



Application of EventFlow to Model the Complexity and Continuity of Antipsychotic Use Among Youth

Susan dosReis,¹ Wendy Camelo Castillo,¹ James Gardner,¹
Ming-Hui Tai,^{1,2}

¹ *Department of Pharmaceutical Health Services Research,
University of Maryland, Baltimore, MD, United States;*

²*Pharmetrics, Bethesda, MD, United States.*

Objective

- The objective of this study was to examine psychotropic sequencing prior to antipsychotic initiation in terms of therapeutic class switching and polypharmacy.

New Antipsychotic Users

N	%	Identifying New Antipsychotic Users
18034		≤21 years in foster care any time January 2010 through March 2014
3,431/18,034	19.0%	Received at least 1 antipsychotic
1,833/3,431	53.4%	New antipsychotic user (no use in past 6 months)
581/1,833	31.7%	In foster care 180days before/210 days after antipsychotic initiated
289/581	49.7%	ADHD/disruptive behavior disorder in the absence of schizophrenia or bipolar disorder 65 were propensity score matched with controls

- Incidence of antipsychotic use for ADHD/disruptive behavior disorder was 16/1,000 (i.e., 289/18,034)
- Approximately 35% of the new antipsychotic users had prior use of other psychotropic medications 180 days before antipsychotic initiation

New Antipsychotic User Sample Selection Criteria

- ① Antipsychotic use anytime from January 2010 through March 2014.
- ② Continuous foster care involvement 1 year prior to index antipsychotic prescription.
- ③ Age 20 years or younger as of January 2010.
- ④ No antipsychotic use in the 180 days prior to the index antipsychotic prescription.

Defining Psychotropic Patterns

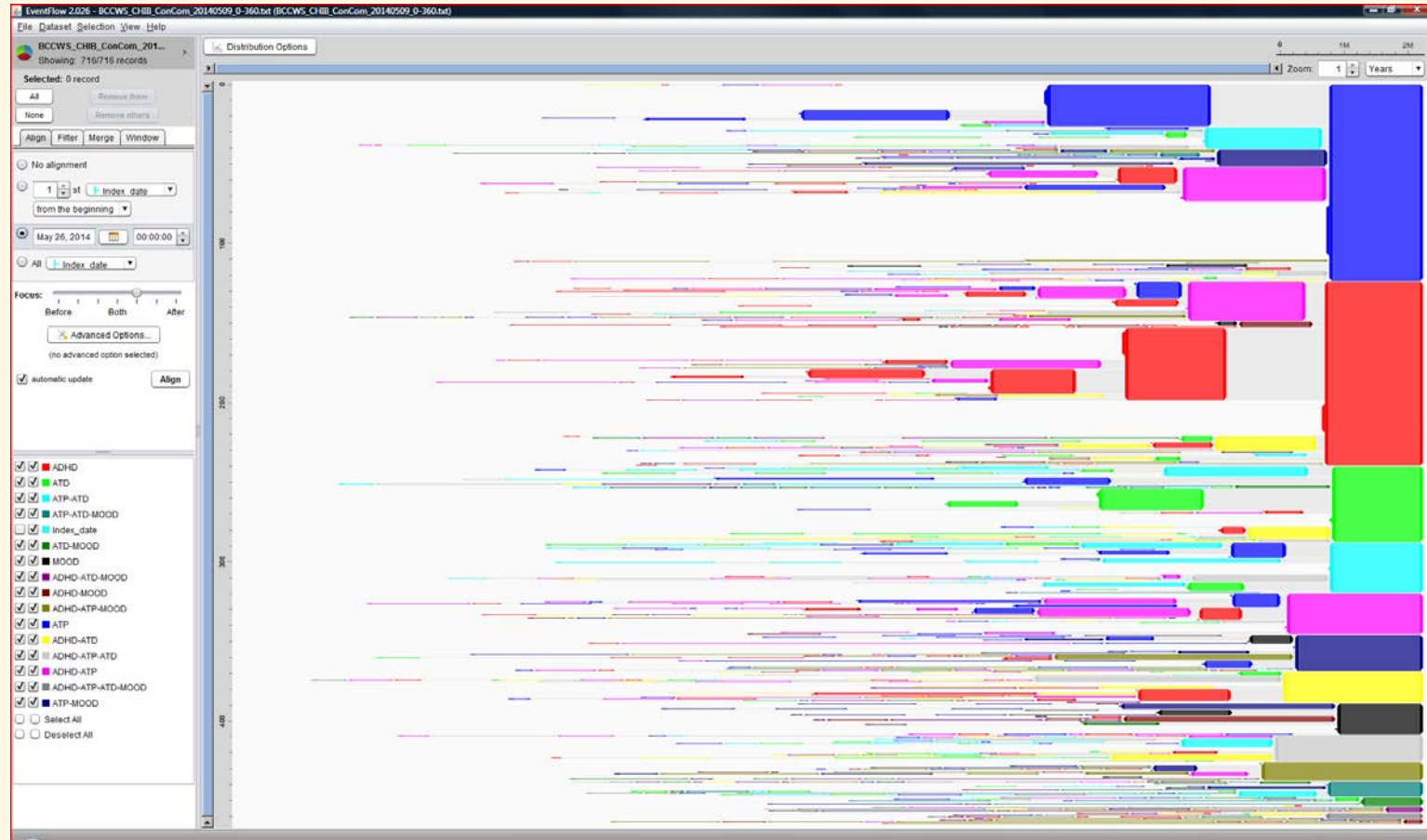
- Created 12 30-day periods prior to the antipsychotic index date.
- Refills within 10 days of each other were collapsed into the same episode.
- Single drug use was counted if >7 days of use in the 30 day period.
- Concomitant use was defined ≥ 15 days of 2 or more classes in the 30 day period.

