Recovering after COVID19 - a practical guide for clinicians and commissioners

Steve Holmes, GP in Somerset and PCRS Education Lead and Rob Stone, Consultant Respiratory Physician, Musgrove Park Hospital, Somerset provide a practical guide for clinicians and commissioners in supporting patients to recover after COVID-19

Key Points

- In the immediate post-recovery phase, infection control measures continue to be important
- There are significant physical, psychological and social sequelae from a major crisis like COVID-19 that will impact on the health service for a prolonged period of time
- It is important to review the physical aspects in those patients that attend but do not forget psychosocial consequences
- Recovery in survivors can be prolonged

Background

This short article is aimed at helping primarily clinicians, commissioners and those involved in service delivery to consider the increased impact that will be faced by the National Health Service as we win the battle against COVID-19.

This document has been written at a very early stage of our experience about the disease, but the authors have tried to draw evidence from similar situations that have been faced in the past. It will be an evolving scenario but vital that we anticipate and explore some of the challenges we will face in the future.

Likely outcome of COVID-19

Many people who have COVID-19 are asymptomatic or have mild disease and recover quickly over a period of 7- 14 days with variable upper respiratory tract symptoms. (1)

Imperial College(2) suggest that approximately:-

- 50% of infections will be associated with no, or very mild, symptoms
- 4.4% of infections will require hospitalisation
- 30% of those hospitalised will require ventilatory support
- 50% of those requiring ventilation on ICU care will die
- The median length of stay is approximately 10 days (16 days with ICU, 8 days without)
- The overall mortality is uncertain (most quoting around 1%; WHO quoting 3.4% in early March 2020)

For ease of use we have divided the article into four short areas:

- Infection control
- Social and psychological recovery
- General physical recovery

- Specific post intensive care recovery

Infection control

Infection control measures may well be important even in patients who are discharged from hospital, as they may still be shedding virus. Indeed, early studies suggest that the "median duration of viral shedding was 20·0 days (IQR 17·0–24·0) in survivors, but SARS-CoV-2 was detectable until death in non-survivors. The longest observed duration of viral shedding in survivors was 37 days."(3) It is suggested that viral spread can occur via surfaces for a prolonged period of time and the infectivity from COVID-19 may be not only from aerosol transmission, but also gastrointestinal – hence infection control will continue to be important.(4)

Social and psychological recovery

Healthcare professionals and carers

We have a lot of healthcare professionals and carers in society, many of whom may not have had severe illness themselves but will have witnessed situations they have found distressing. Many will have made decisions on care using sound clinical judgement but received adverse outcomes. Others may have guilt or fears about having given the infection to vulnerable people.

There are considerable resources being developed to support our workforce following initial concerns(5). However, there is a likelihood of increased early retirement amongst health care workers and carers(6).

Social impact

There are many people who have already lost friends, have lost income or their job, or have significant uncertainty regarding mortgage or rent repayments. This will be true of the general population, no matter the disease severity.

The more severely infected by the virus who survive may have problems being able to return to previous work and full function(7, 8). There can often be changes to religious and spiritual thinking(9) as well as approach to life, including early retirement or change in occupation after significant disasters or crises(6). There is also a significant increase in the number of cases of domestic abuse(10) being reported.

The system will require the provision of population-based support through decision making and social rehabilitation at this time but there is a well-recognised impact on increased health utilisation in this situation(11).

Psychological impact

The social implications will often have psychological sequelae, as will any physical disability following COVID-19. Additionally, there are many who have survived more severe disease who may have feelings of:-

- guilt (why did I survive and others didn't? Did I prevent people surviving or give the disease to others?)

- vulnerability (I survived this but won't next time) and painful memories that are linked to their experiences.

It should be anticipated that many will have symptoms of flashbacks, feelings of isolation, irritability, poor sleep, and guilt.

The provision of adequate primary care support and resources, as well as talking therapies and more specialist care, needs consideration at this stage as the impact is likely to increase as the pandemic progresses and for a significant period beyond.

Physical recovery from COVID 19

We know that many people who have COVID-19 are asymptomatic or have mild disease and recover quickly over a period of 7- 14 days with variable upper respiratory tract symptoms (1). This section is covers those hospitalised with more severe disease. However, a number of patients who were not admitted are likely to follow a similar recovery pattern.

Routine physical recovery

Those that are admitted with pneumonia may have prolonged recovery (no studies at the moment, but recovery is likely to fit with previous coronavirus respiratory infections [SARS, MERS], influenza and community acquired pneumonia) and hence, looking at BTS and NICE guidance (12-14), symptoms should improve, although the speed of improvement will depend on the severity of illness, co-morbidity and frailty. It is usually expected that by:

- 4 weeks — muscle aches, chest pain and sputum production should have substantially reduced (significant sputum production is less common in COVID-19)(3)
- 6 weeks — cough and breathlessness should have substantially reduced.
- 3 months — most symptoms should have resolved but fatigue might still be present.
- 6 months — symptoms should have fully resolved unless the patient has had a complicated ITU stay, in which case mobility and/or respiratory difficulties may be prolonged.

Potential other physical complications

The time to physical recovery will be prolonged in patients who have had other complications during their admission (especially if ventilated), for example sepsis, respiratory failure, heart failure, coagulopathy, myocardial infarction, secondary infection,(3) deep vein thrombosis or pulmonary embolus(15). These will need managing in their own right.

There is concern that, similar to SARS (16) where 30% of survivors in one study six months post infection had abnormal chest x-ray findings and/or 15% abnormal spirometry especially if admitted to intensive care, there may well be prolonged recovery time. There is also evidence that there are CT scan changes in the acute phase, suggesting an interstitial lung disease in those who survive (17), and it is not known currently whether or for how long this will persist.

It is important for patients to maintain muscle activity post-COVID-19, and further information regarding home exercise is available via the British Thoracic Society website: https://www.brit-thoracic.org.uk/about-us/covid-19-information-for-the-respiratory-community/

It is also likely that quite a few people will suffer from a post viral chronic fatigue syndrome, well-described in many significant viral infections (7) and also identified following the previous SARS coronavirus outbreak.(8)

Post-Intensive Care Recovery

Post Intensive Care Syndrome is a condition unfamiliar to many clinicians (18-20). Patients are usually supported in the specialist environment through access to post-ICU clinics but this is likely to be challenged by current demands. Much of the following description has been adapted from, and with thanks to, the Society of Critical Care Medicine (21).

ICU-acquired weakness

ICU-acquired weakness (ICUAW) is a neuromuscular condition that develops during an ICU stay. This is a common problem of critical illness and occurs in:

- 33% of all patients on ventilators
- 50% of all patients admitted with severe infection

Patients who develop ICUAW may take more than a year to recover fully. ICUAW makes the activities of daily living difficult, including grooming, dressing, feeding, bathing and walking. ICUAW may greatly delay the patient from doing activities in the way he or she used to.

Cognitive or brain dysfunction

After leaving the ICU, 30% to 80% of patients may have problems remembering, concentrating, organising and working on more complex tasks. Some people improve during the first year after discharge from the hospital; other people may never fully recover.

Other mental health problems

Critically ill patients may develop problems with falling or staying asleep. They may have nightmares and unwanted memories. Reminders of their illness may produce intense feelings or strong, clear images in their mind. Their reactions to these feelings may be physical or emotional.

Conclusions

The impact on COVID-19 on the population is likely to continue for a considerable period of time. The challenges for e the health care system will be to manage effectively the physical, psychological and social implications of life post COVID-19. It will be important to consider these issues and to provide relevant support and rehabilitation when helping patients and their families to recover optimally.

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