability to absorb other activity in the region creating sustainability 	<ul style="list-style-type: none"> Optimise the flow of speciality activity in the region Release capacity in cancer centre to focus on complex treatments and clinical trials, e.g. by repatriating renal cancer treatment activity Explore opportunities to deliver specialist services in cancer units
2b	Assess feasibility of repatriation of some less common cancers		
3	Implement and further develop shared care models of monitoring and prescribing	<ul style="list-style-type: none"> Improve patient experience by safely managing their condition via primary care and remove inconvenience of regular hospital attendances Strengthen linkages between secondary and primary care 	<ul style="list-style-type: none"> Monitoring and prescribing of selected oral SACT regimens, or supportive treatments, within a primary care setting Realise efficiencies in outpatient clinics and acute hospital dispensaries and/or day units
4	Develop outreach services for all relevant treatments	<ul style="list-style-type: none"> Move care closer to home for patients Increase capacity at cancer centre and cancer units Increase job satisfaction and staff retention Consolidate and increase efficiency of estates 	<ul style="list-style-type: none"> Delivery of a significant proportion of treatments via outreach services Realise efficiencies by re-profiling cancer units to outreach facilities (i.e. decrease in number of cancer units) Release capacity in cancer centre/units to focus on complex treatments and clinical trials Maximise use of existing estates and infrastructure
5	Maximise use of community dispensing of oral SACT	<ul style="list-style-type: none"> Improve patient experience Promote integrated working between community pharmacy and specialist services Increased continuity of care and access to a wider healthcare provider team 	<ul style="list-style-type: none"> Model of supply which utilises the expertise and accessibility of the community pharmacy network Realise efficiencies in acute hospital dispensaries and increase turnaround times Build relationship between community pharmacy and patient

Figure 15: Regional SACT Future Service Delivery Strategic Review Summary

Appendix 1: Phase 1 Capacity Modelling Findings

Capacity modelling was undertaken to consider the following areas: outpatient clinic, nursing, pharmacy, and physical resources. Modelling has provided further understanding of the current position, the challenges faced by services and identified areas where improvement and development are required. The following details key findings from capacity modelling.

Outpatient Clinic Appointments

- Initial review of consultant time available for clinics suggests that, if the service relies on consultant staff alone, there is insufficient time at present to complete pre-assessment and prescribe SACT.
- The current organisation in outpatient clinics results in inefficient workflow with bottlenecks and delays in the system.
- There is currently underutilisation of trained NMP (nursing and pharmacy) across Boards.
- There is significant variation in clinic appointments available by day of week with peaks in activity Monday to Wednesday, as well as a large variation between the minimum and maximum weekly activity which is more pronounced in the smallest units.
- Real time prescribing is recognised as best practice to ensure safe, high quality care however current clinic models often do not allow sufficient time for this.

Nursing Resource

- There is currently a shortage of nursing staff across the majority of units delivering SACT.
- There is variation in the number and role of chemotherapy support workers across all units.
- Patient facing tasks take precedence for nursing staff therefore protected time for senior staff to undertake supporting professional activity, e.g. CEL 30 (2012) audit, is lost at times of peak activity.

Physical Resource

- Scheduling of SACT treatments is not optimised across units. Many units are sharing facilities with non-cancer specialities causing additional challenges.
- Larger units have a greater ability to be flexible in scheduling thereby optimising chair utilisation.
- There is significant variation across the working week with peaks of activity Tuesday to Thursday.

Clinical Pharmacy Resource

- Several units have a deficit in clinical pharmacy resource at certain times with direct patient care prioritised over supporting professional activities at present to cope with increasing demand.
- Inefficiencies in outpatient clinic organisation are resulting in prolonged times in clinic for clinical pharmacists, impacting on other duties.

Aseptic Pharmacy

- Isolator capacity is currently sufficient however the age of most units is such that a capacity problem may occur due to failure of existing equipment
- There is variation in uptake of pre-filled products. Factors such as cost, critical mass required to make use cost effective and storage capacity influence range of products outsourced and usage.

Dispensing Services

- There is an increase in workload for oral SACT within a backdrop of general dispensary pressures.
- Lack of review of routine supportive care medicines by prescribers was identified as an issue in some units. This results in inefficiencies with unnecessary dispensing and medicines wastage.

