Online supplement for Jonas et al., Lead-Time Bias Confounds Association Between Duration of Untreated Psychosis and Illness Course in Schizophrenia. Am J Psychiatry (doi: 10.1176/appi.ajp.2019.19030324)

**Table S1**

*Distribution of DUP*

| | Mean | SD |
|---|---|---|
| <30 days | 12.98 | 8.33 |
| 30-180 days | 109.42 | 42.35 |
| 180-365 days | 272.30 | 55.43 |
| >365 days | 1916.02 | 2001.35 |

Table S2

*Psychosocial function of individuals with onset in late adolescence versus adulthood.*

| | First Admission in Late Adolescence (N=77) | | First Admission in Adulthood (N=201) | | |
|---|---|---|---|---|---|
| | Mean | SD | Mean | SD | p-value |
| Childhood | 61.69 | 9.21 | 62.84 | 10.51 | 0.36 |
| Early adolescence | 61.56 | 9.81 | 62.97 | 10.39 | 0.28 |
| Baseline | 56.93 | 13.40 | 58.98 | 14.55 | 0.24 |

**Table S3**

*Course of Illness and DUP based on first antipsychotic medication (N = 285)*

| | Years to first admission | | | Years to onset of psychosis | | |
|---|---|---|---|---|---|---|
| | B | SE | P | B | SE | P |
| Intercept | 59.43 | 0.58 | <0.001 | 59.36 | 0.57 | <0.001 |
| Slope 1[a] | -0.14 | 0.05 | 0.00 | -0.11 | 0.05 | 0.04 |
| Slope 2[a] | -0.85 | 0.03 | <0.001 | -0.81 | 0.03 | <0.001 |
| DUP | -0.04 | 0.01 | <0.001 | 0.00 | 0.01 | 0.71 |

*Note.* Time is expressed in years. DUP is measured as a continuous variable. Coefficients for DUP were transformed to reflect the difference in illness severity attributable to 30 days untreated psychosis. DUP = duration of untreated psychosis, measured as time from first clear psychotic symptom to first treatment with antipsychotic medication. [a] Slope 1 reflects annual change in psychosocial function from childhood to the inflection point. Slope 2 reflects annual change in psychosocial function over the remainder of the course of illness.

**Table S4**

*Age and functioning across study time points*

| | N | Mean | SD | Min | Max |
|---|---|---|---|---|---|
| Psychosocial Function | | | | | |
| Childhood | 267 | 60.0 | 9.7 | 27 | 84 |
| Early Adolescence | 259 | 60.0 | 10.1 | 32 | 84 |
| Late Adolescence | 233 | 58.0 | 11.4 | 22 | 84 |
| First Admission | 287 | 53.0 | 13.9 | 21 | 81 |
| 6 months | 236 | 49.7 | 13.0 | 21 | 81 |
| 24 months | 231 | 50.3 | 13.0 | 25 | 82 |
| 48 months | 225 | 49.9 | 12.0 | 10 | 81 |
| 10 years | 224 | 44.1 | 10.6 | 21 | 80 |
| 20 years | 175 | 35.2 | 10.2 | 11 | 70 |

*Note*. Cumulative attrition due to death was N = 2 at 24 months (<1%), N = 5 at 48 months (1.7%), N = 14 at 10 years (4.9%), and N = 43 at 20 years (15%).

**Table S5**

*Model fit (BIC) of alternative change points*

| | DUP to admit[a] | | DUP to AP[b] | |
|---|---|---|---|---|
| Change point | Years to first admission | Years to onset of first psychotic symptom | Years to first admission | Years to onset of first psychotic symptom |
| -10 | 16171.72 | 16174.72 | 16016.05 | 16015.32 |
| -9 | 16167.46 | 16171.91 | 16011.94 | 16012.60 |
| -8 | 16164.39 | 16169.33 | 16009.02 | 16010.07 |
| -7 | 16163.00 | 16167.99 | **16007.79** | 16008.76 |
| -6 | **16163.00** | **16167.47** | 16007.97 | **16008.25** |
| -5 | 16163.91 | 16167.90 | 16009.02 | 16008.68 |
| -4 | 16165.27 | 16168.65 | 16010.44 | 16009.41 |
| -3 | 16166.69 | 16169.43 | 16011.89 | 16010.14 |
| -2 | 16167.62 | 16170.70 | 16012.86 | 16011.36 |
| -1 | 16168.36 | 16171.90 | 16013.61 | 16012.52 |
| 0 | 16169.00 | 16172.99 | 16014.22 | 16013.59 |
| 1 | 16172.27 | 16177.52 | 16017.30 | 16017.98 |
| 2 | 16173.51 | 16184.90 | 16018.35 | 16025.24 |
| 3 | 16175.61 | 16190.45 | 16020.40 | 16030.78 |

