recruitment termination based on demonstration of superiority in all primary endpoints.

Results 614 patients were randomized and included in the interim analysis, of whom 498 (81%) were Chinese. Treatment with BDP/FF/GB resulted in improvement of -1.34 (p=0.005; all patients) and -1.37 points (p=0.010; Chinese participants) vs BUD/FF in the CAT Score, and in improvement of -3.08 (p=0.009; all patients) and -3.37 points (p=0.006; Chinese participants) in the SGRQ Total Score. There were 41.4% SGRQ 'responders' in BDP/FF/GB compared to 34.1% in BUD/FF (OR: 1.41; p=0.053) among all patients, and 43.3% SGRQ responders compared to 34.1% in the Chinese participants (OR: 1.50; p=0.040).

Conclusions Extra-fine triple therapy with BDP/FF/GB pMDI significantly improves COPD health status compared to ICS/LABA with BUD/FF DPI in Asian and Chinese patients with severe COPD.

P47 DRY POWDER INHALER RESISTANCE DOES NOT LIMIT THEIR USE AMONG PATIENTS WITH COPD

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Background With rising concern on the global warming potential of propellants in pressurized metered dose inhalers (pMDIs) it has become increasingly important to identify patients who are able to safely switch from pMDI to dry powder inhaler (DPI). Clinicians have been concerned whether patients with COPD can achieve sufficient inspiratory flow rates (PIFR) through DPIs due to the devices internal resistance.

Aim To study PIFR through Easyhaler® inhalers (EH-mono and -combi) and Handihaler® (HH) and to evaluate suitability of In-Check Dial® training device in inhaler selection.

Methods Subjects used the inhalers as instructed by manufacturers and pneumotachograph was used to record inspiratory profiles. PIFR was also measured with In-Check Dial using resistance settings of the inhalers.

Results 100 healthy volunteers and 100 patients with COPD were recruited in Finland and Estonia. Patients were classified to GOLD groups A(20 patients), B(58), C(8), and D(14). All subjects were able to achieve required PIFR (≥30 L/min) with EH. One COPD patient and one healthy volunteer did not archieve 30 L/min flow rate with HH device. The distributions of PIFRs are presented in the table 1. Patients showed lower PIF with In-Check Dial than with the inhalers. The difference was 3.0 (SD 8.5) L/min, 8.0 (SD 7.5) L/min, and 8.1 (SD 7.8) L/min for EH-mono, EH-combi and HH, respectively.

Conclusions Patient performance is not a limiting factor for use of DPI for vast majority of patients with COPD. In this study In-Check Dial underestimated the PIFR for these inhalers, but it correctly classified the PIFR to be in the appropriate range in all cases.

Abstract P47 Table 1

Flow rate (L/min)			
	EH-mono	EH-combi	HH
COPD 10th	45.0	53.1	37.6
COPD 50th	58.8	68.5	47.6
COPD 90th	70.7	82.6	63.2
Healthy 10th	50.7	54.9	36.0
Healthy 50th	61.2	73.1	45.7
Healthy 90th	74.5	88.3	62.3

P48 BIOPLAUSIBLE INSIGHTS CAPTURED FROM COPD PATIENTS: ALIGNING BIOMETRIC DATA WITH EXACERBATION EVENTS AND THERAPY CHANGES USING A COMMERCIAL WEARABLE DEVICE

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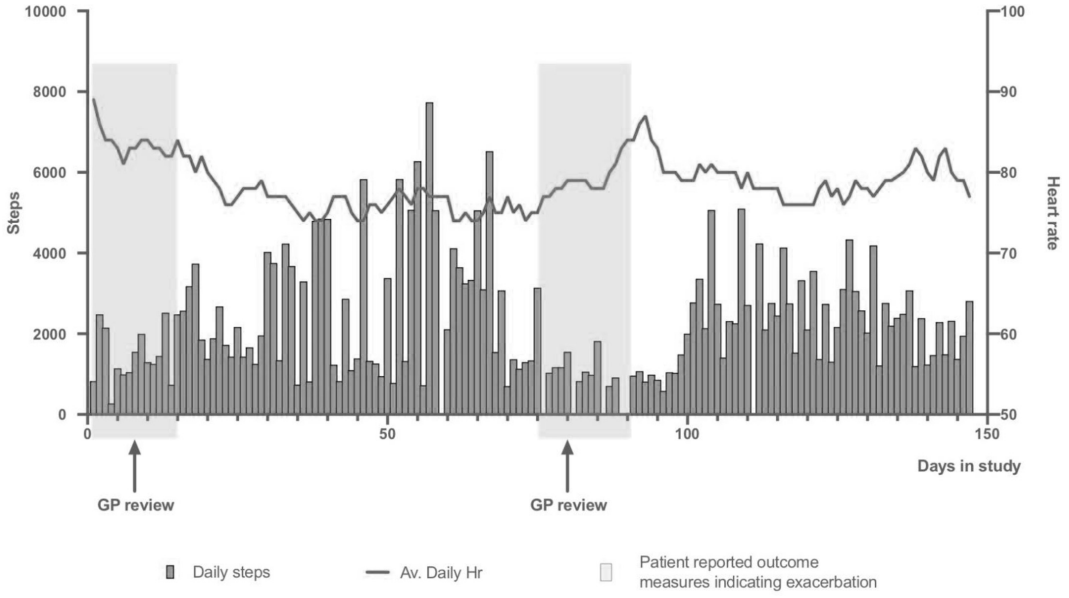
Physical activity is a predictor of survival in COPD. Patients undertaking some level of regular exercise have a lower rate of COPD related admissions and mortality. Increases in daily physical activity have been noted following exacerbations and optimisation of COPD management. There has been a steady uptake in ownership of consumer-based fitness trackers which can capture continuous physiology data over prolonged periods. With advancements in cloud computing, there is now the potential to integrate data from these wearable devices with electronic health record systems. Data can be reviewed by clinicians to monitor physical activity and physiology in patients with COPD, but value-add and clinician capacity are uncertain. Application of machine-learning analyses could generate predictive actionable insights, allowing clinician data review requirements to be focused.

