Abstract P24 Figure 1 CARP trial wearable respiratory rate, respiratory support and outcome data from 3 patients with severe COVID-19

required. Wearable RR sensors have been benchmarked against reference sensors. They offer the potential for continuous remote monitoring at scale of patients at risk for deterioration, who may require escalation and respiratory support. In the CARP trial we are exploring feasibility and utility of continuous wearable RR monitoring of inpatients with COVID-19, with the potential of extrapolating this to other causes of respiratory failure in the future.

Method The pre-commercial chest-worn Altair PneumoWave derives continuous RR and detects apnoeas, with processing algorithms benchmarked with reference impedance plethysmography. The device attaches to a standard adhesive ECG 'dot' with bluetooth hub and wi-fi connectivity. Live RR and event data is presented in a co-designed cloud-based dashboard, allowing for remote visualisation and inpatient journey tracking.

Consenting inpatients with PCR-confirmed COVID-19 who required oxygen therapy were screened over an 8-month period. Follow-up was performed at 28 and 90-days post discharge, including post-COVID patient reported outcomes and MRC dyspnoea score.

Results 156 patients were screened, with 77 recruited to the CARP trial. 32 patients required non-invasive respiratory support, of which 14 were escalated to mechanical intubation. 17 patients died within trial.

Bland-Altman analyses of paired RR data confirmed that wearable sensor data shows good agreement with critical care RR monitoring (Phillips Intellivue MX700), and that ward-based intermittent clinician RR measurements were imprecise.

From the initial utility review of CARP physiology data visualisations, rising hourly average RR >25/min is associated with subsequent patient deterioration. Improving and stable hourly average RR of <25/min associates with stable respiratory failure and improvement to hospital discharge (figure 1).

Conclusion Continuous wearable respiratory rate remote monitoring in COVID-19 inpatients is feasible. Planned machine learning and time-series analyses of the detailed physiology and clinical endpoint data will determine appropriate cut-offs and feature importance for deteriorating patient risk predictions. The CARP clinical dashboard provides an infrastructure for future implementation and evaluation of these AI insights.

P25

THE EFFECT OF POST COVID-19 REHABILITATION ON HEALTH STATUS USING THE EQ-5D- 5L

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Introduction Many patients who have survived COVID-19 are left with ongoing health concerns; be it deconditioning from a prolonged hospital admission or those with long COVID syndrome. Rehabilitation programmes have been developed in attempt to address this but little is understood about its effectiveness. The EQ-5D-5L is a well validated measure of health status and was completed before and after rehabilitation. We aimed to investigate the effect of our rehabilitation programme on health status.

Method All patients attending assessment for post-COVID rehabilitation complete the EQ-5D-5L and is repeated on discharge. Patients attended rehabilitation twice a week for 6 weeks.

Results Between July 2020 and May 2021 136 patients completed post-COVID rehabilitation. Mean age was 56 (12.25). 38% male. Table 1 illustrates change pre and post rehabilitation.

Abstract P25 Table 1 Mean (SD) scores for EQ-5D-5L index pre and post rehabilitation

Pre rehabilitation	Post rehabilitation	change	P value*
0.611 (0.195)	0.733 (0.172)	0.127 (0.187)	< 0.05
Paired t-test			

Conclusion Post COVID rehabilitation improves health status in patients following COVID-19 with ongoing health concerns.

P26

KNOWLEDGE SEEKING BEHAVIOUR OF THE COVID-19 POPULATION. ANALYSIS OF THE FIRST MILLION UK USERS OF YOUR COVID RECOVERY®

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Introduction University Hospitals Leicester NHS Trust (UHL) in partnership with NHS England worked in collaboration with professional societies, charities and healthcare professionals (HCPs) nationwide to launch the Your COVID Recovery® website (www.yourcovidrecovery.nhs.uk). This site offers information on living with and recovering from the physical and psychological effects of COVID-19. The site has information on the commonly reported post COVID symptoms¹ and was launched in July 2020. The aim was to evaluate website usage and the knowledge seeking behaviour of its readers.

