Pwyllgor Gwasanaethau Iechyd Arbenigol Cymru (PGIAC)
Welsh Health Specialised Services Committee (WHSSC)

WHSSC Joint Committee Meeting held in public
Tuesday 13 October 2020 at 16:00

Virtual Quorum Basis Meeting

Consent Agenda

Item		Lead	Paper / Oral	Time
1.	**Preliminary Matters**			
1.1	Welcome, Introductions and Apologies	Chair	Oral	16:00 – 16:05
1.2	Declarations of Interest	Chair	Oral	
2.	**Items for Consideration and/or Decision**			
2.1	Reducing harm due to Covid-19: Stereotactic Ablative Radiotherapy (SABR) and Brachytherapy	Director of Planning	Att.	16:05 – 16:20
3.	**Concluding Business**			
3.1	**Any Other Business**	Chair	Oral	
3.2	**Date of next meeting (Scheduled)** - 10 November September 2020 at 13:30 - To be confirmed	Chair	Oral	

The Joint Committee is recommended to make the following resolution:
"That representatives of the press and other members of the public be excluded from the remainder of this meeting having regard to the confidential nature of the business to be transacted, publicity on which would be prejudicial to the public interest"
(Section 1 (2) Public Bodies (Admission to Meetings) Act 1960)".

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Welsh Health Specialised Services Committee (WHSSC)

		Agenda Item	2.1
Meeting Title	**Joint Committee**	Meeting Date	13/10/2020
Report Title	Reducing harm due to Covid-19: Stereotactic Ablative Radiotherapy (SABR) and Brachytherapy		
Author (Job title)	Planning Manager (Cancer & Blood)		
Executive Lead (Job title)	Director of Planning	Public / In Committee	

Purpose	The purpose of this paper is to request approval for in-year funding to expand the commissioned indications for Stereotactic Ablative Radiotherapy and Brachytherapy in order to provide additional, evidence based, treatment options to support the reduction of harm related to the Covid-19 pandemic.

RATIFY	APPROVE	SUPPORT	ASSURE	INFORM
☐	☒	☐	☐	☒

Sub Group /Committee	Choose an item.	Meeting Date	Click here to enter a date.

Recommendation(s)	Members are asked to: • **Note** that clinical evidence favours the routine commissioning of SABR to treat patients with Oligometastatic Cancer and Hepatocellular Carcinoma; • **Note** treating patients with SABR helps to reduce Covid related harm since the relative benefits of SABR compared with alternative treatment modalities (surgery or systemic therapy) increase when there is risk of infection with Covid-19; • **Note** clinical evidence favours the routine commissioning of Brachytherapy to treat patients with intermediate and high risk localised prostate cancer; • **Note** by substituting for a proportion of external beam radiotherapy, the provision of brachytherapy for intermediate and high risk prostate cancer patients will allow increased radiotherapy throughput, reducing Covid related harm by increasing the ability to treat backlog and manage any future surge of previously suppressed demand. • **Approve** commissioning SABR for patients with Oligometastatic Cancer and Hepatocellular Carcinoma in line with WHSSC's draft commissioning policies as in-year service developments on an interim basis for 6 months;

	• **Approve** commissioning brachytherapy in line with WHSSC's draft commissioning policy as an in-year service development on an interim basis for 6 months; • **Note** recurrent funding for SABR for oligometastatic cancer and HCC, and brachytherapy for intermediate and high risk prostate cancer, will be considered through the WHSSC ICP process for 2021-24.

