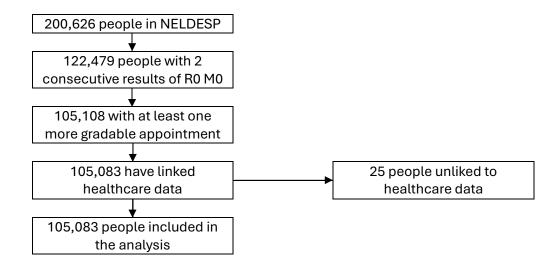
Supplementary material

ESM Figure 1: Inclusion criteria for analysis within NELDESP



ESM Table 1: Baseline characteristics of the NEL DESP cohort among those with no DR on two consecutive annual screening visits and another gradable appointment

Characteristic	Number of people (%)
Total	105,083
Age categories	
<30yr	2976 (2.83%)
31 to 40yr	8468 (8.06%)
41 to 50yr	20549 (19.56%)
51 to 60yr	28234 (26.87%)
61 to 70yr	23676 (22.53%)
71yr and over	21180 (20.16%)
Sex	
Female	50152 (47.73%)
Male	54931 (52.27%)
Ethnicity	
White	38532 (36.67%)
Black	17170 (16.34%)
South Asian	38047 (36.21%)
Any other Asian	6922 (6.59%)
Mixed	1330 (1.27%)
Other	3082 (2.93%)
Duration of diabetes	
Less than 10 years	87540 (83.31%)
More than 10 years	17543 (16.69%)
Type of diabetes	
Type 2	100225 (95.38%)
Type 1	2947 (2.8%)
Other	58 (0.06%)
Missing	1853 (1.76%)
Deprivation (IMD quintiles)	
1	36365 (34.61%)
2	35129 (33.43%)
3	19393 (18.45%)
4	9388 (8.93%)
5	3434 (3.27%)
Not given	1374 (1.31%)

ESM Table 2: Logistic prediction Model 1 using DESP covariates and no ethnicity

Characteristic	Odds ratio (95% CI)	p-value	Coefficient
(Intercept)	7.64 x10 ⁻¹³ (1x10 ⁻¹⁵ , 5.82x10 ⁻¹⁰)	1.69x10 ⁻¹⁶	-27.9
Age in years	1.97 (1.72, 2.26)	4.52x10 ⁻²²	0.678
Age ^a	1.53e-23 (2.01x10 ⁻²⁸ , 1.17x10 ⁻¹⁸)	5.35x10 ⁻²⁰	-52.5
Time since Diagnosis ^b	7170 (2020-25500)	7x10 ⁻⁴³	8.88
Type 1 diabetes	5.46x10 ⁻⁸ (4.96x10 ⁻¹⁰ , 6.01x10 ⁻⁶)	3.1x10 ⁻¹²	-16.7
Time since diagnosis (days) /10000	0.313 (0.211, 0.464)	6.84x10 ⁻⁹	-1.16
Previously not attended an appointment	0.0156 (0.00885, 0.0275)	5.11x10 ⁻⁴⁷	-4.16

^aAge is the transformation of (age in years/100)^3

^bTime since Diagnosis is the transformation of log(Time since diagnosis (days) /10000)

ESM Table 3: Logistic prediction Model 2 using DESP covariates and ethnicity

Characteristic	Odds ratio (95% CI)	p-value	Coefficient
(Intercept)	0.0188 (0.00163, 0.217)	0.00146	-3.97
Age in years	0.931 (0.885, 0.979)	0.0053	-0.0714
Age ^a	4.11 (0.0455, 371)	0.539	1.41
Time since Diagnosis ^b	4.48 (2.56, 7.84)	1.5x10 ⁻⁷	1.5
Type 1 diabetes	0.658 (0.192, 2.25)	0.505	-0.419
Time since diagnosis (days)	1.33 (0.279, 6.35)	0.72	0.285
/10000			
Black	1.77 (0.936, 3.33)	0.0792	0.568
South Asian	1.07 (0.601, 1.92)	0.81	0.0711
Other Asian	1.7 (0.714, 4.04)	0.231	0.529
Mixed	2.13 (0.331, 13.7)	0.426	0.755
Other	4.2 (1.44, 12.3)	0.0088	1.44
Previously not attended an	1.47 (1.05, 2.06)	0.0254	0.385
appointment			

