NHS England

Positron Emission Tomography - Computed Tomography (PET-CT) in South Essex

Further Review August 2016

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The NHS Commissioning Board (NHS CB) was established on 1 October 2012 as an executive non-departmental public body. Since 1 April 2013, the NHS Commissioning Board has used the name NHS England for operational purposes.

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1 Executive Summary

1.1 The preferred Option for the Site of a Fixed Scanner for South Essex

In October 2015 we published our report outlining the options for locating a static PET-CT scanner at either Basildon University Hospital or Southend University Hospital sites. At that time our preferred option was Southend.

When we shared our report with stakeholders, including the Essex Overview and Scrutiny Committees, a number of concerns were raised. As a result of these concerns, we committed to undertake some extensive additional engagement and to look more closely at the impact on access for patients and the clinical evidence supporting each option. This report provides:

- detail of the outcome of our engagement with patients, the public and clinicians;
- additional information on the numbers of patients affected by the proposals and the impact on travel times, using the most recent data;
- the outcome of a review by East of England Clinical Senate of the clinical case for change.

What did the Public and Clinicians Say?

Section 6 summarises the responses we received from our engagement with patients and the public. There were consistent views about what was important when considering where a service should be located, however the views from the public were split when asked about travelling to either location. Equal numbers of patients told us they would find travelling to Basildon or Southend easier, with some concerns raised around accessibility. Clinicians were concerned about access for patients, but also thought that locating the services with radiotherapy and chemotherapy services had some advantages.

What did our analysis of travel times and the numbers of patients affected tell us?

Very small numbers of cancer patients require PET-CT scans. Contracted activity for 2015/16 was for 1,346 scans and for 2016/17 is 1,429 scans. By the end of the contract, the activity is expected to have risen to 3,062 scans during 2024/25. The number of patients attending the service is smaller than the number of scans as some patients require more than one scan.

The expected number of scans that can be managed by a fixed site scanner is between 2,500 and 4,800 per year. In 2015/16, around 68% (915 of 1,346) of South Essex scans took place at the Basildon scanner. Of the South Essex population requiring a scan, 32% used an alternative PET-CT location. Of the patients who underwent a scan at Basildon, 53%

(485/915) were patients from a Clinical Commissioning Group (CCG) area closer to Basildon, with 47% (430/915) closer to Southend. Our contract anticipates that there will be an increase in demand for PET-CT of around 12% per year, with growth expected to reach 3,062 scans in 2024/25. However, growth is exceeding this prediction with the rate of growth currently over 30% which means a second scanner may be required before the end of the ten year contract.

Analysis of travel times shows that travel to either location by public transport can be long and complex. Relocating the service to Southend would mean a longer journey for patients living in CCG areas closer to Basildon, however there would be an advantage in terms of travel for patients living closer to Southend.

It is important to note that many patients from those CCG areas that are closer to Basildon already have to travel to Southend for other elements of their cancer care including radiotherapy and chemotherapy.

Our patient survey revealed that the most important issues for patients are how quickly they can be seen and choice of appointment dates and times. Travelling times ranked near the bottom of priorities, although clear information on directions was considered important. The public survey drew similar conclusions, although those not currently using the service did not rate choice of appointment time as highly.

What did the East of England Clinical Senate Say?

The panel thought that the commissioners had “provided clear evidence and background information both for and against the proposed siting.” They agreed that although the difference between the two options over the course of the ten year contract was relatively marginal, the mobilisation of the Southend University Hospital (SUH) scanner was the preferable option, assuming a single site was the only option in the near future. They gave the following reasons:

1. the different mobilisation timescales, with the lost capacity of at least two additional days for at least 12 months (with subsequent lost appointments for patients) if SUH was not mobilised;
2. the benefit for radiotherapy planning purposes of having a co-located PET-CT (for a subgroup of patients);
3. there appeared to be no overall significant difference in the impact on overall travel times between the two sites;
4. there would be no advantage or additional benefit in terms of scanner specification of a new purpose built scanner on the Basildon and Thurrock University Hospital (BTUH) site.

Conclusion

In considering the outcome of the engagement exercise, the additional analysis of patient numbers and travel time, and the recommendation of the Clinical Senate, we recognise that the decision is finely balanced between the two sites.

In making our decision on a preferred location, we have therefore taken into account that patient numbers are increasing at a greater rate than expected, and that moving to a fixed site scanner as soon as possible will provide the NHS with greater capacity, flexibility and ensure people are offered appropriate diagnostics as part of their pathway of care. This, together with the emerging direction of travel of the Essex Success Regime to concentrate cancer services in Southend, would make the co-location of the PET-CT scanner on the same site advantageous to both patients and clinicians, is the basis for our continued recommendation of Southend for the location of the fixed PET-CT service.

2 Purpose of the Report

The purpose of the report is to provide further information following the Clinical Case for Change undertaken by NHS England Midlands and East in October 2015, sharing with stakeholders the questions and further issues and information identified through public, clinical and stakeholder engagement.

This document should be read in conjunction with the Clinical Case for Change document, published in October 2015 - Appendix 1, the East of England Clinical Senate Review July 2016 - Appendix 2, and the Patient and Public Engagement Report - Appendix 3.