Considerations within the report (tick as appropriate)								
	YES	NO		YES	NO		YES	NO
Strategic Objective(s)	✓		Link to Integrated Commissioning Plan	✓		Health and Care Standards	✓	
	YES	NO		YES	NO		YES	NO
Principles of Prudent Healthcare	✓		IHI Triple Aim	✓		Quality, Safety & Patient Experience	✓	
	YES	NO		YES	NO		YES	NO
Resources Implications	✓		Risk and Assurance	✓		Evidence Base	✓	
	YES	NO		YES	NO		YES	NO
Equality and Diversity		✓	Population Health	✓		Legal Implications		✓

Commissioner Health Board affected																		
Aneurin Bevan	✓	Betsi Cadwaladr	✓	Cardiff and Vale	✓	Cwm Taf Morgannwg	✓	Hywel Dda	✓	Powys	✓	Swansea Bay	✓					

Provider Health Board affected (please state below)
Velindre Cancer Centre

1.0 SITUATION

The purpose of this paper is to request approval for in-year funding to expand the commissioned indications for Stereotactic Ablative Radiotherapy and Brachytherapy in order to provide additional, evidence based, treatment options to support the reduction of harm related to the Covid-19 pandemic.

The WHSSC Management Group, in its September meeting, has supported the recommendations of this paper. However, a Joint Committee decision is required to approve the additional funding since this would be an in-year development above the funding within the WHSSC ICP 2020/21.

2.0 BACKGROUND

2.1 Current commissioning

Stereotactic Ablative Radiotherapy

Stereotactic Ablative Radiotherapy (SABR) is a highly targeted form of radiotherapy which targets a tumour with radiation beams from different angles at the same time. The treatment is delivered in a smaller number of treatments (hypofractionation) than conventional radiotherapy using one, three, five or eight fractions. The aim of treatment with SABR is to ensure that the tumour receives a high dose of radiation whilst the tissues close to the tumour receive a lower dose of radiation sparing the surrounding healthy normal tissues.

WHSSC currently commissions SABR for the treatment of lung cancer (CP76 Stereotactic Ablative Radiotherapy for the management of surgically inoperable non small cell lung cancer in adults). In south west, mid and south east Wales, the SABR service is provided by Velindre Cancer Centre; for north Wales, it is provided at Clatterbridge Cancer Centre.

It should be noted that Velindre Cancer Centre is already providing SABR to NHS patients with Oligometastatic Cancer and HCC. This has been funded through VCC's charitable income. VCC has delivered SABR during the Covid-19 pandemic for HCC patients who were unable to have surgery due to the cessation of liver surgery in UHW.

Brachytherapy

Low dose rate brachytherapy (LDR) involves implanting tiny radioactive seeds into your prostate gland. Radiation from the seeds destroys cancer cells in the prostate. High dose-rate brachytherapy (HDR) is a type of internal radiotherapy used to treat prostate cancer. You may have brachytherapy on its own or together with external beam radiotherapy.

Brachytherapy is currently commissioned by WHSSC for the treatment of patients with low risk prostate cancer (CP01 Brachytherapy in the treatment of localised prostate cancer). Brachytherapy is provided at Velindre Cancer Centre

for south west, mid and south east Wales; for north Wales it is provided at Christie Hospital NHS Trust.

2.2 WHSSC ICP 2020-23

Proposals for expanding the commissioned indications for SABR and Brachytherapy were submitted by Velindre NHS Trust as potential schemes for inclusion in the WHSSC Integrated Commissioning Plan (ICP) 2020-23. These schemes were:

i) SABR for the treatment of Oligometastatic Cancer (OC) and Hepatocellular Carcinoma (HCC);
ii) Brachytherapy for the treatment of intermediate and high risk prostate cancer.

They were considered via the Clinical Impact Assessment Group (CIAG) process in October 2019 but their relative scores, and priority ranking, fell below the cut off that was determined for inclusion as funded schemes within the ICP 2020-23 (appendix 1: relative scores from CIAG).

However, in the period since the ICP 2020-23 was agreed, there have been two important changes which have increased the relative benefits and risks of these schemes for patients. These are:

i) developments in the evidence base for SABR for Oligometastatic Cancer and HCC, and the decision of NHS England to routinely commission SABR for these new indications;
ii) the impact of the Covid-19 pandemic which has changed the relative benefit and risk profiles of these radiotherapy modalities compared with alternative treatments (surgery and systemic therapy).