Conclusion

The work completed to date identifies a range of areas where improvements could be made within current resource. The majority of these improvements apply across all Boards and are not only applicable to one or two units. Whilst responsibility for progressing these improvements is the remit of individual Boards there is merit in retaining a regional approach to addressing these issues, where appropriate, adopting similar methodologies and in maintaining momentum.

Notably, however, even with an increase in efficiency across units and the accompanying optimisation of resource, in the context of current and on-going growth in SACT the recommendations and actions noted below will not be sufficient and further change and investment will be required to support safe and sustainable SACT services.

The outputs of Phase 1 of this work, when completed, will underpin the further redesign of services and enable more detailed modelling work to be undertaken to identify and quantify future resource requirements.

Recommendations and Actions Required

Short Term

The following recommendations are made to optimise current resource by improving efficiency and consistency of SACT service delivery across WoSCAN. These recommendations are underpinned by detailed Board/Unit analysis that has been shared with Operational Managers and Clinical Leads.

- Review and redesign whole system patient flow, to maximise efficiency of the service and ease pressures by flattening out activity across the working week and optimising use of existing physical resource. This should include specifically:
 - outpatient clinic organisation and working practices;
 - pre-treatment blood testing procedures; and
 - maximising two stop model with scheduling of day case SACT.
- Review of skill mix to maximise existing nurse and pharmacy resource, including reviewing the utilisation of trained NMP. Thereby ensuring optimal use of specialist medical, nursing and pharmacy resource.
- Review current usage of pre-filled products across the Region and bring forward recommendations to maximise use to best support service delivery.

Medium Term

Utilising the outputs from Phase 1 the following recommendation is proposed:

- Model and cost future service delivery options, including for example the consolidation of existing units within Boards.

Appendix 2: SACT Future Service Delivery SLWG Membership

Name	Title	Representing
Colin Sloey	Director of Strategic Planning & Performance NHS Lanarkshire (Chair)	Regional Planning Group
Sharon Adamson	Director of Regional Planning	Regional Planning Group
Nicky Batty	Lead Nurse SACT Future Service Delivery Project	WoSCAN
Elaine Burt	Chief Nurse, Regional Directorate, NHS GGC	West of Scotland Directors of Nursing
Gail Caldwell	Director of Pharmacy, NHS Ayrshire & Arran	West of Scotland Directors of Pharmacy
David Dodds	Clinical Director Specialist Oncology Services	NHS GGC
Ken O'Neill	Clinical Lead Primary Care Cancer Network	WoSCAN Primary Care Cancer Network
Katrina Farrell	SACT Lead Clinician	NHS Forth Valley
Maureen Grant	Lead Nurse Specialist Oncology Services	NHS GGC
Ans Khan	Associate Medical Director	NHS Lanarkshire
Mary Maclean	Regional Cancer Care Pharmacist	WoSCAN Pharmacy Group
Peter Maclean	Clinical Director Cancer Services	NHS Ayrshire and Arran
Melanie McColgan	General Manager Specialist Oncology Services & Clinical Haematology	NHS GGC
Fraser McJannett	Assistant General Manager (until April 2017)	NHS Ayrshire and Arran
Seonaid McLachlan	Lead Pharmacist – Cancer Medicines Planning	WoSCAN
John Murphy	SACT Lead Clinician / Chair Regional SACT Executive Steering Group	Regional SACT Executive Steering Group
Mary Orzel	Cancer and Ambulatory Services Service Manager (until July 2017)	NHS Forth Valley
Judith Park	Director of Access	NHS Lanarkshire
Caroline Rennie	Cancer Nurse Consultant	WoSCAN Nurses Group
Iona Scott	Quality and Service Improvement Manager	WoSCAN
Seamus Teahan	Regional Lead Cancer Clinician (Deputy Chair)	WoSCAN
Ewen Thomson	Lead Cancer Clinician	NHS Forth Valley
Evelyn Thomson	Regional Manager (Cancer)	WoSCAN

