Supplementary Tables and Figures

Supplementary Table 1. Demographic and clinical characteristics of sample (included vs. not included).

	Included n = 326		Not included n = 206		df	x^2, t, z	p
Centre							
Nottingham	109	(33.4)	94	(45.6)	1	7.96	0.005
London	217	(66.6)	112	(54.4)			
Sex							
Men	182	(55.8)	128	(62.1)	1	2.07	0.151
Women	144	(44.2)	78	(37.9)			
Baseline age							
Mean (years)	29.9		31.9		530	2.22	0.027
sd	9.9		11.7				
Ethnicity							
White British	122	(37.4)	113	(54.9)	5	22.20	<0.001
Other White	23	(7.1)	14	(6.8)			
Black Caribbean	101	(31.0)	34	(16.5)			
Black African	42	(12.9)	25	(12.1)			
Asian (all)	20	(6.1)	6	(2.9)			
Other	18	(5.5)	14	(6.8)			
Baseline diagnosis							
Non-affective	239	(73.3)	148	(71.8)	1	0.14	0.711
Affective	87	(26.7)	58	(28.2)			
DUP*							
Median (weeks)	8.6		8.1		-	-0.09	0.926
IQR	2.1-31.9		2.2-41.5				

* 23 missing

Supplementary Table 2. Associations between baseline sample characteristics and missingness in timeline data.

	Unadj. OR	95% CI	p
Age			
16-29	1.0		
30-65	0.66	0.37 – 1.19	0.167
Sex			
Men	1.0		
Women	0.76	0.42 – 1.37	0.362
Ethnicity			
White British	1.0		
Other White	0.40	0.11 – 1.37	0.142
Black Caribbean	0.70	0.35 – 1.41	0.321
Black African	0.91	0.36 – 2.31	0.847
Asian (all)	1.91	0.57 – 6.39	0.296
Other	0.69	0.18 – 2.64	0.586
Level of education			
Other	1.0		
No qualifications	1.17	0.62 – 2.22	0.635
Social disadvantage			
0, 1	1.0		
2	1.47	0.44 – 4.95	0.534
3	1.16	0.34 – 3.88	0.815
4	0.49	0.14 – 1.69	0.258
Premorbid IQ	0.98	0.95 – 1.02	0.317
Baseline diagnosis			
Non-affective	1.0		
Affective	1.10	0.57 – 2.12	0.783
DUP*	0.997	0.993 to 1.001	0.074
Mode of onset			
Acute	1.0		
Insidious	0.85	0.46 – 1.57	0.608

* 23 missing

Supplementary Table 3. Model fit of Growth Mixture Model (GMM) without random intercept and slopes for number of months psychotic per year (n=326)

Model	Classes	LL	BIC	Entropy	LMRT		BLRT		Proportion of individuals in class					
					2LL	p	2LL	P	1	2	3	4	5	6
Linear GMM														
Model 2.1.1	1	-8371.97	16813.38						1.00					
Model 2.1.2	2	-6739.31	13565.43	.99	3087.47	.003		<.001	.62	.38				
Model 2.1.3	3	-6407.97	12920.10	.98	626.60	.166		<.001	.57	.09	.34			
Model 2.1.4	4	-6220.97	12563.47	.97	353.62	.196		<.001	.07	.29	.56	.08		
Model 2.1.5	5	-6116.44	12371.76	.96	197.68	.426		<.001	.51	.08	.07	.06	.28	
Model 2.1.6	6	-6020.17	12196.60	.96	199.84	.256		(<.001)	.28	.02	.07	.07	.51	.05
Quadratic GMM														
Model 2.2.1	1	-8367.75	16810.73						1.00					
Model 2.2.2	2	-6694.94	13488.25	.99	3207.07	.002		<.001	.37	.63				
Model 2.2.3	3	-6377.33	12876.19	.98	608.90	.213		<.001	.07	.58	.34			
Model 2.2.4	4	-6187.63	12519.92	.98	363.70	.108		<.001	.08	.28	.56	.07		
Model 2.2.5	5	-6075.66	12319.13	.97	214.66	.492		<.001	.29	.53	.05	.06	.06	
Model 2.2.6	6	-5976.25	12143.47	.96	190.33	.266		(<.001)	.04	.06	.28	.06	.48	.07
Cubic GMM														
Model 2.3.1	1	-8361.12	16803.25						1.000					
Model 2.3.2	2	-6674.01	13457.98	.99	3261.48	.002		<.001	.627	.373				
Model 2.3.3	3	-6354.17	12847.22	.98	618.33	.539		<.001	.57	.34	.09			
Model 2.3.4	4	-6131.21	12430.24	.98	417.26	.316		<.001	.08	.28	.57	.07		
Model 2.3.5	5	-6027.36	12251.48	.96	200.75	.313		<.001	.06	.29	.07	.52	.06	
Model 2.3.6	6	-5941.42	12108.54	.98	189.97	.175		<.001	.55	.04	.06	.03	.29	.04

LL, Log-Likelihood; BIC, Bayesian Information Criterion; LMRT, Lo-Mendell-Rubin Likelihood Ratio Test; BLRT, Bootstrapped Likelihood Ratio Test

Supplementary Table 4. Model fit of Growth Mixture Models (GMM) for number of months psychotic per year (n 326).

