South East Clinical Senate

Kent, Surrey and Sussex

South East

Clinical

senate

Future acute stroke services in Kent and Medway:

A clinical senate review of the STP's preferred option for stroke service configuration

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Preface

The South East Clinical Senate has previously undertaken a number of independent clinical reviews of stroke care for Kent, Surrey and Sussex, and specifically for Kent and Medway it previously was invited to review the draft case for change, and more recently the pre-consultation business case before it went to public consultation. We were delighted to then be asked to provide this independent clinical review of the draft decision making business case, specifically the preferred option within it for three hyperacute and acute stroke units for Kent and Medway.

The stroke programme board, clinical reference group, commissioners, providers and other stakeholders have undertaken a very thorough, measured and collaborative approach to developing their proposals for future stroke care, with the goal of providing the highest quality care for stroke patients in the future, and this is reflected in the draft decision making business case, that was shared with us for review.

The clinical senate has taken both a broad pathway and population based perspective, and a detailed focus on specific elements of the pathway and service, and considered the impact on patients from across the county, and for those hospitals that would not have a stroke unit on site. We have made recommendations around the prevention strategy, the acute period, post-stroke rehabilitation and implementation.

The feedback we have provided is intended to be constructive, and to encourage further focused work to help ensure that the evolving plans are ambitious enough but pragmatic and realistic, and can anticipate and plan for the various challenges that lie ahead in implementing the model of care once it is finally agreed. The benefits to future stroke patients and the population of getting this right are very substantial, which should remain the prime motivation for such major service change.

Dr Lawrence Goldberg,
South East Clinical Senate Chair

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1. Introduction and remit of the review

Evidence suggests that modern stroke care can only realistically achieve the best possible outcomes for patients in specialist units, that can provide the expertise and facilities, around the clock, that are required. In recognition of this, Kent and Medway's commissioners, providers and their clinicians have been undertaking a thorough programme over the last three years to radically improve the quality of stroke services by the creation of specialist hyperacute and acute stroke units (HASUs and ASUs). Through a case for change, a pre-consultation business case, public consultation, and a sequenced process of shortlisting the various possible configurations of such stroke units using agreed criteria, the programme board and its stakeholders have produced a preferred option of three co-located HASUs and ASUs.

The process by which these three centres were chosen, the criteria used, and the data accessed, are summarised in the draft Decision Making Business Case (DMBC).

Prior to finalising the DMBC for agreement on the preferred option by the joint CCGs' Committee in Common, and prior to formal assurance of the proposals by both NHS England and NHS Improvement, the South East Clinical Senate (SECS) was asked to provide an independent clinical review. The agreed remit of the clinical senate review was:

'To provide advice on the final preferred option for stroke services configuration as part of the draft DMBC'.

In undertaking this review, and in line with that of clinical senates' functions more generally, the focus was on:

- Taking a population based approach in considering equitable access across Kent and Medway to high quality stroke services.
- The clinical elements of the DMBC, and the clinical and patient pathways.
- The whole pathway of care, including prevention, pre-hospital and post-ASU care, though acknowledging that the main focus would be on the acute care elements in the HASUs/ASUs and their hosting hospitals.

The review to be undertaken was specifically not to review the process by which the preferred option had been arrived at, not to review the pros and cons of the other options that had been assessed, and not to assess the financial aspects of the proposals.

The SECS has previously undertaken and published reviews of the case for change for stroke services in Kent and Medway[1], and a detailed review of the draft PCBC[2] prior to public

[1] Review of the case or change for stroke services in Kent and Medway. South East Clinical Senate, June 2015. http://www.secsenate.nhs.uk/files/3914/4118/1216/SECS_Kent_and_Medway_Stroke_Services_Review_Report_June_2015.pdf?PDFPATHWAY=PDF

consultation, and detailed reference is made to the recommendations from the SECS on these two documents in the DMBC. Reference to these documents in addition to this current review provides the breadth of input and recommendations provided to the Kent and Medway stroke programme.

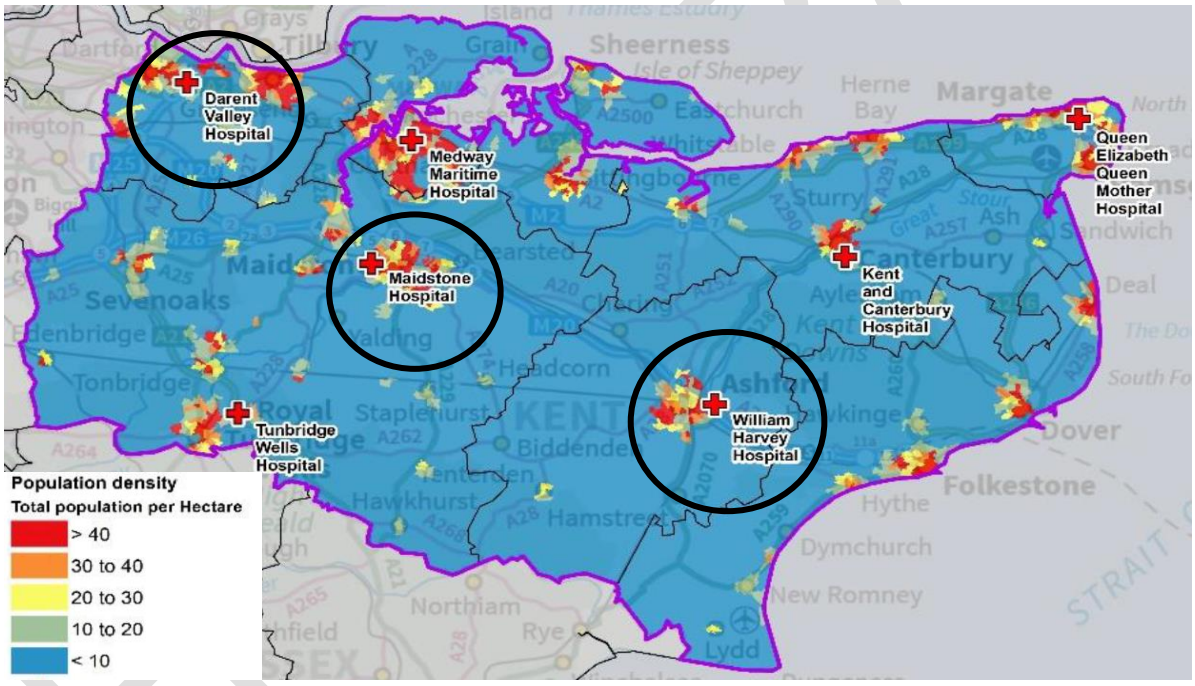
[2] Future acute stroke services in Kent and Medway: A clinical senate review of the STP's draft proposals prior to public consultation. South East Clinical Senate, Jan 2018. (web address awaited)

2. Outline of the preferred option[3]

Kent and Medway had agreed firstly that the HASUs and ASUs in Kent and Medway should be co-located, and secondly that there would be three combined HASU/ASUs in total. The preferred option was arrived at from the final shortlist of five options using the decision making process as described in the DMBC. The three HASU/ASUs in the preferred option would be located at the following three hospitals (and see figure 1):

- William Harvey Hospital, Ashford (WHH)
- Maidstone General Hospital (MGH)
- Darent Valley Hospital, Dartford (DVH)

Figure 1. The location of the three HASU/ASUs in the DMBC preferred option in relation to the other acute hospitals in Kent and Medway, and population density.