Method The first one million users were analysed using Google Analytics from July 2020 to February 2021, reporting on overall site usage, content page views and length of time spent on the pages. The top three content pages were recorded each month.

Results To reach one million users took seven months, with over 700,000 of these users viewing the site from December 2020 to February 2021.

Retrieval of content data (figure 1) shows that Fatigue was the most viewed page (225,511) followed by Musculoskeletal Shoulder and Back Pain (MSK) (212,312) and Cough (184,178). Fatigue consistently featured every month, whereas Musculoskeletal Shoulder and Back Pain and Cough did not feature until October 2020 and November 2020 respectively.

Abstract P26 Figure 1 Top three page views per month for the first million visits to the Your COVID Recovery Website

Breathlessness and Family, Friends and Carers featured in the top three positions for the first four months but not subsequently.

Of the highest viewed content pages, average length of time spent on an individual page was reported to show Fatigue at 02mins12sec, Musculoskeletal Shoulder and Back Pain at 03mins05sec and Cough at 03min35sec.

Conclusion The data highlights the desire for knowledge on symptom management of COVID-19 with areas of specific interest showing some change during the data collection period. This may reflect the progression or change in symptoms and fluctuating COVID-19 cases nationally. It may also provide HCP's an important insight into the recovery of patients with COVID-19. The average length of time spent on the most viewed pages is high, showing good interaction by the reader and again highlights the desire for knowledge.

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P27

THE NEED FOR REHABILITATION PROGRAMME AFTER AN EPISODE OF COVID-19

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Background After COVID-19 infection, individuals can experience a variety of symptoms that might require further treatment. Early data showed that an adapted pulmonary rehabilitation programme may be a valuable intervention.¹ It is anticipated that there will be a huge burden on current services to deliver a programme for patients with long term symptoms following COVID-19 infection and therefore there will need to be flexible alternative modes of delivery. Currently no data exists on the need for rehabilitation and the preferred mode of delivery.

Preferred Rehabilitation Programme

Abstract P27 Figure 1 Preferred rehabilitation programme

Aim To assess the need for rehabilitation programme following discharge from COVID-19 episode and understand patient preference.

Method Patients post hospital discharge (H) and the community managed (C) infection received a follow up call on average of 3 months after discharge as a part of routine clinical management. A survey was completed to assess their most significant symptoms they would seek help with and their preference for rehabilitation. The survey explored ongoing symptoms, level of activity and preferred mode of rehabilitation. Data was analysed using SPSS v25.

Results A total of 160 patients completed the survey (51.2% male, mean [SD] age 54 [15] years). 126 (78.8%) were post hospital and 34 (21.3%) were community managed infections. 101 (63.1%) reported that COVID-19 related symptoms have affected their daily activities, and 106 (66.3%) reported their desire to be more active. The most common symptoms identified needing support were fatigue (C- 82.4%, H- 44.4%) and shortness of breath (C- 88.2%, H-48.4%). Both groups preferred face-to-face group programme (C- 54.8%, H- 46.8%), and (C-38.7%, H- 40.3%) preferred a supported digital rehabilitation programme or non-digital home based programme (C- 3.2%, H-12.9%) respectively (figure 1).

Conclusion The survey responses indicate a significant need for a support package of care. The majority preferred a face-to-face intervention; although a significant minority would prefer a digital intervention, regardless of mode there will be a substantial burden on services.

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P28

DEVELOPING A NOVEL ADVANCED CLINICAL PRACTITIONER LED SEVERE COVID-19 FOLLOW-UP SERVICE – A PICTURE IS NOT ALWAYS WORTH A THOUSAND WORDS

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During the COVID-19 pandemic the British Thoracic Society produced national guidance advising for all severe COVID-19 pneumonia (defining our inclusion criteria as clinico-radiological diagnosis, oxygen requirements >35%, continuous positive pressure ventilation or mechanical ventilation) to have 4–6–