Model	Classes	LL	BIC	Entropy	LMRT		BLRT		Proportion of individuals in class					
					2LL	p	2LL	P	1	2	3	4	5	6
Linear GMM														
Model 1.1.1	1	-6530.08	13146.96						1.000					
Model 1.1.2	2	-6270.14	12644.45	.97	491.56	.020	519.87	<.001	.642	.358				
Model 1.1.3	3	-6196.27	12514.06	.96	139.70	.276	147.75	<.001	.353	.606	.041			
Model 1.1.4	4	-6115.33	12369.54	.97	145.32	.198	153.69	<.001	.072	.314	.049	.565		
Model 1.1.5	5	-6056.24	12268.72	.96	111.75	.384	118.18	<.001	.534	.046	.068	.311	.041	
Model 1.1.6[a]	6	-6005.30	12184.20	.97	96.34	.215	101.88	<.001	.516	.041	.067	.055	.049	.273
Quadratic GMM														
Model 1.2.1	1	-6457.11	13024.16						1.000					
Model 1.2.2	**2**	**-6173.63**	**12480.35**	**.97**	**543.48**	**.005**	**566.96**	**<.001**	**.642**	**.358**				
Model 1.2.3	3	-6115.21	12386.66	.98	112.00	.295	116.84	<.001	.570	.075	.355			
Model 1.2.4	**4**	**-6009.52**	**12198.43**	**.98**	**159.00**	**.240**	**165.87**	**<.001**	**.585**	**.056**	**.054**	**.306**		
Model 1.2.5	5	-5941.95	12086.44	.96	129.54	.289	134.76	<.001	.053	.548	.041	.051	.306	
Model 1.2.6[a]	6	-5898.25	12022.20	.96	83.77	.308	87.39	<.001	.046	.052	.040	.307	.512	.043
Cubic GMM														
Model 1.3.1[a]	1	-6387.79	12914.46						1.000					

LL, Log-Likelihood; BIC, Bayesian Information Criterion; LMRT, Lo-Mendell-Rubin Likelihood Ratio Test; BLRT, Bootstrapped Likelihood Ratio Test

[a] Residual covariance matrix and first-order derivative product matrix not positive definite for this and all subsequent models with a higher number of classes

Supplementary Table 5. Estimated and observed means of two-class quadratic Growth Mixture Model (GMM) with random intercepts and slopes.

	2-class quadratic GMM			
	Class 1		**Class 2**	
Year	Estimated	Observed	Estimated	Observed
1	3.60	5.16	10.32	9.93
2	2.94	2.51	10.28	10.03
3	2.35	1.69	10.50	10.16
4	1.84	1.49	10.59	10.32
5	1.41	1.41	10.53	10.51
6	1.06	1.39	10.78	10.73
7	0.79	1.43	11.05	10.97
8	0.59	0.82	11.69	11.25
9	0.47	0.57	11.39	11.55
10	0.43	0.41	11.82	11.88

Supplementary Table 6. Estimated and observed means of four-class quadratic Growth Mixture Model (GMM) with random intercepts and slopes.

	4-class quadratic GMM[a]							
	Class 1		**Class 2**		**Class 3**		**Class 4**	
Year	Estimated	Observed	Estimated	Observed	Estimated	Observed	Estimated	Observed
1	3.04	4.66	6.26	6.22	10.72	11.34	10.53	10.75
2	2.25	1.88	4.86	4.07	11.14	10.55	10.87	10.88
3	1.58	0.99	3.96	3.78	11.15	10.47	11.16	11.15
4	1.04	0.78	3.54	4.20	10.77	10.17	11.41	11.41
5	0.63	0.43	3.61	2.87	9.98	11.08	11.62	11.60
6	0.34	0.59	4.17	3.36	8.80	9.52	11.78	11.91
7	0.19	0.82	5.22	4.35	7.22	7.48	11.90	12.00
8	0.16	0.44	6.76	9.69	5.25	4.33	11.97	11.95
9	0.26	0.44	8.78	8.53	2.87	1.73	12.00	11.82
10	0.48	0.41	11.30	10.91	0.09	0.44	11.99	12.00

[a] Average latent class probabilities for most likely latent class membership:

Class 1	Class 2	Class 3	Class 4
0.991	0.996	1.00	0.986

Supplementary Table 7. Baseline socio-demographic and clinical characteristics by latent trajectories, descriptive data.

