

Speciality guides for patient management during the coronavirus pandemic

# Clinical guide for the management of stroke patients during the coronavirus pandemic

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“...and there are no more surgeons, urologists, orthopaedists, we are only doctors who suddenly become part of a single team to face this tsunami that has overwhelmed us...”

Dr Daniele Macchine, Bergamo, Italy. 9 March 2020

As doctors we all have general responsibilities in relation to coronavirus and for these we should seek and act on national and local guidelines. We also have a specific responsibility to ensure that essential care continues with the minimum burden on the NHS. We must engage with those planning our local response. We may also need to work outside our specific areas of training and expertise and the General Medical Council has already indicated its support for this in the exceptional circumstances we may face. [www.gmc-uk.org/news/news-archive/how-we-will-continue-to-regulate-in-light-of-novel-coronavirus](http://www.gmc-uk.org/news/news-archive/how-we-will-continue-to-regulate-in-light-of-novel-coronavirus)

Much of stroke medicine is in the frontline, with responsibilities involving direct and indirect support to emergency departments (EDs) and admissions units. Most stroke physicians however have dual or triple accreditation in general medicine and/or geriatrics. Therefore some services may need to consider how they extend their roles to release clinicians to support the general emergency medical take and inpatient bed base. We should seek the best local solutions to continue the proper management while developing and protecting resources for the response to coronavirus.

In addition, overall factors such as staff sickness, supply chain shortages and the use of some facilities to develop additional in-patient capacity including high dependency unit and intensive treatment unit (ITU) resources may impact on normal pathways of care.

An acceptance of the need to reduce the stroke inpatient bed base to accommodate the potential influx of non-stroke patients is paramount, although ensuring that stroke patients have access when needed is crucial.

Many services will already have elements of virtual assessment in operation along the stroke pathway. It is suggested that where these have been used for out of hours assessments, one considers their use during normal working hours also. There will be other opportunities to use virtual assessments where they have not previously been used; the use of novel (Facetime/WhatsApp video call) mobile apps with established virtual assessments should be considered for extension to settings such as MDT's, pre-hospital, virtual ward rounds and rehabilitation. There are pre-existing [GDPR clauses](#) offering flexibility in times of crisis, [as laid out by NHSX](#), and we would encourage use of facilitative technologies during this time.

Consider enhanced pre hospital communication with senior stroke decision maker to reduce unnecessary conveyance to hospital for patients with a stroke mimic or TIA – this may include the rapid introduction of pre-hospital tele medicine e.g. via apps such as Facetime. Work on the direct to CT pathway for patients with clear stroke symptoms and an onset time that makes them amenable to recanalisation therapy.

## **Maintaining high standards of stroke care across the pathway**

Many facets of the stroke pathway are deemed important, but during this time of considerable pressure some that should hold precedence:

- early senior assessment on admission (<1 hour) – this may be face-to-face with PPE, but only one stroke specialist to consider, with secondary reviews done via video or telephone
- early appropriate cerebral imaging (<1 hour)
- rapid thrombolysis and referral for thrombectomy
- early reversal of anticoagulation and management of raised BP in patients with intracerebral haemorrhage (<1 hour)
- direct admission to stroke unit (<4 hours)  
early swallow screen (<4 hours)
- maintain stay on stroke unit for as long as patient benefitting from care.
- rapid discharge to Early Supported Discharge Services to minimise time spent in hospital.

