Health and Adult Social Care Select Committee

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Radiotherapy in West Sussex (and the provision by Brighton and Sussex University Hospitals NHS Trust of a Satellite Radiotherapy Unit at St Richard’s Hospital, Chichester part of Western Sussex Hospitals NHS Foundation Trust)

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Disclaimer: Although the author is a public/patient member of the NHS Sussex Linked Radiotherapy Services Programme Board, this submission is not made on behalf of that Board: All the material and the views expressed are entirely those of the author alone.
Foreword: An Imaginary Conversation

What's the problem with radiotherapy in West Sussex?
There isn't any.

You're joking aren't you?
I'm deadly serious.

What about Midhurst?
That used to have a small radiotherapy unit, but it shut down when King Edward VII hospital closed 11 years ago.

Has nothing been done since then?
There have been lots of promises, but nothing has materialised.

So where do West Sussex patients go?
Cancer patients requiring radiotherapy go to the cancer centres in Portsmouth, Guildford and Brighton.

Is that all there is?
No: They can go to the Royal Marsden, or Southampton. And from Crawley they can go to the unit at East Surrey Hospital, linked to the Guildford centre.

What about someone living in e.g. Bognor, which is a long way from any of the three centres?
They - and many others - don't have any choice but to travel over 45 minutes each way. Or they could give up, as many do.

Why hasn't a new unit been commissioned or provided?
The former is not for Coastal West Sussex Clinical Commissioning Group, but for NHS England South, and the latter is not for Western Sussex Hospitals but for Brighton & Sussex University Hospitals.

What can be done about this scandalous state of affairs?
Read on.

A. Summary

1. Radiotherapy is a core part of modern cancer treatment. Radiotherapy can cure cancers, can assist in alleviating symptoms, and is cost effective. Radiotherapy is second only to surgery in its effectiveness in treating cancer, and about 40% of cancer patients who are cured receive radiotherapy as part, or the whole, of their cancer treatment.

2. Cancer patients should not have to travel over 45 minutes to receive radiotherapy. Many cancer patients living in Western Sussex Hospitals’ catchment travel for 60 minutes, or even longer, for radiotherapy - which is received by 52% of them - in Brighton, Portsmouth or Guildford. There are, on average, 3,501 new cases of cancer in people living in the area covered by the Coastal West Sussex Clinical Commissioning Group (CWSCCG), out of a population of 482,100, which corresponds roughly to the catchment population...
of Western Sussex Hospitals. On average, 2,849 new cases of cancer were in people aged 60 or over in the Western Sussex Hospitals’ catchment population.

3. This submission is about the need to build and equip a radiotherapy unit at St Richard’s Hospital (SRH) in Chichester, at a capital cost of about £20m, linked to one or more of the 3 cancer centres. That there should be such a unit is widely accepted, and has been for 10 years. The size of the unit is not agreed, however, and this submission argues that there should be 2 linacs, rather than 1 or 3, to serve the Western Sussex Hospitals’ catchment population of about 450,000.

4. There are no radiotherapy facilities within the county of West Sussex. Western Sussex Hospitals’ catchment population of about 450,000 would require 2.5 to 3 linacs, according to the formula of 5.5 to 6 per million population (PMP) in the report to Ministers by the National Radiotherapy Advisory Group (NRAG) in 2007. The National Radiotherapy Implementation Group (NRIG) in 2012, which used Malthus - an evidence based radiotherapy demand simulation tool - recommended that there should be 6.8 linacs PMP, equating to 3 linacs. The national service specification of 2013 confirmed that those planning assumptions should be used, and has not been superseded.

5. Some cancer patients from Western Sussex Hospitals would continue to use the cancer centres in Brighton, Portsmouth and Guildford because their cancers must be treated at a centre. There has been a tendency to use higher doses of radiotherapy of late, meaning that fewer sessions are required, though no specific figure has been given for the effect this has on the number of linacs needed. But the demand for radiotherapy is growing at an unprecedented rate of 2% a year.

6. Some cancer patients living in the Western Sussex Hospitals’ catchment area would be closer to the centres in Brighton, Guildford and Portsmouth. A reasonable estimate of the population to be served by the proposed satellite unit at SRH is 400,000 which would equate to 2.7 linacs, using the 6.8 linacs PMP formula.

7. The preferred location of a satellite unit was Worthing Hospital until late in 2014. But then there was a realisation that a better location, not least for reasons of space being too tight at Worthing, would be at SRH, linked to the cancer centre in Brighton. A satellite unit of 2 linacs at SRH was the subject of an Outline Business Case, prepared by Brighton and Sussex University Hospitals NHS Trust (BSUH), working closely with Western Sussex Hospitals NHS Foundation Trust (WSHFT). This OBC was submitted to, and approved by, the then NHS Trust Development Authority (TDA) early in 2015.

8. Patients in the north of the county, in Horsham town and Crawley Borough have access to a satellite radiotherapy unit at East Surrey Hospital, Redhill. That development was the result of a joint venture between the Royal Surrey County Hospital NHS Foundation Trust, which runs the St Luke’s cancer centre in Guildford, and the Surrey and Sussex Healthcare NHS Trust (SASH) which runs the East Surrey Hospital in Redhill. The respective chief executives jointly chaired the prOJEUIt, which was completed in August 2014.
9. The SRH location is agreed by all the NHS bodies with an interest, including BSUH, WSHFT, CWSCCG and NHS England South. The SRH location would not disadvantage patients from the East Worthing and Shoreham areas. They would mostly continue to use Brighton, where the increased capacity and less city central location provided by 2 linacs at Preston Park will benefit them.