Defining Psychotropic Patterns

- Focused on 4 major psychotropic classes
 - ADHD medications
 - Antidepressants
 - Mood Stabilizing Anticonvulsants
 - Antipsychotics
- Other possible patterns
 - No Use
 - Tapering
 - A drug pattern that carried over from or into an adjacent month and constituted <15 days of the 30-day period
- 15 drug and drug combinations were identified



Event Flow Graph



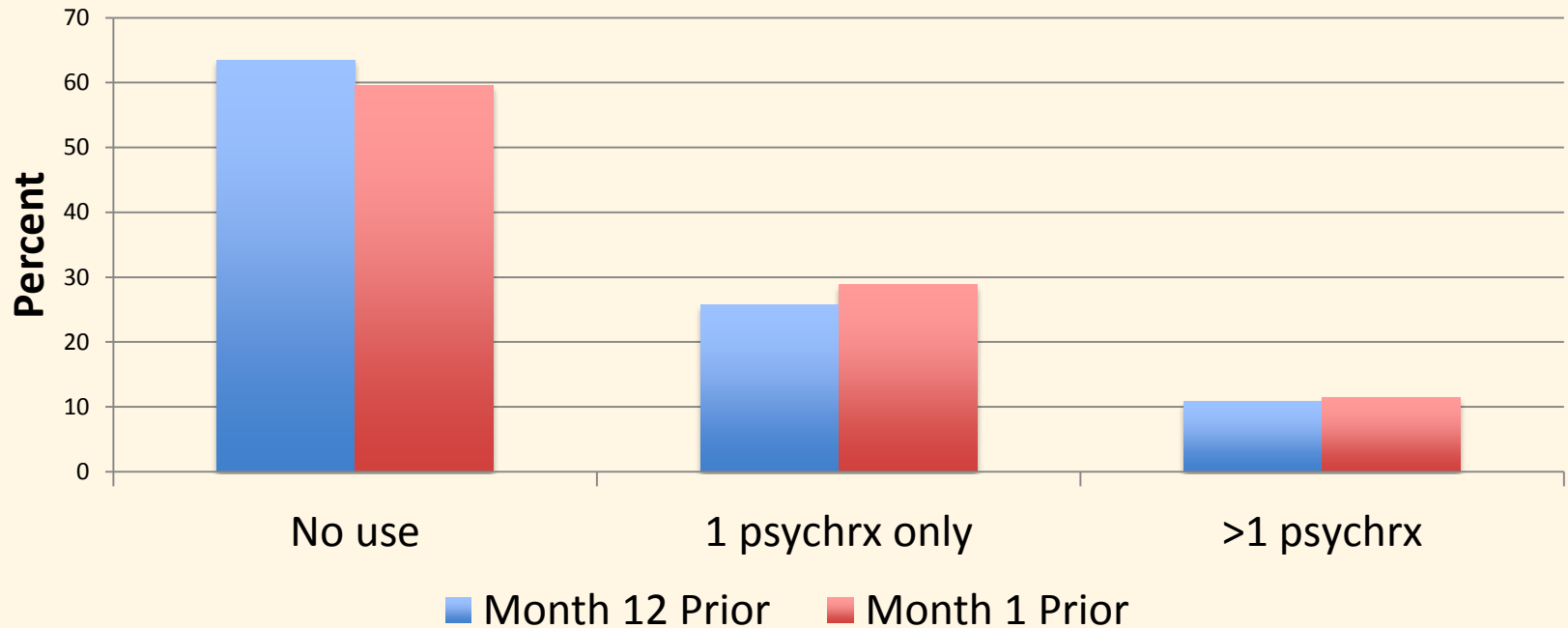
Psychotropic Pattern File Layout

ThirtyDayBlock	Event_Type	Event_Date	End_Date	Days
1	No Drug	05/09/2010	06/07/2010	30
2	ADHD-MOOD	04/14/2010	05/07/2010	24
3	No Drug	03/10/2010	04/08/2010	30
4	No Drug	02/08/2010	03/09/2010	30
5	No Drug	01/09/2010	02/07/2010	30
6	No Drug	12/10/2009	01/08/2010	30
7	MOOD	11/10/2009	12/09/2009	30
	ADHD	11/10/2009	11/18/2009	9
8	ADHD-MOOD	10/11/2009	11/09/2009	30
9	ADHD-MOOD	09/11/2009	10/10/2009	30
10	ADHD-MOOD	08/12/2009	09/10/2009	30
11	ADHD-ATP-MOOD	07/21/2009	08/07/2009	18
	ADHD	07/13/2009	07/20/2009	8
	ATP	07/13/2009	07/20/2009	8
12	ADHD-ATP	06/13/2009	07/12/2009	30