Given the developments in the evidence base, the commissioning position adopted in NHS England and the contribution of these treatments in the context of the pandemic, this paper outlines the case for commissioning these additional indications for SABR and Brachytherapy in NHS Wales as in-year developments.

3.0 ASSESSMENT

3.1 Evidence Base: SABR for Oligometastatic Cancer and HCC

Since the development of the WHSSC ICP 2020-23, the Commissioning through Evaluation (CtE) programme has reported its findings for SABR in the treatment of OC and HCC. NHS England has reviewed the CtE findings and, in conjunction with other published evidence, concluded that the evidence favours routine commissioning of SABR for both these indications. NHS England

published policies for the routine commissioning of SABR for OC and HCC in March 2020[1][2].

- Benefits of SABR: Oligometastatic Cancer

The evidence favours SABR for the treatment of metachronous[3] extracranial oligometastic cancer. SABR, limited to up to three sites of oligometastatic disease, may prolong disease-free survival and overall survival. SABR provides an alternative treatment to systemic therapy (chemotherapy, hormonal therapy or immunotherapy) for suitable patients and may delay the use of systemic treatment. It may also substitute for surgery when a patient is felt not to be medically fit enough.

NHS England's evidence review concluded: "The use of SABR in this indication is thought to: (i) prolong disease free survival; (ii) delay the use of systemic treatment; (iii) improve quality of life; and (iv) improve overall survival in this indication." It found that SABR has a significant survival benefit, increasing overall survival by33 around 13-14 months. It was found to be within acceptable limits for toxicity.

- Benefits of SABR: Hepatocellular Carcinoma

Hepatocellular carcinoma (HCC) is the most common type of primary liver cancer. Surgical resection and liver transplant are available choices to treat early stage disease. However, most people present with either severe co-morbidities or advanced disease meaning that treatment with surgery and liver transplant is not always possible. For people unsuitable for surgery or transplant, local ablative treatments such as radiofrequency ablation (RFA) can be offered. TACE is also another possible treatment option.

The use of SABR in this indication would offer an additional treatment option for people unsuitable for any of the current treatments but would also offer an alternative treatment option for people currently eligible for treatment with either RFA or systemic treatments such as Sorafenib, delaying or avoiding the use of these treatments. The use of SABR is thought to stop further growth of the lesion (local control) supporting the management of any associated symptoms of the disease.

The NHS England evidence review concluded that while the quality of the evidence supporting SABR for HCC, both from CtE and published literature, was limited since it is comprised largely of non-comparative, retrospective studies,

[1] NHS England » Stereotactic ablative radiotherapy (SABR) for patients with metachronous extracranial oligometastatic cancer (all ages)
[2] NHS England » Stereotactic ablative radiotherapy (SABR) for hepatocellular carcinoma (adults)
[3] Metachronous is defined as metastasis more than 6 months after the primary cancer has been treated.

the balance of evidence supported routine commissioning. SABR was found to have the following benefits for patients:

- Overall survival with SABR was found to be higher than for systemic therapy and similar to radiofrequency ablation.
- SABR was not found to result in high rates of adverse events.

3.2 Evidence base: Brachytherapy

The use of Brachytherapy in the management of prostate cancer is supported by NICE guidance (NICE guideline 131. Prostate cancer: diagnosis and management). WHSSC currently commissions LDR and HDR brachytherapy for patients with low risk prostate cancer. However, NICE guideline 131 recommends brachytherapy (either LDR or HDR) as a treatment option for intermediate and high risk prostate cancer (in combination with standard external beam radiotherapy).

Brachytherapy in combination with external beam radiotherapy in the intermediate and high risk groups has been shown to be more effective than external beam radiotherapy alone. Patients are treated with a single brachytherapy implant and then treated with a shorter course of external beam radiation than is normally given (15 treatments rather than 20).

3.3 WHSSC Draft Policies

WHSSC has developed draft commissioning policies for each of these 3 clinical areas:

- Stereotactic Ablative Radiotherapy for Patients with Metachronous Extracranial Oligometastatic Cancer (all ages).
- Stereotactic Ablative Radiotherapy for Patients with Hepatocellular Carcinoma (adults).
- Brachytherapy for the Treatment of Localised Prostate Cancer.

