week follow-up with all COVID-19 patients having imaging at 12 weeks.¹ To avoid duplication of work streams, the district general hospital developed a pathway liaising with ICU to ensure follow-up 4–6 weeks post discharge, chest x-ray at 12 weeks and follow-up telephone appointment at six months with the aim of discharging back to the community or referring for further investigations. In total we followed up 272 patients who were referred to our service.

In the first wave (April 2020 – July 2020) we followed up 117 patients of whom 99 had a follow-up chest X-ray. Chest x-rays were performed on average 80.4 (43–140) days post discharge. Of these patients, 14% had residual changes, with 86% having a clinic normal chest X-ray, with 33 (28%) requiring referral for further investigation and respiratory physician follow-up due to breathlessness (quantified by Modified Medical Council Research dyspnoea score) identified at follow-up clinic appointments, on average 168.4 (91–209) days post discharge.

In the second wave (October 2020 – April 2021) we followed up 155 patients of whom 133 had a chest x-ray and 51 (38%) had residual changes. Chest x-rays were performed on average 88.7 (32–120) days post discharge and follow-up clinic appointments were on average 150.9 (92–172) days post discharge. Only 35 patients have been followed up to date (the remaining having not reached 6-months post discharge). Of these 15 (42.8%) required onwards referral for further investigation.

This data shows that we have run a robust follow-up service for severe COVID-19 pneumonia patients. It is important that we think carefully about who is referred for further respiratory investigations as our data shows that chest x-ray resolution does not necessarily correlate with resolution of symptoms, and the implication for NHS services.

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Advances in the management of TB and NTM infections

P29 HOW ARE WE MANAGING NON-TUBERCULOUS MYCOBACTERIA PULMONARY DISEASE (NTM-PD)? RESULTS FROM THE FIRST UK-WIDE SURVEY OF CLINICAL PRACTICE

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Introduction and Objectives The prevalence of pulmonary non-tuberculous mycobacteria (NTM) isolates identified in the UK is increasing. We sought to ascertain the current NTM-pulmonary disease (NTM-PD)-related workload in the UK and the infrastructure in place to support this; and to compare reported NTM-PD management with recommendations outlined in national guidance.

Methods A cross-sectional online survey on the diagnosis and management of NTM-PD was circulated between November 2020 and May 2021 via NTM Network UK, the British Thoracic Society and the British Infection Association to healthcare professionals across the UK who manage patients with NTM-PD.

Results Data from 87 sites were analysed (including 4 paediatric and 12 cystic fibrosis centres). 76/87 (87%) of respondents were consultant physicians, of which 63% were adult respiratory consultants. NTM-related workload is considerable, with 62% of respondents seeing over six newly diagnosed NTM-PD patients each year, in addition to a further 10–20 patients already under follow-up. 41–60% of patients under review are commenced on treatment for NTM-PD.

68 (78%) sites manage NTM patients in TB clinic, whilst 8 have a dedicated NTM clinic. All respondents had access to bronchoscopy, and 66% also to induced sputum diagnostics. Support available from clinical nurse specialists and other allied healthcare professionals varied. 68% have input from TB specialist nurses whilst 14% receive no nursing support. 47% of respondents have support from physiotherapists, 41% from a pharmacist and 33% receive no allied healthcare support.

Of the 66 respondents who do not work at a NTM tertiary referral centre, 42 (64%) do not receive external MDT support from one. 55% of clinicians do not provide or signpost NTM-PD patients to any patient information resources related to NTM-PD.

Conclusions There is significant variation in how patients with NTM-PD are managed across the UK including existing infrastructure for NTM diagnosis and treatment, and a lack of standardised NTM care pathways. Opportunities to improve support to patients and clinicians include: 1) helping centres to set-up NTM-PD multi-disciplinary teams, 2) establishing regional networks and a national NTM-PD Clinical Advice Service and 3) enabling NTM patients to access relevant NTM information and support.

Please refer to page A191 for declarations of interest related to this abstract.

P30 MOBILE HEALTH USES IN SURVEILLANCE OF TUBERCULOSIS MEDICATION SIDE EFFECTS AND BEYOND-A PILOT STUDY

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Tuberculosis (TB) and multi-drug resistant TB (MDR-TB) are some of the most deadly infectious lung diseases worldwide. Medications such as ethambutol and fluoroquinolones, used in treatment, have potentially severely debilitating side effects, namely ocular toxicity. Current monitoring is infrequent and can lead to unnecessary progression of side effects until irreversible or fatal. Mobile health (m-health) may be able to provide suitable solutions.

