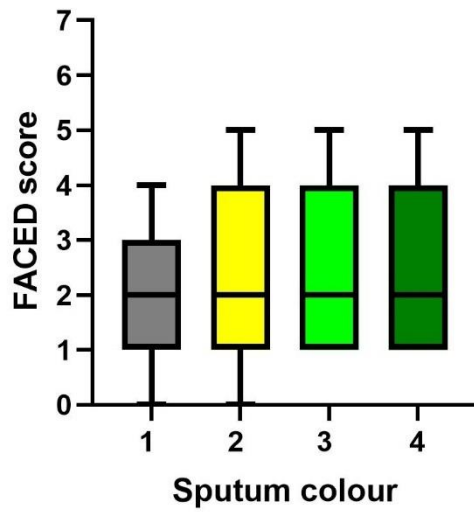


Supplementary data



Supplementary Figure S1: The relationship between Faced score and Sputum colour ($p < 0.0001$ by Kruskal Wallis test).

Aetiology	Odds ratio (95%CI)	P-value
Idiopathic	1.00 (reference)	n/a
Post-infective	1.05 (0.94-1.18)	0.41
Tuberculosis	0.70 (0.59-0.85)	<0.0001
NTM infection	0.96 (0.61-1.52)	0.87
ABPA	1.00 (0.78-1.28)	1.0
Rheumatoid arthritis	1.08 (0.83-1.42)	0.56
Primary ciliary dyskinesia	1.50 (1.20-1.87)	<0.0001
Asthma	0.97 (0.80-1.17)	0.73
COPD	0.98 (0.93-1.16)	0.80
GORD/aspiration	0.99 (0.69-1.40)	0.93
Immunodeficiency	1.25 (1.00-1.56)	0.050
Alpha-1 anti-trypsin deficiency	1.23 (0.70-2.15)	0.48
Inflammatory bowel disease	0.99 (0.63-1.56)	0.98
Connective tissue disease	1.35 (0.88-2.06)	0.17
Obstructive	1.18 (0.25-5.70)	0.84

Table S1. Unadjusted odds ratios for different aetiologies and their relationship with purulent sputum (grades 3 or 4 on the sputum colour chart) compared to idiopathic bronchiectasis which is the reference group.

	BSI			FACED		
	Mild	Moderate	Severe	Mild	Moderate	Severe
Mucoid	1546 (31.8%)	1781 (36.7%)	1531 (31.5%)	3050 (62.8%)	1477 (30.4%)	331 (6.8%)
Mucopurulent	1098 (22.6%)	1766 (36.4%)	1992 (41.0%)	2752 (56.7%)	1602 (33.0%)	502 (10.3%)
Purulent	435 (18.5%)	831 (35.3%)	1091 (46.3%)	1254 (53.2%)	811 (34.4%)	292 (12.4%)
Very purulent	29 (18.4%)	48 (30.4%)	81 (51.3%)	80 (50.6%)	47 (29.7%)	31 (19.6%)

Table S2. Disease severity and its relationship with sputum purulence

	Mucoid	Mucopurulent	Purulent	Severe purulent
N	4858	4856	2357	158
<i>P. aeruginosa</i>	620 (12.8%)	1127 (23.2%)	709 (30.1%)	48 (30.4%)
<i>H. influenzae</i>	546 (11.2%)	765 (15.8%)	386 (16.4%)	23 (14.6%)
<i>M. catarrhalis</i>	127 (2.6%)	179 (3.7%)	74 (3.1%)	8 (5.1%)
<i>Enterobacteriaceae</i>	268 (5.5%)	362 (7.5%)	255 (10.8%)	15 (9.5%)
<i>Staphylococcus aureus</i>	180 (3.7%)	299 (6.2%)	174 (7.4%)	12 (7.6%)
<i>Streptococcus pneumoniae</i>	217 (4.5%)	251 (5.2%)	139 (5.9%)	17 (10.8%)
<i>Stenotrophomonas maltophilia</i>	45 (0.9%)	79 (1.6%)	49 (2.1%)	2 (1.3%)
<i>Serratia marcescens</i>	36 (0.7%)	50 (1.0%)	31 (1.3%)	2 (1.3%)
<i>Acromobacter xyloxidans</i>	18 (0.4%)	33 (0.7%)	16 (0.7%)	0 (0%)
<i>Haemophilus parainfluenzae</i>	52 (1.1%)	54 (1.1%)	37 (1.6%)	0 (0%)
<i>P. aeruginosa</i> chronic infection	797 (16.4%)	1346 (27.7%)	804 (34.1%)	57 (36.1%)
Any positive culture	1279 (26.3%)	1863 (38.4%)	1026 (43.5%)	84 (53.2%)

Table S3. The frequency of different bacteria identified in sputum at baseline according to the sputum colour at baseline.

