**Kelly and the team at GSTT would like to share their critical care and ward early experiences of COVID-19. Things are already changing but this was how things started for us:**

**COVID-19 Physiotherapy Experience at Guy’s and St.Thomas’ Hospital**

We would like to thank David McWilliams for sharing his and his colleague’s early experiences of the assessment and treatment of patients with COVID-19. We have had a significant number of confirmed cases to our critical care units and our early experiences have been very similar. We thought it would be helpful to share our experiences in critical care and on the wards to date.

**Critical Care**

Our patients have generally deteriorated rapidly either at home, in accident and emergency or on the wards and require rapid intubation. They predominantly present with Type I respiratory failure and are commonly ventilated on Airway Pressure Release Ventilation (APRV) mode. As David has said, these patients often require deep sedation and paralysis and therefore have an absent cough. Whilst we are continuing to follow the guidelines with regards to infection prevention and control, with the view to minimising contact and footfall within the COVID- 19 areas, we are also finding that appropriate cough augmentation and secretion clearance techniques are required in this group of patients. Additionally, those patients with pre-existing respiratory conditions and those with super-imposed infections have a significant secretion load that requires physiotherapy intervention.

Our established critical care areas have a stethoscope attached to each bed space so staff who are not wearing a hood have been able to utilise auscultation during their assessments of these patients. These are cleaned before and after every contact. As critical care areas are set up throughout the hospital this equipment may not be so readily available. Today we have been updated that personal stethoscopes can be used ensuring that they are cleaned with green clinell/detergent wipes before and after every contact. We are also using palpation and waveform analysis including peak expiratory flow values and reviewing resistance and compliance values as indicated. We are avoiding disconnection and therefore the treatment techniques that we are commonly utilising have been ventilator hyperinflation (where appropriate), manual techniques, supine or head down manual assisted cough, suction +/- saline instillation, and suction with simultaneous vibs. This is also carried out as required in patients in the prone position for which the team have been asked to support. Future interventions are based on our assessment and treatment findings and vary from daily reviews to reviews within72 hours, as per our local respiratory standards. Some patients demonstrate spontaneous drops in saturations and deteriorations in ABGs which do not seem to be related to any specific interventions. This requires careful clinical reasoning to screen whether this is related to the disease presentation or identification of problems that are amenable to physiotherapy intervention. Typically these patients are very PEEP dependent, requiring more time to wean from mechanical ventilation or subsequently needing tracheostomies.

Our patients are on heated, humidified ventilation circuits yet we are starting to notice that their secretion load is increasingly tenacious. One of the factors that we feel may be contributing to this is that nebulisers were not previously being used due to the risks of disconnection. This was discussed at our daily MDT COVID-19 meeting yesterday and the use of nebulisers is now evaluated and utilised on a case by case basis. We will continue to review this area of practice and share with our colleagues.

Our experience of extubation of these patients is starting to increase but is currently limited to a small number of patients. We have seen that some of these patients have presented with stridor post extubation which may be related to the rapid intubation that these patients have required. This is something that we are going to continue to monitor and have been asked to review as part of our extubation assessment. Additionally, we are finding that a number of patients are agitated on lightening of their sedation which is increasing the time for readiness for extubation. Their neurological appropriateness may also not be optimal – we are currently relating this to their previous need for heavy sedation/paralysis however, we need time to evaluate this further. Additional pharmacological strategies to optimise delirium management are currently also being utilised.

The use of Heated High Flow Oxygen (HHFO) and Intermittent Positive Pressure Breathing (IPPB) are not to be used on our units. These are considered high risk due to their aerosol generating properties, lack of efficacy, and waste of oxygen resources. . Non-invasive Ventilation (NIV) – with additional viral filter prior to exhalation port, Continuous Positive Airway Pressure (CPAP) and misty oxygen/venturi are interventions that can be used post extubation, as required. We are working with our colleagues and reviewing national guidelines and recommendations to establish best practice going forwards. It is important that patients considered for extubation are discussed with the MDT including the use of these interventions and ceilings of therapy.

**Learning Points:**

It is difficult to call for urgent help in full PPE – people’s voices are muffled and somehow the masks seem to also affect your hearing! It is important to ensure that you bear this in mind and know where your emergency call alarms are and how to contact the medical team if they are not immediately present on the unit.