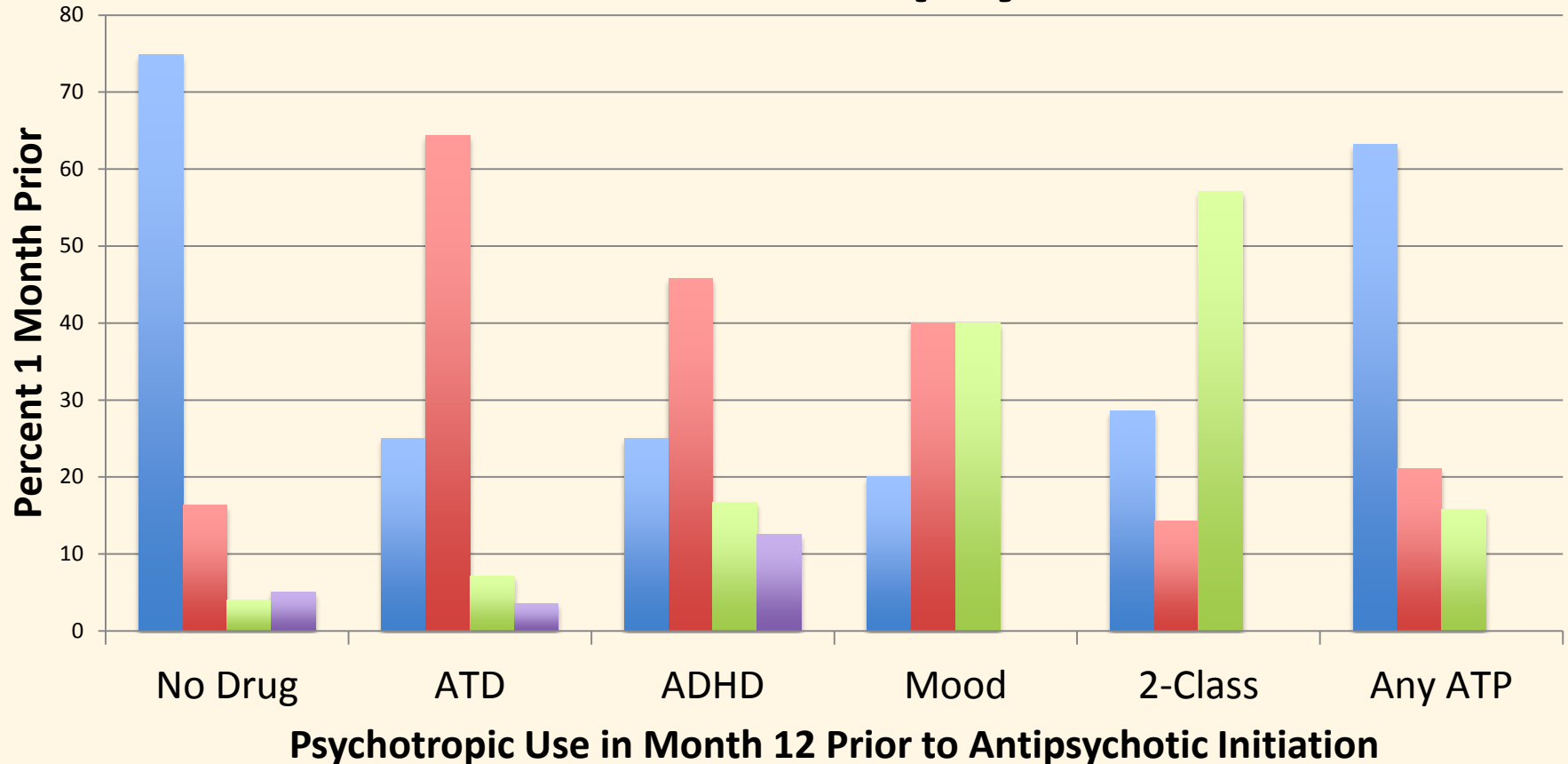
Youth Characteristics by Psychotropic Patterns 30-days Prior to Antipsychotic Initiation

	Overall	No Use	Only 1 Psychotropic	>1 Psychotropic
	N=304	N=181	N=88	N=35
Mean Age (SD), years	14.3 (4.9)	14.7 (5.1)	13.2 (4.7)	14.8 (4.3)
4 years or less	3.3%	3.9%	3.4%	.
5-9 years	19.4%	17.7%	25.0%	14.3%
10-14 years	14.8%	9.9%	20.5%	25.7%
15-21 years	62.5%	68.5%	51.1%	60.0%
Gender				
Male	51.9%	53.0%	52.3%	45.7%
Female	48.0%	46.9%	47.7%	54.3%
Race				
White	29.3%	29.3%	28.4%	31.4%
Black	69.1%	69.6%	70.5%	62.9%