[3] Based on the information provided to the SECS panel in the draft DMBC and supporting appendices.

The activity and projected bed numbers (that assumes no growth in the coming years for each of the three HASU/ASUs) is shown in table 1.

Table 1. Planned HASU activity per annum, and associated HASU and ASU bed requirements.

Site	Confirmed stroke	TIAs	Stroke mimics	HASU beds	ASU beds	Total Beds
DVH	807	81	202	10	24	**34**
MGH	896	90	224	11	27	**38**
WHH	1239	123	309	14	38	**52**
Totals	**2942**	**294**	**735**	**35**	**89**	**124**

As a result of the centralisation of acute stroke care to three centres, there will be a transfer of current stroke activity from the other three acute hospitals that currently admit stroke patients, and with additional impact on patient flows and activity in the two neighbouring HASUs outside of Kent and Medway, Eastbourne District General Hospital (DGH) in Sussex and Princess Royal University Hospitals in South East London (Bromley).

Table 2. The transfer of future stroke activity from current providers to the three HASU/ASUs in the preferred option, and the impact on surrounding HASUs.

	Projected transfer of stroke activity to the three HASUs in the preferred option						
Future HASUs	DVH	MGH	Tunbridge Wells	Medway	WHH	QEQM, Margate	**Future HASU total**
DVH	604	0	93	110	0	0	**807**
MGH	0	314	197	385	0	0	**896**
WHH	0	0	21	7	643	568	**1239**
	Impact on neighbouring HASUs						
PRUH	0	0	2	0	0	0	**2**
Eastbourne	0	0	94	0	0	0	**94**
East Surrey	0	0	18	0	0	0	**18**
Total	**604**	**314**	**425**	**502**	**643**	**568**	**3056**

3. General comments

- The plans to have a standardised model for the delivery of stroke care across Kent and Medway is to be commended. The key is developing and implementing a sustainable service that can deliver this model of care.
- The DMBC would benefit from a clear overview and summary up front of the preferred option, which is of course the main focus and conclusion from the processes described within the document. It is currently obscured within the document, and a greater prominence to the preferred option would help to orientate those considering this case.
- There should be a stated ambition to achieve SSNAP grade As across the board in all three HASU/ASUs. This should include the criteria in the post-acute as well as the acute organisational and clinical audit. That is the implied purpose of establishing HASUs and ASUs and their associated networks, as compliance with SSNAP audit criteria leads to improved patient outcomes. The timescale for achieving this will be challenging in the short term, so providing a timescale for when it is intended to achieve such high performance would also be required.
- The DMBC should also make clear the intention to comply with the Royal College of Physicians' recommendations for stroke care by those delivering and commissioning stroke care[4,5].
- The co-location of HASUs with ASUs will likely have a significant and positive impact on length of stay and patient flow in comparison to London, where HASUs are generally not co-located with ASUs and requires transfer of patients back to another hospital for their ASU care.

[4] Key recommendations for stroke 2016. Royal College of Physicians 2016. https://www.strokeaudit.org/SupportFiles/Documents/Guidelines/Profession-Specific-Guides/11-Key-Recommendations.aspx

[5] Commissioning concise guide for stroke services 2016. Royal College of Physicians. https://www.strokeaudit.org/SupportFiles/Documents/Guidelines/Profession-Specific-Guides/10-Commissioning.aspx

4. Stroke prevention, and addressing health inequalities

- K&M's sustainability and transformation plan emphasises the importance of prevention within the goal or 'care transformation' by 'enlisting public services, employers and the public to support health and wellbeing, with efforts to tackle the future burden of cardiovascular disease and diabetes'[6]. The inclusion of the full stroke pathway, including prevention, is to be commended in that regard, and includes key areas that we would have expected including tackling obesity, physical inactivity, diabetes, atrial fibrillation and hypertension.
- A clearer statement of the ambitious targets from the STP that are being aimed for across these various risk factors for stroke would give more weight to the prevention strategy in the DMBC. These should include interventions that cover wider determinants of health and cover primary and secondary prevention interventions.
- An example of where improvement is required is for smoking, given that Kent and Medway prevalence rates have not decreased in line with national trends. Statements such as 'encourage GPs and frontline workers to encourage patients to stop smoking' are unlikely to achieve the radical upgrade in prevention needed.
- The stroke strategy should ensure that the preferred option does not make health inequalities worse. One way is to demonstrate an increased focus on prevention in the more deprived areas. There is a need for close links and alignment with local authority ambitions and plans, particularly in areas of high deprivation (this is an important mitigation for the increased travel times from these areas).
- A system focus on 'primordial prevention' (strategies to avoid the development of risk factors in the first place, as opposed to primary prevention which is the treating of risk factors) is recommended, particularly in the context of healthy diets and physical activity starting in childhood[7,8].
- The 'Inverse care law' currently exists around stroke care in England, Bray et al recently found that patients from lower socioeconomic groups have strokes around seven years earlier than the highest, are more likely to die within the first year, have a higher

[6] Kent and Medway Sustainability and Transformation Plan: Transforming Health and Social Care in Kent and Medway. October 2016. https://kentandmedway.nhs.uk/stp/stp/

[7] Primordial prevention of cardiovascular disease – the role of blood pressure. Giampaoli S. European Cardiology Review 2007. https://www.ecrjournal.com/articles/primordial-prevention-cardiovascular-disease-role-blood-pressure

[8] Primordial Prevention of Cardiovascular Disease. Gillman M. Circulation 2015. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4349501/pdf/nihms656725.pdf

prevalence of pre-stroke disability and diabetes and are less likely to receive good care[9]. The integrated impact assessment (page 3) highlights that the preferred option will have disproportionately longer journey times for those from deprived areas. The DMBC should be clearer as to how the risks to worsening inequalities might be mitigated by the better patient outcomes that will result from the improved stroke care that will result from treatment in a high performing centralised stroke service.

