



## Introduction

The COVID-19 pandemic brought about an influx of patients admitted to critical care with higher length of stay and rates of complications. The subsequent health burden related to impaired recovery is substantial, compounded by the multi-system effects of both critical illness and COVID-19 symptoms . Emerging evidence demonstrates that the associated combination of long-term physical, cognitive, psychological, and social difficulties are highly debilitating for survivors, impacting on their day-to-day function, identity, quality of life as well as the well-being of their families and carers .

**Barts Health NHS Trust** is one of largest trusts in England and has 4 acute sites that were admitting critically ill patients with COVID-19. During wave 1, the critical illness survivors were followed up in the existing, individual site, post ICU clinics., not all of which had dedicated therapy involvement. However, at the start of wave 2 it became clear that due to the increasing number of complex patients requiring follow up, and the high staff re-deployment rates, the need was unlikely to be met through the existing ICU clinics. An additional, virtual cross-site critical care follow up clinic was therefore established with multidisciplinary support to address the increased needs holistically.

### Aims:

- To identify the burden of on-going symptoms or issues related to therapies secondary to a stay on critical care due to COVID 19;
- Evaluate the role of physiotherapy (PT) and occupational therapy (OT) input in managing this disease burden in the COVID-19 critical care follow-up clinic.

## Methodology

The new cross-site COVID-19 critical care follow-up clinic ran between March and August 2021, to address the needs of patients from the second wave of the pandemic. Patients were review by telephone or video approximately three months after hospital discharge.

The inclusion criteria were as per NICE CG83 guidance, with the caveat of only reviewing patients with a primary diagnosis of COVID-19 . Survivors from any of the 4 Barts Health sites were included.

Patients who had a very short stay, with no impairments on hospital discharge, and those who were palliated were excluded.

The multidisciplinary clinic team included a critical care consultant, ICU nurse, physiotherapist, and occupational therapist. Each clinic consisted of four one-hour appointment slots with pre and post administration time.