Psychotropic Patterns in Month 12 and Month 1 Prior to Antipsychotic Initiation

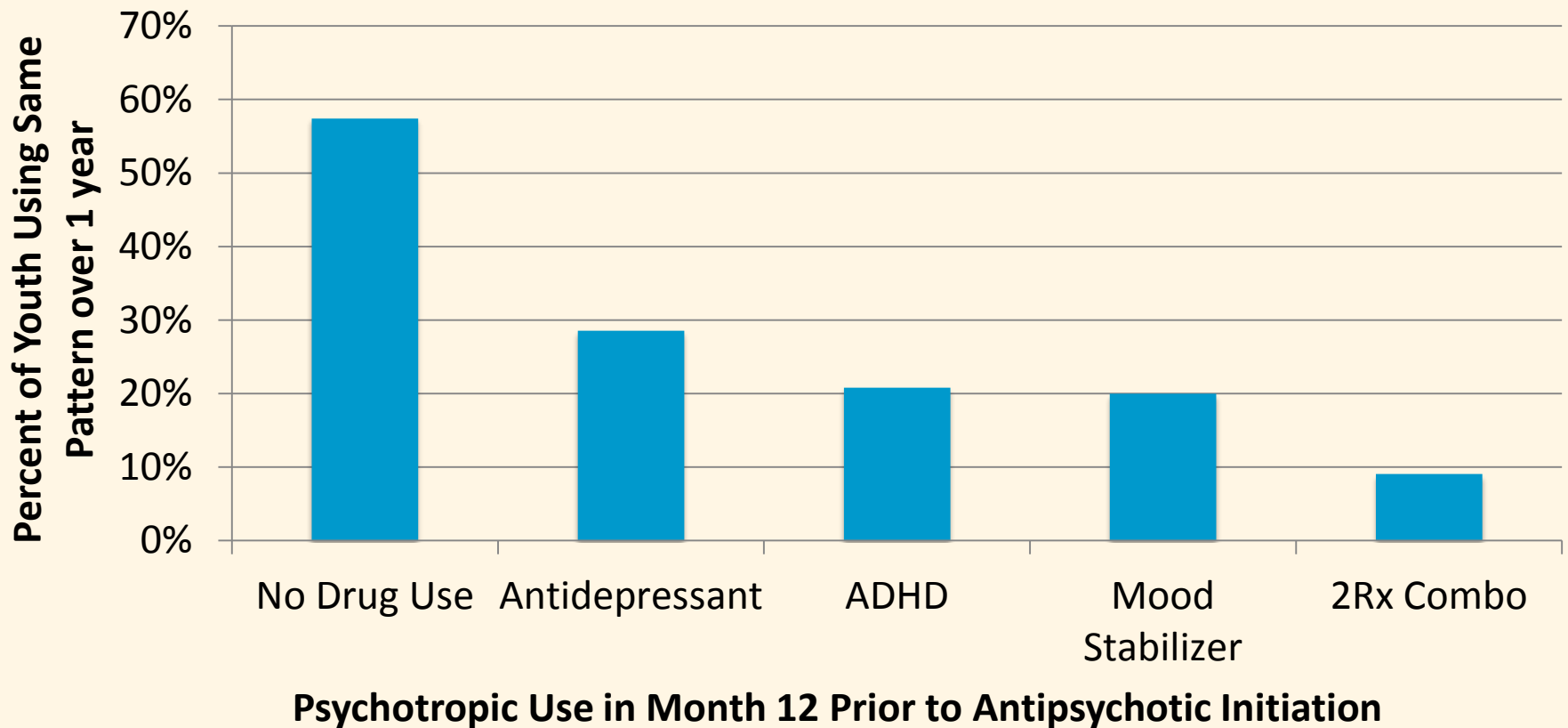


Comparing Psychotropic Use in Month 12 and Month 1 Prior to Antipsychotic Initiation



■ No Drug ■ 1 Medication ■ 2+ Medications ■ Taper

Stability of Psychotropic Patterns Over the 1-Year Prior to Antipsychotic Initiation



Summary

- A large proportion of new antipsychotic users did not have any psychotropic medication in the prior year.
- 60-80% of new antipsychotic users experienced treatment switching and polypharmacy in the year prior to initiating an antipsychotic medication.

Limitations

- The study sample is not nationally representative, and thus cannot generalize to other foster care populations.
- Service utilization or use of other non-pharmacologic interventions in the year prior to antipsychotic initiation was not examined.
- Cannot assess the effect of severity or extent of impairment on switching patterns, polypharmacy, or no psychotropic use.