**Appendix**- RCOT response to Reshaping Stoke Care, Saving Lives, Reducing Disability (Individual Member Comment -July 2019)

In the response below, I have outlined concerns within the Department of Health’s 2019 ‘Reshaping Stroke Care’ consolation document and provide some evidence based research to support my comments.

It is set out in the Consultation document that each of the proposed Centralised Stroke Care models is based on those already in operation in England (Manchester and London). In each of these models, it is stipulated that patients with suspected acute stroke should be admitted directly to a hyper acute stroke unit (HASU) and be assessed for emergency stroke treatments by a specialist physician without **delay** (National Clinical Guidelines for Stroke, 2016).

Centralised Stroke Care Models in England that were used and referenced to within the Dept of Health consultation document:

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| --- | --- |
| London | 8 HASU (first 72 hours) each with their ASUSituated **within max 30 mins. travel time** of all London population |
| Further 16 ASUs |
| Manchester | 3 HASUs - Choice of HASUswas based on **ambulance journey times across the region to ensure equality for residents** |
| 8 ASU |

Both Manchester and London models emphasise HASU proximity to patients as being a deciding factor in where HASUs are established. None of the 6 models presented in the consultation document provides a model of care whereby all patients are no more than the 30 minutes travel time from a HASU as stipulated in the London model above.

The modelling for each of the options in the Consultation Document is based on doubling this transport time to 60 minutes, in 4/6 options the travel time exceeds 60 mins and provides for a maximum of 102 minutes. NHS reconfiguration guidelines suggest travel time should ideally be 30 minutes, but no more than 60 minutes (NHS England. Stroke Services: Configuration Decision Support Guide, 2015; Price & James, 2011).

While 60 minutes is the maximum timeframe recommended, evidence points to ‘the earlier thrombolysis is given in stroke patient the better their outcome’ (Savar et al., 2013; Meretoja et al., 2014; Emberson et al., 2014)

The Dept of Health’s proposals do not propose any viable method of reducing travel times nor does it evidence impact on outcome by in fact doubling the travel time. Travel time, a key deciding factors in the establishment and location of HASU in both London and Manchester models, would have no impact on quality of care and outcomes as all within 30 minute window.

There is additional concern that travel times may indeed worsen from those proposed in the Consultation Document. In the 2017/18 Annual Report by Northern Ireland Ambulance Service [NIAS] (2018) found that for yet another year, the response times for Category A calls deteriorated. Only 45.2% of Category A calls were responded to within 8 minutes during 2017-18 against a target of 72.5 NIAS 2018). Given the funding and staffing crisis in the NHS there is considerable alarm that if the centralisation model was implemented as is outlined in the Consultation Document, the problem of extensive transport times will significantly worsen.

The only attempt to mitigate the extensive increase in travel time for patients in the Dept of Health’s proposal is an acknowledgment that NIAS aim to introduce an enhanced call taking process based on the Pre-Triage Sieve (PTS) and Nature of Call (NOC). Although it is accepted that this would help improve targeted dispatch of ambulances to patients, it is alarming that under this new category, patients who are FAST responsive are not categorised as top priority calls, rather they are listed as Category 2 (NHS England Ambulance Response Programme Review, 2018). The consultation document mentions on page 31 that this new system helps identify Category 1 patients earlier than is currently the case, it does not mention improving identification of Category 2 (stroke) patients.

In 2018, the mean response time (dispatch to arrival at scene) to category 2 calls in England where the PTS and NOC system is in use was 18 minutes (NHS England Ambulance Response Programme Review, 2018). If this is replicated when the system is implemented in Northern Ireland, this response time with the additional journey time added to the proposed HASU sites being in excess 60 minutes and with up to a maximum of 120 minutes if a HASU is not situated in the South West Area Hospital as set out 4 out of the 6 models proposed. This is an alarming travel time especially considering the 3/4 hour window during which the provision of Thrombolysis is accepted to be effective as a treatment for certain strokes. RCP Stroke Clinical Guidelines (2016) states that patients with acute ischaemic stroke, regardless of age or stroke severity, should be considered for thrombolysis within 3 hours of known onset and those aged under 80 considered for thrombolysis within a 4 hour window.