^aAge is the transformation of (age in years/100)^3

^bTime since Diagnosis is the transformation of log(Time since diagnosis (days) /10000)

ESM Table 4: Logistic prediction Model 3 using DESP and Health care record covariates, excluding ethnicity

Characteristic	Odds ratio (95% CI)	p-value	Coefficient
(Intercept)	5.55x10 ⁻⁶ (1.14x10 ⁻¹⁰ , 0.271)	0.028	-12.1
Age ^a in years	1.52 (1.35, 1.71)	2.95x10 ⁻¹²	0.421
(age/100)^3	2.03x10 ⁻¹³ (1.75x10 ⁻¹⁷ , 2.36x10 ⁻⁰⁹)	9.35x10 ⁻¹⁰	-29.2
Time since Diagnosis ^b Type 1 diabetes	8.83 (3.93, 19.9) 7.03x10 ⁻⁶ (9.99x10 ⁻⁸ , 0.000494)	1.37x10 ⁻⁰⁷ 4.55x10 ⁻⁸	2.18 -11.9
Time since diagnosis (days) /10000	1.43 (0.0766, 26.8)	0.81	0.36
Previously not attended an appointment	0.184 (0.117, 0.291)	3.58x10 ⁻¹³	-1.69
Diastolic per mmHg	0.852 (0.795, 0.913)	6.1x10 ⁻⁶	-0.16
Standard deviation of HbA1c mmol/mol values	0.9488 (0.7517, 1.1977)	0.658	-0.0526
HbA1c ^c	0.29 (0.0879, 0.957)	0.0422	-1.24
HbA1c ^d	21500 (612, 754000)	3.91x10 ⁻⁸	9.98
HbA1c ^e	0.9942 (0.9886, 0.9998)	0.0413	-0.0058

^aAge is the transformation of (age in years/100)^3

^bTime since Diagnosis is the transformation of log(Time since diagnosis (days) /10000)

[°]HbA1c is the transformation of Median HbA1c mmol/mol / 10.929 +2.15

^dHbA1c is the transformation of (Median HbA1c mmol/mol /109.29 +0.215)^3

[°]HbA1c is the transformation of (Standard deviation of HbA1c mmol/mol values) ^2

ESM Table 5: Logistic prediction Model 4 using DESP and health record covariates, including ethnicity

Characteristic	Odds ratio (95% CI)	p-value	Coefficient
(Intercept)	0.00012 (3.52x10 ⁻⁵ ,	7.16x10 ⁻	-9.02
	0.000412)	47	
Age in years	0.963 (0.95, 0.977)	1.26x10 ⁻⁷	-0.0377
Age ^a	19.5 (5.87, 65)	1.26x10 ⁻⁶	2.97
Time since	0.832 (0.474, 1.46)	0.523	-0.184
diagnosis			
(days) /10000			
Time since	1.74 (1.39, 2.17)	9.81x10 ⁻⁷	0.552
Diagnosis ^b	,		
Type 1	0.786 (0.551, 1.12)	0.185	-0.24
diabetes	,		
Black	2.02 (1.74, 2.35)	9.76x10⁻	0.704
	, ,	20	
South Asian	1.47 (1.27, 1.69)	1.27x10 ⁻	0.383
	, , ,	07	
Other Asian	1.62 (1.3, 2.01)	1.35x10⁻⁵	0.481
Mixed	1.84 (1.15, 2.94)	0.0106	0.61
Other	1.15 (0.799, 1.64)	0.457	0.137
Standard	1.05 (1.03, 1.07)	6.64x10 ⁻⁷	
deviation of	(1100)		
HbA1c			
mmol/mol			
HbA1c ^c	816 (195, 3420)	4.63x10 ⁻	6.7
TIDATO	010 (100, 0420)	20	0.7
Previously not	1.27 (1.14, 1.41)	1.44x10 ⁻⁵	0.238
attended an	1.27 (1.14, 1.41)	1.44710	0.230
appointment			
diastolic	1.01 (1, 1.02)	0.000656	0.0111
	•		
HbA1c ^d	0.313 (0.18, 0.544)	3.81x10 ⁻⁵	-1.16
HbA1c ^e	0.9990 (0.9985, 0.9994)	8.85x10 ⁻⁶	-0.001

^aAge is the transformation of (age in years/100)^3

^bTime since Diagnosis is the transformation of log(Time since diagnosis (days) /10000)