Subgroup	Mucoid	Mucopurulent	Purulent	Severely purulent
Severity				
Mild	1.0 (reference)	1.19 (1.04-1.36)	0.99 (0.81-1.21)	1.95 (1.10-3.48)
Moderate	1.0 (reference)	1.24 (1.12-1.37)	1.30 (1.14-1.48)	2.10 (1.39-3.16)
Severe	1.0 (reference)	1.19 (1.08-1.32)	1.48 (1.32-1.65)	1.47 (1.08-2.01)
Microbiology				
Pseudomonas +ve	1.0 (reference)	1.05 (0.91-1.22)	1.39 (1.18-1.63)	1.13 (0.74-1.73)
Pseudomonas -ve	1.0 (reference)	1.31 (1.22-1.40)	1.43 (1.31-1.57)	2.15 (1.65-2.82)
Past history of exacerbations				
0	1.0 (reference)	1.28 (1.11-1.49)	1.25 (1.03-1.51)	1.83 (0.94-3.56)
1	1.0 (reference)	1.22 (1.05-1.43)	1.07 (0.87-1.31)	1.66 (0.90-3.08)
2	1.0 (reference)	1.03 (0.89-1.20)	1.20 (0.99-1.47)	2.01 (1.05-3.85)
3 or more	1.0 (reference)	1.22 (1.11-1.33)	1.49 (1.34-1.66)	1.54 (1.15-2.06)
Lung Function				
>80% predicted	1.0 (reference)	1.24 (1.11-1.37)	1.38 (1.20-1.58)	2.45 (1.67-3.59)
50-80% predicted	1.0 (reference)	1.38 (1.24-1.54)	1.52 (1.34-1.74)	1.68 (1.14-2.46)
30-49% predicted	1.0 (reference)	1.22 (1.05-1.41)	1.52 (1.27-1.81)	1.19 (0.62-2.28)
<30% predicted	1.0 (reference)	0.93 (0.71-1.21)	1.44 (1.06-1.94)	2.75 (1.11-6.82)
Treatments				
Long term macrolide use	1.0 (reference)	1.34 (1.16-1.55)	1.97 (1.68-2.33)	1.85 (1.14-2.99)
Long term inhaled antibiotic use	1.0 (reference)	1.25 (1.00-1.57)	1.72 (1.35-2.18)	1.27 (0.69-2.33)

Table S4. The relationship between baseline clinical parameters and exacerbations during follow-up (data are presented as incidence rate ratios with 95% confidence intervals).

Sputum group	Hazard ratio for time for first severe exacerbation (95%CI)
Mucoid	1.0 (reference)
Mucopurulent	1.18 (1.07-1.29)
Purulent	1.54 (1.38-1.71)
Severely purulent	1.75 (1.29-2.37)

Table S5. Time to first severe exacerbation is associated with sputum colour at baseline.

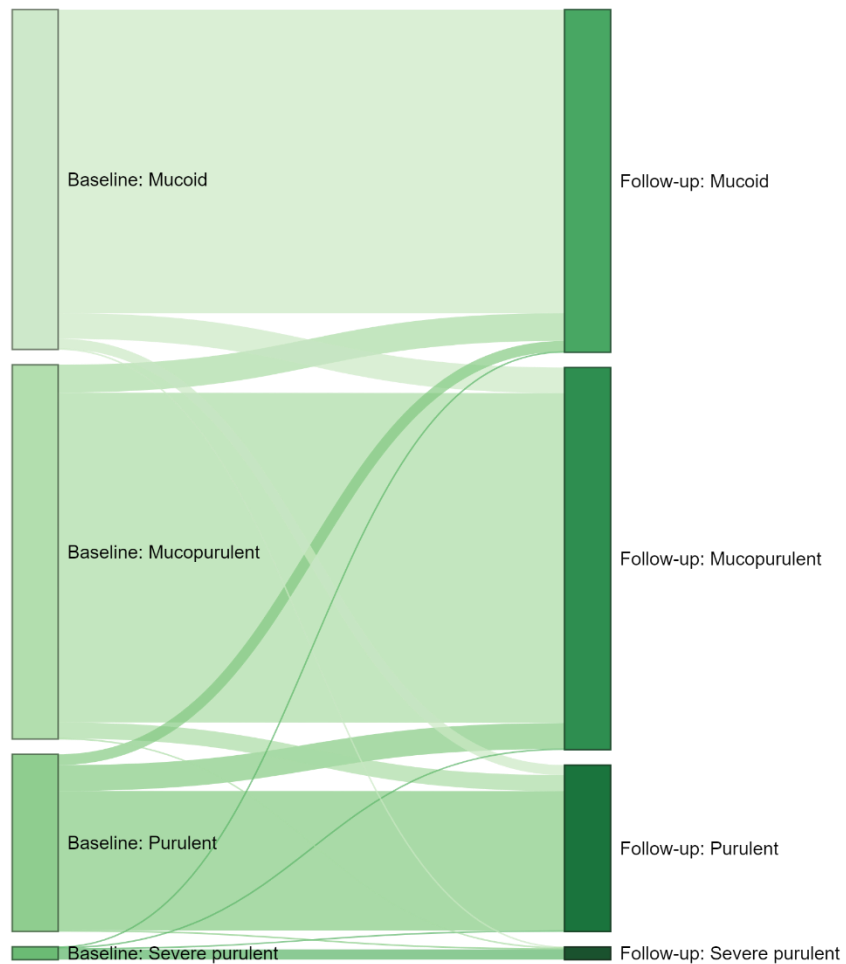


Figure S2. Sankey diagram showing stability of sputum colour over time from baseline to visit 1.