Medical Subgroup Membership

Name	Title	Representing
Sophie Barrett	Consultant Oncologist	Breast Cancer Oncology Team
Carrie Featherstone	Consultant Oncologist	Lung Cancer Oncology Team
Hilary Glen	Consultant Oncologist	Urological Cancer Oncology Team
Alistair Hart	Consultant Haematologist	Haemato-oncology NHS GGC
Seonaid McLachlan	Lead Pharmacist – Cancer Medicines Planning	WoSCAN / Pharmacy
Nick McLeod	Consultant Oncologist	Urological Cancer Oncology Team
Iona Scott	Quality and Service Improvement Manager	WoSCAN
Dawn Storey	Consultant Oncologist	Gastrointestinal Cancer Oncology Team
Ashita Waterston	Consultant Oncologist	Gastrointestinal Cancer Oncology Team
Jeff White	Consultant Oncologist & SACT Lead Clinician	NHS GGC

Pharmacy Subgroup Membership

Name	Title	Representing
Sarah Coulter	CEPAS Pharmacist	NHS Greater Glasgow and Clyde
Debi Dunn	Principal Pharmacist	NHS Ayrshire & Arran
Carla Forte	Lead Clinical Pharmacist Regional Services	NHS Greater Glasgow and Clyde
Fiona Maclean	Lead Clinical Pharmacist Regional Services	NHS Greater Glasgow and Clyde
Mary Maclean	Regional Cancer Care Pharmacist	WoSCAN Pharmacy Group
Seonaid McLachlan	Lead Pharmacist – Cancer Medicines Planning	WoSCAN / Pharmacy
John Milne	Lead Pharmacist Oncology Services	NHS Lanarkshire
Joanne Robinson	Senior Pharmacist - Oncology	WoSCAN / Pharmacy
Iona Scott	Quality and Service Improvement Manager	WoSCAN
Gillian Wishart	Principal Pharmacist	NHS Ayrshire & Arran

Nursing Subgroup Membership

Name	Title	Representing
Nicky Batty	Lead Nurse SACT Future Service Delivery Project	WoSCAN
Natasha Brown	Senior Charge Nurse	NHS GGC/ Victoria ACH
Val Browne	Senior Nurse (Chemotherapy)	NHS GGC/ Beatson WoS Cancer Centre
Claire Cowie	Senior Staff Nurse	NHS GGC/ Royal Alexandra Hospital
Cathie Dickie	Outpatients Department Service Manager	NHS GGC/ Beatson WoS Cancer Centre
Fiona Galbraith	Chemotherapy Charge Nurse	NHS Forth Valley
Lynn Mack	Macmillan Cancer Improvement Programme Manager	NHS Lanarkshire
Pamela Mackinnon	Senior Charge Nurse	NHS GGC/ Vale of Leven Hospital
Angela McDermid	Senior Staff Nurse	NHS GGC/ Inverclyde Royal Hospital
Seonaid McLachlan	Lead Pharmacist – Cancer Medicines Planning	WoSCAN / Pharmacy
Ann McPhelim	Macmillan Lead Haematology-Oncology Nurse	NHS Lanarkshire
Iona Scott	Quality and Service Improvement Manager	WoSCAN
Emma Smith	Senior Charge Nurse	NHS Ayrshire & Arran
Wendy Short	Senior Charge Nurse	NHS Ayrshire & Arran
Carol Stevenson	Senior Nurse (Chemotherapy)	NHS GGC/ Beatson WoS Cancer Centre

Appendix 3: Board Level SACT Activity Data Summary

NHS Ayrshire & Arran

Unit	SACT Episodes Delivered				
	2013	2014	2015	2016	2017
AYR HOSPITAL	3444	3698	4185	4685	4850
CROSSHOUSE HOSPITAL	4349	4874	4810	5197	5450
NHS A&A Total	7793	8572	8995	9882	10300

NHS Forth Valley

Unit	SACT Episodes Delivered				
	2013	2014	2015	2016	2017
FORTH VALLEY ROYAL HOSPITAL	4515	4873	5360	6280	6374
NHS FV TOTAL	4515	4873	5360	6280	6374

