

Online supplement

Online table 1

Demographics of patients at time of CF diagnosis in the Pan-Thames region.

	Not screened (n=126)			Screened (n=214)	
	Symptomatic diagnosis (n=103)	Meconium ileus (n=10)	Asymptomatic at diagnosis (n=13)	NBS diagnosis (n=180)	Meconium ileus (n=34)
Age at diagnosis	Median 2.4 yrs IQR 0.8, 5.0 yrs Range 0.06 to 16.6 yrs	Median 15d IQR 9, 19.5 d Range 0 to 130 d *	Median 3.6 yrs IQR 0.03, 4.7 yrs Range 0 to 8.6 yrs	Median 20 d IQR 16, 31.3 days Range 0 to 795 days **	Median 15 d IQR 10, 20 d Range 0 to 97 d
Gender	50M:53F (48% male)	5M:5F (50% male)	6M:7F (46% male)	97M:83F (54% male)	20M:14F (59% male)
Ethnicity	89 White (86%) 3 Mixed (3%) 7 Asian (7%) 3 Black (3%) 1 Other (1%)	10 White (100%) 0 Mixed 0 Asian 0 Black 0 Other	11 White (85%) 0 Mixed 2 Asian (15%) 0 Black 0 Other	147 White (82%) 15 Mixed (8%) 13 Asian (7%) 1 Black (0.6%) 4 Other (2%)	28 White (82%) 2 Mixed (6%) 1 Asian (3%) 1 Black (3%) 2 Other (6%)
Mode of	Sweat 11 (11%) †	Sweat 2 (20%)	Sweat 1 (8%)	Sweat 7 (4%)	Sweat 1 (3%)

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diagnosis	DNA 11 (11%) Sweat & DNA 80 (78%)	DNA 7 (70%) Sweat & DNA 1 (10%)	DNA 7 (54%) Sweat & DNA 5 (39%)	DNA 53 (29%) Sweat & DNA 120 (67%)	DNA 27 (79%) Sweat & DNA 6 (18%)
Genotype	49 Δ F508/ Δ F508 (48%) 37 Δ F508/other (36%) 13 Other/other (13%) 4 No genes (4%)	7 Δ F508/ Δ F508 (70%) 3 Δ F508/other (30%) 0 Other/other 0 No genes	3 Δ F508/ Δ F508 (23%) 7 Δ F508/other (54%) 2 Other/other (15%) 1 No genes (8%)	90 Δ F508/ Δ F508 (50%) 66 Δ F508/other (37%) 23 Other/other (13%) 1 No genes (0.6%)	19 Δ F508/ Δ F508 (56%) 12 Δ F508/other (35%) 3 Other/other (9%) 0 No genes
Height z score	Median -1.1 IQR -2.0, -0.20 Range -4.9 to 1.6	Median -0.8 IQR -1.4, -0.2 Range -2.1 to 0.8	Median 0.0 IQR -0.5, 1.9 Range -2.0 to 4.3	Median -0.6 IQR -1.6, 0.04 Range -5.4 to 2.2	Median -1.2 IQR -1.8, -0.4 Range -3.0 to 0.9
Weight z score	Median -1.2 IQR -2.2, -0.4 Range -5.5 to 2.7	Median -1.2 IQR -2.3, -0.8 Range -2.9 to 0.7	Median -0.4 IQR -0.8, 0.5 Range -1.7 to 2.5	Median -1.2 IQR -2.0, -0.6 Range -4.1 to 2.5	Median -1.6 IQR -2.3, -1.0 Range -3.7 to -0.1
BMI z score	Median -0.5	Median -1.1	Median -0.5	Median -1.0	Median -1.6

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	IQR -1.2, 0.2	IQR -1.9, -0.6	IQR -1.0, 0.8	IQR -1.9, -0.1	IQR -2.3, -0.8
	Range -5.0 to 2.6	Range -2.9 to 2.1	Range -5.0 to 1.2	Range -7.7 to 3.7	Range -4.4 to 0.1
Stool elastase	n=71	n=8	n=10	n=175	n=21
Low <100 mcg/g	69 low (77%)	8 low (100%)	6 low (60%)	131 low (75%)	21 low (100%)
Mod low 100-200	2 moderately low (2%)		4 normal (40%)	10 moderately low (6%)	
Normal >200	19 normal (21%)			34 normal (19%)	
1 st respiratory	n=103	n=10	n=13	n=179	n=34
culture ‡	51 positive (50%)	3 positive (30%)	3 positive (23%)	35 positive (20%)	3 positive (9%)
	20 PsA (19%)	1 PsA (10%)	2 PsA (15%)	3 PsA (2%)	0 PsA
	32 SA (31%)	1 SA (10%)	2 SA (15%)	31 SA (17%)	2 SA (6%)
	5 HI (5%)	0 HI	0 HI	3 HI (2%)	1 HI (3%)
	1 MC (1%)	1 MC (10%)	0 MC	3 MC (2%)	0 MC
Age at 1 st PsA	n=79	n=6	n=5	n=79	n=20