[9] Socioeconomic disparities in first stroke incidence, quality of care, and survival: a nationwide registry-based cohort study of 44 million adults in England. Bray et al, Lancet Public Health 2018. 3 e185-93. https://www.thelancet.com/pdfs/journals/lanpub/PIIS2468-2667(18)30030-6.pdf

5. Future stroke incidence rates

- Achieving stable overall stroke incidence rates requires effective ongoing prevention measures to mitigate and prevent a rise (see previous section), and previous improvements in population based risk factors need to be maintained and augmented.
- Detailed modelling on future stroke incidence has been undertaken by K&M (in 2015), and referenced in the PCBC and DMBC. This showed that based on recent data, stroke incidence had not increased in recent years. One explanation for this, in addition to any impact of prevention measures, is thought to be that the better understanding and diagnosis of stroke has led to a reduction in numbers of hospital events being classified as stroke in recent years. Therefore the apparent absence of an increasing incidence may be misleading.
- The projected increasing proportion of elderly people in the population, together with the forecast increase in the overall population of K&M, is however likely to result in an actual rise in the total number of stroke cases per year, even if the age-related stroke incidence remains the same. In this regard, note should be made of the important recent publication 'The burden of stroke in Europe' which forecasts a rise across Europe in total stroke events of 34% between 2015 and 2035[10]. For the UK Kings College estimates an increase in the UK of 44% from 2015-2035[11].
- It is therefore recommended to take note of this longer term predicted trend and explore what the implications of this could be in the final DMBC (including the impact on HASU/ASU bed capacity requirements), or re-model activity using a range of activity that includes the current "no increase" and a moderate increase in later years in line with the conclusions of the Kings College report. It would also be worth re-examining the data for the under 75s especially in relation to health inequalities and areas of deprivation, as it has been shown that patients from lower socioeconomic groups have strokes around seven years earlier than the highest, so the incidence of stroke is likely to be higher in deprived areas in this age group[12].

[10] See pages 35-37 from The Burden of Stroke in Europe report. Kings College London for the Stroke Alliance of Europe, 2017. https://www.stroke.org.uk/sites/default/files/theburdenofstrokeineuropereport.pdf and http://strokeeurope.eu/index/the-burden-of-stroke-in-europe/1-7-what-do-we-predict-about-the-future-burden-of-stroke-in-europe/

[11] Report predicts growth in stroke rates for UK. Kings College London News. May 2017. https://www.kcl.ac.uk/newsevents/news/newsrecords/2017/05-May/Report-predicts-growth-in-stroke-rates-for-UK.aspx (i) Incidence estimate: 43,326 strokes in the UK in 2015, 39.3 strokes per 100,000 inhabitants annually, age- and sex-adjusted. This is projected to rise to 62,366 strokes in 2035.

[12] Socioeconomic disparities in first stroke incidence, quality of care, and survival: a nationwide registry-based cohort study of 44 million adults in England. Bray et al, Lancet Public Health 2018. 3 e185-93. https://www.thelancet.com/pdfs/journals/lanpub/PIIS2468-2667(18)30030-6.pdf

6. Bed modelling

- The bed numbers required over the coming decade needs to take account of any increase in stroke activity in K&M, and planning should include the potential for the need for additional beds over time.
- The bed modelling based on the current stroke incidence rates, and length of stay of stroke, TIA and stroke mimic patients is considered appropriate.
- The catchment populations for each HASU and of the neighbouring HASUs outside of K&M need to be agreed, so that capacity is aligned with demand. The ambulance service also needs to be clear where to take the patient after on site triage based on the pick-up location. There are apps available to assist paramedics in this regard[13].
- Meeting the LoS assumptions needs effective onward care and rehabilitation pathways and capacity to be in place, and for repatriation to a non-HASU hospital (e.g. for stroke mimic patients) agreements with neighbouring trusts (especially for Medway Maritime as the only acute trust without a HASU).
- The ability to deliver the additional beds for the HASUs and ASUs on time and with sufficient capital needs careful review once plans are presented. The DMBC needs to acknowledge more explicitly the risks around this. This was a particular concern with regard to Maidstone, which will absorb the biggest increase in stroke cases (from 314 to 896 p.a.) with a potential go live date of October 2019.
- We were reassured that the anticipated changes to patient flows resulting from the preferred option have been clearly modelled, quantified and agreed with the relevant neighbouring Trusts that host a HASU (East Sussex Hospitals NHS Trust, and Princess Royal University Hospitals NHS Trust, Bromley). The net effect as presented to us was:

Table 3. Change in stroke activity and associated bed requirements at neighbouring HASUs

	Change in confirmed stroke cases from K&M catchment area	Change in stroke bed numbers vs current
Eastbourne*	+ 49	+2
PRUH	-209	-8

Key: * assumed from data in table 2.

[13] Further information available from panel member Jo Dent, Advanced Practitioner for stroke at Salford Royal Foundation Trust, at dentjjpd@gmail.com

7. The hyper-acute stroke pathway: onset of symptoms to commencement of thrombolysis

- Thrombolysis reduces disability after stroke but this benefit reduces rapidly with time so urgent assessment and treatment are vital: RCP guidelines state that 'patients with acute ischaemic stroke, regardless of age or stroke severity, in whom treatment can be started within 3 hours of known onset should be considered for treatment with alteplase'. Unfortunately there are many contra-indications to thrombolysis so not all patients are appropriate for treatment. It is estimated that around 15% of patients will meet the criteria.
- The time window from the onset of stroke symptoms to the administration of thrombolysis is an aggregate of different steps in the overall:
  - Time from onset of symptoms to call to ambulance service (or GP) by patient, relative or bystander
  - Time for ambulance to arrive at the caller's address (response time), assess the patient and transfer to the ambulance (on site assessment time)
  - Time to blue light drive to the HASU 'front door' (travel time)
  - Time to assess the patient and undertake a CT scan (door to scan time)
  - Time from scan to administration of thrombolysis
- Therefore longer travel times can be mitigated by slicker processes on arrival at the HASU hospital. This is one of the many benefits of HASUs, where systems, staff and equipment are in place to deliver an efficient pathway. This point should be emphasised to partly address the concerns of those faced with longer ambulance travel times to get to their nearest HASU hospital. To mimimise the impact of longer travel times for some patients, K&M have set 120 minutes from the call to the ambulance service to administration of thrombolysis at the HASU hospital (the 'call to needle time') as their standard, in line with standards set by the South East Strategic Clinical Network Stroke and TIA Service and Quality Core Standards (2016)[14].
- There are parallels with a number of other specialist services such as major trauma, pPCI for acute coronary syndromes, acute kidney failure, and aortic aneurysm rupture, that have been centralised for years with associated evidence of the improved outcomes that arise from the 24/7 availability and provision of specialist care which can only be provided in fewer but bigger specialist centres.

[14] South East Strategic Clinical Network Stroke and TIA Service and Quality Core Standards (2016). http://www.secn.nhs.uk/files/6814/8095/2230/SE_Clinical_Network_Stroke_and_TIA_standards_v21_Final.pdf

7.1. Response times and ambulance travel times

- The travel time modelling undertaken for the programme board by Basemap used 'off peak' travel times as a proxy for blue light travel. We recommend that South East Coast Ambulance (SECAmb) provide actual blue light travel time data for pPCI or trauma transfer from Thanet to William Harvey Hospital, Ashford, as it is expected that this would be less than that estimated by Basemap. If the blue light data is available for other journeys, this would add further data and perspective.
- There should be greater transparency provided in the DMBC about the travel times for residents living furthest from HASUs. This particularly applies to residents in Thanet who have the further journey times (to Ashford). The travel time map (figure 6) in the Integrated Impact Assessment (Mott Macdonald Sept 2018) provides a clear visual demonstration of the areas of K&M (and of East Sussex) of the issue.
- The standard for ambulance response times for category 2 calls (that includes FAST stroke calls) is 18 minutes, though we understand that currently 90% respond within 40 minutes. We understand that SECAmb believes the standard is achievable, but with additional funding and resources, which would need to be agreed. The knock on effects of longer ambulance journeys for stroke conveyances on the availability for the conveyancing of non-stroke patients needs to be understood.
- Minimising the time from ambulance arrival to departure for a HASU requires additional paramedic training together with senior triage and will benefit from the use of technology to support the on-site clinical assessment. We understand that a pilot was undertaken by SECAmb that, through more accurate on-the-scene diagnosis could result in one third of patients following a different clinical pathway (though details or confirmation of this were not available to us).