NHS Greater Glasgow and Clyde

Unit	SACT Episodes Delivered				
	2013	2014	2015	2016	2017
BEATSON WoS CANCER CENTRE	30336	33460	33823	37257	37441
NEW VICTORIA HOSPITAL	4958	5725	6376	7036	7394
SOUTHERN GENERAL/QEUH	634	911	891	834	833
GRI	13	30	265	521	654
STOBHILL HOSPITAL	23	82	217	342	454
IRH	1818	2095	2209	2502	2441
RAH	871	1185	1641	1725	1914
VOL	1320	1386	1337	1560	1768
NHS GGC Total	39973	44874	46759	51777	52899

NHS Lanarkshire

Unit	SACT Episodes Delivered				
	2013	2014	2015	2016	2017
HAIRMYRES HOSPITAL	2361	2918	3804	3650	3803
MONKLANDS HOSPITAL	2957	3026	3540	3830	3992
WISHAW GENERAL HOSPITAL	3012	4066	3820	3942	4687
NHS LANARKSHIRE Total	8330	10010	11164	11422	12482

Appendix 4: Stakeholder Engagement Plan

Activity	Timeframe
Undertake patient experience survey across all units delivering day case SACT in WoS <ul style="list-style-type: none"> • Develop patient experience questionnaire • Utilise chemotherapy day units to disseminate questionnaire to all patients receiving SACT over a defined time period • Collate and analyse results 	Feb 2017
Develop SACT patient experience survey WoS summary report <ul style="list-style-type: none"> • Provide local Board report and raw data to local teams to facilitate local improvement work 	Apr 2017
Developing public facing briefing paper/materials, including case studies	Jan-Feb 2018
Establish Stakeholder Reference Group <ul style="list-style-type: none"> • Develop terms of reference including governance arrangements • Seek patient/carer nominations – via chemotherapy day unit managers • Seek third sector nominations 	Jan 2018
Initial Stakeholder Reference Group Meeting <ul style="list-style-type: none"> • Agree engagement plan • Agree public facing documentation 	Jan-Feb 2018
Convene Focus Groups <ul style="list-style-type: none"> • Determine key questions • Develop slide presentation • Advertise via chemotherapy day units / through unit managers • Aim for 5/6 across WoS Boards 	Feb-Mar 2018
Develop engagement report <ul style="list-style-type: none"> • Collate focus group findings • Identify key issues to be addressed within SACT Future Service Delivery Emerging Service Model 	Mar 2018
Stakeholder Reference Group Meeting <ul style="list-style-type: none"> • Review and approve engagement report • Agree next steps 	Mar 2018

Appendix 5: Current Service Provision

	Outpatient Clinics					Treatment Delivered (IV and/or oral)				
	Breast	Lung	CRC	Haem	Uro	Breast	Lung	CRC	Haem	Uro
NHS Ayrshire & Arran										
Ayr Hospital	✓	✓	X	✓	✓	✓	✓	✓	✓	✓
Crosshouse Hospital	✓	✓	✓	✓	X	✓	✓	✓	✓	X
NHS Forth Valley										
Forth Valley Royal Hospital	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
NHS Lanarkshire										
Hairmyres	✓	X	✓	✓	X	✓	✓	✓	✓	X
Monklands	X	✓	✓	✓	X	✓	✓	✓	✓	X
Wishaw General Hospital	✓	X	X	✓	X	✓	✓	X	✓	✓
NHS Greater Glasgow and Clyde										
Beatson WoS Cancer Centre	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Victoria ACH	✓	✓	✓	✓	✓	✓	✓	✓ ^O	✓	✓
Inverclyde	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Vale of Leven	✓	✓	X	✓	X	✓	✓	X	✓	X
Royal Alexandra Hospital	X	X	X	✓	X	X	X	X	✓	X
Stobhill ACH	X	X	X	✓	X	X	X	X	✓ ^O	X
Glasgow Royal Infirmary	X	X	X	✓	X	X	X	X	✓ ^O	X

O = oral treatments only

CRC = Colorectal Cancer

Uro = Urological Cancer (Prostate and Bladder Cancers Only)

Appendix 6: NMP Best Practice Principles

Following a baseline audit of current non medical prescribing (NMP) practice across the WoS the SACT Future Service Delivery Nursing, Medical and Pharmacy Subgroups agreed the following best practice principles at a workshop in March 2017.

