Weekly data on influenza-like illness (ILI) rates and positive percentages (PP) (i.e., proportion of influenza-positive sentinel respiratory specimens) was obtained from the Health Protection Surveillance Centre. Excess mortality rate during influenza season was defined as the percentage difference between Q4/Q1 and preceding third quarter (Q3) mortality rates. We adopted the Goldstein Index (ILI rate $\times$ PP) as an indicator of IA. Time series analyses, Pearson correlation coefficients (r) and linear regression models were used to evaluate the relationships between IA and excess cardiovascular, respiratory and renal disease mortality rates.

Results Statistically significant positive associations were observed between IA and excess AMI ($r=0.557$, $p=0.011$), cerebrovascular disease ($r=0.858$, $p<0.001$), pneumonia ($r=0.635$, $p=0.003$), asthma ($r=0.668$, $p=0.001$) and renal disease ($r=0.652$, $p=0.002$) mortality rates. Linear regression models predicted 0.072% (95% confidence interval 0.019%, 0.125%), 0.095% (0.067%, 0.123%), 0.184% (0.073%, 0.296%), 0.367% (0.165%, 0.569%) and 0.124% (0.053%, 0.196%) increases in excess AMI, cerebrovascular disease, pneumonia, asthma and renal disease mortality rates respectively per unit increase in IA.

Conclusion Elimination of IA may have contributed towards limiting the effects of COVID-19 on cardiovascular, respiratory and renal disease mortality rates in Ireland.

S19

RELEVANCE OF PREDICTION SCORES DERIVED FROM THE SARS-COV-2 FIRST WAVE, IN THE UK COVID-19 SECOND WAVE, FOR EARLY DISCHARGE, SEVERITY AND MORTALITY: A PREDICT COVID UK PROSPECTIVE OBSERVATIONAL COHORT STUDY

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10.1136/thorax-2021-BTSAbstracts.25

Introduction and Objective COVID-19 prognostication scores are all based on COVID-19 first wave, requiring prospective validation in the evolving pandemic due to SARS-CoV-2 variants (prevalent B.1.1.7 replacing parent D614) and healthcare responses altering patient demographic and mortality. Accelerated COVID-19 virtual hospital (VH) telemedicine model implementation avoids hospital admission, appropriately allocating hospital resources to pandemic needs in tandem with resumption of regular healthcare services, requires a safe triage tool. Widely used COVID-19 first wave derived prognostication scores, SOARS and 4C Mortality Score, with uncertain performance in the evolving pandemic, raises the need for prospective validation. We prospectively validate SOARS and 4C Mortality Score in the evolving UK COVID-19 second wave determining relevance for mortality and safe early discharge.

Methods Protocol-based, prospective observational cohort study of SOARS and 4C Mortality Score in 1,383 PREDICT (single site) and 20,595 multi-site ISARIC (International Severe Acute Respiratory and Emerging Infections Consortium) patient cohorts during the UK COVID-19 second wave, between October 2020 and January 2021

Results Data from 1,383 patients (median age 67y, IQR 52–82; mortality 24.7%) in the PREDICT and 20,595 patients from the ISARIC (mortality 19.4%) cohorts showed SOARS had AUC of 0.8 and 0.74, while 4C Mortality Score had an AUC of 0.83 and 0.91 for hospital mortality, in the PREDICT and ISARIC cohorts respectively, therefore effective in evaluating both safe discharge and in-hospital mortality. 19.3% (231/1195, PREDICT cohort) and 16.7% (2550/14992, ISARIC cohort) with a SOARS of 0–1 were potential candidates for home discharge to a virtual hospital (VH) model. SOARS score implementation resulted in low re-admission rates, 11.8% (27/229), and low mortality, 0.9% (2/229), in the VH pathway. Use is still suboptimal to prevent admission, as 8.1%

SOARS and 4C Mortality Score in PREDICT and ISARIC Cohorts

Abstract S19 Figure 1 SOARS and 4C mortality score in PREDICT and ISARIC cohorts

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

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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

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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