 The Department of Health proposals could mean reducing the time during which thrombolysis could be provided by almost a quarter, and in some instances, by a third, this is of grave concern that there has been no evidence put forward within the consultation document that increasing the time of travel (modelling from 30 to 60 minutes) and demand for NIAS to travel further – an unprecedented model - would not have an impact on patient outcomes.

The consultation document states on p30 that ‘reconfiguration of stroke services in London suggested targets for travel time of between 30 mins and 60 minutes for the journey time from home to HASU for treatment with thrombolysis. This statement I would question, as following a review of the evidence that was used to develop the reconfiguration of stroke services in London there was assurances that ‘sites were identified with no Londoner more than a 30 minute ambulance journey to nearest HASU (Morris et al., 2014).

There is a distinctive lack of evidence within the full document and especially to justify that increasing travel times to 60 minutes for large sections of the community (which may put them outside the time when it some of the treatments are effective) would be preferred model. This questions some of the proposed models level of research and clinical evidence to support their proposals. A recent paper published in the British Medical Journal by Morris et al, (2019) examines the ‘Impact and sustainability’ of centralising acute stroke services in Manchester and London and in fact does recognises that a delay in transport times is a significant problem with the centralisation model.

The Department of Health, Reshaping stroke care : consultation document states ‘we recognise that increased travel times are a source of anxiety and are considering a range of options to minimise travel time with a new model of care’ (p30 Department of Health, Reshaping stroke care : consultation document 2019). The consultation makes a commitment to develop the use of air ambulance service particularly form rural areas. On p11 of the stroke consultation document (Department of Health, Reshaping stroke care: consultation document 2019) outlines 7 commitments and states:

 At a recent Department of Health public meeting (2.7.19) it was clarified by Dr Brid Farrell that the air ambulance would in fact only be utilised to transfer a patient from one unit to another, not for response to rural locality. This was further confirmed via email from Dr Brid Farrell to myself 8.7.19 “*The planed role for HEMs in acute stroke is in secondary transfer of patients ie for interhospital transfers only”*. This statement contradicts the consultation document commitment that is clearly outlined on p11, therefore leaving no assurances to meet the clinical evidenced timeframe for thrombolysis for a large section of Northern Ireland population.

The Department of Health commissioned University of Exeter and Calgary to undertake modelling to provide ‘robust evidence base on the impact of reshaping hospital based stroke services, including on travel times and clinical outcomes’ p9 (Department of Health, Reshaping stroke care : consultation document 2019). The modelling papers by both universities have outlined various options and scenarios, giving evidence tables and maps for a range of these options, but it must be noted that Exeter University states that the modelling that they have proposed, ‘focuses on the Hyper acute stroke unit phase of stroke care, and does not extend to organisation of ongoing step-down care in local stroke units or after discharge home’ (p38). This highlights the lack of consideration for the rehabilitation phase of the patient’s journey that is required by 60-70% of stroke patients and reinforcing the medical model approach that was taken with the reconfiguration options.

In a mixed rural / urban environment some compromise between unit size and travel times must be made, the question is why was travel time the compromise when the evidence is very clear for ‘time is brain’ ethos where the earlier thrombolysis is given in stroke patient the better their outcome.

The consultation document points to alternative systems and structures that have been implemented in other countries. None of the alternative models discussed in this comprehensive document are evidenced as having been considered by the authors of the DoH consultation. An alternative care model outlined by Hubert et al (2016) is the Telemedical Project for Integrative Stroke Care (TEMPiS) implemented in South-East Bavaria, Germany a region where the population is of a similar size and density to Northern Ireland with 1.94 Million spread across 14,992Km in South-East Bavaria, and in Northern Ireland there is 1.78 million within 9096km (a more comparable geographical area than Manchester or London).