10. The debate about whether there should be one, two or three linacs at SRH is ongoing. NHS England’s national lead for radiotherapy has indicated that the number of linacs in West Sussex remains to be determined in the light of further modelling work on rates of fractionation. There is also the question of whether the minimum of 2 linacs should still be adhered to, other than in truly exceptional circumstances. Single linac sites, linked to centres, have been shown to work in Australia, however, and in a few locations in the UK.

11. The small unit at King Edward VII Hospital in Midhurst used to function well on this basis, taking NHS patients from centres in Portsmouth, Guildford and Brighton. That arrangement for SRH would be feasible: Brighton’s patients could go there, as could Portsmouth’s and Guildford’s. A 2 linac unit at SRH would obviously be more sensible for the patient demand from the local population, and for the reasons of service continuity that still apply.

12. The need for radiotherapy in West Sussex was agreed in 2007 by all the then relevant NHS bodies. The need remains, 10 years on, to improve access for cancer patients on the coast of West Sussex, many of whom travel over 45 minutes for radiotherapy, sometimes 5 days a week for up to 6 weeks, and some of whom give up.

13. The capital costs of this project were estimated at £17.5m in 2014, including £4.6m for the 2 linacs and other equipment, and £1.8m for IT. The costs now are estimated to be in the region of £20m. That estimate is based on: one linac to start with and a bunker for another machine; all the kit; the demolition of 1-5 Aberdare Close at SRH; and the re-provision of staff accommodation elsewhere at SRH.

14. The source of the capital is highly unlikely to be public dividend capital, i.e. the NHS, although the linac(s) will probably be funded from a centrally controlled budget of £130m. A public/private partnership arrangement is favoured, therefore. The exact nature of that arrangement is not known, but public finance initiative is no longer considered worthwhile.

15. Both NHS England and NHS Improvement will have to approve this project. Others, such as Portsmouth Hospitals NHS Trust, must be on board. And the size of the unit remains to be decided: the need for 2 linacs is demonstrated in this submission.

B. Introduction

16. The submission describes:

16.1 the history, including the early identification of need for increased radiotherapy capacity;
16.2 recent developments, especially in respect of additional and replacement machines in Brighton, and the completion of a satellite unit at Eastbourne to serve East Sussex;
16.3 assessments of capacity requirements for radiotherapy;
16.4 analyses of the populations affected in West Sussex;
16.5 finance implications, in so far as these are known; and
16.6 conclusion

C. History

17. The need for a satellite radiotherapy unit in West Sussex has been evident since at least 2007, when the NRAG report drew attention to the absence of any radiotherapy services in West Sussex, which then had about 740,000 residents (now 836,300 according to Office of National Statistics (ONS) mid-year population estimates 2015). At that time, the lack of radiotherapy services in West Sussex caused the Health Editor of The Times to describe the county as a ‘black spot’ for radiotherapy.

18. A small radiotherapy unit in West Sussex ceased operating when the King Edward VII Hospital in Midhurst – a charitable institution – was closed in 2006. That had links with all 3 cancer centres.

19. The impact of the loss of that facility was not fully appreciated at the time, in part because the Calman-Hine report in 1993 had recommended, and NHS planners had accepted, that:

   19.1 radiotherapy should be delivered only in centres, as the evidence showing the usefulness of satellite units was not convincing at the time;
   and
   19.2 there would be less use of radiotherapy in the future, a mistaken conclusion that took many years to reverse.

20. The population of West Sussex has grown, and is now estimated to be 836,300 according to mid-year 2015 ONS data. To receive either curative or palliative radiotherapy, which 52% of cancer patients get at some point, most West Sussex patients travel to Guildford’s cancer centre, to Portsmouth’s cancer centre, or to Brighton’s cancer centre. The number of patients using each of these 3 centres was given in reply to a Parliamentary Question in 2015, but that data seemed so implausible (showing for example that twice as many cancer patients from West Sussex went to Portsmouth than went to Brighton) that they are not worth quoting.

21. Other cancer patients from West Sussex, i.e. those requiring highly specialised radiotherapy, are taken to the Southampton cancer centre or to the Royal Marsden Hospital. That will probably remain the case. And some choose to go to private radiotherapy units, of which there are a few, all close to the NHS cancer centres. Some of these private units, e.g. the one in Havant, also treat NHS patients under contract.

22. The case for a radiotherapy service in West Sussex was agreed by all parts of the NHS in 2008, when the then West Sussex Primary Care Trust (PCT) and BSUH set out the requirements. At the time, the preferred location was
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Worthing Hospital. The Joint Strategic Needs Assessment on radiotherapy in West Sussex of 2010 gave a comprehensive analysis of all the issues, again based on the assumption that a satellite radiotherapy unit would be at Worthing Hospital.

