in the PREDICT cohort and 9.5% in the ISARIC cohort were admitted despite SOARS score of 0–1.

Conclusion SOARS and 4C Mortality Score remains valid and relevant to their purpose, transforming complex clinical presentations into tangible numbers, aiding objective decision making, despite evolving viral subtype and treatment advances altering patient demographic and mortality. More importantly both scores are easily implemented within urgent care pathways for safe admission avoidance especially to a VH model.

The new normal? Novel and remote strategies for pulmonary rehabilitation

S20

COMBINING PHYSICAL ACTIVITY BEHAVIOURAL MODIFICATION STRATEGIES ALONGSIDE COGNITIVE BEHAVIOURAL THERAPY DURING PULMONARY REHABILITATION IN PATIENTS WITH COPD: AN INTERIM ANALYSIS OF A PILOT RCT

¹M Armstrong, ¹E Hume, ²L McNeillie, ²F Chambers, ²L Wakenshaw, ²G Burns, ²K Heslop-Marshall, ¹I Vogiatzis. ¹Northumbria University, Newcastle upon Tyne, UK; ²Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, UK

10.1136/thorax-2021-BTSAbstracts.26

Introduction In patients with COPD, pulmonary rehabilitation (PR) improves exercise capacity, but continues to report inconsistent improvements in physical activity, particularly in those with low baseline physical activity levels. In addition, patients with elevated levels of anxiety and/or depression are typically less able to manage symptoms and improve physical activity.

Objective To determine the efficacy of combining physical activity behavioural modification strategies (PA) with cognitive behavioural therapy (CBT) during PR in improving patients' experiences of physical activity and steps/day in COPD patients with low baseline physical activity levels and high anxiety and/or depression.

Methods In this pilot RCT, 23 patients (mean±SD: FEV₁: 40±17%, baseline steps/day: 2913±1821, HADS Anxiety: 11±3, HADS Depression: 11±4) were assigned 1:1 to receive PR+CBT, or PA (comprising motivational interviews, step count monitoring, feedback using a pedometer and goal setting) alongside PR+CBT (PA+PR+CBT). Assessments included patients' experiences of the amount and difficulty of physical activity captured by the Clinical PROactive Physical Activity in COPD (C-PPAC) instrument, accelerometer steps/day, the 6MWT, CAT and HADS questionnaires.

Results We found significant and clinically important improvements in favour of PA+PR+CBT compared to PR+CBT

intervention in the C-PPAC total score and steps/day. Meanwhile, similar significant and clinically important improvements in the 6MWT, CAT and HADS depression scores were reported across both groups (table 1).

Conclusions Providing anxious and/or depressed patients with physical activity behavioural modification strategies alongside CBT during PR is more favourable for improving patients' experiences of the amount and difficulty of physical activity and steps/day than providing CBT and PR.

S21

FEASIBILITY OF SMARTPHONE-BASED PHYSICAL ACTIVITY TELE-COACHING IN LUNG TRANSPLANT RECIPIENTS

¹E Hume, ²H Muse, ²K Wallace, ¹M Wilkinson, ³K Heslop-Marshall, ²A Nair, ⁴J Sanchez, ⁴J Benavent, ⁴J Roldan, ²S Clark, ¹I Vogiatzis. ¹Northumbria University, Newcastle upon Tyne, UK; ²Institute of Transplantation, Freeman Hospital, Newcastle upon Tyne NHS Foundation Trust, Newcastle upon Tyne, UK; ³Chest Clinic, Newcastle upon Tyne Hospitals NHS Foundation Trust, Newcastle upon Tyne, UK; ⁴Linkcare Health Services SL, Barcelona, Spain

10.1136/thorax-2021-BTSAbstracts.27

Introduction As the COVID-19 pandemic continues, the demand for tele-medicine remains high, particularly for lung transplant recipients who often live far from transplant centres. This interim analysis presents the early findings from our study investigating the feasibility of a 3-month semi-automated tele-coaching intervention (Demeyer *et al.*, 2017, *Thorax*) in this population.