This Telemedical Project for Integrative Stroke Care (TEMPiS) recognised the problem of long travel times for many patients from home to the nearest HASU resulting in the delay of administrating thrombolysis and ultimately impacting patient outcomes and care. The TEMPiS set up a decentralised system of telemedicine-linked stroke facilities (TeleStroke Units) a specialised stroke care facility that is closer to patients’ home. Following a 3 year study Morris et al, examined the 2 systems of stroke care and demonstrated that ‘telemedicine stroke care’ can achieve similar thrombolysis rates and overall time delays in a rural population as a centralised system can achieve in an urban population (Morris et al 2019).

The service outlined above is only an example of an alternative model that should be considered. It is evidence that the realities of population distribution in large spread out rural communities is of such concern in other countries, that when planning optimum stroke care, it shapes the fundamentals of the modelling. Similar demographic challenges in Northern Ireland do not seem to have been given the same level of importance as they have in other countries.

The Department of Health’s proposal is very medically driven and centralises the importance on the hyperacute phase of the patients’ stroke journey. It does not take into consideration that HASU models in Manchester and London acute/rehab stroke services are being centralised into “hub and spoke” systems as a means of improving access to organised care in a high number of in-patient rehabilitation stroke units. This involves hospitals providing different levels of stroke care working together to create a centralised system.

In the London model (8 HASU each with their ASU and a further 16 ASU therefore 24 ASU in total), once patients are stabilised in HASU, they are either transferred to one of 24 acute stroke units that provide acute / rehabilitation services and ongoing medical input or are discharged, patients are usually transferred to an acute stroke unit close to their home. Manchester has a similar model with 3 HASUs and 5 ASUs (Morris et al, 2019).

Both models provide opportunity for patients to receive stepped down ongoing care and rehabilitation in hospitals that are nearer their home. Proximity to home is again considered (admittedly amongst others) in the modelling of centralised stroke care in both Manchester and London. In Northern Ireland, where there is a much larger rural population that is extremely poorly served by transport (this is especially true in both the Southern where there is very limited public transport to Craigavon Area Hospital). The additional hardship this will pace on families and subsequent stress to the patient does not seem to have been a pertinent consideration when deciding on appropriate models of care for stroke patients at all stages of their care in hospital.

60-70% of our patients will require ongoing inpatient rehabilitation following their stroke, the documents fails to demonstrate how they will meet these needs within the models outlined; the documents as a whole are driven heavily by the medical model and fail to give weight to the importance of the rehabilitation structures for the full patient journey. Caution must be applied as a number of the proposed options are that the hyper acute units are also the acute units –while a combined model can be beneficial, it is feared that with the emphasis on hyper acute care, the patients within the ‘acute/rehabilitation’ beds may be transferred to other wards/ repatriated to local hospitals that do not have the adequately trained AHP / nursing staff to treat this client group and meet their ongoing rehabilitative needs. The move may be solely to free-up beds to allow incoming patients to access hyper acute stroke care. RCP National Stroke Guidelines (2016) state that ‘the closer a rehabilitation service is to the person’s home the more that family/carers can be engaged and the more targeted the rehabilitation can be’ (p18).

Overloading / maximum capacity – the proposal for this reconfiguration is scheduled with a reduction of hospital beds whatever final option is chosen. While no ‘number / percentage of the proposed bed reduction has been provided – it has been confirmed by Dept of Health that there will be an overall reduction in stroke beds within Northern Ireland following this reconfiguration. It must be note that Exeter University made a few references to the ‘over capacity’ of units, especially the HASU in RVH as it is also the thrombectomy centre. ‘It is likely that efficient transfers back to local stroke units will be required to prevent overload in the thrombectomy centre and possible the other HASUs’ – some of the Dept of Health options don’t have any proposals to have local stroke units. Also concerns must be reserved for volume of patients to each unit as no consideration has been made in the consultation document for stroke mimics, it is well documented that stroke mimics are approx. 20-25% of presentations (Dawson et al 2016), these presentations will also have to be triaged in the HASU – a struggle if demand outweighs capacity, and if confirmed not CVA – where will that patient continue their medical care?