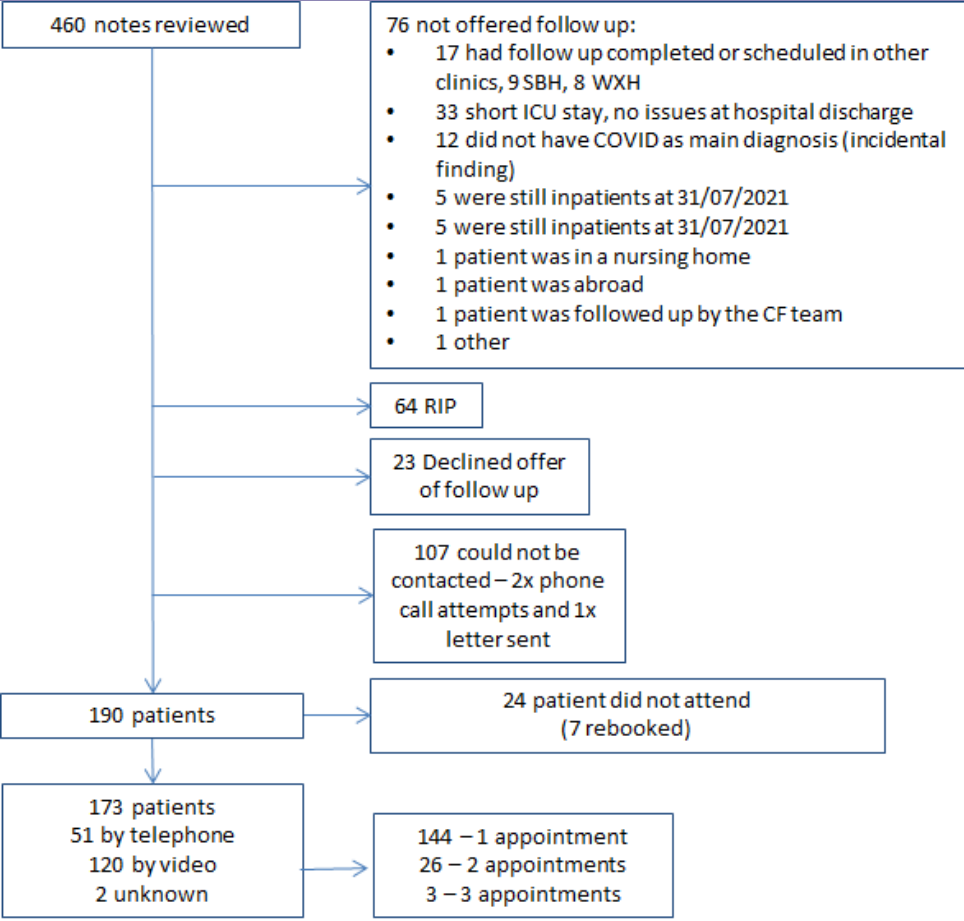


Figure 1. Inclusion flowchart

Demographic	Number (Range)
Male (NP)	105
Female (NP)	68
Average age	54 (28-82)
Intubated	85
Average hospital LOS	33 (4-119)
Average ITU LOS	18 (1-107)
Average days from hospital discharge to ICU clinic appointment	101 (38-250)

Table 1. Demographics and data

“It completely changed my life...I wouldn’t have been able to get the specialist [neuro] rehab I needed without the clinic”

“we didn’t know what to do after she was discharged by reablement, the GP said she’d already had physiotherapy”

“talk to someone who understands exactly what I went through in hospital is amazing and so helpful”

Figure 2. Examples of patient feedback received

## Conclusion

The COVID-19 pandemic has highlighted the importance of holistic multidisciplinary team support in critical illness recovery, particularly the value of including PT and OT in COVID-19 critical care follow-up clinic. Therapy specific interventions were invaluable in addressing the wide-ranging symptoms and issues experienced by the COVID-19 survivor. The virtual Trust wide nature of the clinic not being tied to a particular site was a success as it spread the patient load and consultant cover, and ensured that individual site clinics were not over run.

## Acknowledgements

Thank you to all the consultants, therapists, nurses and administrators who helped to run and make the clinic such a success. Special note to Anthony Bastin, Barbara Abrahams and Megan Kennedy who set up the clinic and made sure that everything behind the scenes ran smoothly.

## Results

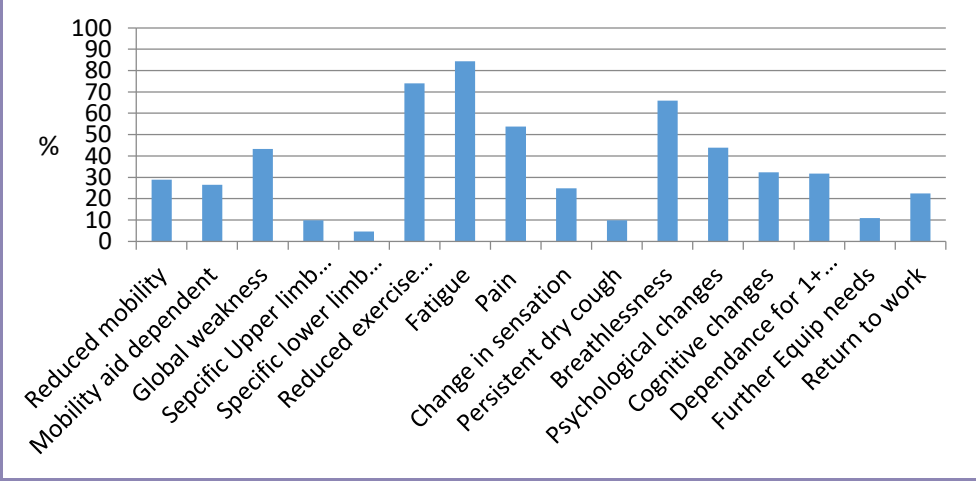


Figure 3. New post-COVID symptoms/issues reported in new patient appointment

A sample of 75 of the 173 new patients were asked to rate their perceived recovery. ‘If 100% was you before COVID (physically and psychologically), where would put your recovery now, out of 100%’. Just under half the patients considered it less than 75% (Fig. 4). This could be attributed to the severity of COVID recovery, or due to the time in which follow up occurred post hospital discharge. The average time to appointment was 101 days but the range was from 38-250 therefore some may have been seen earlier or later.