23. Since 2010, however, there have been several developments affecting that location:

23.1 a private radiotherapy unit, also treating NHS patients, has been opened at the Spire Portsmouth Hospital, located in Havant, and because of the lack of capacity in Brighton and elsewhere, some patients from Worthing and even further afield had to be treated in Havant for a while;
23.2 a satellite radiotherapy unit at the East Surrey Hospital, Redhill, linked to the Guildford cancer centre, opened in August 2014, because the chief executives of the Royal Surrey County Hospital NHS Foundation Trust and the Surrey and Sussex Healthcare NHS Trust, having identified a need, jointly expedited the planning and construction of the unit;
23.3 a private radiotherapy unit at Pease Pottage, south of Crawley was under construction by Sussex Healthcare Ltd, a private nursing home provider, but work on that development ceased, and the Woodhurst Hospital site is abandoned at present;
23.4 a satellite radiotherapy unit at Eastbourne District General Hospital (DGH) in East Sussex, originally to include 3 linacs, but now with 2, is complete, and is treating cancer patients, many of whom would previously have gone to Brighton;
23.5 cancer networks based on the hospitals with cancer centres, i.e. Brighton, Portsmouth and Guildford, were abolished in April 2013; that gave an opportunity to plan on different areas, not limited to those hospitals’ catchments, which was especially relevant to West Sussex, falling between all 3; there now exists an embryonic Surrey and Sussex Cancer Alliance, the leaders of which are fully aware of the situation in West Sussex and recognise the need to take into account the traditional referral pattern of some West Sussex patients to Portsmouth;
23.6 the Sussex Cancer Centre in Brighton has expanded capacity with the building of a linked facility at 175 Preston Road, Preston Park. Though the extra 2 machines there are essential for the period when the time-expired linacs at the Sussex Cancer Centre are being replaced, these extra 2 linacs are not temporary, and will form part of the overall complement in Brighton. A replacement linac for the oldest one is about to receive approval; others will follow. There are 6 machines in Brighton and 2 in Eastbourne;
23.8 several satellite radiotherapy units have opened in NHS England South region: in Swindon, linked to Oxford; in Basingstoke, where there is a temporary unit with a permanent unit to follow, linked to Southampton; and in Dorchester, linked to Poole, though that is currently being built.

D. Developments

24. When PCTs and Strategic Health Authoritiess were abolished and before NHS England became fully operative, NHS Sussex took the lead in commissioning radiotherapy. NHS Sussex brought the key NHS players together and
announced on 22nd May 2012, that radiotherapy services in Sussex were set to
double. The press release said:

"The NHS in Sussex has today announced plans to more than double radiotherapy provision by 2014. Radiotherapy for the majority of patients in Sussex is currently provided by 4 linacs at the SCC, part of the RSCH in Brighton. Other patients are travelling to facilities outside the county in Havant, Portsmouth and Guildford for their treatment. Last week a plan was agreed to provide an additional 2 linacs at Worthing Hospital and 3 at Eastbourne DGH – which will dramatically reduce travel times for over 2,500 patients a year who live in the east and west of the county.

In addition, from 2013, a programme will begin to replace the 4 linacs in Brighton with more modern and efficient machines. During the replacement period some patients will be treated using linacs owned by private provider Sussex Health Care at their new facility in Pease Pottage new Crawley. These patients as well as those being treated in Worthing and Eastbourne will for the duration of their treatment remain patients of BSUH, treated on the NHS and by NHS doctors working across the newly located linacs.

It has also been agreed that, thanks to an investment fully supported by NHS Sussex, 2 further types of radiotherapy – Brachytherapy and Tomotherapy – will also be provided at the SCC in Brighton. This will increase the range of treatments available to Sussex patients and means that as the number of patients with cancer continues to grow the service will keep up with this demand.

Amanda Fadero, CEO of NHS Sussex said: ‘This is really good news for cancer patients across Sussex. Radiotherapy needs specialist technology and highly specialist buildings. By working with an external provider we will more than double radiotherapy in Sussex by 2014 – something the NHS has wanted to achieve for some time’

Duncan Selbie, CEO of BSUH said: ‘Our patients deserve the best and working in this way means we can make improvements to existing services more quickly, and increase our capacity in a way which is safe, cost-efficient and sustainable’.

25. The BSUH Board received a paper from the Director of 3Ts on 28th May 2012, in which he stated:

"In 2010, BSUH and the Sussex Cancer Network established a Steering Group to progress the satellite facilities in the East and the West. It was agreed that the location and distribution of the satellite facilities would be 3 linacs on the Eastbourne Hospital site and 2 linacs on the Worthing Hospital site. Work progressed on the development of OBCs for these 2 developments on this basis. It was also proposed that as the host to the SCC, BSUH would pursue the capital required for the 2 developments: £23m for the Eastbourne facility and £18.5m for the Worthing facility.

In December 2011, the OBCs for the 2 facilities were well developed and discussions commenced with NHS Sussex as to the revenue funding required to support the expansion of service to meet unmet demand and repatriation of activity from other centres. This was identified as a high priority for the health
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community. Discussions with NHS South of England were also had with regard to the source of capital funding. It became apparent at the time that the capital regime was changing and that the assumption that Public Dividend Capital could be made available to support these developments was unsafe. The DH is moving away from granting PDC to a loans-based regime (prudential borrowing) for all developments in the NHS rather than just those with FT status.

Given the level of planned developments at BSUH (3Ts etc) it was unlikely that BSUH would be able to support this level of prudential borrowing. East Sussex Healthcare and Wester Sussex Hospitals also confirmed that their financial planning would also be unable to support borrowing at these levels. Health economy wide discussions were initiated to try and find a solution to these issues led by NHS Sussex.”