## Stroke patients can be considered in a few categories:

- **Hyper-acute admissions:** Continue to require urgent assessment for thrombolysis and thrombectomy and ongoing management. **We must expedite treatment to avoid delays and expedite rehabilitation to minimise length of stay.**
  - Remote telemedicine review of all potential thrombolysis patients in AED, this use should be encouraged both in and out of hours.
  - Consider first-line MRI (to avoid CT followed by MRI) in patients you think are likely to need an MRI – to release CT capacity, and avoid ‘confirmatory’ MRI scanning in patients with a clinical diagnosis of stroke.
  - Consider CTA for all patients with carotid territory symptoms at time of presentation to avoid need for inefficient return to imaging department.
  - Rapid introduction of Artificial Intelligence to speed up image interpretation remotely, adoption should be coordinated across networks, rather than by individual providers, to ensure interoperability.
  - Regional telemedicine rotas should be explored to enable continuity of service.
  - Where individual stroke services have limited depth of consultant cover and therefore their sustainability vulnerable to sickness leave, ensure ‘shadow rotas’ are in place and embark upon rapid discussions for system optimisation with all co dependant services and organisations, including ambulance trusts, to plan for this eventuality; clear descriptions of ‘tipping’ points to be articulated. Virtual consultant cover to facilitate these units remaining open should be considered. Your regional medical directors and clinical networks should be involved in these discussions.
  - Where an organisation has several sites and one does not have an AED but imaging/ITU and overnight medical cover, consider the temporary transfer of the stroke service, with staff, to that site with direct admission – caring for the inevitable stroke mimic patient should be a local decision but reliance upon secondary conveyance by the ambulance service may not be realistic.
- **Suspected TIA patients**
  - Telephone triage for all TIA referrals followed by (or at the same time as) virtual TIA clinic (via telephone or video app) – no TIA patients should be admitted or kept in AED, with the opportunity to deliver most TIA assessments virtually.
  - Access to BP recordings and an ECG are important aspects of the TIA assessment and methods to ensure patients receive this at the point of referral or within 24hrs of assessment should be explored locally. The prescription of and delivery of secondary preventative medicines is a vital

aspect of a TIA service: ensuring there are local prescribing / delivery options available is paramount.

- **Outpatients**

- Principles should be to promote social distancing and reduce travel to providers while maintaining continuity of care. Review current lists to determine who can be discharged, who can be delayed and who still requires some form of follow-up. Patients may require a variety of diagnostic tests to support that their follow up, consider what is essential and cancel or postpone other tests.
- Most 4-6 week and 6 month reviews may be managed remotely from the hospital or in the community via telephone or video call.

- **Rehabilitation pathways**

These are essential to reduce disability through early intervention and enable rapid assessment and early discharge home if possible.

- Consider immediate discharge of 'walking wounded' patients from AED where able, to reduce short stay admissions using a rapid response MDT team to AED.
- Maintaining and ideally increasing Early Supported Discharge and Community Rehabilitation Teams should be prioritised and to consider 7/7 working (if not already in operation); risk assessment is needed to mitigate harm and to support these often small teams.
- Individual specialties are providing guidance via the royal colleges, specialist societies and the commissioning bodies.
- Discussion with, and support for, therapy teams to redefine 'safe discharge' and ensure only those patients that have no potential to be cared for at home continue with inpatient rehabilitation. Consider development of tele-rehabilitation models (with training of volunteers/ carers to support simple interventions) including tele-swallowing, communication reviews, virtual rehabilitation MDT's, video linked group rehabilitation classes.

- **Leadership**

- A consultant must be designated as 'lead consultant'. This duty can be for one day, a few days or even five days in small units. This is an essential role during crisis management. It cannot be performed by the consultant 'on-call' or a consultant of site. They must be free of clinical duties and the role involves co-ordination of the whole service from ED through to liaison with other specialties and managers.