7.2. Door to needle

- Whilst the SSNAP audit standard for door (arrival at the HASU hospital) to needle is 60 minutes, many well-functioning HASUs can achieve a median of 30 minutes, and this should be the aspiration, which would help compensate for longer travel times for some patients, and brings the overall call to needle time down for all patients with the associated improvement in outcomes.
- This can be achieved in part by advance notification from the ambulance service to the receiving stroke team so that it meets the patient on arrival, makes an immediate assessment then takes the patient direct to CT.

- Rapid CT scanning needs access to a scan. This is much harder to achieve with only one scan in operation, with patients with other conditions competing for the available scanner time, and it is the expectation that hospitals housing HASUs have at least two functioning CT scanners, and that they prioritise new stroke patients accordingly.

8. Mechanical thrombectomy

- Thrombectomy of a large occlusive clot in the cerebral circulation with or without thrombolysis as soon as possible after the onset is now an evidence based intervention that improves stroke outcomes in selected patients. It is estimated that around 10% of confirmed stroke cases would benefit from thrombectomy. Across the country, there is a nationally led programme to establish how this specialist treatment can be provided. Currently some K&M stroke patients receive thrombectomy at BSUH (Brighton), Kings or St Georges, though there is no formal, commissioned pathway, and the numbers are small. The ambition to have a single thrombectomy centre in K&M is clearly articulated in the DMBC.
- The case for a K&M thrombectomy centre could be strengthened by estimating the potential number of patients who should receive it, and the health impact.
- We were provided with the vision to have a single 'spoke' thrombectomy associated with one of the three HASU sites in place by April 2020, which might provide the service (initially at least) Monday - Friday day time, but with the hub centre (at BSUH or Kings) providing out of hours cover, training and support. More detail about this could be included, and how the service would be staffed (e.g. by training non-neuro interventional practitioners (e.g. interventional cardiologists and interventional radiologists)), though it is recognised that stroke units around the country are currently grappling with the same issues.
- There will presumably be capital investment requirements to deliver a *de novo* thrombectomy service, which should be appear somewhere in the final DMBC as a future cost.
- Confirmation that all three HASUs will be able to provide 24/7 CT angiography should be sought, as this is required to select patients urgently for thrombectomy.
- The HASU hospital that ends up providing the thrombectomy service for K&M would increase admissions to that HASU. The impact that this may have on patient flows and bed capacity required at the thrombectomy hospital and the other non-thrombectomy HASU hospitals should be explicitly considered, as part of the risk analysis of the overall bed modelling.
- To avoid the risk of secondary transfer of severe stroke patients from one HASU to another that hosts the thrombectomy service, on scene triage by the ambulance service (with appropriate guidelines, and communication with the stroke centres) will facilitate transfer to the correct site first time.

9. Presence of on-site co-dependent and supporting clinical services

- The stroke pathway as described in the DMBC (section 2.3.4) refers to the South East Clinical Senate's report 'The clinical co-dependencies of acute hospital services' in which is described the clinical services that should co-locate with a HASU. It is assumed, but not stated in the document, that each of the three HASUs in the preferred option meets that guidance. It would be important to confirm that for each of the three HASU hospitals.
- The evaluation criteria for the selection of the preferred option (section 3.5.1) does however refer to the 'co-adjacencies' with vascular surgery and trauma, to mechanical thrombectomy co-adjacencies (on site availability of pPCI and interventional neuroradiology) and 'major emergency centre requirements – whether all services are available on site' (though what those services are, is not specified).
- Ongoing relationships with neurosurgical centres should be maintained for patients requiring neurosurgical intervention such as for malignant MCA syndrome, sub-arachnoid haemorrhage, subdural haemorrhage and intracranial hypertension

10. Pathways for stroke mimics

- The proportion of stroke mimic patients admitted to HASUs is estimated to be 25% of confirmed stroke cases, and it is advised that the pathways of care are presented in more detail than is currently available in the DMBC. After admission to a HASU and exclusion of a stroke, ongoing inpatient care (if required) could continue a) in the HASU if discharge is impending, b) in another ward in the same hospital under a different clinical team, or c) in the patient's local hospital (if that is not the HASU hospital).
- The DMBC refers to ongoing care in the HASU hospital under the 'general team' if predicted LoS is 2 days or less, or transfer of care to the general team at the patient's local hospital (if not the HASU hospital) of predicted LoS is >2 days. There will need to be flexibility in this outline pathway depending on the clinical condition of the patient, what their other specialty needs are, and to avoid unnecessary breaks in the continuity of care. It is likely that a significant number of such patients will remain in the HASU hospital till discharge, and those hospitals should factor in the implications of this for their non-stroke bed base.
- Daily neurology ward rounds on the HASU, to review stroke mimic patients, is likely to help in rapid diagnosis and clinical management.

11. TIA pathway

- The effective and timely management of patients with TIAs is a vital component of stroke prevention care. The DMBC confirms that the stroke clinicians in K&M have agreed the NICE pathway for TIA management. How this is delivered within each of the three proposed HASU networks is likely to vary in the detail, but the panel agrees that the model is an appropriate framework to follow.
- Patients with possible TIA presenting either at the HASU hospital or local non-HASU hospital should be effectively triaged by the on call acute medical teams, with the telephone of telemedicine links to stroke specialists if required on a case by case basis, to avoid overloading the TIA service, and to avoid unnecessary transfer or travel of patients.
- High risk cases will need to attend the 7/7 urgent referral service at the HASU site, where timely diagnostics and management can be provided. The role for local (e.g. weekly) TIA clinics for less urgent patients, or to follow up on outpatient investigations, should be agreed within the network.

12. Rehabilitation pathways

- Effective rehabilitation services after a stroke are key to improving long term functional outcomes for patients. This is well recognised in the DMBC, in which there is an extensive description of the model of care that is intended for K&M, which it to be commended.
- Meeting the length of stay on ASUs (modelling an average of 15 days) requires the capacity in the community to discharge patients to, whether to home with early supported discharge, to inpatient rehabilitation, or to nursing home or palliative care. Therefore addressing the current apparent capacity gap is critical for the sustainability of the proposed new HASU/ASUs. Inpatient rehabilitation capacity should be considered alongside ASU bed requirements, not separately.
- The establishment of a Rehabilitation Working Group (RWG) reporting to the Stroke Clinical Reference Group (CRG) will have been an important step in establishing the needs of these post-acute pathways, the required manpower and capacity, and where they should be located. The CRG should ensure that the two current workstreams for acute stroke care and rehabilitation stroke care are fully aligned and mutually consistent, to ensure timely delivery of the overall pathway of care for stroke patients.