Essential Criteria
<ul style="list-style-type: none">• SOP/Protocol should be in place for each clinic and reviewed regularly. SOP/protocol must include:<ul style="list-style-type: none">○ Inclusion criteria for patients eligible for NMP review (this may vary between clinics based on clinical need and prescriber experience and should be reviewed regularly)○ Clear referral pathway for access to medical advice/support• Cover/contingency arrangements must be planned and accounted for in advance of starting a new clinic. Full details should be included in the SOP/protocol.• NMPs should have their own clinic list/template. This will allow for quantification, audit and assessment of NMP clinics as well as appropriate referral (in line with agreed referral criteria).• NMP clinics (either stand alone or run in conjunction with a medical team) must be recognised and resourced as prescribing clinics. Adequate provision of the following must be established:<ul style="list-style-type: none">○ Clinic room (including access to appropriate IT for electronic prescribing)○ Administrative support○ Access to medical records○ Clinic support staff• Appropriate preparation and follow up time for NMP clinics must be considered and incorporated into clinic specific SOP/protocol. This may include activities such as:<ul style="list-style-type: none">○ Formal pre/post clinic debrief to identify appropriate patients for NMP, discuss any challenges or identified problems, clarify management plan, discuss scan results etc.○ Time for checking blood/test/scan results in advance of clinic○ Post clinic dictation and follow up activities as required• NMPs prescribing in clinics must have their role recognised as being separate from other nursing or pharmacy responsibilities with clearly defined role specification and appropriate job plan.
Desirable Criteria
<ul style="list-style-type: none">• Evaluation and audit of current and future practice is very important and should be incorporated into routine practice and clinic SOPs/protocols.• A multi-disciplinary team based approach to assessment of whether NMP clinic should be run alongside a medical clinic or whether it should be run separately with appropriate access to medical support if required.• A multi-disciplinary approach should be taken to the provision of care for patients receiving SACT, this may include but does not necessitate, various members of the multi-disciplinary team working within the same clinic.• As far as practically possible, NMPs should be integrated within the clinical team(s) they are working with. Protected time for attendance at site specific team meetings/MDTs is desirable.• Where it is unavoidable or necessary for the prescriber to undertake more than one role, consideration should be given to clinic set up/template to ensure both patient and prescriber safety e.g. pharmacists should have specific separate sessions for either prescribing or clinical verification, nurses with additional CNS responsibilities may require longer appointment times to allow for safe prescribing of SACT and provision of additional holistic care/support.• NMPs should operate within a regionally agreed competency based framework. This framework could include different levels with appropriate assessment and criteria to be met. This would allow NMPs to prescribe and progress in a structured and formalised setting, ensuring governance and equity of services provision across the West of Scotland.

Appendix 7: Non Medical Prescribing Modelling

	Patients/ Clinic	Patients/ Year	Patients/ Year inc. capacity factor (85%)	Patients/ Year inc. capacity factor & deferral rate	Total SACT Episodes/ Year (2016)	NMP suitable activity	NMP Episodes / Year	WTE Req'd inc. resource factor	Nurse WTE*	Pharmacy WTE*
Scenario 1	10	5200	4420	3978	72440	50%	36220	9.9	6.0	4.0
Scenario 2 - 60% activity	10	5200	4420	3978	72440	60%	43464	11.9	7.2	4.8
Scenario 3 - 20% deferral rate	10	5200	4420	3536	72440	50%	36220	11.2	6.7	4.5
Scenario 4 - 8 patients per clinic	8	4160	3536	3182.4	72440	50%	36220	12.4	7.5	5.0

* based on current workforce 60:40

Activity Assumptions (informed by current best practice across WoS)

- 15 minute appointments
- For each 0.1 WTE each NMP will have a full half day to attend clinic which includes seeing 10 patients and all admin activities, preparation and follow up
- 10% deferral rate
- Working at 85% capacity to account for fluctuations in demand week to week
- Resource factor of 22.5% included to account for annual leave, sickness etc

Prescribing assumptions

- Medics will prescribe the clinical trials activity (6% total activity 2016)
- Medics will prescribe cycle 1 day 1 activity (14% total activity 2016)
- Medics will need to see 30% of remaining activity either due to frailty or review (perhaps conservative)
- Given factors above medics need to undertake 50% of activity (therefore other 50% activity appropriate for NMP prescribing)