- A leadership team should support the lead and include relevant members of the multidisciplinary team (MDT).
- Establish a daily sitrep and dashboard with critical data to share across the workforce. That should include patient flows, workforce issue, stock levels and other key messages (eg state of coronavirus response, personal protective equipment (PPE) requirements).
- Leadership of safety rounds to ensure that preventable harm is reduced and that care of acutely deteriorating patients is escalated, avoiding critical care admission.
- Encourage inpatient investigations for stroke aetiology to be limited where the benefit of intervention is based upon annual recurrence rate and an outpatient investigation will suffice.
- Discussions with the voluntary sector such as the Stroke Association to understand what support offer is available and encourage a local increase in volunteers, including via other routes such as trust charities.
- Provide leadership regarding secondary prevention and a help line to support patient queries. This should include clear advice regarding up-to-date recommendations regarding certain agents and their use with coronavirus ie continuation of ACE inhibitors and ARB's is currently not contraindicated in patients with confirmed coronavirus although as more evidence emerges this guidance may change.
- Encourage administration staff within the service to take telephone calls that may have ordinarily come to stroke specialist nurses to offer basic advice for FAQ and triage other calls.
- It may not be possible to maintain data entry into the national Stroke Audit (SSNAP). There will be national guidance offered regarding data entry and reporting over the next 3 months. This may include moving to a focus on a minimal data set – more information via SSNAP website.
- Where telemedicine is already in operation, consider which other specialities may avail themselves of its use.
- It can be very stressful during a crisis. Support each other and share the workload. Do not expect the clinical director to do all the co-ordination!
- Identify pathways that require actions outside normal provider pathways including contingency plans for supply chain issues.

## **. Inpatients**

- Establish discharge planning at the start of an admission process.

- Support early family involvement and discussions at the bedside upon first review, to ensure need for rapid transfer of care is articulated early, an understanding of what assistance may be offered at discharge to the patient, with ceiling of care and anticipatory care planning undertaken early.
- Across an organisation identify services to support rehabilitation and discharge to maintain capacity.
- Development of or sustaining of 7/7 therapy and medical reviews –virtual weekend medical ward rounds should be considered if appropriate.

## Specialist pathways

- Individual departments should consider other specialist pathways that need more support to maintain activity as safely as possible.
- **EDs will change their system: using triage at the front door and streaming patients directly to inpatient areas before examination or diagnostics.** Continue to deliver and develop your in-reach services that are consultant-led to pull patients who need to be admitted to the stroke unit or to facilitate rapid discharge to the community.
- **Pateints awaiting carotid endarterectomy should, if able, be discharged upon dual antiplatelet therapy if appropriate and await carotid intervention.**
- **Identify and upskill staff to support other areas to release staff to manage coronavirus cases.** While not every clinician will feel they have the skills to manage every situation, they all have important roles in supporting the system. That should be recognised and supported as clinical teams move into unfamiliar areas. Consider simple training refresher courses to reinforce skills.

## Principles

- Avoid unnecessary attendances at hospital.
- Senior decision-making at the first point of contact should reduce or even prevent the need for further attendances.
- Clinicians may need to work in unfamiliar environments or outside their sub-specialist areas. They will need to be supported.
- Provide simple clear communication within your teams.
- Plan ahead for the next stage and consider potential scenarios.
- The risk–benefit analysis of everything we do will change and evolve during this epidemic.

## Escalation

Prevalence of coronavirus	Low	Medium	High	Very high
<b>Impact on organisation</b>	Normal winter pressures Business as normal	Limited ITU Limited bed capacity	No ITU, emergency ITU in operation	Escalation to ITU restricted
<b>Phase</b>	Prepare to respond	Reduce/stop routine activity	Redirect resource to emergency activity	Major incident
<b>Elective in patient activity</b>	Identify activity	Reduce activity	Stop activity	
<b>Non-elective in patient activity</b>	Upskill staff Plan reallocation of staff to support emergency activity	Twice daily consultant-led ward reviews Enhance rapid discharge planning Establish discharge clinics to facilitate	In-reach to ED/MAU to pull emergency activity away from front door Escalate discharge processed	Consider triage criteria
<b>Outpatients</b>	Identify activity	Delay follow-ups Identify diagnostic support services Start remote access clinics	Increase discharge clinic capacity to support discharge planning	Consider staff step-down options while maintaining activity to maintain staff resilience Deploy medical students and physician aides to support outpatient activity