Methods 196 eyes from 96 participants sourced from St Mary's TB clinics, Western Eye Hospital outpatient clinics, Charing Cross Hospital MS clinics and student volunteers were examined using a digital colour vision test (EnChroma). The results were compared to currently used analogue tests during two phases. Phase one involved comparison to the

Abstract P30 Figure 1 Correlation of EnChroma comparison to Ishihara test, (n=40). Axis numbers correspond to results with EnChroma result on the x-axis and the Ishihara test result on the y-axis. Normal=1, protan=2, deutan=3, tritan=4, unknown=5. Bubble size denotes number of participants.

Farnsworth D15 test (FD15) and phase two to the Ishihara plate test. Participant self-assessment and opinions on the usability of the m-health solution were recorded.

Results There was good correlation between the EnChroma and Ishihara tests ($r=0.81$, $p<2.3\times 10^{-10}$), correlation between EnChroma and the FD15 was poor ($r=0.49$, $p<2.3\times 10^{-10}$). The qualitative analysis showed high trust and ease of use when scored by patients and clinicians.

Discussion The low correlation between the EnChroma and FD15 tests could be due to oversensitivity of the EnChroma test, however previous studies comparing the FD15 to other colour vision tests showed a low sensitivity for the FD15, (0.59)¹ suggesting that EnChroma results may be true abnormalities rather than false positives.

Apps like EnChroma have the potential to revolutionise, modernise and personalise colour vision testing in medicine, however the study lacks power (shown by the large confidence intervals) and will have to be repeated on a larger scale. Patients are keen to engage with m-health and more, suitable solutions should be explored. M-health has the potential to enable rapid point of care testing and fully remote management of side effects in TB and MDR-TB with further potential in other conditions.

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P31

CHARACTERISTICS ASSOCIATED WITH TREATMENT DECISIONS AND OUTCOMES IN NON-TUBERCULOUS MYCOBACTERIAL PULMONARY DISEASE: A RETROSPECTIVE COHORT STUDY

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Introduction Despite comprehensive guidelines the decision to treat non-tuberculous mycobacterial pulmonary disease (NTM-PD) is often determined by individual patient characteristics. The factors driving such decisions are reported infrequently in UK cohorts, and often exclude the immunosuppressed. Here we evaluate the features associated with treatment initiation in NTM-PD, and subsequent clinical outcomes.

Methods Positive non-tuberculous mycobacteria (NTM) samples from our hospital sites between 2011–13 and 2017–21 were analysed. Patients with respiratory isolates meeting the ATS/IDSA microbiological diagnostic criteria were included, and their digital hospital records examined. Multivariable logistic regression analyses were performed to examine characteristics significantly associated with treatment initiation and favourable clinical outcomes.

Results 125 patients were identified (table 1); 116 (93%) had abnormal imaging. 43 (34%) of the total cohort received specific antimicrobial therapy for NTM - 36% in 2011–13, compared to 31% in 2017–21 ($p=0.6$). Cavitary change on imaging was the only variable significantly associated with commencing treatment (OR 9.57 [95% CI 2.30–39.70; $p<0.01$]). Patients who isolated *Mycobacterium avium* complex, *M. kansasii* or *M. xenopi* appeared more likely to receive treatment. Those aged ≥ 80 were significantly more likely to not improve with NTM treatment (OR 0.69 [95% CI 0.48–0.99; $p=0.04$]), though overall there was a positive trend toward clinical improvement in the treated cohort (OR 1.23 [95% CI 0.98–1.54; $p=0.08$]). Over a median follow-up of 16 months (IQR 5–36 months), 36 patients (29%) died: this was not associated with any independent variable.

Abstract P31 Table 1

Descriptive Statistics of Cohort (n=125)

Median age (IQR)	68 (56–75)	
Sex	Female	70 (56%)
NTM species isolated	<i>Mycobacterium avium</i> complex (MAC)	78 (62.4%)
	<i>M. kansasii</i>	7 (5.6%)
	<i>M. xenopi</i>	4 (3.2%)
	Rapid-growing species	18 (14.4%)
	Other slow-growing species	8 (6.4%)
Radiological changes at diagnosis	Species undefined/mix	10 (8%)
	Nodular/bronchiectatic	61 (48.8%)
	Cavitating	28 (22.4%)
	Other	27 (21.6%)
Comorbidities	Normal/Unavailable	9 (7.2%)
	Immunosuppressed ⁱ	36 (29%)
	Known lung disease (e.g. bronchiectasis, COPD, fibrosis)	81 (64.8%)
	Malignancy (ongoing)	16 (12.8%)
	GORD	12 (9.6%)
Received NTM antimicrobial therapy	Yes	43 (34.4%)
	No	82 (65.6%)
Death from any cause during follow-up	Yes	36 (28.8%)
	Of those who received NTM treatment	14 (32%)
	Of those who did not receive NTM treatment	22 (27%)

¹Includes patients with HIV (n=10, with non-disseminated NTM disease), immunoglobulin deficiencies, active haematological malignancies, and significant doses of immunosuppressant medication.