26. And later in the paper dated 28th May 2012, he wrote:

"Further discussions have been held between BSUH, NHS Sussex and the SCC to consider how the 2 satellite centres can be procured and funded. The emerging preferred option is to enter into a public-provider partnership for this provision. The precise nature of the partnership will need to be developed over the coming months, but it will not take the form of a PFI type procurement.

It is proposed that, whilst a 3rd party provider will provide some services, the exclusive ownership of the patient pathways, clinical standards and outcomes will lie with BSUH to ensure integration of the external provider with existing capacity.

An initial assessment of the timescale to undertake a procurement process and deliver the satellite facilities has identified late 2014 as the most likely time when this capacity will become available.”

27. This did not prove possible, however. By the end of 2014, there were no new facilities. And for Western Sussex, that remains true; nothing has materialised 5 years after the announcement by NHS Sussex and BSUH. The Sussex Linked Radiotherapy Services Programme Board has succeeded in producing satellite units at Preston Park and at Estbourne DGH, and has replaced one of the 4 linacs at Royal Sussex County Hospital (RSCH), but has not yet succeeded in building anything for Western Sussex Hospitals.

28. The expansion of radiotherapy services in Brighton is a significant factor in two respects:

28.1 the 2 additional linacs at Preston Park allow more patients to receive radiotherapy, be they cancer patients from Brighton & Hove, from East Sussex or from the eastern half of West Sussex; and
28.2 the location of the unit at Preston Park is more easily reached by patients coming from outside the city, in that the travel time for patients from Worthing, for example, is reduced by 10 minutes.

29. The extra capacity in Brighton with the Preston Park unit means that the arguments supporting the previously agreed case for a radiotherapy unit to be
located at Worthing Hospital are no longer valid. Cancer patients from east of Worthing i.e. Lancing, Shoreham and Portslade will be more readily able to access the 6 linacs in Brighton.

30. The selection of SRH depended on several factors, including:

30.1 insufficient total capacity of the radiotherapy system in Sussex, even with the addition of 2 linacs in Brighton, and 2 in Eastbourne;
30.2 unacceptably long travel times for many patients living to the west of Worthing, e.g. in Bognor Regis and Littlehampton;
30.3 the availability of land at SRH, opposite the Fernhurst Centre, which is a chemotherapy unit for cancer patients;
30.4 the ability to give radiotherapy to more cancer patients within the maximum 45 minutes travel time, where those patients already receive surgery and/or chemotherapy, rather than them having to go to Brighton, Portsmouth or Guildford for their radiotherapy.

31. WSHFT’s Board of Directors have been involved throughout, the selection of SRH being announced by the chief executive at a Board meeting in public in January 2015. Soon afterwards an invitation to submit bids was issued by WSHFT to Brighton, Guildford and Portsmouth cancer centres. Presentations were given on 30th July 2015, by the 3 centres, led by their respective Trust chief executives. A clear consensus emerged: Almost all those present concluded that Guildford was the best bid.

32. Further discussions took place. However, the Guildford bid was eventually withdrawn when the chief executive moved to Kings College Hospital. WSHFT then engaged with Brighton again, and BSUH – who remains the lead provider – have included WSHFT representatives in the NHS Sussex Linked Radiotherapy Services Programme Board, the first priority of which has been to ensure that East Sussex and Brighton & Hove have modern radiotherapy facilities.

33. Recent developments indicate that BSUH now proposes to implement not only an interim solution at SRH by October 2017 but also a permanent arrangement there by March 2019. At the BSUH Board meeting in public on 27th April 2017, the chief executive of BSUH/WSHFT said:

“It was planned that a business case detailing the planned solution in West Sussex would be submitted to the [29] June Board. This would be subject to NHS Improvement approval, which could be expected in September, subject to any changes or delays. It was planned that procurement and mobilisation would commence within 6 months with a planned opening date of the Unit in March 2019. It was also planned that an interim solution would be implemented, and which could be up and running in 6 months with provisos”.

34. She added that BSUH

“had been invited to submit an application for funding from the central national radiotherapy fund [of £130m, for linacs].”

35. This interim/permanent solution appears to have been devised following an invitation issued via the Official Journal of European Union OJEU in December 2016. This read:
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“Call for market engagement and supplier day to procure the provision of a radiotherapy point of deliver service in Western Sussex region.

BSUH manages the Sussex Cancer Centre (SCC) providing specialist cancer services for adults in Sussex. The SCC covers an area from Rye (in East Sussex) to Arundel (in West Sussex) and Brighton to East Grinstead (North West Sussex), a population of 1.07 million. The SCC undertakes over 17,000 oncology outpatient appointments, 9,000 chemotherapy episodes, and over 35,000 radiotherapy attendances every year. The SCC is in Brighton, on the RSCH campus, but provides outreach oncology to Eastbourne General Hospital and the Conquest Hospital in Hastings (both part of East Sussex Healthcare NHS Trust) and to Worthing Hospital (part of Western Sussex Hospitals NHSFT).