A total of 66 clinics were completed during this time frame. Of the 173 new patient appointments, over 40% were still struggling with new global weakness, reduced exercise tolerance, fatigue, pain, breathlessness or psychological changes (Fig.3)

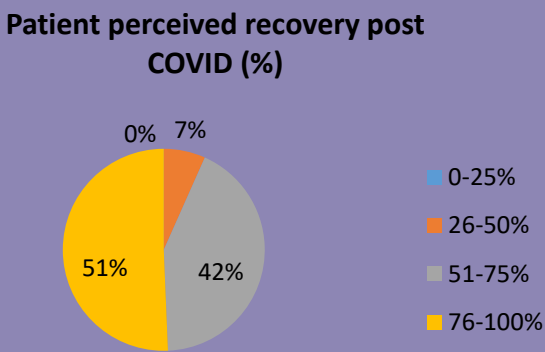


Figure 4. Patient perceived recovery

Referrals / Intervention	Number	%
Referral to community PT services	8	5
Referral to community OT services	26	15
Long COVID referral and symptom advice	40	23
Talking therapies referral	42	24
Memory and concentration advice	56	32
Fatigue management advice	146	84
Cough suppression advice	10	6

Table 2. Main therapy interventions at new patient appointments

The majority of clinics ran with a consultant, plus both therapists. However some ran with a consultant and just one therapist. There was specialist nurse input in 21% of clinics. The clinic did not have psychology input, however 24% of patients required psychological input and were referred to talking therapies.

The main therapy interventions at new patient appointments are shown in Table 2. This was not exclusive. Written information given was from the NHS Your COVID Recovery (YCR) website, but all advice given was specialist advise from the clinic therapists.

Clinics with:	No. of Clinics	%
Critical care Consultant	66	100
Clinic with just PT	16	24
Clinic with just OT	11	17
PT & OT	39	59
ICU Nurse	14	21

Table 3. Clinic MDT composition

## Discussion

This data suggests that therapists, specifically OT and PT, were ideally placed to help patients manage their symptoms (Fig.3). Having specialist knowledge of these issues and a good oversight of available community services within the clinic is imperative to ensuring the patients get the best care possible.

The therapists involved in the follow up clinic were chosen due to also working in critical care. This was felt to give better context to patients’ clinical stories, and familiarity with the patients care pathway, linking inpatient and outpatient specialist services. It was evident this had a positive impact from verbal feedback received (Fig.2)

The main interventions were for fatigue and reduced cognition, specifically memory and concentration (Table 2). Standardised, written advice was given to these patients, however having therapists in clinic, who are experts in assessing and managing physical activity, energy conservation and cognition, meant that personalised verbal advice could be offered as well.

The higher number of OT compared to PT community referrals is surprising. Reasons for this could include the number of patients experiencing cognitive issues, or it could be due to the lower percentage of patients seen by inpatient OT (36%) compared to PT (94%). This lack of inpatient OT could stem from staffing issues, standards of discharge or redeployment. Although un-directly linked to the follow up clinic, this would definitely be worthy of further evaluation.

The data captured clearly provides a rationale for increased provisions of therapists in intensive care follow up clinics. A thorough pre screening of patients for therapy needs would make the most efficient use of what could be considered a precious resource.

## Limitations

- Inevitable absence of data on potentially confounding factors due retrospective analysis of prospectively collected data.
- Therapist intervention was limited due to the appointments being virtual. Had they been face-to-face, additional specialist assessments could have been carried out.
- We didn’t follow most patients for longer than a few months, so it is unknown whether their symptoms, quality of life and recovery have improved or been sustained in the longer term. Further research in this area would be beneficial.
- There was no control group to compare, e.g. similar non-COVID post-ICU patients, so it is unknown whether the symptoms or burden of disease is the same as would be seen from any ICU survivor, or worse. This could also be used for future study.