- The input from and collaboration from adult social care is critical to the success of the rehabilitation pathway. Social worker input to stroke units is vital to planning onward care in the community, and this should be emphasised. Social worker assessment is complicated by the centralisation of acute stroke care, and the need for input from the patient's local social work services. This issue should be considered and ways developed to ensure patients are not stranded in the HASU/ASU whilst waiting for their needs and local service provision to be evaluated and set up.
- The membership of the RWG was not provided, so it is unclear if there is representation from local authority adult social care services. Collaboration with local authorities is vital to the provision of a comprehensive, holistic rehabilitation pathway, and planning should be integrated between health and social care.
- The timescales provided for the RWG's work in the DMBC (High level plan for community rehabilitation, fig 16) indicate that a business case will be produced in Spring 2019. Given the time required to approve the business case then recruit the staff required, this must be seen as a risk to the smooth running of the new HASU/ASUs at their predicted go live dates, and planning for any community rehabilitation transition period should be undertaken.
- Commissioning principles for rehabilitation are listed in the DMBC, and have been agreed by the RWG and the stroke CRG. We did not get a sense of the firm commitment of the K&M commissioners to these principles and the importance of resourcing this key aspect of the stroke pathway, but this is clearly required.
- For patients with devastating strokes, end of life care is often appropriate, and the DMBC should refer to this palliative care pathway and how it would be provided.
- It will be important to ensure that the stroke rehabilitation service is clearly distinguished from general or neuro rehabilitation, as the pathway required specific skills and approach.
- Stroke-specific rehabilitation is mandatory for patients where stroke is the main problem but where there is formal multidisciplinary agreement that stroke is no longer the main problem the pathway should provide the option of appropriate local rehabilitation.
- Stroke specific community rehabilitation in local nursing homes should be considered as an alternative to prolonged stay in hospital far from the patient's home.
- An important measure of the impact of stroke rehabilitation is functional performance at the 6 month post-stroke patient review. These reviews are required by the RCP standards, and functional status will be a key metric in evaluating the improvements in the quality of care being delivered using the SSNAP methodology.

13. Workforce strategy, gaps, and development

13.1. General points

- There is an appropriate major focus on the workforce requirements and implications of HASUs and ASUs, and K&M have demonstrated in the DMBC a wide range of initiatives and collaborations to address this challenge. A detailed workforce implementation plan is contained in the DMBC, but the risks around it need to be made more explicit, with the need for interim contingency planning.
- The gap between current staffing levels (medical, nursing and therapies) and that required for the three preferred HASU/ASUs to comply with national recommendations is very significant, and there was concern from the panel about the ability to address these gaps in the timescales being proposed, and creative interim solutions are likely to be required.
- There were a number of ways proposed in the DMBC for the gaps to be addressed through flexible working, new roles, and transfer of staff from hospitals that will lose their own stroke service. There is a significant risk that these won't fill the gaps in the timescales for opening these HASUs.
- It was considered likely that a significant proportion of the staff currently working with stroke patients in non-HASU/ASU hospitals would not move towns to the newly designated HASU/ASU hospital. However there is clearly excellent ongoing staff engagement, including on a 1:1 level (particularly at EKHFT) which may bear fruit in encouraging retention of stroke skills in K&M stroke services.
- A staged approach that adopts a transitional staffing model may be necessary in the short to medium term that is less dependent on solely medical staff, with contingency planning for the likely event that not all posts will be filled at the planned go live dates. This might include for example the more extensive use of stroke nurse specialists for ward cover of stroke units with consultant supervision.
- Developing high quality standardised stroke nursing care across K&M might benefit from pan-Kent study days delivered by Kent clinicians for shared learning between the trusts. Pan-London nursing competencies for the training of band 5+ nursing staff are also available[15].

[15] Contact Angela Roots, Advanced Nurse Practitioner in Stroke and Neuro Rehabilitation, Guys and St Thomas' Hospital (panel member) for more information at angela.roots@gstt.nhs.uk

13.2. Medical

- Given the current national shortage of stroke consultants, the upskilling of other medical specialties in stroke competencies to support stroke units and on call rotas (particularly Care of the Elderly consultants, whose traditional skill set would provide additional value for the care of older stroke patients) should be considered.
- We were concerned from what we heard that the Medway stroke service might become unsustainable before early 2020 (when services are anticipated to have been moved to Darent Valley and Maidstone) based on stroke consultant staffing levels. It may be helpful to consider the feasibility of transferring services/patients earlier to Maidstone, particularly if the one full time stroke consultant could move with the service. This would support the development and establishment of a critical mass at Maidstone, though the interim implication for beds at Maidstone would need to be addressed.
- Each of the three proposed HASU/ASU hospital trusts have different numbers of stroke consultants currently in place, and will require (based on sound job plan modelling in the DMBC) 7.1 WTE stroke consultants to run each HASU/ASU service:
    - EKHFT is best placed, with 9 consultants in post across the trust. It is not clear though how many of those currently working at QEQM would transfer to Ashford as their main place of work, but we understand that substantial staff engagement is ongoing.
    - In Darent Valley, there is currently 1 full time stroke consultant and one locum. An interim solution is likely to be required at the go live date.
    - In Maidstone and MTW Trust, there are plans to increase stroke consultant numbers rapidly, and encourage staff in Tunbridge Wells to transfer to Maidstone, but they acknowledge the challenge of getting to a full complement in the short term.
    - In Medway, there are very few stroke consultants, and it is considered that only one would be potentially available to work either at the Maidstone or Darent Valley HASU/ASU.
- Creative ways will be needed in the short to medium term to address these likely gaps. This might include:
    - A shared out of hours thrombolysis rota across the 3 HASUs
    - Recruitment of specialty and staff grade doctors
    - Upskilling of non-stroke medical consultants to participate in specialist stroke care and the rotas.

13.3. Nursing and therapies

- The potential nursing and therapies gap is sizable across all three prospective HASU/ASUs. Significant engagement work with staff currently involved with stroke care is ongoing across the three trusts, to consider their career development.
- It is considered less likely that nursing and therapies staff would move to work in a different hospital, so assumptions about utilisation of stroke staff from hospitals losing their stroke units (e.g. QEQM to William Harvey) need to be qualified and alternative ways of staffing the HASU/ASUs considered.
- Rotational posts, working both in the hospital and the community, should be considered for stroke nursing and therapies staff. This would develop broad skills, and may enhance recruitment and retention.