Methods The intervention consists of a pedometer and smartphone app, allowing transmission of activity data to a platform (Linkcare v2.7.1) that provides feedback, activity goals, education, and contact with the researcher as required. Remote assessment pre- and post-intervention includes physical activity (PA) using accelerometry (Actigraph GT3X), HADS, SF-36 questionnaire and patient acceptability by a project-tailored questionnaire.

Results So far, all eligible patients approached were willing to be randomised to the intervention or usual care (n=9; COPD=2, ILD=5; CF=1; PH=1). In the intervention, usage of the pedometer was excellent, with patients wearing it for 6.9±0.1 days per week and rating the pedometer and telephone contact (9±2 out of 10) as the most vital aspects. Patient feedback has been positive, with 80% (4 out of 5) of patients responding that they 'liked' taking part and that the intervention 'helped them a lot' to increase their activity levels. In patients who completed the intervention (n=5), there was an improvement in accelerometry daily steps (by 2830±3026), time spent in light (by 26±21 mins) and moderate

Abstract S20 Table 1

	Baseline (PA+PR+CBT)	Post PR (PA+PR+CBT)	Within-group difference	Baseline (PR+CBT)	Post PR (PR+CBT)	Within-group difference	Between-group P values
C-PPAC total	54±14	62±12	8±8 *	58±11	59±12	1±1	0.047
Daily steps	3180±1714	4245±2034	1065±975 *	2632±1877	2745±1933	113±456	0.020
CAT	29±4	24±4	-5±3 *	31±5	29±6	-2±2 *	0.075
6MWT (m)	265±95	324±88	59±44 *	245±84	275±85	30±22 *	0.067
HADS (A)	12±5	9±4	-3±2 *	10±3	9±4	-1±1	0.397
HADS (D)	10±6	8±4	-2±2 *	11±2	8±3	-3±1 *	0.898

*Clinically important improvement

Abstract S21 Figure 1 Daily steps using accelerometry (Actigraph GTX3), at baseline (hospital discharge), 3 months and 6 months for lung transplant recipients assigned to the intervention group (n=5)

(by 7 ± 11 mins) activities, as well as a reduction in sedentary time (by -58 ± 141 mins) at 3 months. At 6 months (n=3), there was a further improvement in daily steps (by 1641 ± 661), a reduction in sedentary time (by -28 ± 137 mins) and time spent in light activities (by -21 ± 36 mins), with an increase in moderate activity time (by 25 ± 29 mins). Following the 3-month intervention, increases were shown in physical functioning, role physical, mental health, bodily pain, and general health SF-36 domain scores, but not in HADs.

Conclusion Tele-coaching appears feasible in lung transplant recipients, with patients wearing the pedometer and interacting well with the app over 3 months. This is promising in the current climate, with the need to develop and evaluate innovative ways of supporting patients remotely.

S22 EVALUATION OF A VIRTUAL PULMONARY REHABILITATION PROGRAMME AND COMPARISON TO TRADITIONAL FACE-TO-FACE PROGRAMMES IN COPD

¹K Cox, ¹A Krynicka, ²AR Jenkins, ³AW Jones. ¹Lincolnshire Community Health Services, Lincoln, UK; ²Division of Respiratory Medicine, University of Nottingham, Nottingham, UK; ³Department of Allergy, Immunology and Respiratory Medicine, Monash University, Melbourne, Australia

10.1136/thorax-2021-BTSabstracts.28

Introduction and Objectives During the coronavirus disease (COVID-19) pandemic, pulmonary rehabilitation (PR) services in the UK ceased traditional face-to-face (F2F) programmes and transitioned to remote or virtual delivery. Virtual programmes may continue to be offered as an alternative to F2F programmes in order to increase accessibility to PR. Our objective was to compare the benefits of Virtual Pulmonary Rehabilitation (VPR) to F2F programmes in a community PR service in England.