The publication of the Clinical Case for Change document and presentation to the Essex Health Overview and Scrutiny Committees (HOSCs) in autumn 2015 brought about a number of concerns from stakeholders regarding the preferred location for the long term.

Despite the Clinical Case for Change document detailing a proposed communication and engagement plan and process, concern was raised by both Essex and Thurrock Health Scrutiny Committees and local patient and clinical stakeholders that there had been insufficient involvement and engagement with both patients and clinical stakeholders regarding the proposed change.

As a result, NHS England, Midlands and East Specialised Commissioning Team has undertaken a public and clinical engagement exercise and wider review of pathways and services that interact with PET-CT to further inform the clinical case for change and impact for patients of the proposals. The results are provided in this report, along with the recommendation and review by the East of England Clinical Senate which took place in July 2016.

3 Background

Positron Emission Tomography – Computed Tomography (PET-CT) is a diagnostic service that is currently primarily used to diagnose and stage cancers. About 5% of PET-CT scans are carried out for non-cancer reasons.

PET-CT is commissioned nationally by NHS England supported by clinical leadership through a PET-CT National Clinical Reference Group. Standards for providing the service and indications for use are covered by a National Service Specification.

In February 2015, a new provider was awarded a ten year national contract for the provision of PET-CT scanning to the North, Midlands and East, South and South West of England – about 50% of all PET-CT scans currently undertaken in England. As a result of this contract, the PET-CT service in South Essex has been identified to benefit from increased capacity and improved facilities through moving from a mobile unit to a fixed facility.

Following the award, the new provider, Alliance Medical Ltd (AML) asked commissioners to review the location of the PET-CT facility in South Essex. The contract award made provision for the delivery of PET-CT scans through a mobile unit at Basildon Hospital until December 2016 when a fixed site permanent facility would be installed at Basildon Hospital.

The recommendation of the Clinical Case for Change exercise was that in terms of strategic fit, future proofing and co-location of services, Southend Hospital (SUH) is the preferred long term location for the PET-CT service in South Essex. This was further supported by expert advice and by the East of England Clinical Senate Review in July 2016.

NHS England Midlands and East sought advice on the need to conduct a formal consultation process regarding the proposed change with reference to the NHS England Planning, Assuring and Delivering Service Change for Patients policy (October 2015), and received assurance that the appropriate course of action was to undertake a period of engagement with stakeholders.

There are no increased financial implications to NHS England irrespective of where the permanent service is located.

4 Options

The original Case for Change looked at two options Table 1:

Options	
1.	Status Quo – continue the mobile scanner and move to the fixed scanner at BTUH which will take 12 months to mobilise.
2.	Move the PET CT service to SUH following local engagement with patients, clinicians and stakeholders to maximise the benefits of a static service, colocation with radiotherapy and the opportunity for earlier increased capacity.

Table 1: Options in the Case for Change July 2015.

The preferred options were shared with a wide range of stakeholders and generated a large number of questions.

The current PET-CT service in South Essex is provided through a mobile facility two or three times a week at Basildon and Thurrock University Hospitals NHS Foundation Trust (BTUH), although recently efforts have been made to secure additional attendances of the scanner to meet increased demand. Under the terms of the contract, the provider (AML) is required to provide a fixed site permanent facility at BTUH. Alternatively, as recommended by the Case for Change, PET-CT services could be provided through an existing modular build facility based at Southend University Hospital NHS Foundation Trust (SUH) which is owned by AML. The facility at SUH is a modular build specifically designed for PET-CT scanning that can be relocated if required.

A fixed site facility at BTUH would take between nine months and a year to become available. The originally anticipated commencement date was December 2016; should the outcome of the decision making process conclude that BTUH is the preferred option the original commencement date will be delayed due to the time taken to undertake the engagement process and clinical review. The fixed site facility at SUH would take less than 3 months to commission and become active.

5 Current Activity and Patient Flows

The specialised commissioning team has looked at the current and future demand for this service, where patients are coming from and their primary reason for the scan. As the primary reason for scans being requested is cancer we have looked at the projected growth in cancer for the population of the CCGs.

5.1 Where can we Expect Patients to come from?

Population Profile of South Essex

Current population figures for the six Clinical Commissioning Groups (CCGs) in South Essex that use the service have been considered, noting that the contract to provide PET-CT scanning to South Essex is in place for 10 years, until 2025.

	Population in thousands			
Area Name	2015	2025	Growth	Growth by %
Basildon and Brentwood	255	273	18	7
Castle Point, Rayleigh and Rochford	174	183	9	5
Mid Essex	387	415	28	7
Southend	178	192	14	8
Thurrock	164	182	17	10
West Essex	295	330	35	12

Table 2. Source: Office of National Statistics released August 2013

The data indicates that the highest growth area for the duration of the contract will be West Essex CCG whose patients access services outside the centres that come under the national contract, as well at the BTUH site. The next highest growth area is Thurrock CCG followed by Southend CCG. Mid Essex will remain the most highly populated area (Mid Essex CCG patients currently access PET-CT services at both BTUH and Colchester); the second highest populated area is, and will remain, Basildon and Brentwood.