Scenarios

1. NMP prescribe 50% total activity, 10 patients per clinic, 15 min appointments with 10% deferral rate (as per activity assumptions)
2. Increase NMP prescribing activity to 60% of total prescribing
3. Increase deferral rate to 20%
4. 8 patients per clinic

Appendix 8: Breast Cancer CMG Risk Stratification

The Christie NHS Foundation Trust has developed a framework document to determine which patients can safely be referred to their nurse-led outreach services. These criteria have been applied to the current WoSCAN breast cancer CMG, to quantify the proportion of patients who could potentially receive treatment as part of an outreach service. This exercise only considered properties of the SACT regimen, as it would not be possible to try and anticipate patient specific characteristics at this stage, therefore these figures will represent an overestimation. This exercise relates only to the delivery of SACT and not the clinical assessment.

Criteria for inclusion

- All oral SACT;
- All subcutaneous SACT; and
- All SACT meeting The Christie pre-specified criteria.

All regimens within the breast cancer CMG are amenable to outreach for at least some of the regimen. Based on 2016 data this means that:

Regimen	No. of patients (WoS)	Total Episodes (WoS)	Adjustments	Chair time (hours/ week)
FEC-D (FEC from cycle 1, D from cycle 3)	501	1423	FEC only	68
AC (from cycle 1)	32	104		2
TC (from cycle 3)	184	282	Cycle 3 onwards	19
FEC 60/80/100 (from cycle 1)	129	579		17
Trastuzumab (SC or IV from cycle 3)	SC 568 IV 73	SC 4733 IV 496	Cycle 3 onwards	SC 182 ⁹ IV 19
Epirubicin (from cycle 1)	37	355		7
Docetaxel (from cycle 3)	33	85	Cycle 3 onwards	4
Capecitabine	176	1210		
Vinorelbine	IV 9 Oral 55	IV 39 Oral 307		IV 0.5
Carboplatin (from cycle 3)	32	56	Cycle 3 onwards	2
Denosumab	275	2048		10
Zoledronic Acid	401	2316		33
Weekly paclitaxel (from cycle 3)	231	1903	Cycle 3 onwards	82
Mitoxantrone	1	4	Cycle 3 onwards	0.1
Low dose oral cyclophosphamide	11	35		
Total		15975		
Total activity breast cancer 2016		19795		
Percentage activity potentially amenable to outreach delivery		81%		

⁹ Trastuzumab SC chair time includes observation period as per SPC

Appendix 9: Shared Care of Patients Receiving Hydroxycarbamide Evaluation Summary

Project Description:	<p>The service allows appropriate patients to receive their hydroxycarbamide monitoring and prescribing within a primary care setting.</p> <p>Patients remain under the care of haematology with blood levels monitored and medication prescribed by primary care. Where any change in dosage is required, based on blood results, this is undertaken following consultation with haematology.</p>
Stage of Project:	Established in 2012
Project Summary :	46% patients (16 patients) are currently being managed via the shared care protocol (SCP) and referral criteria are well adhered to. The SCP is being implemented well however audit highlights that more eligible patients could be successfully managed by this approach.

Patient Experience	Safety and Governance
<p><i>There is evidence to indicate this project has a positive impact on patient experience</i></p> <ul style="list-style-type: none"> Significantly reduces patient visits to hospital for what is essentially a long term chronic condition for many patients. Local anecdotal patient feedback is positive. 	<p><i>There is good evidence to indicate that the project meets safety and governance criteria</i></p> <ul style="list-style-type: none"> Service benchmarked and risk assessed against CEL 30 (2012) demonstrating compliance. Relevant governance process and structures in place. No adverse events/near misses have occurred to date in delivery of this service. Audit demonstrates compliance with protocol of patients managed in primary care.
Efficiency	Transferability
<p><i>There is excellent evidence to suggest this pilot makes efficient use of NHS resources</i></p> <ul style="list-style-type: none"> Outpatient activity significantly reduced from 4 clinic visits per year to one (48 OP appointments / year at present). Hospital dispensary workload reduced (64 prescriptions/ year at present). At the patient level, this shared care process significantly reduces time spent in hospital. 	<p><i>There is good evidence to suggest this project is scalable and transferable</i></p> <ul style="list-style-type: none"> A detailed shared care protocol has been developed and rigorously tested, which is available and could be utilised across WoS. The evaluation team conclude that the project is scalable and transferable across NHS Boards, in addition, the principles of the shared care protocol could be utilised for other oral SACT medications for more chronic conditions with appropriate development. Wider roll out of service across WoS dependent on engagement with / remuneration for Primary Care. Imperative that a clear GP route back in with queries is in place which links with patient record to ensure audit trail/ completeness (SCI Gateway).