	Remitting row n (row %)		Late decline row n (row %)		Late improvement row n (row %)		Persistent row n (row %)	
Study centre								
London	**119**	**(54.8)**	11	(5.1)	**12**	**(5.5)**	**75**	**(34.6)**
Nottingham	**73**	**(67.0)**	6	(5.5)	**4**	**(3.7)**	**26**	**(23.9)**
Sex								
Men	98	(53.9)	**8**	**(4.4)**	**11**	**(6.0)**	**65**	**(35.7)**
Women	94	(65.3)	**9**	**(6.3)**	**5**	**(3.5)**	**36**	**(25.0)**
Age								
Mean	29.7		29.2		28.3		30.6	
SD	10.0		7.2		8.3		10.3	
Ethnicity								
White British	**80**	**(65.6)**	**4**	**(3.3)**	7	(5.7)	**31**	**(25.4)**
Other White	12	(52.2)	2	(8.7)	1	(4.4)	8	(34.8)
Black Caribbean	**47**	**(46.5)**	**7**	**(6.9)**	6	(5.9)	**41**	**(40.6)**
Black African	26	(61.9)	3	(7.1)	2	(4.8)	11	(26.2)
Asian	13	(65.0)	0	-	0	-	7	(35.0)
Other	14	(77.8)	1	(5.6)	0	-	3	(16.7)
Education^								
University	29	(15.8)	1	(6.3)	1	(6.3)	4	(4.1)
Further	50	(27.2)	6	(37.5)	4	(25.0)	31	(32.0)
GCSE	51	(27.7)	5	(31.3)	2	(12.5)	26	(26.8)
School	54	(29.4)	4	(25.0)	9	(56.3)	36	(37.1)
Social disadvantage*								
0, 1	**44**	**(75.9)**	2	(3.5)	2	(3.5)	**10**	**(17.2)**
2	42	(60.0)	1	(1.4)	3	(4.3)	24	(34.3)

	Remitting		Late decline		Late improvement		Persistent	
	row n (row %)		row n (row %)		row n (row %)		row n (row %)	
3	41	(58.8)	5	(7.0)	2	(2.8)	23	(32.4)
4	**28**	**(45.9)**	5	(8.2)	6	(9.8)	**22**	**(36.1)**
Substance Use†								
Non-problematic use	100	(56.8)	12	(80.0)	4	(25.0)	48	(51.6)
Abuse	36	(20.5)	2	(13.3)	3	(18.8)	25	(26.9)
Dependence	40	(22.7)	1	(6.7)	9	(56.3)	20	(21.5)
Diagnosis								
Non-affective	121	(50.6)	15	(6.3)	11	(4.6)	92	(38.4)
Affective	71	(81.6)	**2**	**(2.3)**	5	(5.8)	9	(10.3)
DUP (weeks)**								
Median	**5.9**		**9.9**		**4.3**		**17.4**	
IQR	**2-25**		**1-21**		**3-22**		**5-87**	
Premorbid IQ (quartiles)‡								
1st (highest)	27	(33.3)	0	(0.0)	1	(11.1)	4	(9.8)
2nd	19	(23.5)	2	(33.3)	2	(22.2)	10	(24.4)
3rd	19	(23.5)	2	(33.3)	2	(22.2)	15	(36.6)
4th (lowest)	16	(19.8)	2	(33.3)	4	(44.4)	12	(29.3)

Note: Class 1: Remitting: course characterised by remitting periods of symptoms, which became shorter and less frequent over time; Class 2: Late decline: course characterised, initially, by remitting periods of symptoms, with more persistent symptoms over time; Class 3: Late improvement: course characterised, initially, by persistent symptoms, with remitting periods of symptoms later; Class 4: Persistent: a course characterised by persistent or long periods of symptoms throughout.