[°]HbA1c is the transformation of Median HbA1c mmol/mol / 109.29 +0.215

^dHbA1c is the transformation of (Median HbA1c mmol/mol /109.29 +0.215)^3

eHbA1c is the transformation of (Standard deviation of HbA1c values) ^2

ESM Table 6: Probability of STDR diagnosis per appointment in NEL DESP

	Annual	Biennial	Model 1 (DESP excluding ethnicity)	Model 2 (DESP including ethnicity)	Model 3 (Healthcare records excluding ethnicity)	Model 4 (Healthcare records including ethnicity)	Model 5 (Points risk Score)
Aged 41	1 years or old	ler, less thar	10 years du	ration of dia			
White	0.00374	0.0104	0.00891	0.0103	0.00896	0.00911	0.0104
	(0.00345,	(0.00962,	(0.00822,	(0.00947,	(0.00827,	(0.00841,	(0.00956,
	0.00405)	0.0113)	0.00966)	0.0111)	0.00971)	0.00988)	0.0112)
Black	0.00858	0.0239	0.0216	0.0208	0.0219	0.0219	0.0183
	(0.00791,	(0.022,	(0.0199,	(0.0192,	(0.0202,	(0.0202,	(0.0169,
	0.00931)	0.0259)	0.0234)	0.0225)	0.0238)	0.0238)	0.0198)
South	0.00616	0.0168	0.0152	0.0158	0.0152	0.0155	0.0165
Asian	(0.00575,	(0.0158,	(0.0142,	(0.0148,	(0.0142,	(0.0145,	(0.0154,
	0.00658)	0.018)	0.0163)	0.0169)	0.0163)	0.0166)	0.0176)
Other	0.00575	0.0156	0.0136	0.0136	0.0138	0.0139	0.0117
Asian	(0.00493,	(0.0134,	(0.0117,	(0.0117,	(0.0118,	(0.0119,	(0.0101,
	0.00671)	0.0181)	0.0158)	0.0158)	0.016)	0.0162)	0.0137)
Mixed	0.00799	0.023	0.0214	0.0201	0.0216	0.0218	0.0188
	(0.00585,	(0.0169,	(0.0157,	(0.0147,	(0.0159,	(0.016,	(0.0138,
	0.0109)	0.0314)	0.0291)	0.0274)	0.0294)	0.0297)	0.0256)
Other	0.00556	0.0156	0.0139	0.0105	0.0138	0.0142	0.00845
	(0.00438,	(0.0123,	(0.011,	(0.00827,	(0.0109,	(0.0112,	(0.00666,
	0.00705)	0.0197)	0.0176)	0.0133)	0.0175)	0.0179)	0.0107)
Aged 41	1 years or old	ler, 10 years	duration of	diabetes or r	nore	,	•
White	0.00603	0.0166	0.0101	0.0129	0.0101	0.0113	0.012
	(0.00523,	(0.0144,	(0.00881,	(0.0112,	(0.00877,	(0.00984,	(0.0104,
	0.00695)	0.0191)	0.0117)	0.0149)	0.0116)	0.0131)	0.0138)
Black	0.0129	0.0348	0.0232	0.02	0.0225	0.0256	0.0163
	(0.0112,	(0.0304,	(0.0202,	(0.0175,	(0.0196,	(0.0224,	(0.0142,
	0.0147)	0.0397)	0.0265)	0.0229)	0.0257)	0.0293)	0.0186)
South	0.0124	0.033	0.0223	0.0208	0.0207	0.0248	0.0225
Asian	(0.0113,	(0.03,	(0.0202,	(0.0189,	(0.0188,	(0.0225,	(0.0205,
	0.0137)	0.0362)	0.0245)	0.0229)	0.0228)	0.0272)	0.0248)
Other	0.0109	0.0286	0.0181	0.0161	0.0176	0.0201	0.0135
Asian	(0.00857,	(0.0227,	(0.0143,	(0.0127,	(0.0139,	(0.0159,	(0.0107,
	0.0137)	0.0362)	0.0229)	0.0203)	0.0222)	0.0254)	0.0171)
Mixed	0.00581	0.0162	0.0109	0.00815	0.0108	0.0125	0.00738
	(0.00226,	(0.00632,	(0.00425,	(0.00317,	(0.00421,	(0.00487,	(0.00287,
	0.0148)	0.0409)	0.0277)	0.0208)	0.0275)	0.0317)	0.0188)
Other	0.0131	0.0353	0.0234	0.017	0.022	0.0268	0.0168
	(0.00929,	(0.0251,	(0.0166,	(0.0121,	(0.0156,	(0.019,	(0.0119,
	0.0184)	0.0494)	0.0329)	0.0239)	0.0309)	0.0376)	0.0236)
Aged 40) years or you	•				,	
White	0.00949	0.0278	0.0277	0.0187	0.0276	0.0277	0.0191
	(0.0079,	(0.0232,	(0.0231,	(0.0156,	(0.023,	(0.0231,	(0.0159,
	0.0114)	0.0333)	0.0332)	0.0224)	0.0331)	0.0332)	0.0229)
	3.3117)	3.3333	0.0002)	0.02271	5.5551)	5.5502,	5.5220)