14. Issues for the non-HASU hospitals

- The South East Clinical Senate has previously produced detailed guidance for stroke networks on hospitals without acute stroke units[16]. It is strongly recommended that the K&M stroke programme board and its stakeholders review this document and the recommendations contained within it, as they are all highly relevant to the current K&M plans and their ability to deliver the benefits of centralised acute stroke care.
- Of the seven acute hospitals in K&M, four of them will not have stroke units in the future. Medway is the only hospital whose trust does not have a HASU on another of their sites, but many of the issues are similar for all four, and the DMBC should outline how these four hospitals will work with the HASUs in the future, and provide greater clarity on the patient pathways. There is currently insufficient detail about this in the DMBC.
- Key points the SECS panel would emphasise following review of the DMBC are the following:
  - Patients in the local catchment area should receive the same access to and quality of stroke care as those presenting directly to a HASU hospital.
  - The non-HASU hospitals must have representation on and involvement with the HASU-led stroke network.
  - Each non-HASU hospital should have a clinical champion(s) for stroke, to maintain the professional links and liaison with the HASU and stroke network, and to ensure the stroke-related issues of the local population, the hospital's patients, and its staff are considered and addressed.
  - The IM&T is in place to ensure ready access to imaging, pathology and correspondence at both the HASU hospital and the non-HASU hospital.
  - Clear patient pathways need to be in place for:
    - **Patients presenting to the hospital with a possible stroke.** This would need to take account of time from onset of symptoms to presentation, and allow for the urgent transfer to the HASU of those who may be eligible for thrombolysis, but also transfer of other stroke patients who would benefit from the full range of stroke services available in a HASU.
    - **Patients sustaining a stroke within the hospital**. Rapid communication with the HASU on call team to decide on best management and whether to transfer will be

[16] Hospitals without stroke units: A review of the clinical implications, and recommendations for stroke networks. South East Clinical Senate. Jan 2016. http://www.secsenate.nhs.uk/files/3814/5503/1676/Hospitals_without_acute_stroke_units_-_implications_and_recommendations._South_East_Clinical_Senate_Jan_2016.pdf

determined by: the severity of the stroke (and ability to safely transfer); the primary medical condition alongside the acute stroke, and where that would be best managed; and whether the patient is for palliative care only.

- **TIAs**. The NICE pathway for TIA management depending on the level of stroke risk and the likelihood of the TIA diagnosis is referenced in the DMBC, and the K&M clinicians have agreed this as the model of care. The non-HASU hospital could see and assess locally those patients in whom TIA is unlikely, or in whom non-urgent investigations are required, following agreed timescales and network-based guidelines, and in coordination with the HASU.
- **Repatriation of patients in whom a stroke is excluded** at the HASU (stroke mimic) and need ongoing acute inpatient care. The DMBC refers to a pathway that involves such patients, if their predicted length of stay is more than two days, being transferred back to their local hospital for ongoing inpatient care. This cannot be a blanket policy, as continuity of care, the specialty(ies) of care required, and other individualised criteria, will need to be taken in to account.
- **Stroke patients needing ongoing inpatient rehabilitation**. Ideally, patients would remain on the ASU in the HASU/ASU hospital until a definitive plan for community based rehabilitation was possible and in place, and transfer to another acute hospital bed would likely increase the length of stay and disrupt continuity of care. However for patients living furthest from the HASU/ASU hospital whose have a predicted need for prolonged inpatient rehabilitation, the requirements and specification for such local stroke rehabilitation capacity should be mapped and planned for. This would reduce the impact on patients and their relatives and carers when they are unable to return home directly.
- **Stroke patients being discharged home or to residential care**, ensuring provision of their ongoing stroke rehabilitation.

- It is vital to avoid destabilising existing non-stroke services by the transfer of any staff to a HASU hospital.
- As described in the section in the implementation of the model, there is a high level of risk that the stroke service as it currently exists will not endure through to the formal date of HASU opening, though staff redeployments or choice. Detailed discussions with stroke care staff in these hospitals is required to explain the transition, and to understand the opportunities for and plans of such staff.
- There will be an impact on training in the medical specialties as experience of stroke care will not be available in the non-HASU hospital. Training rotations with need to take account of this, and provide clinical experience in HASU/ASU centres, in line with RCP curriculum requirements.

- There is a need to maintain core skills on site in diagnosing or excluding stroke, and to manage patients with stroke mimic symptoms who don't need transfer to the HASU. This is likely to be provided by medical staff (consultants and trainees) in A&E, acute on call medicine, elderly care and neurology.
- Rapid access to advice from the on call stroke team at HASU essential. Networks should explore if there are benefits of developing or maintaining telemedicine links over and beyond rapid telephone access to specialists.
- The provision of local outpatient clinics for post-discharge follow up of stroke patients will reduce the need for patients and carers to travel to the more distant HASU hospital for such reviews.
- The many benefits of centralising stroke services to patient outcomes following a stroke must be clearly communicated to the public and service users. The inevitable concerns from the local population of losing stroke services from their local hospital must be met with a clear explanation of the new pathways, providing re-assurance that patient safety issues are addressed, that patient transfers to the centre will be appropriate and timely, and that post-acute stroke care will be of a high standard that maximises rehabilitation outcomes, with rehabilitation at home as soon as possible.
- Commissioners and providers should engage with the public, stroke patients and their carers in considering the impact of their local hospital not having a specialist stroke unit. Meaningful and demonstrable engagement should be part of any commissioning specification. Such engagement needs to acknowledge the potential trade-off between the benefits of travelling for specialist treatment, and the lack of more local provision of the service.
- Any steps that could be taken to mitigate the impact on relatives and carers who may have to travel longer distances to visit the patient whilst in the HASU or ASU should be considered. This might include longer permitted visiting hours, and support with transport.

15. Implementation and transitional arrangements

- The period between status quo and the establishment of the three HASUs will involve a number of uncertainties, most prominently the decisions made by the relevant staffing groups at the hospitals that are destined to lose their stroke services. There has been good engagement work with staff that may be affected (particularly within EKHFT that we heard), to consider the roles that may be available within the new HASU.
- The four factors listed in the DMBC are an appropriate starting point for planning this transition period, i.e. (as worded in the DMBC):
  - To implement the new services as quickly as possible whilst ensuring that quality and patient safety are not compromised
  - To recognise the risk of closing units becoming unsustainable due to an inability to retain and recruit staff
  - To reflect the projected flows between hospitals and the impact on activity, beds, travel time and workforce over the transition period
  - The ability of site operational teams to accommodate the transition based on seasonal variation in demand and staffing shortfalls

  Comprehensive 'key implementation activities' are also listed in detail.
- There was particular concern that the Medway stroke unit could cease to be able to provide adequate services quickly after the decision on the preferred options for HASUs is made, and plans should be prepared for a rapid transfer of stroke activity to the hospitals that will take on this activity (Maidstone and Darent Valley).
- There are similar risks for QEQM and Tunbridge Wells hospitals, but these may be easier to mitigate as they each will have a HASU in one of their trust's other hospitals.
- For all these reasons, the implementation period should be minimised.
- IM&T requirements must be in met before the new pathways are rolled out to ensure safe and high quality care can be provided across the stroke networks. This includes ready access to any imaging or blood results done in the referring hospitals, and streamlined ways of sharing patient clinical information at the point and time of need.
- There are parallel discussions ongoing about the future configuration of acute hospitals in East Kent, with an alternative major emergency hospital located in Canterbury being considered. The potential impact of such a future reconfiguration on the flow of patients with acute stroke, are not discussed in the DMBC. Whilst there is significant uncertainty

about this alternative at present, and if agreed and implemented it would likely be some years before it was established, there should be explicit reference to this issue in the DMBC.