^ 13 missing
* 62 missing
† 26 missing
** 24 missing
‡ 189 missing

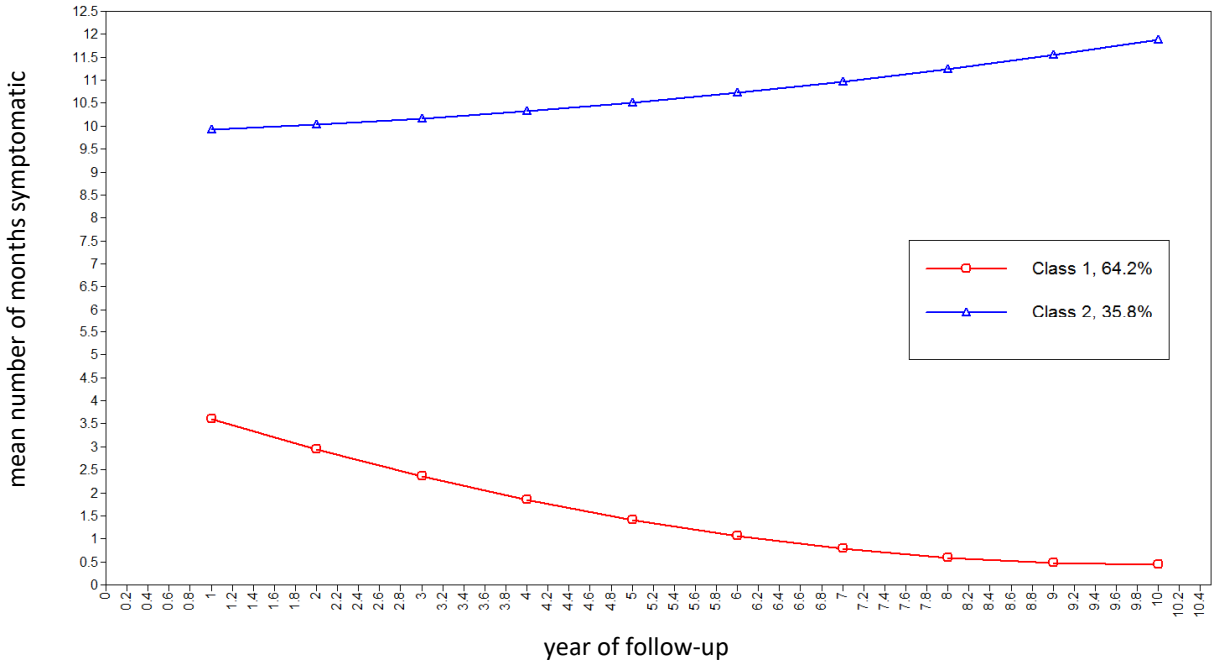
Supplementary Table 8. Latent trajectories and treatment resistence.*

Trajectories	Responder n (%)		Never adequate treatment n (%)		Treatment resistant, at onset n (%)		Treatment resistant, late n (%)	
1 Remitting	130	(86.1)	6	(85.7)	6	(13.0)	5	(45.5)
2 Late decline	6	(4.0)	0	(0.0)	1	(2.2)	4	(36.4)
3 Late improve	12	(8.0)	0	(0.0)	3	(6.5)	0	(0.0)
4 Continuous	3	(2.0)	1	(14.3)	36	(78.3)	2	(18.2)

Note 1: Class 1: Remitting: course characterised by remitting periods of symptoms, which became shorter and less frequent over time; Class 2: Late decline: course characterised, initially, by remitting periods of symptoms, with more persistent symptoms over time; Class 3: Late improvement: course characterised, initially, by persistent symptoms, with remitting periods of symptoms later; Class 4: Persistent: a course characterised by persistent or long periods of symptoms throughout.

