Mean age was 66.2, 72% male. 94% white, in keeping with our population. Most common comorbidities included pre-existing lung disease (35%), cardiovascular disease (33%) and diabetes (29%). 52% had Rockwood clinical frailty score (CFS) 1–2.

50% were for full escalation. In total, 20% were transferred to Intensive Care Unit (ICU). Of those, average time from initiating AGP to ICU admission was 4 days. Patients transferred within 24 hours of initiating AGP and subsequently intubated, had a 40% mortality rate, versus 75% if transferred > 5 days after AGP initiation. Overall ICU mortality rate was 52%.

Average inpatient length was 16.6 days, mean AGP duration was 6.2 days. Patients with CFS 1 had a 13% mortality following AGP initiation, versus 90% mortality in those with CFS 4. We also noted a 1.1kPa PO₂ difference prior to AGP initiation for the survivors (8.8kPa vs 7.7kPa).

Overall RHCU outcome: 19% discharged, 39% died, 22% transferred to other ward (87% survived), 20% ITU (48% survived). ReSPECT form was completed in 87% and End of Life care-plan initiated in 81% who died.

Despite challenges, including staff shortage, low morale, oxygen and beds limitation, we remained up-to-date throughout the pandemic offering novel treatments. Of those eligible, 100% received dexamethasone, 95% were appropriately anticoagulated, 87% were given tocilizumab and 61% received remdesivir. 29% of patients were recruited into the RECOVERY trial, far exceeding recruitment within the trust (11.2%), regionally within the West Midlands (6.3%), and nationally (10%).¹

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P216 COVID-19 AND ETHNICITY: HOW DOES IT IMPACT ADMISSION TO INTENSIVE CARE AND USE OF CPAP?

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Background In the first wave of the COVID-19 pandemic, published data suggested that patients from ethnic minority backgrounds were disproportionately affected by the disease; however, there appears to be a paucity of data regarding specific outcomes such as admission to intensive care (ICU) and use of continuous positive pressure (CPAP) ventilation.¹ We describe a patient cohort presenting to two urban district general hospitals, analysing whether ethnicity is associated with increased morbidity.

Methods A retrospective cohort analysis of 752 patients with a clinical or laboratory (RT-PCR positive) diagnosis of COVID-19 presenting to the respiratory units across two hospitals was conducted. Data was collected on patients' self-reported ethnic identity, admission to ICU, use of CPAP and intubation.

Results 48 patients' ethnic identities were unavailable and therefore excluded from analysis. Of the 704 patients included in analysis, median age was 61, 58.1% male and 41.9% female. Within this cohort, non-white patients (n=259) were more likely to require ICU admission and intubation when

compared with white patients (n=445) (RR 1.75 [p <0.0015], RR 2.092 [p <0.0063]). Subgroup analysis showed, black patients (n=47) were more likely to require ICU admission (RR 2.322 [p < 0.0184]), intubation (RR 3.293 [p <0.0017]) and CPAP (RR 1.612 [p <0.00183]) when directly compared to white patients. Patients of South Asian (n=127) origin were more likely to require intubation (RR 1.98 [p <0.0396]) but no significant difference was noted in use of CPAP.

Conclusion Existing evidence suggests that patients from ethnic minority backgrounds were disproportionately affected by acute COVID-19 and are more likely to be exposed. Our analysis demonstrates that this patient group often experienced more severe disease requiring ICU admission and respiratory support, compared to white patients. Current hypotheses include a higher prevalence of comorbidities, socio-economic factors and societal structural inequalities. Our study not only adds to current data and underlines the importance of continued research into this area, but also helps clinicians, particularly those within hospitals serving diverse populations, prepare resources for further potential surges of COVID-19.

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P217 IMPROVED COVID-19 OUTCOMES IN A LARGE NON-INVASIVE RESPIRATORY SUPPORT COHORT DESPITE NEW VARIANTS

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Background Respiratory high-dependency units (rHDU) are widely used to manage respiratory failure in coronavirus-19 (COVID-19) outside of the intensive care unit (ICU). Wave two variants of COVID-19 have been linked to increased rates of mortality and admission to ICU, however, their impact on a rHDU population, as well as the effects of new treatments, have not been previously studied.¹ In this study we aimed to compare our clinical practice and rHDU outcomes between the two main UK waves of COVID-19 infection and identify factors that influenced outcomes in the second wave.

Method We conducted a single-centre, retrospective analysis of all patients with a diagnosis of COVID-19 admitted to the rHDU of our teaching hospital for respiratory support during the first wave from 23rd March to the 4th June 2020 and the second wave in between 10th October 2020 and 31st January 2021 when our evaluation ended. Patient data including virus genotype, treatments received and patient outcomes were collected and compared between waves.

Results In total, 348 patients were admitted to rHDU; 71 (20.4%) during the first wave and 277 (79.6%) in the second wave. Patient characteristics are shown in *table 1*. Mortality and intubation rates were lower in the second wave compared with the first. Patients in the second wave were less frail and more patients in the second wave received CPAP as their primary respiratory support and were able to prone. The VOC B.1.1.7 variant did not have a significant effect on rHDU outcome.