16. Stroke networks and clinical leadership across K&M

- Strong and effective clinical leadership and programme management will be required in setting up the new stroke pathways and HASU/ASUs within Kent and Medway. There needs to be commitment to this need, and appropriate resourcing. A clinical director for stroke services across Kent and Medway is recommended, with appropriate managerial support.
- In addition, each HASU should have strong clinical leadership from the medical, nursing and therapies professions to oversee implementation, and be responsible for the quality of stroke care in the HASU, ASU and the local stroke network it is responsible for.

17. Summary

Kent and Medway's commissioners and providers have agreed on the need to deliver modern, high quality care for patients with stroke in K&M. They have acknowledged that the current arrangements are struggling to provide this, and that by centralising specialist stroke care in three co-located HASUs and ASUs they will address the challenge of providing improved patient care.

Through an assiduous process over the last three years, that has included making a strong case for change and evaluating the many possible combinations of hospitals that might provide future stroke care, a preferred option has been arrived at, and is presented in a decision making business case.

The clinical senate was tasked with providing an independent, clinical review of this preferred option of three HASU/ASUs for K&M, which would be based in Ashford, Maidstone and Dartford, as described in the draft DMBC and associated supporting material provided to us. The review was not of the process by which the preferred option was arrived at, nor of the financial aspects of the case, but a review of the clinical and patient pathways that are the consequence of this configuration of stroke care. The review considered the full pathway from prevention, to acute stroke care, and through to rehabilitation in the community.

Future stroke activity

The panel was not entirely confident in the current projections for no growth in stroke activity in the years ahead, given the growth in the projected size and age of the population of K&M, and recent publications. This underlines the importance of prevention measures (that also impact on the development of many other long term conditions) in improving population health and reducing future need and demand for stroke care, and reducing health inequalities. Meanwhile, capacity planning at the trusts hosting the HASU/ASUs should take account of a potential increase in activity in the years ahead.

The hyperacute pathway, from call to needle, and travel times

The impact of longer travel times for patients living furthest from the planned HASU/ASUs needs to be more fully acknowledged, and the ways of mitigating that impact described more clearly. The key metric is the time from the onset of stroke symptoms to the administration of thrombolysis (for the 15% or so of stroke patients who would benefit from it). Longer travel times can be compensated for by rapid response from the ambulance service to the first call, rapid assessment and scanning on arrival at the HASU hospital. The standard that is being adopted of 120 minutes from call to needle is ambitious but achievable if all the components of the call to needle pathway are addressed and made as efficient as possible.

The benefits of HASU/ASU care are not just for those receiving thrombolysis, but for all stroke patients, who will benefit from the specialist, round the clock care from the full multidisciplinary

team that can only realistically be provided in a fully resourced and staffed HASU/ASU. The benefits to ultimate patient outcomes should be seen as outweighing the longer travel times for some to get to such units.

Thrombectomy

The evidence base for thrombectomy (mechanical clot extraction) after or instead of thrombolysis in a selected group of stroke patients is now strong, and the implications of this new standard of care are being worked through nationally as well as locally. The DMBC describes plans for a single thrombectomy service for K&M, though the siting of this is yet to be decided. The impact of such a centre on patient flows and capacity planning of the three proposed HASUs across the county will need to be considered in more detail.

Stroke mimics

Patients with stroke mimic symptoms make up around 25% of admissions to HASUs, and the subsequent pathways of care need to be mapped out in more detail, particularly for those patients initially admitted from more distant sites, and for whom the location of their ongoing care needs to be carefully considered.

Workforce

There are significant challenges to filling all the posts required (medical, nursing and therapies) to meet the workforce standards for HASUs and ASUs in the planned go live time scale, and medium term contingencies are likely to be required until full recruitment has been achieved.

Once the decision has been made about the future siting of the HASU/ASUs, there is a risk of destabilising the stroke workforce in units that won't be providing stroke care in future, and full and meaningful engagement with affected staff in exploring the opportunities available at the future HASU/ASU units, should continue.

Issues for non-HASU hospitals

For the four acute hospitals in K&M that will not have HASUs, reference should be made to the recommendations in the South East Clinical Senate's report (Jan 2016)[17]. Patient pathways to and back from HASU/ASUs need to be clear, clinically appropriate, and maximise continuity of care. Such pathways include patients sustaining a stroke in one of these hospitals, patients presenting to their urgent and emergency care services with a possible stroke, stroke mimic patients and those needing longer term rehabilitation. Effective IT links must be in place for the seamless transfer of clinical information (imaging, pathology results and correspondence). These hospitals must be represented on their local stroke network.

[17] Hospitals without stroke units: A review of the clinical implications, and recommendations for stroke networks. South East Clinical Senate. Jan 2016.
http://www.secsenate.nhs.uk/files/3814/5503/1676/Hospitals_without_acute_stroke_units_-_implications_and_recommendations._South_East_Clinical_Senate_Jan_2016.pdf

Rehabilitation

Fully resourced and staffed pathways for the onward care post-ASU of stroke patients and their rehabilitation are critical for improving patient outcomes, for maintaining flow and managing capacity in HASUs and ASUs. There are large gaps currently in stroke-specific rehabilitation services across K&M which will need to be addressed by commissioners. The acute and rehabilitation work-streams, programmes and timelines need to be fully coordinated and aligned, and include full engagement with local authorities and their social services leads.

Implementation, and the need for leadership and stroke networks

The transition period to the new model of care needs to be closely overseen, and the time minimised, in view of the risk of stroke services becoming destabilised in the hospitals that won't have HASUs. There will likely be a need to be transitional arrangements for patient flows, staffing models and rotas.

Strong and effective clinical and managerial leadership will be required, and a formalised stroke network for Kent and Medway, and for the three individual HASU-based networks, is strongly recommended to ensure the successful implementation of the new model of care, and the delivery of the patient benefits that are the prime purpose of this programme.

18. Appendices

Appendix 1. South East Clinical Senate Council Review Group membership, declarations of interest and agenda

1.1. South East Clinical Senate Council Review Group Membership

No.	Panel Role / Functional area	Name	Job Title/Role/ Employing organisation
1	**Chair**	Dr Lawrence Goldberg	Chair of the South East Clinical Senate, and Consultant Nephrologist, Brighton and Sussex University Hospitals NHS Trust
2	**Stroke Consultants**	Dr Tilly Spiers	Frimley Health FT
3		Dr Simone Ivatts	Western Sussex Hospitals NHS FT
4		Dr Patrick Gompertz	Barts Health NHS Trust
5	**Interventional Neuroradiology**	Dr Panos Koumellis	Brighton and Sussex University Hospitals NHS Trust
6	**Nursing**	Angela Roots	Advanced Nurse Practitioner, Stroke and Neuro Rehabilitation, Guys and St Thomas' Hospital
7	**General Practice**	Dr Sarah Pledger	Clinical lead for Transformation, Frail and Aging populations, Central West Sussex CCG
8	**Public Health**	Dr Michael Baker	Deputy Director of Healthcare, Public Health England (SE)
9	**Allied Health Professional**	Lucy Carter	Head of Therapies, Lewisham and Greenwich NHS Trust
10	**Ambulance and transport services, and 111 services**	Joe Dent	Advanced Practitioner (stroke). Salford Royal Foundation Trust
11	**Public and patient perspective**	Priscilla Chandro	PPE
12	**SE Clinical Senate Associate Director**	Ali Parsons	NHS England
13	**SE Clinical Senate Programme Manger**	Helen Bell	NHS England