This does not take into account the Thames Gateway Development (TGD) which is expected to realise growth in all areas in South Essex in population, commerce, industry, transport, infrastructure and housing. The information on time periods for these developments differs but will certainly be ongoing for the duration of the PET-CT contract. The TGD could be expected to realise a growth of 45,000 homes and 52,000 jobs to South Essex. *Source: South East LEP growth deal and strategic economic plan. 2014*

PET-CT activity in NHS England has a projected growth rate of approximately 12% per annum; this is incorporated into the contract with the provider. Given the contract is currently over-performing, in time a further increase in capacity of PET-CT to South Essex may be required to accommodate growing demand. Commissioners will keep demand under review and commission additional capacity as required.

5.2 Cancer Diagnosis and Treatment Pathways for South Essex

PET-CT is used predominantly in the diagnosis, and staging of cancer to assist in determining treatment pathways for the patient.

The predominant users of the PET-CT scanner at the BTUH site are from Basildon and Brentwood, Castle Point, Rayleigh and Rochford, Mid Essex, Southend, and Thurrock CCGs. For the year 2013, the following numbers of new cancers were diagnosed in the five South Essex CCGs.

CCG Population	Cancer Diagnosis 2013	Per 100,000 Population
Basildon and Brentwood	1329	579
Castle Point, Rayleigh and Rochford	1018	544
Mid Essex	2053	559
Southend	957	582
Thurrock	737	625

Table 3. Data Source: Public Health England's National Cancer Intelligence Network and Macmillan Cancer Support

The highest number of new cancers diagnosed in South Essex in 2013 was from Mid Essex CCG followed by Basildon and Brentwood CCG. The highest number per 100,000 population was from Thurrock CCG followed by Southend CCG. A snapshot of actual PET-CT scan data between Aug 2015 and Jan 2016 shows that 157 patients attended the BTUH site for a PET-CT scan from Thurrock CCG with 146 from Southend CCG during the same time period.

A change in location of the PET-CT service will not affect cancer diagnosis in South Essex or change the clinical indications for a PET-CT scan.

Patients will still be referred to their local hospital for suspected cancer within two weeks of their GP appointment. A number of diagnostic options are available to hospital consultants, including PET-CT for appropriate patients (it is not the appropriate option for all patients). Following their PET-CT scan and diagnosis, they would then be referred for treatment at their local hospital or to a specialist cancer or surgical service if needed.

For lung cancer patients, other than those requiring PET-CT and for surgery, diagnostic and other elements of care for lung cancer are provided by all of the hospitals in South Essex. More patients are diagnosed with lung cancer at Southend Hospital, but Basildon is the specialist centre for lung cancer patients requiring surgery and treats approximately 12% of Southend's lung cancer patients. A move of service would impact on surgical patients should they require further PET-CT scans.

Cancer diagnosis data obtained from “cancerstats” for 2015 shows cancer diagnosis for BTUH and SUH below, indicating that more cancer diagnosis is undertaken by SUH. This suggests that SUH is supporting more cancer patients. As BTUH is the lead hospital for lung cancer surgery in Essex, around 12% of Southend’s lung cancer patients are transferred to BTUH for surgery, after their diagnosis. Southend provides radiotherapy services for South Essex and there are no plans to move or increase radiotherapy provision in the near future.

CANCER	BTUH	SUH
Lung	321	349
Haematology	122	121
Head & Neck	36	85
Colorectal	240	318
Upper GI (oesophagogastic)	81	141
Total	**800**	**1014**

Table 4: Source Cancer Diagnosis by Trust 2015.

5.3 PET-CT Activity

Contracted activity for 2013/14 was for 930 scans at the Basildon mobile scanner, with the actual number for the year at 986, an over-performance of 6%. Contracted activity for 2014/15 was for 1,096 scans, with the actual number at 1,196, an over-performance of 9%. Contracted activity for 2015/16 was for 1,346 scans and for 2016/17 is 1,429 scans.

By the end of the contract, the activity is expected to have risen to 3,062 scans during 2024/25. The number of patients attending the service is smaller than the number of scans as some patients require more than one scan.

The expected number of scans that can be managed by a fixed site scanner is between 2,500 and 4,800 per year.

In 2015/16, around 68% (915 of 1,346) of South Essex scans took place at the Basildon scanner. Of the South Essex population requiring a scan, 32% used an alternative PET-CT location. Of the patients who underwent a scan at Basildon, 53% (485/915) were patients from a Clinical Commissioning Group (CCG) area closer to Basildon, with 47% (430/915) closer to Southend.

Our contract anticipates that there will be an increase in demand for PET-CT of around 12% per year, with growth expected to reach 3,062 scans in 2024/25. However, growth is exceeding this prediction with the rate of growth currently over 30% which means a second scanner may be required before the end of the ten year contract. The table below gives a detailed snapshot of data from August 2015 to January 2016.