PPE – it is worth practicing this prior to getting into the clinical situation. Everyone is processing a lot of new information, environments and new ways of working. Being able to reduce people’s anxiety about their own safety is paramount.

**Ward based care**

This is only the beginning and things will change but based on experiences so far.

Typically these patients do not have a secretion load, their cough remains strong and non-productive. However, remain mindful of those patients with underlying respiratory conditions or acute aspirations.

Breathlessness and hypoxia appear to be the main symptoms in our patients. They can deteriorate very quickly, progressing from 2lO2 via nasal specs to 60% or to a 15lO2 non re-breathe mask within the space of 30mins. It is worth checking each individual patient’s observations at the time of your assessment as they will not necessarily present with respiratory distress. Positioning seems to have a variable effect on the patient from what has been seen so far. Limited trials of prone lying in appropriate, spontaneously ventilating patients has been shown to have good effect but these have been poorly tolerated by patients –this will need to be evaluated further as our experience with these patients’ increases.

Tip: if you don’t have a double wall oxygen socket per patient then ensure you have an oxygen cylinder in the bay. This allows you to use this whilst setting up another oxygen delivery system, if appropriate e.g. venturi, humidified oxygen/misty ox.

You can feel very isolated if you’re alone in a bay and accessing urgent help is not easy with the added difficulty of closed doors. We do have the skills to manage these patients until that help arrives and remember we have the skills and knowledge to support doctors with their decision making.

Tip: if you are particularly concerned about a patient that you are due to review, and if staffing allows, it is helpful having another designated staff member outside the bay to communicate with the rest of MDT or bring supplies, as required.

Rehab: Just about every patient will need physiotherapy intervention regardless of their baseline and most will require assistance of two staff. Their function can also change very rapidly - for example one 84 year old man didn’t have sitting balance one day and walked to the window the next day. We would suggest that you screen every patient every day. This is time consuming but appears to be necessary whilst we learn more about our patients.

The experience of delirium seen in the critical care setting is also reflected in our experiences on the ward.

Proactive discharge planning is vital and will be further complicated by accessibility to assessments, availability of NH/RH placements, access to carers, family members that may need to self-isolate for the current advised time of 14 days etc.

The MDT: Everyone is understandably anxious with heightened levels of stress. Role boundaries are changing and staff will need to be flexible and be prepared to do tasks that they wouldn’t traditionally do.

Support for the patients: They are all scared. They are all lonely. They will want to talk to you when you go in to see them and, just like us, they crave the social interaction. Be nice, have a chat, make sure they all have a drink when you’re in there.

Support for the nursing staff: many of the nurses may not have done inpatient nursing for a period of time before this and they may not be used to acutely unwell patients - be kind and supportive. We are the respiratory experts and there are opportunities to upskill the staff working in that area. Check the patient with them if they aren’t sure – we are all going to be learning together. Support them with nursing care, if you are going in to a bay check with the nurses if you can do anything in there to support them. Always check before you leave a bay if there is anything that they need.

Medical staff: there are a number of patients for whom escalation to critical care/HDU/NIV etc. is not appropriate and despite optimal management they will need to move to an end of life pathway for comfort care. Be prepared to have many difficult discussions with the doctors who are managing these patients.

Palliative care: They are going to be busy. As a respiratory physiotherapist we have a role in breathlessness management which patients are finding helpful.

Additionally, ensure that staff are aware of the PPE requirements for the assessments and treatments that they are delivering. It is important for staff to know when full PPE is required with FFP3 masks versus when the use of aprons, gloves and surgical face masks is appropriate. This is an area of high anxiety for staff and needs to be communicated and understood. It is paramount to ensure that staff feel informed and safe whilst delivering patient care yet ensuring that valuable stock is used appropriately and levels are maintained.

**Overall main messages**:

Be kind, be supportive and be understanding to each other and of each other.

Communication and updates have never been more important and things are constantly changing throughout the day. We have discussed between ourselves how this is best achieved - ensuring that we can do this in a timely way, not overloading people’s already full inboxes and respecting staff wellbeing.

If opening new units, aim to standardise care and expectations before they open to support staff and ensure the delivery of best patient care.

Get training and re-deployment plans in place early. The needs of these patients are many, varied and complex and addressing patients’ needs will require that staff do not work in their traditional silos of care. You will need to have knowledge of staff skills and availability to ensure that you are in the optimal position to have the right staff in the right place at the right time.

Stay safe everyone

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