Methods With the support of the local Digital Health team, VPR was delivered in cohort groups using Microsoft Teams, twice-weekly for 6 weeks, supported by a specialist physiotherapist and with education delivered live or via pre-recorded webinars. The F2F cohort programme comprised of twice-weekly exercise and education sessions for 6 weeks. Outcomes of VPR delivery (June 2020-March 2021) were compared to F2F programmes from the same time period 12 months previously using the following measures: Chronic Respiratory Questionnaire (CRQ); Hospital Anxiety and Depression Scale (HADS). Due to restrictions, physical capacity for VPR was

Abstract S22 Table 1 Number of patients achieving minimal clinically important differences in CRQ and HADS following Virtual Pulmonary Rehabilitation (VPR) or Face-to-Face pulmonary rehabilitation (F2F)

Outcomes	VPR n (%)	F2F n (%)	p value (Chi-square test)
CRQ-Dyspnoea	32 (54)	30 (55)	0.974
CRQ-Fatigue	30 (50)	34 (62)	0.203
CRQ-Emotion	23 (38)	29 (53)	0.121
CRQ-Mastery	24 (40)	34 (62)	0.019
HADS-Anxiety	17 (33)	24 (44)	0.214
HADS-Depression	12 (23)	27 (50)	0.004

measured using sit to stand (STS) tests as opposed to Incremental (ISWT) and Endurance Shuttle Walk Tests (ESWT) for F2F.

Results VPR (n=60) produced significantly smaller improvements than F2F (n=55) in CRQ-Fatigue ($+0.4 \pm 1$ vs $+0.9 \pm 1.3$, $p=0.036$), CRQ-Mastery ($+0.3 \pm 1$ vs $+0.9 \pm 1.2$, $p=0.005$) and HADS-Depression (-0.1 ± 2.7 vs -1.9 ± 3.1 , $p=0.003$). Improvements in CRQ-Dyspnoea ($+0.6 \pm 1$ vs $+1 \pm 1.4$, $p=0.159$), CRQ-Emotion ($+0.3 \pm 1$ vs $+0.5 \pm 1$, $p=0.348$) and HADS-Anxiety (-0.2 ± 3 vs -1.4 ± 3.1 , $p=0.132$) with VPR and F2F were not significantly different. A greater proportion with F2F achieved clinically meaningful improvements in CRQ-Mastery and HADS-Depression but no other statistically significant differences were found (table 1). VPR significantly increased 30-sec STS ($+1.5$ repetitions, $p<0.001$), but not 1-min STS ($+1.7$ repetitions, $p=0.085$). F2F significantly increased ISWT ($+33$ m, $p<0.001$) and ESWT ($+180$ m, $p<0.001$).

Conclusions F2F PR provided larger improvements in outcomes and a greater number of COPD patients achieving meaningful improvements in mastery and depression. However, the number of patients achieving clinically meaningful improvements in dyspnoea, fatigue, emotional function and anxiety with VPR demonstrates the success of transitioning to this model during the pandemic and supports the potential use of such alternative delivery models to increase access to PR.

S23 INTEGRATING HOME-BASED EXERCISE TRAINING WITHIN A HOSPITAL AT HOME SERVICE FOR PATIENTS HOSPITALISED WITH ACUTE EXACERBATIONS OF COPD: A MIXED METHODS FEASIBILITY STUDY

¹RE Barker, ²LJ Brighton, ³J Bayly, ¹JA Walsh, ¹CM Nolan, ¹S Patel, ¹O Polgar, ⁴J Wenneberg, ⁴SSC Kon, ⁵JA Wedzicha, ²M Maddocks, ⁶M Farquhar, ¹WDC Man. ¹Royal Brompton and Harefield Hospital, London, UK; ²King's College, London, UK; ³St Barnabas Hospices, Worthing, UK; ⁴Hillingdon Hospital NHS Foundation Trust, Hillingdon, UK; ⁵Imperial College, London, UK; ⁶University of East Anglia, Norwich, UK

10.1136/thorax-2021-BTSabstracts.29

Background The uptake of face-to-face supervised outpatient-based pulmonary rehabilitation (PR) following hospitalisation for an acute exacerbation of COPD (AECOPD) is low. One commonly cited barrier is travel. Home-based PR may be an alternative setting. The aim of this study was to determine whether a co-designed home-based exercise training intervention, delivered alongside usual hospital at home (HaH) care