Total scans undertaken Basildon site for the period Aug 15 – Jan 16	South Essex Scans undertaken Non Basildon site for the period. Aug 15 – Jan 16	Total
832	379	1211

CCG	Total	Basildon	Non Basildon
NHS Basildon and Brentwood CCG	225	219	6
NHS Thurrock	164	157	1
NHS Southend CCG	149	146	3
NHS Castle Point and Rochford CCG	156	149	7
NHS Mid Essex CCG	206	100	106
NHS West Essex CCG	92	49	43
NHS North East Essex CCG	219	6	213
Totals	1211	663	379

Table 5: PET –CT Contract Monitoring

The South Essex PET-CT service is used most commonly in the diagnosis of lung cancer, followed by lymphoma. This is consistent with the rest of the country. Those patients going on to require lung cancer surgery are treated at BTUH, with most currently receiving chemotherapy at Southend and smaller numbers requiring radiotherapy also receiving that element of their care at Southend. A snapshot of scan activity by cancer diagnosis is below.

Totals Aug 15 – Jan 16. Basildon Site	Lung	Lymph	H&N	Upper GI	Colorectal
NHS Basildon and Brentwood CCG	102	58	4	16	5
NHS Castle Point and Rochford CCG	71	28	0	12	10
NHS Mid Essex CCG	45	18	3	9	9
NHS North East Essex CCG	1	1	1	1	0
NHS Southend CCG	61	36	7	9	10
NHS Thurrock CCG	81	49	10	12	11
NHS West Essex CCG	4	23	6	5	11
Total	**365**	**213**	**31**	**64**	**56**
Totals Aug 15 – Jan 16. Total Contract	**Lung**	**Lymph**	**H&N**	**Upper GI**	**Colorectal**
NHS Basildon and Brentwood CCG	104	61	4	16	5
NHS Castle Point and Rochford CCG	72	29	0	13	11
NHS Mid Essex CCG	86	41	6	21	19
NHS North East Essex CCG	85	52	16	26	19
NHS Southend CCG	62	37	8	9	11
NHS Thurrock CCG	81	50	10	12	11
NHS West Essex CCG	8	35	11	11	13
Total	**498**	**305**	**55**	**108**	**89**

Table 6. PET CT Activity by Tumour Site (H&N – Head and Neck)

5.4 Population Use

Very small numbers of people have a PET-CT scan. Some may require more than one scan during their treatment. The following percentages apply in terms of the numbers of people having a PET-CT scan in relation to the whole CCG populations.

CCG	% Pop
NHS Basildon and Brentwood CCG	0.16
NHS Thurrock CCG	0.18
NHS Castle Point and Rochford CCG	0.16
NHS Southend CCG	0.14
NHS Mid Essex CCG	0.05
NHS West Essex CCG	0.03

Table 7.

A change in location would affect on average approximately 0.17% of the total population of around 1.4 million.

6 Patient and Public Engagement

NHS England, Midlands and East have undertaken further analysis of local factors including patient pathways and flow, travel and patient, clinician and user views. These are contained within Appendix 2 and summarised below.

6.1 Patient and Public Involvement Executive Summary

What did the community say?

The engagement process was carried out over a period of just over four months from January 2016 to mid-May 2016.

A wide range of stakeholders was engaged which included patients using the service, the public, members of community and patient groups, clinical referrers, clinical reporters, medical directors and other key stakeholders i.e. Councillors and Healthwatch.

To give as many people as possible the opportunity to respond, a wide range of communication channels were used which included surveys developed specifically for patients who use the service, and for the public and clinicians. 268 responses were received from the three surveys. Alongside the surveys a wide range of face-to-face activity was held which included a series of roadshows and meetings with community groups, patient groups and clinicians. Views were also provided through letters, emails and by telephone. A detailed feedback report is attached at Appendix 3.

6.2 A summary of the feedback

Patients: there were 40 responses to the patient survey and over half of these were from either Southend or the immediate surrounding area. The key points that were raised included:

- There was a mixed response to whether their journey would be more difficult if the scanner was at Southend. Some felt it would be easier; however others felt it would be more difficult because of travel time, congestion and parking.
- The factors most important to patients (in order of priority) when choosing where they are treated were:
    - To be seen quickly;
    - Difference it might make on the outcome of their treatment; and
    - How good car parking is.
- The factors that were most important when asked where the services are located were:
    - Should put the scanner on the site where there is the larger amount of inpatients; and
    - Put on the site with other services the scanner needs to work with.
- Equal numbers of patients said the journey to Southend would either be easier or more difficult (exactly 50% for each). Of those who explained why they held that view, the majority thought Basildon Hospital was more accessible.

The public: there were 209 responses to the general survey and half of these responses were from people who lived nearer Southend. Over half said that either they or a relative had undergone a scan but some were not sure what type of scan they had. The key points that were raised through this survey included:

- The factors most important to the public when choosing where they are treated in order of preference included:
    - How quickly they can be seen (over half the responses – 138);
    - The difference it might make on the outcome of the treatment; and
    - Being treated in the same place as other treatments.
- The factors most important when asked where the services should be located are:
    - The scanner should be put on the site near to other services it needs to work with now;
    - The scanner should be put on the site near to other services it needs to work with in the future; and
    - Where the largest number of inpatients who use the service are.
- The key themes that were raised in the general feedback included:
    - Travel and parking was a key issue;
    - Some concern around lower income families having to travel to Southend if the scanner was moved;
    - It should be put in the same place as specialist clinicians (cancer centres);

- People wanted it in the hospital that has the best outcomes;
- The decision makers should listen to clinicians when making their final decision about the location.