The draft SABR policies align with the criteria within the NHS England policies and clinical evidence; the brachytherapy policy aligns with the NICE guideline 131 (appendix 2 shows the inclusion criteria). These policies were developed with input from the relevant clinical leads in NHS Wales in accordance with the published WHSSC methodology. WHSSC has therefore developed the criteria for commissioning and has been able to estimate the potential patient demand for these treatments.

It is estimated that in Wales approximately 100 patients per annum would be suitable for SABR under the oligometastatic disease policy, and 6 patients per annum would be suitable for SABR under the HCC policy. Approximately 57 patients per annum with intermediate and high risk localised prostate cancer would be suitable for brachytherapy under the policy criteria.

3.4 Reducing Covid Related Harm

SABR and Brachytherapy for these indications have additional benefits in the context of the pandemic and helping to reduce Covid-19 related harm.

The Welsh Government framework 'Leading Wales out of the Coronavirus pandemic: A framework for recovery' circulated on 24th April 2020, set out four ways in which Covid-19 related impact or harm could affect the people of Wales:

i) Direct harm to individuals from SARS-CoV2 infection and complications including for those who develop severe disease and, in some cases may die as a result;
ii) The harm caused if services including the NHS became overwhelmed due to any sudden large spike in demand from patients with COVID-19 on hospitals, critical care facilities and other key services;
iii) Harm from non-COVID illness, for example if individuals do not seek medical attention for their illness early and their condition worsens, or more broadly from the necessary changes in NHS service delivery made during the pandemic in Wales to pause non-essential activity;
iv) Socioeconomic and other societal harms such as the economic impact on certain socioeconomic groups of not being able to work, impacts on businesses of being closed or facing falling customer demand, psychological harms to the public of social distancing and many others.

Commissioning the two additional indications for SABR, and commissioning Brachytherapy in alignment with NICE guideline 131, will contribute to reducing the 3rd area of harm, namely harm from non Covid illness. SABR provides the following additional benefits in circumstances where the prevalence of Covid-19 is high, perhaps in the form of a second wave.

HCC

The option to treat HCC patients with SABR reduces Covid related harm by reducing the risk associated with treating their cancer. SABR provides:

- An effective alternative to immune suppressing systemic therapies reducing the risk to patients of adverse outcomes, including death, were they to contract Covid;
- An effective alternative to surgery reducing risk to patients of adverse outcomes, including death, from undergoing a general anaesthetic were they to contract Covid;
- An effective alternative to RFA or TACE if delivery of these services becomes compromised;
- As an alternative to surgery, SABR would also provide effective treatment if the delivery of surgical services (including access to ITU) becomes compromised due to Covid.

Oligometastatic Cancer

The option to treat patients with SABR reduces Covid related harm by reducing the risk associated with treatment of their Oligometastatic Cancer. SABR provides:

- An effective alternative to immune suppressing systemic therapies reducing the risk to patients of adverse outcomes, including death, were they to contract Covid;
- As an alternative to surgery, SABR would also provide effective treatment if the delivery of surgical services (including access to ITU) becomes compromised due to Covid.

Brachytherapy

The option to use Brachytherapy for treating patients with intermediate and high risk prostate cancer helps reduce Covid related harm by freeing capacity for external beam radiotherapy and supporting increased radiotherapy throughput.

- Brachytherapy, in combination with external beam radiotherapy, for treating intermediate and high risk prostate cancer patients will reduce the time taken on standard radiotherapy machines, by substituting for a proportion of external beam radiotherapy (15 fractions rather than 20, therefore saving 5 fractions per patient).
- The machine time saving will increase overall radiotherapy capacity and help reduce any COVID related back log.
- It is estimated that the addition of brachytherapy for the treatment of 40 intermediate and high risk prostate cancer patients (annual demand for south Wales) would free 200 fractions (treatments) of external beam radiotherapy per annum. This is equivalent to treating approximately 40 patients with lung SABR or 40 patients receiving adjuvant radiotherapy for breast cancer.