Black	0.0153	0.0435	0.0434	0.0275	0.0432	0.0434	0.0239
	(0.0126,	(0.0359,	(0.0358,	(0.0227,	(0.0357,	(0.0358,	(0.0197,
	0.0186)	0.0525)	0.0525)	0.0333)	0.0522)	0.0525)	0.0289)
South	0.00766	0.0215	0.0214	0.0156	0.0214	0.0214	0.0169
Asian	(0.00674,	(0.0189,	(0.0188,	(0.0137,	(0.0188,	(0.0189,	(0.0149,
	0.00871)	0.0244)	0.0243)	0.0177)	0.0243)	0.0243)	0.0192)
Other	0.00906	0.0254	0.0254	0.0164	0.0253	0.0254	0.0142
Asian	(0.00643,	(0.018,	(0.018,	(0.0116,	(0.018,	(0.018,	(0.0101,
	0.0128)	0.0356)	0.0356)	0.0231)	0.0355)	0.0356)	0.02)
Mixed	0.0116	0.0378	0.0378	0.0228	0.0378	0.0378	0.0196
	(0.00611,	(0.02,	(0.02,	(0.012,	(0.02,	(0.02,	(0.0103,
	0.0219)	0.0703)	0.0703)	0.0427)	0.0703)	0.0703)	0.0368)
Other	0.0119	0.0339	0.0339	0.0181	0.0338	0.0339	0.0159
	(0.00742,	(0.0213,	(0.0213,	(0.0113,	(0.0212,	(0.0213,	(0.00997,
	0.0189)	0.0537)	0.0537)	0.0288)	0.0535)	0.0537)	0.0254)

ESM Table 7: Baseline characteristics of the SELDESP cohort among those with no DR on two consecutive annual screening visits and another gradable appointment

Characteristic	Number of people (%)
Total	79296
Age categories	
<31yr	2162 (2.7%)
31 to 40yr	4106 (5.2%)
41 to 50yr	12450 (15.7%)
51 to 60yr	21742 (27.1%)
61 to 70yr	19694 (24.8%)
71yr and over	19412 (24.5%)
Sex	
Female	37371 (47.1%)
Male	41910 (52.9%)
Missing	15 (0.02%)
Ethnicity	
White	41335 (52.1%)
Black	21471 (27.1%)
South Asian	5202 (6.6%)
Any other Asian	5054 (6.4%)
Mixed	2103 (2.7%)
Other	2035 (2.6%)
Missing	2096 (2.6%)
Duration of diabetes	
Less than 10 years	64845(81.8%)
More than 10 years	14451 (18.2%)
Type of diabetes	
Type 2	75943 (95.8%)
Type 1	3017 (3.8%)
Other	121 (0.15%)
Missing	215 (0.27%)
Deprivation (IMD quintiles)	
1	9900 (12.5%)
2	8746(11.0%)
3	4669 (5.9%)
4	2616 (3.3%)
5	1789 (2.3%)
Not given	51576 (65.0%)

ESM Table 8: Number of appointments and number of delayed STDR if the screening protocols had been implemented in SEL DESP

	Annual	Biennial	Model 1 ^a (DESP excluding ethnicity)	Model 2 ^a (DESP including ethnicity)	Model 5 ^a (Points risk Score)
Number of appointments	295,805 (100%)	140,131 (47%)	165,768 (56%)	162,781(55%)	166,469 (56%)
Number of non- delayed STDR	2532 (100%)	1662 (66%)	1858 (73%)	1949 (77%)	1963 (78%)