Face to face roadshows and community/patient group meetings: A series of roadshows were held across South Essex and over 35 community/patient groups were given the opportunity to meet face to face with the engagement team to give their feedback. In addition to the roadshows there was attendance at four patient group meetings. In the main attendees completed the survey and where views were given there was no clear consensus of opinion. However some of the key themes were:

- Concern that the scanner at Southend should be put to use as soon as possible;
- People should have access to a local service and that travel and access for patients should not change or become more difficult;
- That the decision should be made on the immediate use of the service not the future;
- Speed of access to aid diagnosis was important, no changes should be made that slow access or change the speed of diagnosis;
- Strong concern from one member of the public who attended some meetings and put forward their concerns in writing that the recommendation for the use of PET-CT for radiotherapy planning was invalid, unfounded and outside the current service requirement and therefore co-location with radiotherapy is not required.

Clinicians Survey: There were 19 responses to the Clinicians survey and the majority were from Clinicians based at Basildon Hospital. The following key themes were raised:

- Concern that moving the service would impact on the lung cancer pathway;
- Travel, access and location of Basildon more central and easier for patients to travel to;
- Concerns about the delay in the pathway should the service move.

Face to face meetings with Clinicians: One meeting was held with GPs from the Mid Essex Primary Care Forum and the further three with Clinicians from Basildon, Mid Essex and Southend. The key points that were raised:

- Three of the four meetings felt that co-location of the scanner with radiotherapy planning would be an advantage;
- Important that there is access to a fixed site scanner as soon as possible;
- Both Basildon and Southend would prefer the location to be locally based and see advantages to it being on site; Basildon clinicians felt particularly strongly about benefits of co-location with their lung surgery and lymphoma services, whilst Southend clinicians felt that they also provide lung cancer services that don't require surgery and that a number of patients already have to travel for elements of cancer care that are only provided at Southend;

- Concern that the decision had become political rather than based on clinical outcomes;
- There should be some alignment with the Success Regime however recognition of different timescales.

6.3 Travel and Access

As noted in the Clinical Case for Change commissioners and clinical experts agree that consideration needs to be given to population access to the service. The scanner should be sited where local people will not be disadvantaged and where optimum access for most patients would be served.

Geography

Clearly, the time taken to travel to either location will differ depending on exactly where in a CCG area the patient lives. However, for the purposes of this analysis, we have used the CCG office locations as a starting geography. In terms of the distance in miles, the following applies:

CCG	Scans Aug 15 – Jan 16	Closest Location
NHS Basildon and Brentwood CCG	219	BTUH
NHS Thurrock	157	BTUH
NHS Southend CCG	146	SUH
NHS Castle Point and Rochford CCG	149	SUH
NHS Mid Essex CCG	100	SUH
NHS West Essex CCG	49	BTUH

Table 8.

Based on the snapshot above, if the location of the service were to change from BTUH to SUH, approximately 30 people undergoing a scan out of a total number of 663 scans undertaken between August 2015 and January 2016, i.e. 5% would have needed to travel further in distance.

For the full year, 53% (485) of patients attending are from a CCG closest to BTUH and 47% (430) from a CCG closet to SUH, which would mean 46 people undergoing a scan would need to travel further in distance.

Travel by car

These results apply when looking at travel times by car to either site, although travel to either site may be affected by traffic density at the time of travel.

Public Transport

Public transport services in Essex are complex. Some residents are best served by both bus and train depending upon where they are travelling from.

- **Train Travel**

BTUH is a 21 minute walk from the nearest train station or a 13 minute journey by bus. SUH is served by Southend Victoria and Southend Central train stations both of which are a 9 -16 minute bus journey to the hospital and a walk of 17 minutes from Southend Victoria or 23 minutes from Southend Central.

Therefore there is minimal difference in accessing either hospital from local train stations.

- **Bus Travel**

Analysis of travelling times by bus was completed at three separate times: 11:30 on a Monday morning, 9am on a Wednesday morning and 3pm on a Thursday afternoon. The six CCG offices were used as starting points to enable consistent analysis.

The results (available at appendix 4), show that a change in location of the scanner would have some impact on patients travelling from the BTUH area if travelling by bus, however in this context, bus travel, irrespective of location of the service or time of the day, is often lengthy and difficult particularly for those in poor health.

Approximately 5% of PET-CT patients told us they travel by bus (according to our patient survey), 0.006% of the total population or around 71 patients (based on contracted activity for 2016/17, although the increased demand we have seen so far this year could mean this number rises to around 92 patients if the trend continues).

Consequently, at the slowest time of day for travelling to Southend, 0.0038% of the local population (approximately 53 people each year) would be affected by longer travelling times if the service were to move. Conversely, 0.0032% (approximately 45 people per year) would benefit from shorter travelling times.