Aim Explore the potential insights to be gained from capturing continuous physiological measurements in COPD patients using commercially available wearable technology.

Method As part of the RECEIVER digital innovation study (NCT04240353), high risk COPD patients were given Fitbit Charge 3 devices linked to a co-designed web app which also captures daily patient reported outcomes and exacerbation events. Exacerbation events, hospital admissions and treatment changes were plotted with daily step counts and daily average heart rate to evaluate potential patterns which would justify more extensive analyses.

Results Data from 32 patients with sustained FitBit recordings were reviewed as part of planned 6 month interim analyses. Average days of available data = 58 (8–147). We identified notable trends in daily step count and heart rate around exacerbation events (figure 1). Increased daily step counts and reduction in heart rate were observed following commencement of home NIV.

Conclusion Notable bio-plausible insights are present, with correlation between Fitbit data, exacerbations and treatment interventions. Further evaluations of the capability of commercially available wearable sensors to track and predict COPD events are indicated. Results from this evaluation have directed the further analyses of the RECEIVER trial data. This includes expansion of the digital connectivity to incorporate intra-day wearable data, integration with patient-reported outcome and clinical summary data, and application of machine-learning



Abstract P48 Figure 1 Specimen event and Fitbit data from patient enrolled in RECEIVER trial
Changes in step count align with exacerbation and precede GP review events. Increase in step count and decrease in heart rate is noted post-exacerbation

algorithms targeting a risk of exacerbation decision support prediction model.

P49 USING A HOME OXYGEN REVIEW PROFORMA IN COPD CARE TO INCREASE SAFETY AND ADDRESS GAPS IN HIGH VALUE INTERVENTIONS

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Background As a respiratory team we provide annual reviews for local patients prescribed home oxygen. The aim of these reviews is to optimise oxygen benefit, reduce risk of harm, and address gaps in value-based interventions. We developed and introduced a Home Oxygen Review Proforma to support this approach. The aim of this study was to evaluate the impact of this proforma as an enabler of high-value COPD interventions and patient safety.

Methods All 2019 Home Oxygen Review Proformas completed for patients with COPD were analysed for: demographics, spirometry, oxygen saturations on air (SpO2) and carbon monoxide (CO) readings; and actions taken following review: value-based interventions (influenza vaccination, tobacco dependence treatment, referral to pulmonary rehabilitation (PR)) and 'oxygen alerts' (Patient Specific Protocols ('PSPs')) for patients with raised serum bicarbonate.

Results 52/55 (26M;26F) patients with COPD prescribed oxygen were reviewed at home. Mean age was 73 (range 52–89) years. Mean (SD) FEV1 was 0.71 (0.37) L; n=52, FVC 1.59 (0.77) L; n=51 and SpO2 87(5)%; n=50.

Smoking status was confirmed with CO testing; 43/50 (86%) normal (0–4 ppm); none with CO>10ppm (smoking). 7/50 (14%) were 'possibly smoking' (5–9ppm) with no evidence of smoking in home, hence monitored.

39/52 (75%) patients were up-to-date with influenza vaccination; 9/52 (17%) were referred for vaccination; 4 declined vaccination offer. 40/52 (77%) had previously completed PR; 7/52 (13%) were referred for PR; 3 declined referral; 2 did not meet criteria.

46/52 had serum bicarbonate measured: raised in 27/46 (59%); 19 had 'PSP' already and 7 (26%) were referred for new 'PSP' to prevent oxygen poisoning.

Discussion This Home Oxygen Review Proforma for patients with COPD using home oxygen was an enabler of increased safety; specifically CO validation of smoking status, and serum bicarbonate identifying nearly 60% of patient as at risk of oxygen poisoning. While the majority of patients reviewed had received value-based interventions, it was also an effective way to identify gaps;17% had missed out on, and were referred for: influenza vaccination, 13% referred for PR and 26% for a 'PSP'. This proforma is now used for all home oxygen reviews across two CCGs.

P50 PILOTING A STANDARDISED APPROACH TO MANAGEMENT OF PATIENTS WITH PREVIOUSLY UNDIAGNOSED COPD PRESENTING WITH EXACERBATIONS

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Introduction Approximately one third of people with a first hospital admission for a COPD exacerbation have no previous diagnosis.[1]

The Integrated Respiratory Team (IRT) consists of specialist nurses and physiotherapists and provides holistic reviews of patients with known COPD, prioritising high value interventions. Patients without a prior COPD diagnosis previously were directed to the respiratory registrar for review. Due to multiple commitments of the registrars a proportion of patients do not receive inpatient review and are discharged without follow up or initiation on inhaled therapy whilst awaiting formal diagnosis leading to discrepancies in care. Informal feedback from the IRT identified low staff