1.2. Declarations of Interest

Name	Personal pecuniary interest	Personal family interest	Non-personal pecuniary interest	Personal non-pecuniary interest
Lawrence Goldberg	None	None	None	None
Tilly Spiers	None	None	None	None
Simone Ivatts	None	None	None	None
Patrick Gompertz	None	None	None	None
Panos Koumellis	None	None	None	None
Angela Roots	None	None	None	None
Sarah Pledger	None	None	None	None
Michael Baker	None	None	None	None
Lucy Carter	None	None	None	None
Joe Dent	None	None	None	None
Priscilla Chandro	None	None	None	None
Ali Parsons	None	None	None	None
Helen Bell	None	None	None	None

1.3 Attendees at the Clinical Senate Panel Review meeting 18.10.18

Name	Role	Organisation
Caroline Bates	Head of Nursing	Dartford and Gravesham NHS Trust
Steve Fenlon	Medical Director	Dartford and Gravesham NHS Trust
David Hargroves	Stroke Consultant	EKHUFT
Anne Neal	Interim Director of Strategy and Business Development	EKHUFT
Rebecca Brad	Workforce Programme Director	Kent and Medway STP
Rachel Jones	Director of Acute Strategy	Kent and Medway STP
Nicola Smith	Acute Strategy Programme Lead	Kent and Medway STP
James Lowell	Director of Planning and Partnerships	Medway Foundation Trust
David Sulch	Stroke Consultant	Medway Foundation Trust
Tak Ellis	Stroke Consultant	Maidstone and Tunbridge Wells Trust
Sarah Overton	Head of Strategy	Maidstone and Tunbridge Wells Trust
Louise Rattray	Stroke Clinical Nurse Specialist	Maidstone and Tunbridge Wells Trust
Claire Hall	Clinical Education Lead, Stroke, pCI, Trauma Pathways Lead	South East Coast Ambulance Services NHS Foundation Trust
James Pavey	Regional Operations Manager (East)	South East Coast Ambulance Service NHS Foundation Trust
Jackie Huddleston	Associate Director	South East Clinical Networks
Martyn Denny		Healthwatch, Kent
John Potts	Patient Representative	
Ellie Davies	Programme Support	Carnall Farrar
Alice Caines	Principal	Carnall Farrar

1.4 Clinical Senate Council Review Group Agenda 18th October 2018

South East Clinical Senate:
Panel Review of Kent and Medway STP Stroke Decision Making Business Case
18th October 2018, 10.00 am – 4.00pm
(Please note: Clinical Senate Panel Pre meet 10.00-10.30am
post meeting review 2.00-4.00pm)
Venue details
Holiday Inn, Povey Cross Road, Surrey, Gatwick RH6 0BA

Item	Time	Item	Lead
1.	9.30	**Arrival, registration and refreshments**	
2.	10.00	**South East Clinical Senate Expert Review Panel pre-meet**	**LG**
	10.30	K&M Stroke Programme Board members to join the meeting	
3.	10.30	**Introduction, context and approach to the review**	**LG**
4.	10.35	**K&M STP DMBC presentation** Presentation from the K&M stroke team, summarising the DMBC, the strategic approach for getting there and finalising the preferred option, response to consultation etc.	**Rachel Jones**
5.	10.55	**Discussion between the clinical senate panel and the K&M team, relating to the strategic approach and overarching themes (Q&A).**	**LG**
6.	11.15	**Provider presentations and discussion** Review of the three HASU/ASU hospitals' models of care and plans, and of Medway NHS Trust's planned patient pathways (as a non-HASU/ASU hospital). For each trust, a 10 minute presentation, followed by 10 mins Q&A. **David Hargroves – Stroke Consultant EKHUFT; Steve Fenlon – Medical Director, DVH; Tak Ellis – Stroke Consultant, MTW; David Sulch -Stroke Consultant Medway** **There will be a 15 minute coffee break from 11.35-11.50**	
7.	12.50	**STP/Providers presentation and discussion** Transition and Implementation planning (10 minute presentation followed by Q&A).	**Rachel Jones**
	1.15	**Close of joint meeting and lunch**	
8.	2.00	**Clinical senate review panel only:** Panel discussion, conclusions and agree on main recommendations	**LG**
9.	3.50	**Summing up, next steps**	**LG**
10.	4.00	**Meeting close**	**LG**

Appendix 2. Key Lines of Enquiry (KLOEs)

Strategic, Kent and Medway-wide
Ambition and anticipated benefits in patient out-comes
Public health measures, stroke prevention strategy and addressing health inequalities
Modeling of future stroke numbers up to 2030
Rehabilitation pathways and plans
Transport issues to meet the 120 minute call to needle standard: ambulance response times, journey times and impact on ambulance service capacity
Mechanical thrombectomy
Impact of preferred option on surrounding HASUs outside of K&M
Workforce strategy, gaps, development
For each HASU/ASU hospital and its network
Current vs planned SSNAP performance, and trajectory for improvement
Clarification of catchment area and associated stroke activity
Bed modelling
Travel times
Door to needle path
Presence of on-site co-dependent/supporting clinical services
Mechanical thrombectomy pathway
Pathway for patients presenting at their non-HASU networked hospitals
Onward care pathways
Pathways for stroke mimics
TIA pathways
Workforce: Medical
Workforce: Nursing
Workforce: Therapies
Issues for non-HASU hospitals within the HASU's network (i.e. Medway, Tunbridge Wells, Kent and Canterbury, QEQM)
Pathway for patients presenting with possible stroke diagnosis
Pathway for inpatients sustaining a stroke
Repatriation and rehabilitation of patients post-HASU
Role of the future local HASU-centred stroke network
Workforce issues
Clinical information sharing between hospitals
Implementation and transition
Implementation plan and oversight
Nature of future clinical network(s) across K&M
Impact of EKHFT act reconfiguration options appraisal on K&M stroke networks and HASUs

Appendix 3. Abbreviations

ASU	Acute Stroke Unit
CQUIN	Commissioning for Quality and Innovation
CSR	Community Stroke Rehabilitation
CTA	CT Angiography
DMBC	Decision Making Business Case
EqIA	Equality Impact Assessment
ESD	Early Supported Discharge
HIA	Health Impact Assessment
HTA	Health Technology Appraisal
HASU	Hyper Acute Stroke Unit
ICST	Integrated Community Support Team
IIA	Integrated Impact Assessment
IR	Inpatient Rehabilitation
JCCCG	Joint Committee of Clinical Commissioning Group
JHOSC	Joint Health Overview and Scrutiny Committee
K&M	Kent and Medway
LSOA	Lower Super Output Areas
NIHSS	National Institute of Health Stroke Scale
PCBC	Pre Consultation Business Case
SSNAP	Sentinel Stroke National Audit Project
TIA	Transient ischaemic attack