6.4 Consistency with current and prospective need for patient choice

Current services in South Essex

PET-CT is predominately used to assist in the diagnosis and staging of cancer. There is no single hospital in Essex that has been designated as a cancer centre, with each hospital taking the lead for a different cancer. BTUH is the lead for lung cancer surgery, Mid Essex Hospital NHS Foundation Trust (MEHT) the lead for head and neck cancer and upper GI cancer surgery, SUH and Colchester Hospital University NHS Foundation Trust provide radiotherapy. Lymphoma is treated locally for level 1/2a services (Level 1 only at MEHT),

and level 2b and 3 are referred on to London Hospitals, although this may change with the development of haematological services at BTUH from MEHT. Colorectal surgery is treated locally with the exception of anal cancer which is referred to Addenbrooke's in Cambridge or to London.

In the East of England, Essex is the only area not to have a designated cancer centre and the South Essex service is the only PET-CT service that is not co-located with radiotherapy services.

Currently patients who require a PET-CT scan are offered a number of sites for appointments. In addition to the service at BTUH there is also provision to Essex at Colchester Hospital University NHS Trust and elsewhere in the East of England through the same contract at Cambridge University Hospitals NHS Foundation Trust and Norfolk and Norwich University Hospital NHS Foundation Trust, as well as London options. A change to the location of the PET-CT service in South Essex will not change the opportunity for patients to access PET-CT or alter existing clinical pathways of care.

7 Clear, Clinical Evidence base

A Clinical Case for Change was initiated by NHS England Midlands and East Specialised Commissioning Team. In building the case for change advice was sought from, among others, the Royal College of Radiologists and its Clinical Oncology Subcommittee for Nuclear Medicine, the Institute of Physics and Engineering in Medicine, key clinical leads and from expert patients. All clinical experts agreed that a fixed site scanner was preferable over a mobile PET-CT service and that co-location with radiotherapy would be desirable for the future. For the purpose of this report these are summarised in the Case for Change October 2015 and the Clinical Senate Report of August 2016.

7.1 The East of England Clinical Senate Review

At the request of the specialised commissioning team the East of England Clinical Senate reviewed the Clinical Case for Change. It was agreed that the role of clinical senate was not to endorse, or otherwise, the proposal to site PET-CT services for South Essex from SUH, but to consider whether the proposals have "the potential to deliver real benefits to patients. The panel should also identify any significant risks to patient care in these proposals".

The East of England Clinical Senate considered this question on the 21st July 2016, reviewing all available evidence, including responses received through the engagement exercise from clinicians and Basildon and Southend, other stakeholders and interested parties, and members of the public as well as presentations from a two-day international PET-CT event. The panel's recommendations were ratified by the full Senate Council on the

16th August 2016. The full report can be found at Appendix 2. This was received by the specialised commissioning team on the 16th August 2016.

The panel agreed that although the difference between the two options over the course of the 10 year contract was relatively marginal, the mobilisation of the SUH scanner was the preferable option, assuming a single site was the only option in the near future, for the following reasons:

1. the different mobilisation timescales, with the lost capacity of at least two additional days for at least 12 months (with subsequent lost appointments for patients) if SUH was not mobilised;
2. the benefit for radiotherapy planning purposes of having a co-located PET-CT (for a subgroup of patients);
3. there appeared to be no overall significant difference in the impact on overall travel times between the two sites; and
4. there would be no advantage or additional benefit in terms of scanner specification of a new purpose build scanner on the BTUH site.

The Senate has also suggested that the fixed site scanner would increase the ability for patients to be entered into research trials which could improve outcomes.

It also made three recommendations which we will take into consideration when we are planning the move.

ARSAC

PET-CT requires the oversight and support of an approved Administration of Radioactive Substances Committee (ARSAC) certificate holder. Certificates are held by two consultant radiologists in South Essex, one based at BTUH and one based at SUH. A change in the location of the service will still require an ARSAC certificate holder and can be accommodated by the accredited radiologist based at SUH. Referral processes and arrangements for patients would not alter if the location of the service were changed.

Radiotherapy

PET-CT is directly commissioned by NHS England. A change in location of the PET-CT scanner in South Essex has no bearing on current or future commissioning of radiotherapy. The Clinical Case for Change exercise identified that a change of location of the scanner to SUH could extend its use into radiotherapy planning. Clinical advice sought for the Case of Change noted that the co-location of PET-CT with radiotherapy services would be an advantage to allow radiotherapy planning using PET-CT, in line with the recommendation of the national cancer strategy, although not yet widely available. SUH provides radiotherapy in South Essex as noted on the following page:

By CCG	Radical	Palliative	Total
Basildon and Brentwood	277	159	436
Barking and Dagenham	1	0	1
Castle Point and Rochford	213	151	364
Havering	5	1	6
Horsham and Mid Sussex	0	1	1
Ipswich	1	1	2
Kent	1	3	4
Mid Essex	21	17	38
Northumberland	1	0	1
Southend	151	140	291
Southwark	0	1	1
Thurrock	172	124	296
Total	**843**	**598**	**1441**

Table 9

The highest users of both radical and palliative radiotherapy delivered at SUH in 2015 were Basildon and Brentwood and Castle Point and Rochford CCGs. Basildon and Brentwood CCG is more closely located to BTUH. The data indicates that more patients from the BTUH area are already travelling to SUH to access radiotherapy than patients from the SUH area; however there is no prospect of radiotherapy moving or provision increasing. Data is not yet collected to indicate the numbers of patients who have a PET-CT scan that progress onto radiotherapy, or to show those patients that have a PET- CT scan but do not undergo radiotherapy as part of their treatment pathway.