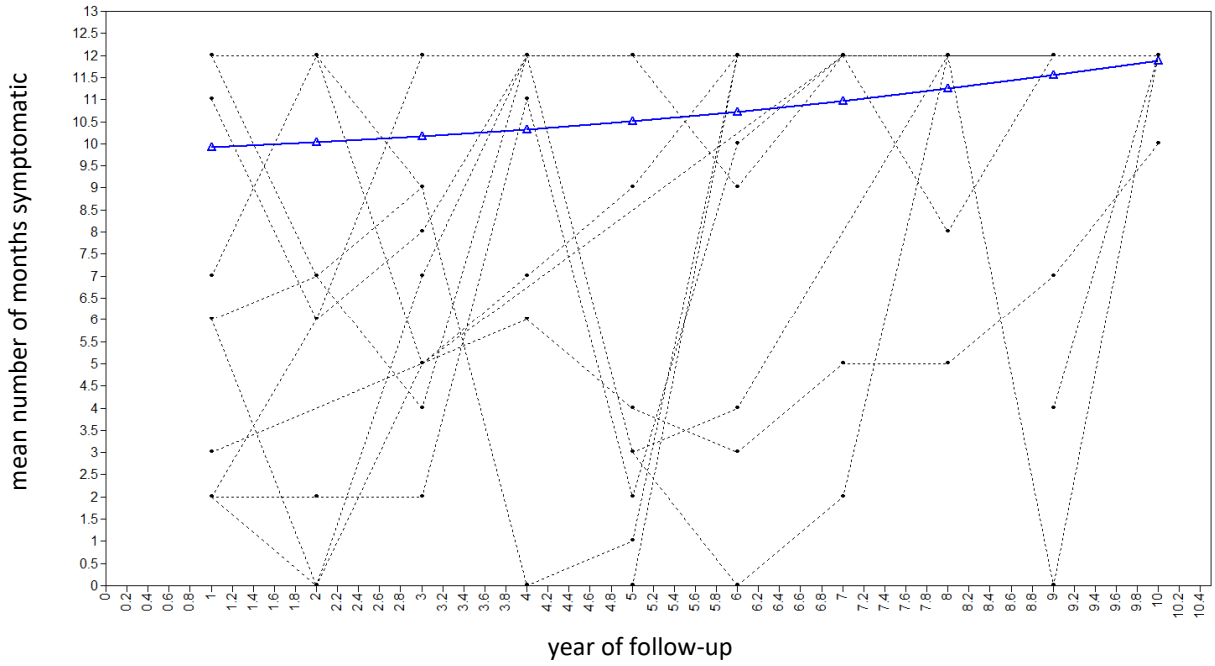
Note 2: Given that many cells have 0 or a small number of observations, and patterns of overlap between trajectories and other course and outcome variables are clear, test statistics were not calculated.

* missing, n 111

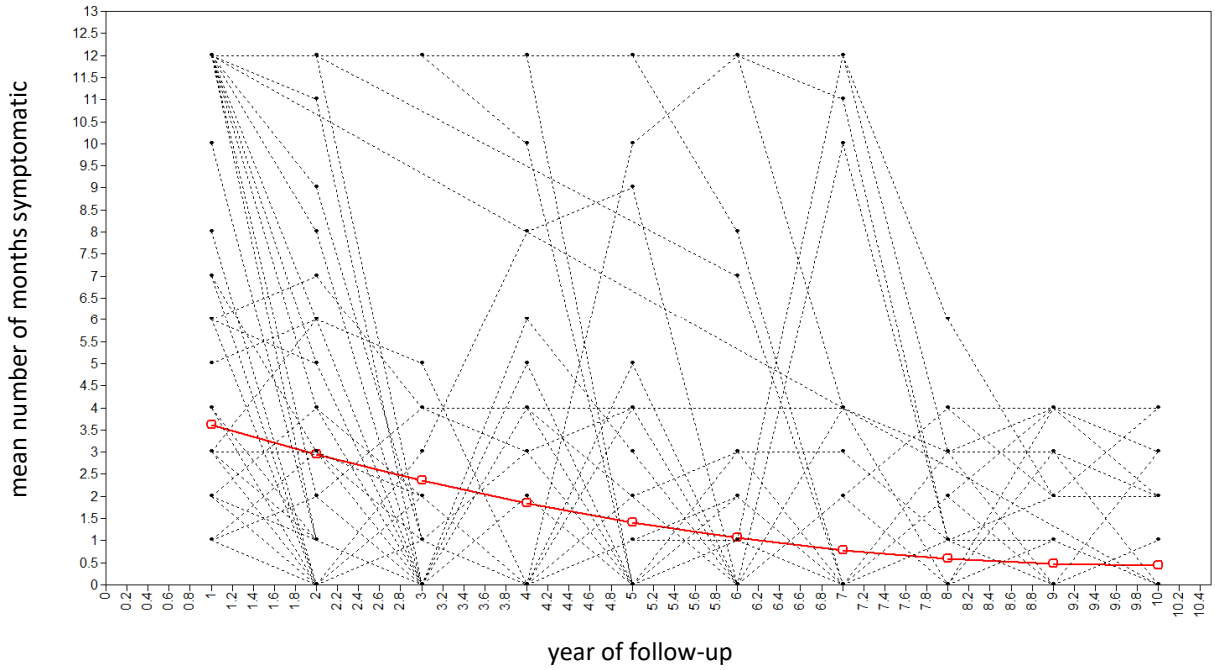


Supplementary Figure 1. Estimated latent trajectories of 2-class quadratic GMM (Model 2.2.2, see Table 1) for number of months psychotic per year (n=326)

Trajectory 1



Trajectory 2



Supplementary Figure 2. Estimated means and observed values of 2-class quadratic GMM in randomly selected 100 subjects (Model 2.2.2, see Table 1) for number of months psychotic per year (n=326)