Demand for radiotherapy provision is projected to increase significantly over the next decade, with this trend being particularly strong in Sussex as a consequence of population demographics. Key to BSUH’s strategy is to develop hub and spoke models for services where patients benefit from both local provision, but a co-ordinated pathway and concentration of expertise. BSUH are developing linked radiotherapy centre based in Eastbourne and Chichester acute sites and a decant facility within Brighton at Preston Park to allow for replacement machines of the machines based at RSCH. These developments will ensure timely provision of enhanced radiotherapy access to populations served by the BSUH Sussex Cancer Centre. The developments maintain and enhance BSUH’s role as the regional cancer centre.

The initial phasing of the hub and spoke model has successfully provided a two Tomotherapy unit within Brighton, opened on April 2016, and a two Linac centre in Eastbourne will open summer 2017. The next phase will be to increase the capacity of Radiotherapy services in Sussex by contracting for the provision of a Linked Radiotherapy Unit in West Sussex. This final linked unit will:

- Provide additional capacity while linacs are replaced at the SCC and during the period when the new facility at BSUH is built
- Ensure a local provision of radiotherapy services; the aim is that the majority of patients will have a reduced journey time.
- Improve the technical quality of radiotherapy in Sussex
- Provide the most cost-effective service

BSUH is considering a number of ways in which this facility might be provided, such as

Securing a partner who will provide a building to accommodate 2 bunkers suitable for linacs, with shielded accommodation for a CT scanner, patient waiting areas and consulting space, plus associated treatment preparation and administrative space.

Securing a partner who will provide a building as described above, together with a degree of equipping such as one linac and a CT scanner, and with staff provided by BSUH. The partner may wish to explore the opportunity to provide a second linac for their own radiotherapy treatment activity.”

Securing a partner who will provide a building as above but with full equipping and in addition supply the associated operational staff.
In addition to the above 3 models, the Bidder is invited to enter into a dialogue with BSUH to suggest their own service provision models and offer innovative pricing options available including MES, Lease and potential cost neutral options to BSUH."

36. BSUH is understood to have received several expressions of interest, and some of the bidders met with BSUH representatives in January 2017. The outcome is not known, but from the chief executive’s statement above, there is clearly an intention to have both an interim solution and a permanent arrangement, both in the same part of SRH, i.e. opposite the Fernhurst Centre, on land currently used for staff accommodation.

37. For the temporary solution, there are thought to be only two companies, both based in the USA, that are capable of providing a facility by October 2017. These are:

RAD Technology Medical Systems, which is a “Design-Build-Financer using modular technology for an array of technical spaces including radiotherapy vaults etc. Facilities can be temporary, interim or permanent solutions. These turnkey projects are factory-fabricated eliminating the need for lengthy on-site construction, and provide patients with access to new treatment options in a matter of weeks or months rather than years.”

VERITAS Medical Solutions, which is a “world leader in the design, production and installation of pre-engineered radiation shielded treatment facilities, and serves the radiotherapy oncology etc industry. Veritas brings together, in-house, all the elements necessary when designing and constructing a radiation shielded center, and provides these services as part of a pre-engineered package.”

38. Whether both companies made bids for the contract is unknown, as is the reasoning behind BSUH’s decision to seek an interim solution (but experience at Basingstoke might have been a factor). Also not known is whether:
   38.1 the interim solution has one linac or two;
   38.2 the permanent installation has one linac or two, and
   38.3 the interim solution is to be removed when the permanent installation is in place.

39. These uncertainties are compounded by the patently absurd suggestion made by BSUH in February 2017 that the Chichester radiotherapy unit would not be for Chichester patients, but would serve only the current Brighton cancer centre’s catchment which extends only as far as Worthing (according to the defunct Sussex Cancer Network’s website) or Arundel (according to the OJEU Notice above).

40. This preposterous idea could not be allowed to gain traction, and was drawn to the attention of the National Cancer Director (NCD) for NHS England at the end of February. In her reply dated 27th March 2017, the NCD said:

"I have looked into the concerns that you have raised related to the satellite radiotherapy site being considered in Chichester, and I understand that no decisions have yet been made on any proposals to change the configuration of
services in West Sussex. NHS England South Region is still awaiting a business case proposal to be made to them by BSUH, which is to be supported by a Memorandum of Understanding agreed and signed by BSUH, Portsmouth Hospitals NHS Trust and WSHFT.

"As National Cancer Director, I would like to reassure you that my top priority is to ensure that all patients get access to sustainable high quality, modern radiotherapy treatments wherever they live. I am currently working with colleagues in Specialised Commissioning to ensure we have radiotherapy service networks and central investment in linacs to provide high quality services for patients across the country. Any proposal for service configuration will need to fit in with these principles."

41. The principles to which the NCD refers are those contained in the consultation document ‘Modernising Radiotherapy Services in England – developing proposals for future service models’ issued on 28th October 2016, the relevant paragraphs of which are:

"Should a networked service envisage a re-provision of activity and capacity to a new location within their geography, the case must be substantiated in terms of:

- Demonstrating for that population an existing differential access rate for radiotherapy;
- The capacity required to meet current activity levels for that population involved to include efficiencies and machine utilisation; and
- An assessment of the impact of this re-provision on existing cancer patient pathways particularly those outside the networked geography.

Any service located at the boundary of two cancer referral networks (potentially crossing two networked radiotherapy services should be:

- Associated with a single networked oncology service – assessed by clinical oncologists from a single networked service so as not to fragment patient care;
- Linked to a lead provider that owns the activity delivered locally, and operates through a single governance arrangement which defines the team responsibilities; and
- Restricted to a single multi-provider networked service to ensure robust, integrated and consistent pathways of care.