Radiotherapy planning

The Clinical Case for Change exercise identified that there is an increasing role for PET-CT for radiotherapy planning, particularly for head and neck cancer, lung tumours, lymphoma, gastrointestinal tract tumours, brain tumours and gynaecological malignancy. Radiotherapy planning is currently conducted using CT scanning and is commissioned as part of the radiotherapy pathway of care. Radiotherapy Planning using PET-CT is not currently commissioned although it is being reviewed by NHS England and expert advice suggests that this will become the norm as part of future developments in cancer care. PET-CT is a standalone service that could be sited anywhere and reported remotely. However, PET-CT in radiotherapy planning requires the attendance of a radiotherapy team and could only realistically and safely be delivered if co-located. Failure to co-locate PET-CT with the radiotherapy services means it would be difficult to implement a fully integrated PET-CT planning function and may become a non-viable option that is unlikely to be used.

Chemotherapy

Advice gained for the Clinical Case for Change exercise noted that, wherever possible, scans should take place in a facility close to other cancer diagnostic and treatment services. Chemotherapy plays an important part of the care pathway for some cancer patients. Data relating to patients seen by a specialist under the 31 and 62 day drug treatments monitoring, obtained from the Strategic Clinical Network – Cancer, for the calendar year 2015, indicates that SUH is the main provider of chemotherapy care in South Essex.

Hospital	31 days. Patients	62 days. Patients	Total
BTUH	279	264	543
SUH	622	358	980

Table 10

The numbers of patients experiencing chemotherapy at BTUH may expand due to plans to centralise some haematology services at BTUH from MEHT, but is unlikely to overtake the numbers at SUH. MEHT is expected to retain some chemotherapy provision. In terms of PET-CT this relates to those patients suffering from lymphoma who often experience more than one and up to four PET-CT scans. Currently patients access PET-CT at either Colchester or BTUH. Should the location change to SUH, patients will access PET-CT at either Colchester or SUH. Chemotherapy for these patients will be delivered either at BTUH, MEHT, Colchester or Southend.

Current clinical pathways of care do not allow for the PET-CT to be conducted on the same day as the chemotherapy. PET-CT is used in the diagnosis and staging of haematological cancers and follow up scans are undertaken to monitor treatment response to chemotherapy. A change in location of the PET-CT scanner would not change pathways of care but mean that patients would travel to SUH for the scan and where relevant to BTUH for chemotherapy.

Lung Cancer

Lung cancer was raised as a key issue, with concerns about fragmenting the pathway from diagnosis to treatment. Currently the largest use of PET-CT for cancer diagnosis is for lung cancer patients. A PET-CT scan is one element of the patient pathway and occurs relatively early in the diagnostic journey. Improving access to early diagnosis is a priority for NHS England in improving long term outcomes for patients.

Lung cancer diagnosis and treatment is currently provided at both Basildon and Southend hospitals, with Basildon providing the specialist surgical element where it is required and Southend providing radiotherapy and chemotherapy elements where required. Data on patient numbers is not matched to PET-CT scans at this time so access to precise information on numbers is not currently available. Southend diagnoses larger numbers of

lung cancer, of which approximately 12% require surgery at Basildon. The percentage of lung cancer patients at Basildon requiring surgery is expected to be higher.

The Clinical Senate advised that overall, the percentage of patients having PET-CT who would go on to receive radiotherapy was currently in the order of 30-35% but would almost certainly change as treatment protocols develop. Patients are required to attend hospital for radiotherapy more frequently than for surgery.

Chemotherapy use is higher than radiotherapy, and whilst Basildon is developing future chemotherapy capacity, Southend will remain the larger provider of chemotherapy services for the South Essex population.

In-patients
The provider does not separate data on outpatient and inpatient PET-CT attendances so precise numbers have been difficult to obtain. However, Clinical Senate Panel members agreed that in their experience this was likely to be a small percentage and should not be a relevant factor in determining the option chosen.

Non-Cancer
Currently PET-CT for non-cancer applications is approximately 5% of the total scans undertaken in England. Those non cancer indications include vascular disease, pyrexia of unknown origin, cardiac perfusion and neurological conditions. It is not expected that the use of PET-CT in these areas will increase significantly. Possible exceptions to that in the future are its use in neurological conditions such as Alzheimer's dementia and cardiac perfusion. This is not currently commissioned by NHS England.

7.2 Support for proposals from commissioners

NHS England, Midlands and East Commission PET-CT in South Essex and conducted the Clinical Case for Change in October 2015, which recommended that the permanent PET-CT service be provided at SUH.

Views from local commissioners have been sought and identified that the decision is equally poised with the recognition that either site would support the pathway of care.

The Essex Success Regime aims to help create the conditions for success in challenged areas. Its purpose will be to protect and promote services for patients in local health and care systems that are struggling with financial or quality problems and seek rapid improvement against agreed quality, performance and financial metrics. Essex has been selected as one area to take part in the Success Regime. The Success Regime will see all partners working together across South Essex.

The Success Regime has come into being since the original PET-CT case for change was prepared and it is important to ensure that plans for PET-CT fit within the emerging direction of travel for the Regime.