Appendix 10: Assumptions – Emerging Treatment Delivery Model 2025 Activity Levels

- Outreach for common cancer types only. Other tumour types (e.g. melanoma and renal cancer) are however potentially suitable for outreach delivery.
- Gynaecological cancer repatriation undertaken for all activity other than vagina/vulva cancer and patients receiving concurrent chemoradiotherapy, these groups will continue to be treated at BWoSCC.
- Gynaecological cancer patients from North Glasgow will continue to be treated at BWoSCC.
- Outreach suitable activity calculated as 35% of common cancers chair time, this accounts for suitability based on risk stratification of regimens and patient factors.
- BWoSCC common cancer activity calculated as 53% total chair time (based on 2017 data).
- There is no need for outreach in NHS Forth Valley in the short to medium term.
- Only re-profiled existing cancer units are included as outreach nurse led treatment delivery facilities however outreach could be undertaken in other units/ facilities.

Appendix 11: Productivity Analysis – Staff Variable Costs

1. Inverclyde Royal Hospital (Cancer Unit)

Band	WTE	Hours	Total SACT Delivery Hours	Total SACT WTE	Cost/Year (2017/18 Prices)	Cost/Week (2017/18 Prices)	Cost/Week 2025 (2017/18 Prices)
Band 7	1	37.5	14.3	0.4	£19,537	£375.21	£375.21
Band 6	3.4	127.5	48.5	1.3	£55,534	£1,065.21	£1,065.21
Band 5	0.6	22.5	8.6	0.2	£7,933	£152.28	£285.71 (1 additional WTE)
Total	5	187.5	71.3	1.9	£83,004	£1,592.70	£1,726.13

CURRENT MODEL -STATUS QUO

	SACT Hours/week	Cost per hour of SACT delivery
2017	132	£12.07
2025	185	£9.33

EMERGING MODEL

	SACT Hours/week	Cost per hour of SACT delivery
2025	314	£5.50

Assumptions:

- Based on staffing levels, and assignment of time for SACT delivery, provided by the unit as part of phase 1 capacity modelling exercise.
- Only trained staff costs included, which aligns with phase 1 capacity modelling output.
- Only SACT delivery time included, rather than WTE, given the additional tasks undertaken by nursing staff other than direct SACT activity (e.g. attending clinics, inserting PICC lines etc.)
- SACT hours/week as per those outlined within section 8, figures 10-12.

2. Beatson West of Scotland Cancer Centre

Band	WTE	Hours	Total SACT Delivery Hours	Total SACT WTE	Cost/Year (2017/18 Prices)	Cost/Week (2017/18 Prices)	Cost/Week 2025 (2017/18 Prices)
Band 7	0.8	30	14.1	0.4	£19,263	£369.96	£369.96
Band 6	8	300	140.7	3.8	£161,051	£3,089.13	£3,089.13
Band 5	23	862.5	404.4	10.8	£374,792	£7,194.79	£8,529.04 (10 additional WTE)
Total	31.8	1192.5	559.2	14.9	£555,107	£10,653.88	£11,988.13

CURRENT MODEL -STATUS QUO

	SACT Hours/week	Cost per hour of SACT delivery
2017	1408	£7.57
2025	1971	£6.08

EMERGING MODEL

	SACT Hours/week	Cost per hour of SACT delivery
2025	1351	£8.87

Assumptions:

- Based on staffing levels, and assignment of time for SACT delivery, provided by the unit as part of phase 1 capacity modelling exercise.
- Only trained staff costs included, which aligns with phase 1 capacity modelling output.
- Only SACT delivery time included, rather than WTE, given the additional tasks undertaken by nursing staff other than direct SACT activity (e.g. attending clinics, inserting PICC lines etc.)
- SACT hours/week as per those outlined within section 8, figures 10-12.