42. The consultation document, which was to be followed by a draft revised service specification in early 2017, goes on to describe the clinical and design principles in detail. What all this means for Chichester is that the lead commissioner (NHS England South) and the lead provider (BSUH) must make sure that other commissioners - in this case Wessex, though that also falls within NHS England South’s remit - and the other providers - in this case Portsmouth - know what is meant to be happening, hence the Memorandum of Understanding.
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43. Portsmouth Hospitals’ position, as set out on 31st March is:

“We have been discussing the options for radiotherapy services for the patients in the West Sussex and East Hampshire area for a number of months with both BSUH and WSHFT. We have obviously been involved in the option of placing a linac on the Western Sussex site and working with BSUH to ensure that this facility would provide care closer to home for Western Sussex patients wherever possible. However, it should be recognised that this facility would not have the level of clinical and non-clinical support that is present at a cancer centre and thus some of the existing Western Sussex patients having more complex radiotherapy would still need to travel to Portsmouth for their treatment. BSUH and ourselves are working to agree treatment protocols and pathways that ensure an equitable service for all these patients. This would be supported by a MoU between the relevant hospitals as indicated in the letter from the National Cancer Director.”

44. No information on the content of the Memorandum of Understanding, has been made available. Details will presumably be given to the BSUH Board on 29th June.

45. On satellites, networks, alliances etc, the paper dated 28th October 2016 from NHS England, entitled ‘Modernising Radiotherapy Services in England – developing proposals for future service models’ is enlightening in several places, including:

45.1 Delivery Models: “Patients may be well served by a satellite approach to the provision of radiotherapy where significant access issues exist. This model requires both specialist assessment and planning in the central hub, together with local delivery of radiotherapy overseen by visiting clinical oncologists working under a single governance arrangement.

45.2 A move to this arrangement for some existing services providing radiotherapy to populations of below 500,000 should be considered in order to address the particular challenges that providing services in remote areas present when balancing patient access with resilience and sustainability of service provision and in accordance with the requirements described in this document.”

46. The satellite/centre or spoke/hub model for radiotherapy is seen widely throughout the NHS, and in Sussex has already been implemented in Brighton with satellites of the SCC in both Preston Park and in Eastbourne. There are also networks using hub/spokes for Major Trauma, and for Arterial Vascular Surgery in both of which both SRH and Worthing are spokes of the Brighton centres at RSCH.

47. There is no longer a Sussex Cancer Network, though the embryonic Surrey and Sussex Cancer Alliance replaces that. Wider consortia are also envisaged in the Modernising Radiotherapy consultation paper, with cancer alliances/vanguards and cancer pathway linkages to achieve 3 to 6 million populations. Although the bringing together of Wessex – Portsmouth and Southampton – with Surrey and Sussex does not seem to feature in this
document, that would serve over 3 million people, and correspond to existing pathways, so would be logical.

**E. Capacity Requirements**

48. The total requirement for radiotherapy in Sussex (population 1.6m) can be calculated by various means, some of which entail sophisticated modelling, but all of which produce fairly similar requirements, showing under-provision, even now there are 8 linacs in Sussex:

- **48.1** the calculations made by the Royal College of Radiologists and used in the NRAG report showed 5.5 to 6 linacs are needed PMP;
- **48.2** QUARTS – quantification of radiotherapy infrastructure and and staffing needs - gave 6.5 linacs PMP, but that is now regarded as outdated; and
- **48.3** the most respected methodology, known as Malthus, gives 6.8 linacs PMP.

49. All of those methodologies show that 10 linacs, at least, are needed for Sussex's 1.6m people. Those figures take no account of demography or deprivation, however. If age and deprivation weightings were to be included, a more accurate assessment of the required number of linacs in Sussex might produce a total of 12 linacs, or even more if population growth (especially of the over 75s) were to be taken into account.

50. Ignoring demography and growth in demand, the requirements for linacs in West Sussex Hospitals’ catchment can be compared to:

- **50.1** the current number of linacs PMP in the UK, which was 5.2 in 2014 according to the WHO;
- **50.2** the number of linacs in East Sussex and Brighton & Hove, which have a combined population of 829,300 and which now have a total of 8, with Western Sussex Hospitals, which has a catchment population of 450,000 (and 482,000 registered in CWSCCG) and which has 0 linacs;
- **50.3** the number of linacs in East Sussex (at Eastbourne DGH) which has a population of 544,100 and which has 2, with Western Sussex Hospitals, which has a catchment population of 450,000 and which has 0 linacs.

**F. Populations Served**

51. This submission does not depend on population projections. And the data are not based on registered populations, which can produce inflated figures. Instead, use is made of ONS mid 2015 population estimates in this submission. The data used were published on 16th October 2016, and give a total Sussex population of 1,655,700 of whom 836,900 are in West Sussex, and which includes Horsham District’s 135,900 residents and Crawley Borough’s 110,900 people.

52. Removing Crawley’s population (as they would tend to use either Guildford or Redhill) and most of Horsham’s (as they too would probably find Guildford or Redhill more accessible), except for the Chanctonbury villages, gives 1,400,000 people in the whole of Sussex, now served by a total of 8 linacs.
53. All of Chichester District’s population is included. The former Sussex Cancer Network did not cover much of that district’s population, as patients from most of Chichester District were expected to use Portsmouth (or Guildford). That remains the case at present.