^aThe models were applied to all appointments and those with the highest 20% of risk were seen annually with everyone else seen biennially

ESM Table 9: Risk Ratio (95% CI) of STDR diagnosis per appointment under different protocols in SEL DESP

	Annual	Biennial	Model 1 (DESP excluding ethnicity)	Model 2 (DESP including ethnicity)	Model 5 (Points risk Score)			
Aged 41 years or older, less than 10 years duration of diabetes								
White	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)	1 (1, 1)			
Black	2.33 (2.09,	2.36 (2.13,	2.43 (2.18,	2.13 (1.91,	1.96 (1.76,			
	2.59)	2.63)	2.70)	2.37)	2.18)			
South Asian	1.47 (1.22,	1.6 (1.33, 1.91)	1.58 (1.32,	1.53 (1.28,	1.56 (1.3,			
	1.76)		1.89)	1.83)	1.87)			
Other Asian	1.39 (1.16,	1.53 (1.27,	1.52 (1.26,	1.38 (1.15,	1.27 (1.06,			
	1.68)	1.83)	1.82)	1.66)	1.53)			
Mixed	1.71 (1.38,	2.03 (1.65, 2.5)	1.98 (1.61,	1.81 (1.47,	1.78 (1.44,			
	2.10)		2.44)	2.23)	2.19)			
Other	1.50 (1.20,	1.8 (1.45, 2.25)	1.76 (1.41,	1.45 (1.16,	1.29 (1.03,			
	1.88)	,	2.20)	1.81)	1.61)			
Aged 41 years	or older, 10 years d	luration of diabete		,	,			
White	1.64 (1.43, 1.9)		1.14 (0.99,	1.43 (1.24,	1.52 (1.32,			
	, ,	1.94)	1.31)	1.64)	1.75)			
Black	3.57 (3.12,	3.8 (3.33, 4.33)	2.68 (2.35,	2.56 (2.24,	2.46 (2.15,			
	4.07)	, , ,	3.06)	2.92)	2.8)			
South Asian	2.35 (1.93,	2.79 (2.30,	2.11 (1.74,	2.29 (1.89,	2.51 (2.07,			
	2.85)	3.37)	2.56)	2.78)	3.04)			
Other Asian	1.77 (1.41,	2.15 (1.72,	1.65 (1.32,	1.63 (1.30,	1.58 (1.26,			
	2.22)	2.69)	2.07)	2.04)	1.98)			
Mixed	1.89 (1.48,	2.5 (1.97, 3.19)	2.13 (1.67,	2.07 (1.62,	2.12 (1.66,			
	2.41)	,	2.71)	2.63)	2.7)			
Other	1.78 (1.38,	2.36 (1.84,	1.98 (1.54,	1.87 (1.46,	1.89 (1.47,			
	2.28)	3.03)	2.55)	2.40)	2.42)			
Aged 40 years	•	,	,	,	,			
White	2.42 (2.05,	2.85 (2.42,	2.91 (2.47,	2.14 (1.81,	2.13 (1.81,			
	2.85)	3.36)	3.43)	2.52)	2.51)			
Black	3.17 (2.70,	3.74 (3.20,	3.77 [°] (3.21,	2.82 (2.41,	2.58 (2.2,			
	3.72)	4.39)	4.41)	3.31)	3.02)			
South Asian	1.95 (1.55,	2.53 (2.02,	2.44 (1.94,	2.17 (1.73,	2.25 (1.79,			
	2.45)	3.18)	3.06)	2.72)	2.82)			
Other Asian	1.97 (1.56,	2.56 (2.04,	2.46 (1.96,	2.11 (1.68,	2.02 (1.61,			
	2.48)	3.22)	3.09)	2.66)	2.54)			
Mixed	1.77 (1.37,	2.4 (1.86, 3.09)	2.26 (1.75,	2.05 (1.59,	2.04 (1.58,			
	2.28)	(= -, = = -)	2.91)	2.64)	2.63)			
Other	1.68 (1.29,	2.29 (1.76,	2.14 (1.65,	1.96 (1.51,	1.95 (1.5,			
	2.19)	2.98)	2.79)	2.55)	2.53)			