3.5 Demand and Cost

Demand

Table 1 shows all Wales estimated demand for SABR and Brachytherapy for these additional indications under the criteria within the draft commissioning policies.

Table 1: Estimated incidence and number of patients per annum suitable for treatment under the criteria within the draft commissioning policies

	New Cases per annum*	Patients suitable for treatment (all Wales)
SABR – Oligometastatic Cancer	9000	100**
SABR – HCC	170	6**

Brachytherapy – Prostate cancer (intermediate/high risk)	2760	57***

Sources: *Welsh Cancer Intelligence and Surveillance Unit. **Derived from NHS England commissioning policy analysis and clinical advice to WHSSC. *** Derived from UK Prostate Cancer National Audit and clinical advice to WHSSC.

Table 1 shows the estimated demand for routine commissioning in non-pandemic circumstances. Should there be a general second wave, or localised peaks in Covid infections, that affect the risks of alternative treatments for HCC (in particular, making surgery too high risk), referrals to SABR under the HCC policy may increase. The impact of such an eventuality on surgery risks, and hence on referrals to SABR, is uncertain.

Estimated Costs under interim policy (to March 2021)

SABR

For the south Wales population, there is capacity at Velindre Cancer Centre for approximately 25 to 30 SABR cases under the interim policies (the majority being oligometastatic disease). For north Wales, on a population basis, the forecast demand is approximately 10 to 12 additional cases. The Clatterbridge Cancer Centre has confirmed it has the capacity to receive and treat these additional referrals. Currently, WHSSC does not have a contract with Clatterbridge. Additional activity could be funded on a case by case basis or via BCUHB's contract with Clatterbridge and re-charged to WHSSC.

If the block frameworks stay in place for Q3 and Q4, WHSSC would anticipate Velindre would undertake the activity for no additional cost (since providers are not returning marginal costs for underperformance they would not receive marginal payment for over performance). If NHS Wales does revert to performance contracting, the SABR baseline for lung is 42 cases with additional activity charged at a 20% marginal rate of £798. Therefore if this marginal cost is applied, the expected cost to commissioners would be 30 * £798 = £23,940.

Brachytherapy

Given lead in time, the expected additional activity at VCC is up to 12 cases to March 2021. This level can be managed within the current contract baseline (45 cases) so no additional funding would be required. Christie Cancer Centre tariff prices have been applied to north Wales referrals. Christie has also confirmed capacity to receive these additional referrals from north Wales.

The estimated activity and costs is summarised in table 2 below.

Table 2: Estimated contractual impact of SABR and Brachytherapy policies adopted on an interim basis to March 2021

	Activity			Cost			Total
	SABR - OC	SABR - HCC	Brachy: Prostate	SABR - OC	SABR - HCC	Brachy: Prostate	
North	Up to 12		6	£34,104*		£10,404*	£44,508
South	25 to 30		12	£23,940**		£0	£23,940
Total	42		18	£58,044		£10,404	£68,448

*NHSE tariff. **VCC SABR marginal cost

Due largely to the impact of Covid-19 in suppressing activity, the WHSSC Cancer and Blood programme is forecasting underspend at year end of £1,498K (at month 4). If a proportion of this underspend is made available to SABR and Brachytherapy, the resource can be used to provide access within 2020/21 to these evidence based treatments that will also directly address and help to reduce Covid related harm as described in section 3.4.

3.6 Implementation

As noted in the background, SABR is delivered already by Velindre Cancer Centre for these indications funded through charitable income. There is ability therefore to begin an NHS commissioned service immediately. To extend brachytherapy provision in Velindre to intermediate and high risk patients in line with the draft policy will require a lead in time of approximately 3 months. The increase in activity would therefore be expected in quarter 4. Capacity at NHS England providers has been confirmed. Referral pathways and supporting financial arrangements would need to be put in place.