It is expected that there will be key service changes across the health sector in South Essex, including acute services, as part of the work of the Regime. The detail of these proposals identified to date is that cancer services in South Essex will be led by SUH which is being considered a fixed point for radiotherapy and cancer specialisms in the current discussion about configuration.

8 Summary

- A permanent PET-CT scanner will be provided by NHS England in South Essex irrespective of the location.
- There are no financial implications or considerations for NHS England in regards to the permanent location of the PET-CT scanner and no additional funding is required.
- A period of thorough clinical, patient and public engagement has occurred since the publication of the Clinical Case for Change document in October 2015, and concluded in May 2016.
- Differing views on the preferred location of the permanent PET-CT scanner have been expressed by a range of stakeholders with no clear preferred option from the whole clinical or patient/user population identified.
- Further analysis has been undertaken of the factors noted as important to stakeholders during the process, these have included concerns such as travel, access, co-location with other key services, expected population changes, timeliness of service, the opportunity to have a view, and possible long term developments of the use of PET-CT both nationally and locally, with reference to the recommendations made in the Clinical Case for Change document, and seeking expert clinical advice, during the process.
- A change to the location of the PET-CT scanner in South Essex will not alter other aspects of clinical services for cancer or other disease, or clinical pathways of care.
- A key advantage as highlighted in the Clinical Case for Change is the opportunity to realise increased capacity, access and choice in appointments more quickly through the facility at SUH.
- A secondary advantage of locating the service at SUH remains the opportunity to fully utilise PET-CT in radiotherapy planning, an opportunity that at best could be only partially utilised if the service were to remain at BTUH, due to the complex technical requirements and expertise required to conduct full radiotherapy planning using PET-CT.
- The Clinical Case for Change document recommended due to strategic fit, future proofing and co-location of services, SUH is the preferred location for the permanent PET-CT service. Radiotherapy and Oncology co-location provide strong reasons for

providing the service from SUH. The direction of travel of the Essex Success Regime and findings of the Clinical Senate reinforce that view.

- It considered the advantages for providing the service at BTUH relating to the volume of lung and lymphoma patients who currently receive treatment at BTUH but noted there are also large numbers of lung cancer patients at Southend (it is specialised surgery that is performed at Basildon) and a number of these patients already travel to SUH for radiotherapy.
- These considerations were supported by the Clinical Senate Review who on balance, subject to some recommendations, agreed with the decision.

9 Conclusion

The process and analysis undertaken during the engagement process has been valuable in gaining further information, data and views in the consideration of the best permanent location for the PET-CT service in South Essex.

The view of NHS England, Midlands and East, as expressed in the Clinical Case for Change document (October 2015) that the preferred long term permanent location for the PET-CT service in South Essex is SUH, has not been altered by information received during the process and is unchanged. However we will take note of the recommendations of the Clinical Senate in the mobilisation of the fixed site scanner at SUH, and the views of the Senate and local people in doing what we can to mitigate any adverse impact for patients.

10 Mitigation

In reaching this conclusion, it is acknowledged that there would be an impact on some patients. Whilst the numbers form a very small proportion of the local population, NHS England recognises the need to mitigate this impact and proposes the following:

- Regularly review growth assumptions and commit to any further future expansion of the service (mobile or fixed) being undertaken at Basildon Hospital;
- Develop a robust plan for the transition and clear information for patients, including travel, car parking, public transport and information on assistance with travel costs and qualification for hospital transport if necessary;
- Undertake a more comprehensive Equality Impact Assessment with respect to patients with a Learning Disability and those with mobility issues, and provide information or assistance as is considered appropriate;
- Instruct the provider to establish a patient information group to review information and ensure patients are given adequate support;
- Monitor the impact of travel and access through patient surveys;

- Require the provider to offer a selection of appointment times to ensure those traveling furthest can avoid busy times of day;
- Undertake a piece of work to look at offering multi-clinic appointments;
- Research and develop a case to become a test site for PET-CT in radiotherapy planning.

11 Next Steps

Date	**Action**
15th September 2016	Further engagement with Essex, Southend and Thurrock HOSCs
20th September 2016	Regional Executive requested to endorse the decision to site the permanent PET-CT service at SUH.
September 2016	Provider formally advised of decision and mobilisation plan agreed with firm timelines for delivery.
September 2016	All stakeholders formally advised of decision mitigating actions agreed with all stakeholders.
October – December 2016	Mobilisation of Scanner Provider commence commissioning of facility at SUH;
December 2016	Go live of service at SUH

12 Recommendations

Health Overview and Scrutiny Committees are asked to:

1. Note the further work that has been done since the Clinical Case for Change was presented.
2. Note the conclusions of the East of England Clinical Senate and subsequently of the NHS England regional specialised commissioning team.
3. Comment on the patient and public engagement carried out as part of this exercise.
4. Advise on any considerations or factors NHS England should consider before making a final recommendation to the Regional Executive, particularly in relation to implementation and mitigating actions.

13 Appendices

1. Clinical Case for Change October 2015
2. East of England Clinical Senate Review August 2016
3. Analysis of Patient Engagement Activity June 2016
4. Patient Travel by Bus Analysis June 2016