**Cardiothoracic Surgical Practice and Covid-19**

It is clear from experiences in other countries that there is a high probability that healthcare provision in the UK will be severely compromised in relation to Covid-19. The expectation is that we will progress through stages of preparation, escalation, crisis, de-escalation and resolution, and then recovery before returning to normal practice. It is expected that during these overlapping transitions, healthcare will probably progress through:

* normal working
* working under pressure (e.g. akin to winter pressures)
* compensated working (escalating special measures in places but healthcare copes)
* decompensated working (special measures are in place, however healthcare systems will not provide normally desired outcomes; care provision will need to be prioritised)

Cardiothoracic practice varies around the country. Units may be located within major trauma centres or as isolated units. The pressures and circumstances may affect these units in different ways and at different times. Therefore, it is important that we create a framework to support local decision making rather than directing specifically what and when decisions should be made. However, all our individual decisions must take into account the wider position. We must bring together the available information – local, regional and national, reconcile objectives and make effective decisions – together recognising the individual nature of our circumstances. The impact of Covid-19 is changing incredibly rapidly and we must consider timing implications of decisions taken today on circumstances that may be radically different even a few days later. For example, complex surgery requiring critical care for several days has a longer impact than surgery requiring critical care for only a day.

As cardiothoracic surgeons, we do have a specific responsibility to ensure that essential cardiothoracic care is provided and not cancelled unnecessarily but the burden on the wider NHS should be minimised. We should also ensure that in the context of public health care we should support the initiatives that minimise the risk to our patients and our staff.

Cardiothoracic practice may not seem to be in the frontline with Covid-19 but we do have a key role to play and this must be planned. In response to pressures on the NHS, the elective component of our work may be curtailed. However, the non-elective patients, emergency, urgent and trauma, will continue to need care. We should seek to provide the best local solutions to continue the proper management of these patients whilst protecting resources for the response to Covid-19.

In addition, we need to consider the small possibility that surgical facility for emergency surgery may be compromised due to a combination of factors including staff sickness, supply chain and the use of theatres and anaesthetic staff to produce ITU pods. This is a possible scenario and plans are needed.

As doctors we all have general responsibilities in relation to Covid-19 and for these we should seek and act upon national and local guidelines. We must engage with those planning our local response. As the wider healthcare response escalates, we may also need to work outside of our specific areas of training and expertise and the GMC has already indicated its support for this in the exceptional circumstances we may face. <https://www.gmc-uk.org/news/news-archive/how-we-will-continue-to-regulate-in-light-of-novel-coronavirus>

Cardiothoracic surgeons have generic skills that apply to patients in intensive care. If extra ITU capacity involves anaesthetic rooms and operating theatres, then cardiothoracic surgeons may have a role in helping intensivists look after these patients.

Cardiothoracic patients can be considered in a few categories:

1. **Obligatory in-patients:** Condition mandates admission and surgical management
2. **Alternative pathways** 
   * **In-patient -:** Condition can reasonably be managed on an ambulatory basis after a more limited in-patient stay than normal e.g. ambulatory chest drain management, indwelling catheter drains
   * **Ambulatory:** Condition can reasonably be managed on an ambulatory basis
3. **Day-cases:** Surgery can be safely undertaken for a large number of conditions. Provision for day-case surgery must be made.
4. **First contact and clinics:** Outpatient attendances should be kept to the safe minimum. We should consider whether appointments are necessary or could be carried out by telephone or video-conferencing.

When planning your local response, please consider the following:

**Obligatory in-patients.**

* **Length of stay (LOS) must be minimised - especially critical care LOS**
* **At some point there will be a requirement for a designated “Lead Consultant”.** This duty can be for 1 day, a few days or even 5 days at a time in small units. This is an *essential role* during crisis management. It cannot be performed by the consultant “on-call” or the consultant in clinic or in theatre. They must be free of clinical duties and the role involves coordination of the whole service from ED, OPD, theatre scheduling and liaison with other specialties and managers.
* It can be very stressful during a crisis. Support each other and share the workload. Do not expect the Clinical Director to do all of the coordination! Our nursing staff in particular may be under severe pressure – support them as well.
* Use elective theatre capacity and surgeons to ensure minimum pre-operative delay for urgent/emergency cases.
* An anaesthetic guideline for patients requiring surgery and who are Covid-19 positive will be required.
* Consider contingency plans for supply chain issues.

**Alternative pathways**

* Clinical decisions during a serious incident must take into account the available facility for the current patient and also the impact this may have on the whole community.
* A number of patients can be managed either operatively or non-operatively. As the system comes under more pressure, there may be a shift towards non-operative care.
* Non-operative care may reduce the in-patient and operative burden on the NHS.
* It may also protect the individual from more prolonged exposure in a hospital setting.
* It may free up beds for more urgent cases

**Day-cases**

* Many procedures are clinically suitable to be performed as a daycase.
* During the Covid-19 crisis, an increase in day-case surgery will:
  + Avoid unnecessary admission
  + Reduce exposure of the individual to a hospital environment.
  + Free-up beds for more urgent cases
  + Allow staff from elective theatres to continue working in a familiar environment
* During the Covid-19 emergency, it is likely that the only elective surgery occurring will be urgent cases or day-cases. Even this provision may become compromised. Careful prioritisation of day-case patients will be needed across both the elective and non-elective patients based on theatre/staff capacity.

**Surgery and interventional care postponed**

* Some of our patients may be best managed by delaying their care until later in the year. This may be due to constrained resources but also it may be in the patient’s best interest to not be post-operative if they then incidentally develop coronavirus infection.

**Trauma**

* We should avoid unproductive attendances at hospital and travel – can we review x-rays and scans remotely and give remote advice to local clinicians; can patients be managed with ambulatory chest drains
* Severe trauma will still need to be managed but hospital pathways/protocols may change. Patients may progress through different physical routes and locations to separate patient flows. We may be the first point of contact in order to free up ED physicians and others.
* Protocols to identify those injuries that require no follow up should be reviewed.

**Training and Education**

* It will be important to cancel professional / study leave and postpone conferences, exams, courses etc, thereby freeing up staff. “The aim is to ensure that surgeons and trainees are available to help health services cope with COVID-19. A second aim is to minimise any risk, however small, of transmitting the virus to other groups of surgeons and/or surgical trainees.”
* Many of our trainees (and seniors) have families abroad. These staff if visiting family at home may become caught up in flight delays and disruption and hence would exacerbate staff shortages. Consideration should be given to how these staff can be supported and additional opportunities found for them to communicate with their families (e.g. access to high quality videoconferencing at times to match their home countries)
* This will be an important opportunity to train and educate our trainees in emergency planning, healthcare resilience, governance in extreme circumstances, major incident /disaster management and medical leadership as well as wider clinical management of complex disease.

**Wider Support**

* Senior decision making at the first point of contact should reduce or even prevent the need for further attendances.
* A decrease in elective work will allow for a greater senior presence.
* Consider postponing long-term follow-up patients until the crisis has passed.

Consider delaying post-operative surveillance scans - CT scanning may be limited as it is the investigation of choice for Covid-19 interstitial pneumonia.

* Cardiothoracic surgeons have enough generic skills to help at front of house and triage.
* Clinicians may need to work in unfamiliar environments or outside of their sub-specialist areas. They will need to be supported.