Case example local stroke unit:

The Stroke Unit in Daisy Hill Hospital (DHH), Newry (Southern Heath and Social Service Trust - SHSCT) performs excellently on key indicators of in Hospital Stroke Care as evidenced in the latest SSNAP review audit (SSNAP Jan – Mar 2019 Public Report, 2019) within last quarter (Jan – March 2019) DHH scored an overall score ‘B’ and not one of the six options includes Daisy Hill Hospital to be either an HASU or ASU.

Within this the most recent SSNAP review period South West Acute was the only unit to score ‘A’, RVH unit scored ‘B’ alongside DHH. The following units scored ‘C’ - CAH / UHD / AAH and Atnaglevin scored ‘E’ all of these units which score lower than DHH have been included within all or some of the 6 options within the new HASU / ASU proposals.

The Dept of Health has outlined that DHH is not listed in any of the options, while RVH / CAH are within all 6. Dept of Health have also confirmed that guidelines post centralisation/ reconfiguration will not recommend that FAST positive patients be given thrombolysis in DHH at any stage, even if the additional travel time to CAH would mean that the 3/4 hour window in which it may be effective expires. Another factor is that while CAH is within SHSCT, it may not, in fact be not the closest HASU. RVH in Belfast has a much better road structure and NIAS travelling from rural areas outside of Newry will get to RVH before CAH, this may be an additional strain on the tertiary centre in RVH.

It is documented in the results in the SSNAP Audit of Stroke Care (2019) that the appropriate and timely access to specialist medical and nursing care as well as Occupational therapy, Physiotherapy and Speech and language therapies in Daisy Hill is consistently excellent evidence at a national level that indicate that its post-acute phase stroke care is higher than other local units and above standard. It seems incongruous that it is has not considered as appropriate site for HASU or ASU.

The commissioned work by Exeter University has not included DHH within any of the options mapped in their paper review. It raises the question was Exeter University provided with the 5 options to map, with the additional 6th option requested in February 2019? Was DHH ever considered or mapped out? When looking at all 6 options, it is without doubt that RVH is listed, as the territory centre it is the centre of excellence for the hyper acute care, but why when Ulster Hospital was excluded due to ‘closeness to Belfast’ CAH was not also ruled out – with travel time from Craigavon to Belfast 20-30mins and excellent road structure?

Other local workforce concerns need raised such as the impact on service delivery within local hospital sites. If trained experienced staff are to move from local stroke units to other HASU / ASU centres (such as moving from DHH to CAH) workforce skill and expertise will be lost from the local hospitals such as DHH, the neurological stroke occupational therapy team not only see stroke patients but also a range of other complex neurological patients such as head injuries etc. this loss of skill must be considered.

Overall there are a lot of fundamental flaws with each of the models that have been put forward in the consultation document by the DoH that caution should be applied when considering any of the proposed options that have been put forward.

Until it can be demonstrated that a centralised stroke care model is capable of being provided to the same standards to those in Manchester and London - with optimim travel time and in-hospital rehabilitation within a local ASU, a choice cannot be made recommending any of the six models put forward in the DoH consultation document.

Concerns summary:

* Lack of reference to stroke mimics and the management / repatriation of these patients
* Overcrowding in HSAU esp RVH
* Over emphasis of medical model.
* Lack of rehabilitation focus.
* Lack of consideration for stroke mimics on capacity / demand.
* Travel times for sections of community within all 6 options.
* Travel times in all options for Newry and Mourne locality residents.
* Lack of evidence and research throughout the document.
* Commitment made to use of HEMS to overcome travel time for rural localities while same contradicted by Dept of Health.
* Basing all proposals on Models developed in urban areas – not comparable.
* ‘Drip and ship’ option only being considered for Thrombectomy – no proposals for local sites re Thrombolysis (same evidenced as comparable outcome)
* Rehabilitation patients being repatriated back to local hospitals that are not resourced for stroke rehabilitation.

I am open to change, development and modernisation of services, however not to the detriment of patients within some localities within Northern Ireland.