3.7 ICP 2021-24

It is proposed that SABR for oligometastatic cancer and HCC, and Brachytherapy for intermediate and high risk prostate cancer, are commissioned according to the criteria in the draft commissioning policies on an interim basis for 6 months in 2020/21. Recurrent commissioning from April 2021 would need to be agreed within the WHSSC commissioning plan 2021-24. Schemes for recurrent funding for both these developments will therefore be considered through the CIAG process.

4.0 RECOMMENDATIONS

Members are asked to:

- **Note** that clinical evidence favours the routine commissioning of SABR to treat patients with Oligometastatic Cancer and Hepatocellular Carcinoma;
- **Note** treating patients with SABR helps to reduce Covid related harm since the relative benefits of SABR compared with alternative treatment modalities (surgery or systemic therapy) increase when there is risk of infection with Covid-19;

- **Note** clinical evidence favours the routine commissioning of Brachytherapy to treat patients with intermediate and high risk localised prostate cancer;
- **Note** by substituting for a proportion of external beam radiotherapy, the provision of brachytherapy for intermediate and high risk prostate cancer patients will allow increased radiotherapy throughput, reducing Covid related harm by increasing the ability to treat backlog and manage any future surge of previously suppressed demand;
- **Approve** commissioning SABR for patients with Oligometastatic Cancer and Hepatocellular Carcinoma in line with WHSSC's draft commissioning policies as in-year service developments on an interim basis for 6 months;
- **Approve** commissioning brachytherapy in line with WHSSC's draft commissioning policy as an in-year service development on an interim basis for 6 months;
- **Note** recurrent funding for SABR for oligometastatic cancer and HCC, and brachytherapy for intermediate and high risk prostate cancer, will be considered through the WHSSC ICP process for 2021-24.

5. APPENDICES

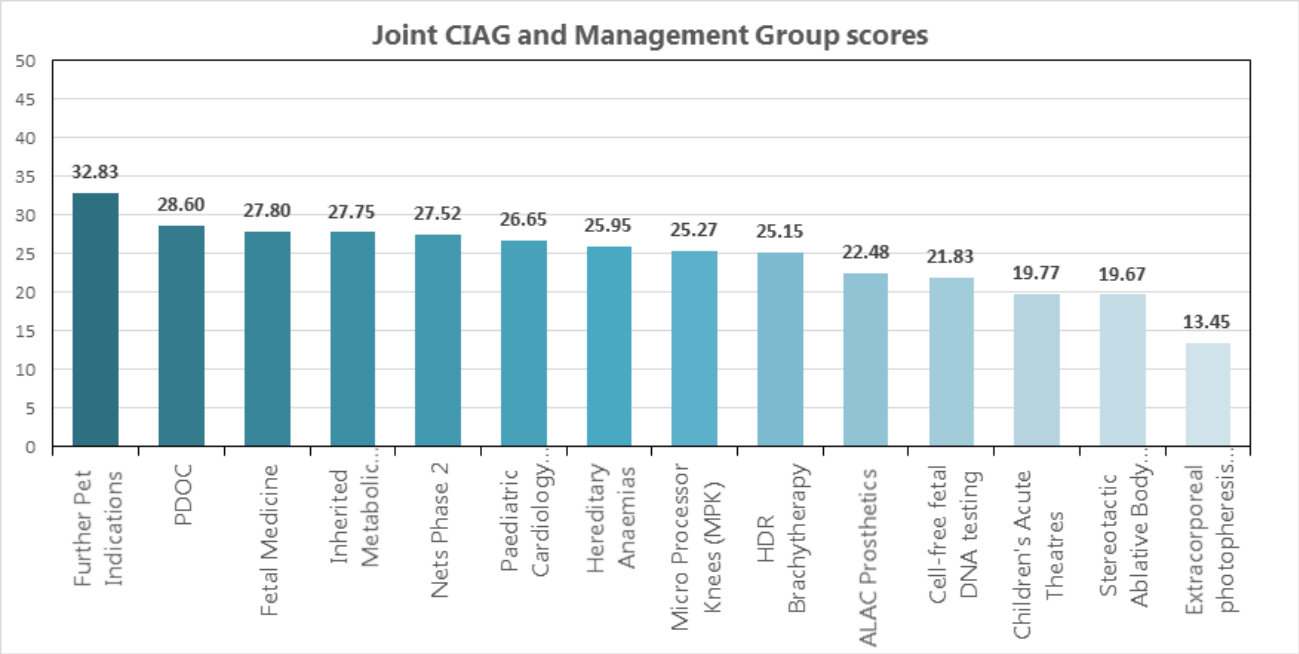
CIAG Outcome, ICP 2020-23 and Draft Commissioning Policy Criteria