ESM Table 10: Probability of STDR diagnosis per appointment in SEL DESP

	Annual	Biennial	Model 1 (DESP	Model 2 (DESP	Model 5 (Points
			excluding	including	risk Score)
Agod 4	1 years or older, less	than 10 years dure	ethnicity)	ethnicity)	
White	0.00351	0.00968	0.00888	0.00955	0.00962
VVIIILE	(0.00323,0.00381)	(0.00891,0.0105)	(0.00817,0.00965)	(0.00879,0.0104)	(0.00886,0.0105)
Black	0.00876	0.0244	0.0231	0.0215	0.0198
Diack	(0.00813,0.00943)	(0.0227,0.0262)	(0.0215,0.0248)	(0.02,0.0231)	(0.0184,0.0213)
South	0.00498	0.0137	0.0127	0.0131	0.0135
Asian	(0.00404,0.00613)	(0.0111,0.0169)	(0.0104,0.0157)	(0.0106,0.0161)	(0.011,0.0166)
Other	0.0046	0.0128	0.0119	0.0112	0.0102
Asian	(0.00372,0.0057)	(0.0103,0.0158)	(0.00966,0.0148)	(0.00909,0.0139)	(0.00822,0.0126)
Mixed	0.0064	0.018	0.017	0.0153	0.0147
TIIACG	(0.00482,0.0085)	(0.0135,0.0238)	(0.0128,0.0225)	(0.0115,0.0203)	(0.0111,0.0195)
Other	0.00476	0.0136	0.0129	0.00964	0.00794
Other	(0.00342,0.00661)	(0.00981,0.0189)	(0.00928,0.0179)	(0.00694,0.0134)	(0.00571,0.011)
Δαρd Λ'	1 years or older, 10 y	·	,	(0.00034,0.0134)	(0.00371,0.011)
White	0.00598	0.0161	0.00955	0.0133	0.0144
VVIIICO	(0.00524,0.00682)	(0.0142,0.0184)	(0.00837,0.0109)	(0.0116,0.0151)	(0.0126,0.0164)
Black	0.0166	0.0448	0.0264	0.0267	0.0255
Diaok	(0.0148,0.0187)	(0.0399,0.0502)	(0.0235,0.0296)	(0.0238,0.03)	(0.0227,0.0286)
South	0.0127	0.0337	0.0195	0.0241	0.0285
Asian	(0.01,0.0161)	(0.0267,0.0425)	(0.0154,0.0246)	(0.0191,0.0305)	(0.0226,0.036)
Other	0.00722	0.0192	0.011	0.0114	0.0107
Asian	(0.00509,0.0102)	(0.0136,0.0272)	(0.00774,0.0155)	(0.00806,0.0162)	(0.00754,0.0151)
Mixed	0.0116	0.0319	0.0191	0.0181	0.0187
	(0.00735,0.0183)	(0.0203,0.0499)	(0.0121,0.03)	(0.0115,0.0284)	(0.0119,0.0294)
Other	0.00893	0.0243	0.0138	0.0118	0.0117
	(0.00523, 0.0152)	(0.0143, 0.0412)	(0.00809, 0.0235)	(0.00693,0.0202)	(0.00686,0.02)
Aged 40	0 years or younger	, ,	, ,	, ,	, ,
White	0.0109	0.0323	0.0322	0.0214	0.0212
	(0.00918,0.013)	(0.0272,0.0383)	(0.0271,0.0382)	(0.018, 0.0254)	(0.0179, 0.0252)
Black	0.0176	0.0499	0.0496	0.0321	0.0279
	(0.015, 0.0207)	(0.0425, 0.0585)	(0.0422, 0.0582)	(0.0273, 0.0377)	(0.0237, 0.0328)
South	0.0105	0.0304	0.0302	0.0217	0.0232
Asian	(0.0073, 0.015)	(0.0212, 0.0433)	(0.0211,0.0431)	(0.0151,0.031)	(0.0162, 0.0332)
Other	0.0111	0.0319	0.0318	0.0201	0.0174
Asian	(0.00766,0.0159)	(0.0222, 0.0458)	(0.0221,0.0456)	(0.014,0.029)	(0.0121,0.0251)
Mixed	0.00922	0.0274	0.0274	0.0161	0.0147
	(0.00516,0.0164)	(0.0153,0.0483)	(0.0153,0.0483)	(0.00902,0.0286)	(0.00821,0.0261)
Other	0.00676	0.019	0.019	0.0105	0.00929
	(0.0031,0.0147)	(0.00876,0.0409)	(0.00873,0.0408)	(0.00481,0.0227)	(0.00426,0.0201)