54. But it is patently absurd to have a radiotherapy unit at SRH in Chichester and to tell Chichester cancer patients that they must go to Portsmouth or Guildford as they are outside the Brighton cancer centre’s catchment area. An arrangement by which all 3 cancer centres could use Chichester is feasible, as the Midhurst unit showed, though might no longer be deemed desirable.

55. For the 1.6m people living in Sussex, there is a current need for 11 linacs, according to Malthus’ 6.8 linacs PMP. Sussex has 8 linacs at present, all in Brighton and Eastbourne; there is a deficit of 2 -3 linacs. Locating those 2 - 3 linacs at SRH would mean many more patients would be within the recommended maximum 45 minutes travel time to radiotherapy. Some give up because of the excessive travel time.

56. That 45 minutes maximum is not arbitrary; evidence shows that for patients aged over 69 years and having to travel longer than 45 minutes, the journey becomes so arduous that treatment is often declined after a few sessions. The phenomenon of ‘distance decay’ is particularly marked when patients are expected to undertake lengthy journeys several times a week for several weeks, as with much radiotherapy.

57. If patients from the Horsham District (population 135,900) apart from those in the Chanctonbury villages and from Crawley (population 110,900, who would not usually wish to travel to hospitals on the coast, patients from other parts of West Sussex might do so as follows:

57.1 patients from Arun District (population 155,700, mainly in Bognor Regis and Littlehampton) would see the greatest reduction, as patients from Bognor Regis are within 20 minutes of SRH, and patients from Littlehampton are within 30 minutes of SRH. In comparison, at present from Bognor Regis the travel time is 60 minutes to Portsmouth and 60 minutes to Brighton; for Littlehampton patients, the travel time is 70 minutes to Portsmouth and 50 minutes to Brighton;

57.2 patients from Adur District (population 63,400) mainly in Lancing and Shoreham would continue to travel to Brighton, taking some 30 minutes, though a few might opt for SRH;

57.3 patients from Worthing Borough (population 107,700) would mainly use Brighton, as now, taking up to 45 minutes, though some from e.g. Angmering might opt for SRH, taking about the same time to get there;

57.4 patients from the Mid Sussex District (population 145,700) would also mainly continue to go to Brighton, taking 30 minutes from Haywards Heath, with some e.g. from East Grinstead opting for Redhill; and

57.5 patients from the Chichester District (population 145,900) would obviously find SRH much more convenient, with those outside the city (e.g. in Midhurst, Petworth, Selsey and the Witterings) taking up to 30 minutes, rather than 60 minutes to Portsmouth, though some from the west of the city (e.g. in Fishbourne) might prefer to continue to go to Portsmouth;
57.6 patients from the Chanctonbury villages of Pulbourough and Storrington would probably opt for SRH, taking about 30 minutes, though others e.g. from Steyning and Henfield would continue to go to Brighton, taking about the same time.

58. The travel times cited are for patients in a private car, averaging just 25 mph, which is realistic, given the traffic congestion on the A27 around Chichester, Worthing and Arundel. Patients not being taken by a relative or friend, and not driving themselves, but using the NHS Sussex Patient Transport Service (PTS), to which they are entitled, the journey usually takes longer, as several patients have to be picked up from different places. The travel time (and discomfort) can be made worse if the number of patients being carried exceeds the seats in an ambulance car, meaning that a minibus vehicle is used instead.

59. No patients would be disadvantaged compared with now. Cancer patients from East Worthing and Lancing would not lose out. As now, they would have travel times of 40 minutes to Brighton cancer centre, and perhaps 10 minutes less to Preston Park. The cancer centre and the Preston Park unit in Brighton would have more capacity to take those patients, in the light of reduced demand from East Sussex patients using the Eastbourne unit.

60. The exact catchment population for SRH’s radiotherapy unit is difficult to quantify. Based on the data above, all of which are extracted from the ONS mid 2015 estimates, published in October 2016, and are not projections but are the latest data available, the best estimate is 400,000 though that figure is of course subject to correction. Using the Malthus formula of 6.8 linacs PMP, shows 2.8 linacs are needed.

61. That figure must be adjusted to take account of reduced fractionation rates: what that means is that fewer treatment sessions are required for each episode of care that a cancer patient experiences. Other anticipated changes include taking advantage of equipment efficiencies that are associated with new machines, and the requirement that all linacs should be operational on all 5 week days as a minimum.

62. On the other hand, a capacity planning exercise has modelled future radiotherapy activity levels for England predicated on an unprecedented 2% increase in patient numbers per year, in line with cancer incidence.

63. These reductions and increases are discussed in ‘Modernising Radiotherapy Services in England – developing proposals for future service models’, which was published as a consultation document on 28th October 2016, but the outcome has not been made public.

64. A revised service specification that was to have been ready for public consultation early in 2017 has not yet appeared. Even so, there are reasonable grounds for assuming that the currently applicable formula of 6.8 linacs PMP will be lowered, perhaps to 6 linacs PMP. And the population to be served by SRH’s linacs might not be as high as the 400,000 estimated here, and could be as low as 350,000 people.
65. Using 6 linacs PMP and a population of 350,000 still results in 2 linacs. That seems the most sensible answer for other reasons: 3 linacs might be regarded as oversupply at least to start with, and 1 linac would undoubtedly not be enough to serve that population, as well as being more likely to have a detrimental effect on continuity of care.