Abstract P217 Table 1 A comparison of first and second wave characteristics, treatment and outcome data

	First wave	Second wave	Mean difference (95%CI)	X ² (df)	P value
Age (years)	69.0 (52.0, 80.0)	62.0 (52.0, 71.0)	-3.4 (-7.8 to +1.1)	-	0.14
Sex:					
- Male	49 (69.0%)	180 (65.0%)	-	0.4 (1)	0.52
- Female	22 (31.0%)	97 (35.0%)			
BMI (kg/m ²)	28.5 (24.9, 33.6)	29.6 (24.8, 34.9)	+0.6 (-1.7 to +2.9)	-	0.63
Clinical Frailty Score:				15.6 (5)	
- 1 to 2 (fit)	18 (25.4%)	132 (47.7%)	-		0.008
CT severity score					
- Moderate/severe	11 (29.7%)	131 (52.2%)	-	16.0 (3)	0.0012
- Severe	23 (62.2%)	113 (45.0%)			
CRP prior to rHDU admission (mg/L)	180.6 (118.0, 210.0)	124.1 (78.1, 175.6)	-44.1 (-66.9 to -21.3)	-	0.0002
Spike gene testing					
- VOC B.1.1.7 variant	-	143 (67.1%)	-	-	-
- Wild-type	-	57 (26.8%)			
- Ambiguous	-	13 (6.1%)			
Dexamethasone	3 (4.2%)	266 (96.0%)	-	271.4 (1)	<0.0001
Remdesivir	4 (5.6%)	198 (71.5%)	-	100.6 (1)	<0.0001
CPAP as primary respiratory support	32 (45.1%)	248 (89.5%)	-	71.1 (1)	<0.0001
Able to adopt semi- or full- prone position	42 (59.2%)	237 (85.6%)	-	24.8 (1)	<0.0001
Admission outcome (all)				14.7 (1)	0.0001
- Died	36 (50.7%)	74 (26.7%)	-		
- Discharged	35 (49.3%)	201 (72.5%)			
rHDU outcome ('For Intubation')				17.3 (2)	0.0002
- Died	0 (0.0%)	7 (3.3%)	-		
- Off respiratory support	14 (41.2%)	152 (72.4%)			
- Intubated	20 (58.8%)	51 (24.3%)			

Conclusion Our single centre experience shows that rHDU mortality and intubation rates have improved over time in spite of the emergence of new variants. Improvements in outcome are likely to be multi-factorial. Our data support the benefit of pharmacological COVID-19 therapies in a rHDU population as well as the use of CPAP and awake proning. Other potential causes for improved outcomes are lower serological and radiological COVID-19 severity in our wave two cohort as well as reduced rates of frailty.

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A TALE OF TWO WAVES: A SINGLE CENTRE RETROSPECTIVE COHORT STUDY ASSESSING MORTALITY IN SEVERE COVID-19 IN FIRST AND SECOND WAVES

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Introduction and Objectives The first and second waves of COVID-19 showed different mortality patterns in hospitalized patients (Iftimi S, et al, PLoS One 2021; 16(3)) but it is less clear if that holds true for severe COVID-19 patients who required respiratory support. The rationale of this study is to assess mortality difference of severe COVID-19 patients from both waves who required respiratory support.

Methods A retrospective review was conducted of all patients with severe COVID-19 requiring respiratory support including CPAP/High Flow Nasal Cannula (HFNC) admitted to a respiratory support unit at a London District Hospital in first wave (March-May 2020) and second wave (November 2020-March 2021). Mortality was assessed for CPAP/HFNC and intubation groups of each wave in accordance with age and clinical frailty score (CFS) as baseline characteristics.

Results In wave one, 89 patients were treated with CPAP/HFNC. 53 patients (60%) were offered CPAP/HFNC alone whilst 36 (40%) patients escalated to mechanical ventilation. In CPAP/HFNC group, 35 (66%) survived (Median age: 69, Median CFS: 2), and 18 (34%) died (Median age: 69, Median CFS: 2). In intubated group, 17 (47%) survived (Median age: 61, Median CFS: 2) and 19 (52%) died (Median age: 61, Median CFS: 2). Total 37 patients died with overall mortality 41%.

In wave two, 207 patients were treated with CPAP/HFNC. Of these, 150 (73%) were offered CPAP/HFNC alone whilst 57 (27%) were escalated to mechanical ventilation. In CPAP/HFNC group, 104 (69%) survived (Median age: 66, Median CFS: 2) and 46 (31%) died (Median age: 67, Median CFS: 2). In intubated group, 33 (58%) survived (Median age 62, Median CFS: 2) and 24 (42%) died (Median age: 62, Median CFS: 2). 70 patients died in total with overall mortality 34%.

Conclusion Our findings suggest overall mortality improved in second wave in severe COVID-19 patients though baseline characteristics were not significantly different. This is likely to reflect lessons relating to patient care from wave one and increasing use of steroids and IL-6 inhibitors.