Link to Healthcare Objectives	
Strategic Objective(s)	Implementation of the Plan
Link to Integrated Commissioning Plan	SABR for oligometastatic disease and brachytherapy for intermediate and high risk prostate cancer were considered within the CIAG process to inform the WHSSC ICP 2020/23
Health and Care Standards	Effective Care
Principles of Prudent Healthcare	Reduce inappropriate variation Only do what is needed
Institute for HealthCare Improvement Triple Aim	Improving Health of Populations
Organisational Implications	
Quality, Safety & Patient Experience	This scheme will improve the quality of cancer services in Wales and will support the mitigation of COVID harm.
Resources Implications	Estimated in year additional costs of adopting the draft SABR and Brachytherapy policies are outlined.
Risk and Assurance	The contribution of SABR and Brachytherapy to reducing risks to patients during the pandemic, while providing evidence based treatment, is outlined.
Evidence Base	The draft policies are based on published clinical evidence and national guidelines.
Equality and Diversity	No issues identified.
Population Health	The scheme will improve the management and outcomes of patients with cancer and support the reduction of Covid related harm.
Legal Implications	No legal implications have been identified.

Report History:		
Presented at:	**Date**	**Brief Summary of Outcome**
Corporate Directors Group Board	07.09.20	Approved with amendments.
Management Group	24.09.20	Supported9

Appendix

1. CIAG Outcome, ICP 2020-23



2. Draft Commissioning Policy Criteria

SABR for patients of all ages with metachronous extracranial oligometastatic cancer

Inclusion Criteria

Patients meeting all of the following criteria will be eligible for treatment with SABR:

- Confirmed histological diagnosis of metastatic cancer originating from any primary cancer in the body, including carcinoma, sarcoma and melanoma or a male patient with a PSA>50 and clinical evidence of prostate cancer.
- A disease-free interval between primary treatment and manifestation of metastases of at least six months.
- One to three sites of extracranial, metastatic disease only at the time of disease presentation, confined to one to two organs (defined after appropriate imaging[4]) in the following:
    - Bone;
    - Spine
    - Lymph node;
    - Liver

[4] See WHSSC Positron Emission Tomography (PET) Policy CP50a

  - Adrenal gland; and/or
  - Lung.
- Maximum size of 5 cm for any single metastasis.

In addition, patients eligible for SABR must have:
- A life expectancy of at least 6 months AND
- World Health Organisation (WHO) performance status ≤ 2.

Patients may only receive treatment with SABR for a maximum of three sites of metastases in line with the criteria described above. Should further metastases develop, alternative treatment options should be sought.

For patients being treated for spinal metastases, a maximum of 2 sites in the spine can be treated with SABR.

Exclusion Criteria

Treatment with SABR is unsuitable in people with:
- Haematological malignancies (e.g. lymphoma, myeloma);
- Evidence of active intracranial disease unsuitable for surgical resection or stereotactic radio surgery;
- Evidence of spinal cord compression or spinal instability;
- Evidence of severe interstitial lung disease (for lung metastases);
- Poor liver function and a Child-Pugh score B (for liver metastases);
- More than three sites of metastatic disease or development of new metastases post treatment of a maximum of three lesions;
- A disease-free interval between primary treatment and manifestation of metastases of less than six months;
- A life expectancy of less than six months;
- Severe co-morbidities; or
- WHO performance status > 2.