G. **Financial Implications**

66. The total cost of a satellite unit at SRH has not been calculated accurately in this submission, and no costs published. But the expenditure is probably of the same order as that in Eastbourne. An additional cost for SRH is in the demolition of 1 - 5 Aberdare Close, and the re-provision elsewhere in SRH of this staff accommodation.

67. The capital required is of the order of £20m, based on £11m for the building, £4.6m for 2 linacs and associated equipment, eg CT; £1.8m for IT; and £2.5m for re-provision of staff accommodation. If only one linac is included, the capital cost is reduced to about £17.5m.

68. Rather than seeking the capital required from NHS Improvement, BSUH has been pursuing an alternative. Through OJEU’s public information notice procedure, a “call for market engagement and supplier day to procure the provision of a radiotherapy point of delivery service in Western Sussex region” was issued on 20th December 2016. BSUH received several expressions of interest, and met the people concerned on 9th and 12th January 2017. The outcome is unknown, but indications are that some of the interested parties were contenders.

69. Although pre-application discussions have taken place with Chichester District Council, no applications for planning consent have been submitted. There are no expected to be any problems, however, and planning permission is to be sought soon.

70. Additional revenue costs will probably arise as result of more cancer patients from West Sussex being treated; that is not only inevitable but is also to be welcomed. The extra expenditure would be incurred mainly by the employment of more therapeutic radiographers and medical physicists at SRH. Other staff and equipment running costs would also be incurred.

H. **Conclusion**

71. The impact on Portsmouth cancer centre has not been assessed in this submission. There will inevitably be fewer patients from the Chichester District receiving radiotherapy at the Queen Alexander Hospital in Cosham. Cancer patients from the villages to the west of Chichester will probably still choose to go there. But patients from the rest of the Chichester District, e.g. those in Selsey, the Witterings, Midhurst, Petworth and elsewhere, would opt to go to SRH, as they would have a reduced journey time. The same applies to patients from Bognor Regis, Littlehampton, Rustington, Angmering etc in the Arun District.
72. A satellite radiotherapy unit at SRH could be conceivably be linked to the centres in Portsmouth, and possibly in Guildford, as well as in Brighton. Advances in IT have allowed such joint working arrangements already, adhering to the principles of secure clinical control and improved patient access. The chief executive of the Royal Surrey County Hospital NHS Foundation Trust, whose responsibilities include the Guildford centre, and who is co-chair of the Surrey and Sussex Cancer Alliance has suggested that a simple solution would be for one of the 2 linacs to be operated by Portsmouth with the other by Brighton. The recent national proposals appear to rule out that possibility, though maybe not, and a draft revised national service specification that would prohibit such an arrangement has not been published.

73. From the NRAG report in 2007 onwards, there have been many examples throughout England of schemes like that envisaged in this submission to improve access to radiotherapy. The lack of facilities in West Sussex has been drawn to the attention of National Cancer Director, and her predecessors, who have been sympathetic to the principle of the developments proposed, and who have then delegated any action. The Clinical Lead of the South East Strategic Cancer Network has described the absence of linacs in Western Sussex Hospitals as ‘nothing short of scandalous’. Other observers, such as the former cancer adviser to the World Health Organisation, have repeatedly made similar comments. Disinterested parties find the situation difficult to believe.

74. There is a balance to be struck between supply and demand. NHS England seems anxious to avoid over-supply, as that has apparently already happened in other parts of England. A slight over-capacity tends to reduce waiting times. And collaboration not competition is now the name of the game; this proposal meets that criterion.

75. In this case, however, the possibility of 2 more linacs resulting in any over-supply is so remote as to be discounted. Demand is not being met at present, and hasn’t been for many years. There is a saying that you don’t miss what you’ve never had; in other words, additional facilities are not something that people expect. On the other hand, there is an adage that ‘if you build it, they will come’; a new facility closer to their homes would undoubtedly be welcomed by many of the 52% of the cancer patients in West Sussex who require radiotherapy.

76. There is an irrefutable case for the construction of a satellite radiotherapy unit at SRH, linked to the cancer centre in Brighton, with suitable arrangements made with Portsmouth, and possibly with the centre in Guildford. By far the best way of achieving improvement is to have a radiotherapy unit at SRH with 2 linacs. The current stated intention is that there should be an interim solution with 1 linac at SRH, to be open by October 2017, followed by a permanent unit with 1 linac also at SRH, to be open by March 2019. Both are needed.

77. What is absolutely not needed is a further period of wrangling over how this should be implemented. There remain decisions to be made on what exact configuration of linacs is feasible and desirable for SRH in the short and long term. And there is no indication of what partnership arrangements with a private provider are envisaged; no details of the financial consequences for any
of the parties are available. There are no indications of what the Memorandum of Understanding contains.

78. All these issues are due to be considered by the BSUH Board at its meeting on 29th June, which is 10 years after the need was identified. Approval by NHS England South’s Senior Management Team, and by NHS Improvement’s Deputy Chief Executive will then be required.

John G Gooderham  
12th June 2017