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isolation	Median 3.4 yrs IQR 1.9, 6.7 yrs Range 0.4 to 18.4 yrs	Median 1.3 yrs IQR 0.5, 1.6 yrs Range 0.2 to 2.1 yrs	Median 1.1 yrs IQR 0.6, 4.2 yrs Range 0.4 to 4.7 yrs	Median 1.0 yrs IQR 0.6, 1.6 yrs Range 0.1 to 3.1 yrs	Median 0.6 yrs IQR 0.3, 1.0 yrs Range 0.1 to 2.3 yrs
Age at 1 st SA isolation	n=59 Median 3.8 yrs IQR 2.1, 7.0 yrs Range 0.2 to 15.9 yrs	n=6 Median 2.5 yrs IQR 0.8, 3.7 yrs Range 0.04 to 5.3 yrs	n=6 Median 6.5 yrs IQR 4.6, 8.1 yrs Range 3.4 to 8.7 yrs	n=62 Median 0.2 years IQR 0.1, 1.4 yrs Range 0.05 to 3.3 yrs	n=9 Median 0.5 yrs IQR 0.1, 2.1 yrs Range 0.05 to 3.9 yrs

* 9/10 had CF diagnosis confirmed within 1 month of age. One child had a high IRT and one CF gene identified, the 2nd gene was never found and a sweat test was positive at 130d of age, although the child was presumed to have CF all along.

** This group includes the 10 patients with false negative screening results.

† One child diagnosed by nasal potential difference; CF diagnosis based on persistently abnormal ion transfer on 2 occasions with blunted chloride secretion.

‡ PsA = *Pseudomonas aeruginosa*; SA = *Staphylococcus aureus*; HI = *Haemophilus influenzae*; MC = *Moraxella catarrhalis*. There were no growths of *Burkholderia cepacia* complex nor MRSA.

Online table 2

Ethnicity of the study population.

Ethnicity	No.	%
White British	257	74.1
White Irish	4	1.2
White other	31	8.9
Mixed White/Black Caribbean	5	1.4
Mixed White/Black African	1	0.3
Mixed White/Asian	6	1.7
Other mixed	8	2.3
Indian	6	1.7
Pakistani	8	2.3
Bangladeshi	6	1.7
Other Asian	3	0.9
Black Caribbean	2	0.6
Black African	2	0.6
Other Black	1	0.3
Chinese	0	0
Other ethnic	7	2.0
Total	347	

Online table 3

Commonest presenting symptoms at presentation in the 103 patients with a symptomatic diagnosis prior to NBS.

Symptoms	%
Loose stools	55%
Poor weight gain	50%
Recurrent chest infections	43%
Chronic cough	32%
Rectal prolapse	13%
Chronic wheeze	13%
Pseudo-Bartters syndrome	3%
Nasal polyps	2%
Congenital hyperbilirubinaemia	2%

Online table 4

Clinical details of (non-screened) symptomatically diagnosed CF patients (n=10) in whom diagnosis was made more than 6 years after their initial presentation.

Patient	Time from 1st presentation to diagnosis (yrs)	Age at diagnosis (yrs)	Clinical presentation	Genotype
1	6.0	6.5	Chronic cough, managed as asthma, cachexia, clubbing.	p.Phe508del / p.Phe508del
2	6.7	7.4	Recurrent chest infections.	c.3717+10kbC>T / p.Tyr1092X
3	6.7	7.7	Productive cough, recurrent chest infections, recurrent <i>S. aureus</i> in sputum, early bronchiectasis, clubbing.	p.Phe508del / p.Arg117His
4	7.3	7.5	Wheeze, recurrent chest infections, managed as asthma.	p.Phe508del / unknown
5	8.1	10.0	Recurrent cough, diarrhoea, oily stools.	p.Phe508del / p.Phe508del
6	9.2	9.6	Chronic cough & oily stools.	p.Phe508del / p.Phe508del
7	9.2	11.4	Chronic cough, recurrent chest infections, oily stools.	p.Phe508del / p.Phe508del
8	9.4	9.7	Recurrent chest infections, clubbing, poor weight gain.	p.Phe508del / p.Phe508del
9	10.8	13.8	Steatorrhoea, failure to thrive, chronic cough, several normal sweat test.	p.Phe508del / p.Gly551Asp
10	16.1	16.6	Loose stools, recurrent chest infections, 12 admissions with pneumonia, multiple insufficient sweat samples (eventually positive), colitis.	Unknown

Legend for online figure

Online figure 1

Age distribution at CF diagnosis in Pan-Thames region, of 73 patients diagnosed in the 18 months before (black line) and 274 patients in the 4 years after (grey line) initiation of NBS. The latter group includes 54 patients born before NBS started but diagnosed in the second time period.