**References:**

Dawson, A., Cloud, G.C., Pereira, A.C., & Moynihan, B. J. (2016) Stroke mimic diagnoses presenting to a hyperacute stroke unit. Clinical medicine (London, England), 16(5):423-426.

Department of Health; Reshaping stroke care: consolation document (2019) available at: <https://www.health-ni.gov.uk/sites/default/files/consultations/health/rscs-consultation-document.pdf>

Emberson, J., Lees, K.R., Lyden, P., Blackwell, L., Albers, G., Bluhmki, E. (2014) Stroke Thrombolysis Trialists’ Collaborative Group. Effect of treatment delay, age, and stroke severity on the effects of intravenous thrombolysis with alteplase for acute ischaemic stroke: a meta-analysis of individual patient data from randomised trials. Lancet.; 384:1929–1935

Hubert, G.J., Meretoja, A., Audebert, H.J., Tatlisumak, T.,Zeman, F., Boy, S., Haberl, R.L., Kaste, M., Müller-Barna, P. (2016) Stroke Thrombolysis in a Centralized and a Decentralized System (Helsinki and Telemedical Project for Integrative Stroke Care Network) Stroke. 2016;47:2999–3004 <https://www.ahajournals.org/doi/full/10.1161/STROKEAHA.116.014258>

Northern Ireland Ambulance Service Health and Social Care Trust Annual Report and Accounts 2017-2018. (2018) <http://www.nias.hscni.net/download/public/Corporate/Reports/Annual%20Reports/NIAS-Annual-Report-and-Accounts-2017-18-low.pdf>

Meretoja, A., Keshtkaran, M., Saver, J.L., Tatlisumak, T., Parsons, M.W., Kaste, M. (2014) Stroke thrombolysis: save a minute, save a day. Stroke; 45:1053–1058

Morris, S., Hunter, R. M., Ramsay A.I.G., Boaden, R., McKevitt C., Perry, C. (2014) Impact of centralising acute stroke services in English metropolitan areas on mortality and length of hospital stay: difference-in-differences analysis BMJ; 349 :g4757 URL <http://www.bmj.com/cgi/doi/10.1136/bmj.g4757>.

Morris, S., Ramsay, Angus I. G., Boaden, R. J., Hunter, R. M., McKevitt. C., Paley, L. (2019) Impact and sustainability of centralising acute stroke services in English metropolitan areas: retrospective analysis of hospital episode statistics and stroke national audit data. BMJ 2019; 364 :l1 <https://www.bmj.com/content/364/bmj.l1>

SSNAP : Royal College of Physicians Clinical Effectiveness and Evaluation Unit . SSNAP - Clinical audit January – March 2019 public report.Royal College of Physicians, 2019. <https://www.strokeaudit.org/results/Clinical-audit/National-Results.aspx>

National clinical guideline for stroke.5th ed.(2016) Royal College of Physicians. <https://www.strokeaudit.org/Guideline/Full-Guideline.aspx>

NHS England Ambulance Response Programme Review, 2018 (08296) available at: <https://www.england.nhs.uk/wp-content/uploads/2018/10/ambulance-response-programme-review.pdf>

NHS England. Stroke Services: Configuration Decision Support Guide. Technical report, (2015) available at: <http://www.necn.nhs.uk/wpcontent/uploads/2015/02/ADD_1210_Stroke-NHS-toolkit_c1_full_2016.08.18_11.48_10_single-1.pdf>

Price, C., & James, M., (2011) Meeting the Future Challenge of Stroke Meeting the Future Challenge of Stroke. Available at <https://basp.ac.uk/wp-content/uploads/2017/02/BASP-Meeting-the-Future-Challenge-of-Stroke-2011-15.pdf>

Saver, J.L., Fonarow, G.C., Smith, E.E., Reeves, M.J., Grau-Sepulveda, M.V., Pan, W. (2013) Time to treatment with intravenous tissue plasminogen activator and outcome from acute ischemic stroke. JAMA.; 309: 2480–2488