In addition, SABR is not suitable in people who:
- Require irradiation of whole nodal field (e.g. supra-clavicular recurrence for breast cancer); or
- Have had previous treatment with SABR to the same site of the metastases in line with the criteria set out in this policy.

SABR for adults with HCC

Inclusion Criteria

Patients meeting all of the following criteria will be eligible for treatment with SABR:
- Confirmed diagnosis of localised HCC (primary, recurrent or progressive disease) by at least one criterion listed below:
  - Pathologically (histologically or cytologically) proven diagnosis of HCC.
  - At least one solid liver lesion or vascular tumour thrombosis (involving portal vein, IVC and/or hepatic vein) > 1 cm with arterial enhancement

and delayed washout on multiphasic Computed-Tomography (CT) or Magnetic Resonance Image (MRI) in the setting of cirrhosis or chronic hepatitis B or C without cirrhosis.

- No evidence of extrahepatic metastases or malignant nodes (that enhance with typical features of HCC) > 3.0 cm in sum of maximal diameters.
- Unsuitable for surgical resection or transplant.
- Unsuitable or refractory to TACE.
- History/physical examination including examination for encephalopathy, ascites, and World Health Organisation (WHO) Performance Status ≤2.
- Adequate haematological and liver function.
- Childs-Pugh Class A only.
- Maximum dimension of any lesion 5 cm.
- Liver volume minus intrahepatic GTV > 700 cc. and intrahepatic tumour GTV/liver volume ratio <80%.
- Life expectancy greater than six months.

SABR should be considered as an alternative treatment in people currently eligible for systemic treatments (such as sorafenib) and/or local ablative treatments.

Any patients suitable for SABR must have recovered from the effects of previous surgery, radiotherapy or chemotherapy with a minimum of 4 weeks break prior to treatment with SABR.

Exclusion Criteria

Treatment with SABR is unsuitable in people with:

- Active hepatitis or clinically significant liver failure (encephalopathy, oesophageal varices, portal hypertension);
- Prior abdominal radiotherapy precluding SABR, that is any previous radiation therapy in which a mean dose to the liver of 15 Gray (Gy) in conventional fractionation was delivered or previous doses to critical normal structures that would make re-irradiation unsafe. Prior pelvic radiation is permitted, as long as there is no overlap between pelvic and liver radiation fields;
- Clinically apparent ascites;
- Maximum single tumour size ≤10 cm;
- More than 5 discrete intrahepatic parenchymal foci of HCC;
- Direct tumour extension into the stomach, duodenum, small bowel or large bowel;
- Evidence of extrahepatic metastases or malignant nodes (that enhance with typical features of HCC) > 3.0 cm in sum of maximal diameters (e.g. 2 lung lesions >2 cm); or
- Prior liver transplant.

Brachytherapy for intermediate and high risk prostate cancer

Inclusion criteria

WHSSC will fund brachytherapy to treat localised prostate cancer for the following patients:

- For low risk patients or patients with 1 intermediate risk factor only: brachytherapy (LDR or HDR) as monotherapy may be offered;
- For patients with intermediate or high risk localised prostate cancer: brachytherapy (LDR or HDR) may be offered (in combination with EBRT).

The risk groups are defined by the following risk stratification table for prostate cancer:

Table 1: Prostate cancer risk stratification

Level of risk	PSA		Gleason score		Clinical stage
Low risk	<10 ng/ml	and	≤6	and	T1 to T2a
Intermediate risk	10–20 ng/ml	or	7	or	T2b
High risk[1]	>20 ng/ml	or	8–10	or	≥T2c

Abbreviation: PSA, prostate-specific antigen.

[1] High-risk localised prostate cancer is also included in the definition of locally advanced prostate cancer.

Source: NICE guideline NG131

Exclusion criteria

Brachytherapy alone should not be offered to patients with high risk localised disease.