| | | | | |
|---|---|---|---|---|
| 4 | 16175.61 | 16195.14 | 16023.28 | 16035.51 |
| 5 | 16182.76 | 16200.58 | 16027.59 | 16041.14 |
| 6 | 16186.93 | 16206.06 | 16031.87 | 16046.93 |
| 7 | 16185.62 | 16211.08 | 16030.66 | 16052.24 |
| 8 | 16190.48 | 16216.01 | 16035.61 | 16057.45 |
| 9 | 16196.67 | 16221.48 | 16041.89 | 16071.02 |
| 10 | 16203.95 | 16227.66 | 16049.26 | 16069.49 |

*Note.* Model fit is expressed in terms of the Bayesian Information Criterion (BIC), in which smaller values indicate better fit. Values in bold indicate the model with best fit. [a] DUP calculated as time elapsed between first psychotic symptom and first admission. [b] DUP calculated as time elapsed between first psychotic symptom and first antipsychotic medication.

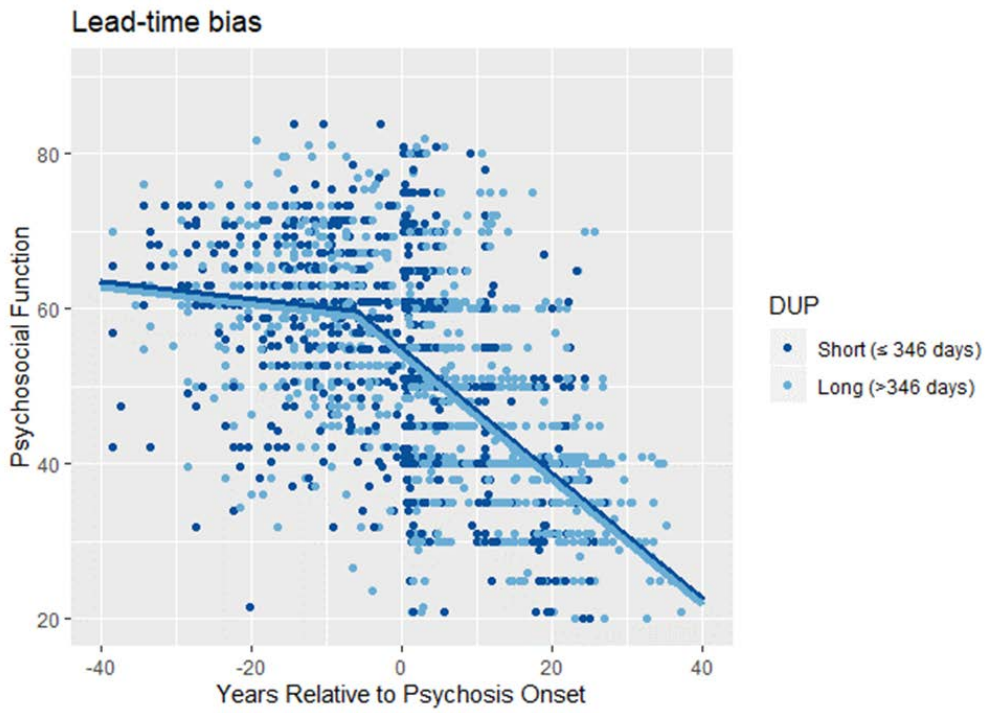
**Table S6**

*Model fit (BIC) of multilevel spline regression models*

| Model | Model Fit | |
|---|---|---|
| | Time Relative to Psychosis Onset | Time Relative to First Admission |
| $Psychosocial\ Function \sim Intercept$ | 17044.18 | 17044.18 |
| $Psychosocial\ Function \sim Intercept + Time$ | **16152.91** | 16175.03 |
| $Psychosocial\ Function \sim Intercept + Time + DUP$ | 16167.47 | **16162.71** |
| $Psychosocial\ Function \sim Intercept + Time + DUP + Time \times DUP$ | 16182.96 | 16195.92 |

*Note.* Model fit is expressed in terms of the Bayesian Information Criterion (BIC), in which smaller values indicate better fit. Values in bold indicate the model with best fit. Model equations include fixed effects as well as random intercepts and slopes (where applicable).

**Figure S1**




*Note.* Model-implied trajectory of illness severity (Global Assessment of Function, GAF). Time 0 is the onset of first psychotic symptom. For illustrative purposes, DUP is dichotomized by a median split, with short DUP less than and long DUP greater than 346 days.