

# Building a Risk Adjusted Model for Monitoring Psychopharmaceutical Prescription for Children in the Child Welfare System

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## Background

- Children in child welfare system more likely to be prescribed psychotropic meds than are children in the general population
- Concern has arisen about promoting safe, appropriate, and effective prescription of these medications in this vulnerable population
- Federal agency Administration on Children, Youth, and Families (ACYF) defined red-flag prescribing

## Methods

### Setting

- Work initiated in 2016 as QI project by public child welfare agency of a southern US state
- Goal: identify prescribers more likely than peers to write prescriptions to children in the child welfare system that are red-flagged

### Data

1. Prescription level data on psychotropic meds (antidepressants, antipsychotics, stimulants, or mood stabilizers)
2. Child placement-level administrative data
3. 2011–2015 5-Year American Community Survey for census tract-level poverty

- Rx issued to children in the welfare system between May 18, 2018, and Jan 10, 2021, included in analysis
- Prescribers with < 10 Rx excluded for stable estimates

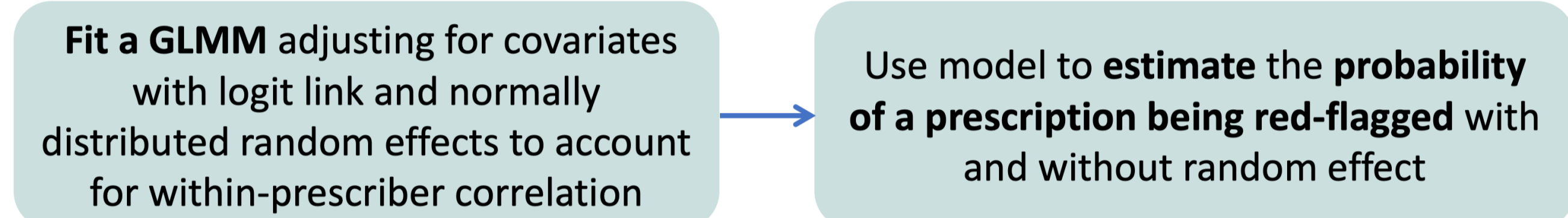
### Outcomes

- Rx level binary outcome indicating whether prescription was r.f. for meeting any of following criteria:
  - (1) Issued to a child age ≤ 5,
  - (2) Was one of four or more concurrent psychotropic prescriptions issued to a child,
  - (3) Was one of two or more concurrent prescriptions in a given class,
  - (4) Exceeded maximum recommended dosage according to FDA
- Overlapping meds of same class that lasted for <60 days not flagged
- Refill Rx were treated as unique Rx

## Youth-Level Covariates

1. Age at prescription
2. Gender
3. Race
4. Commitment region
5. Days in custody until prescription
6. Child census tract-level poverty
7. Adjudication status
8. Level of care
9. Child and Adolescent Needs and Strengths (CANS) complexity score

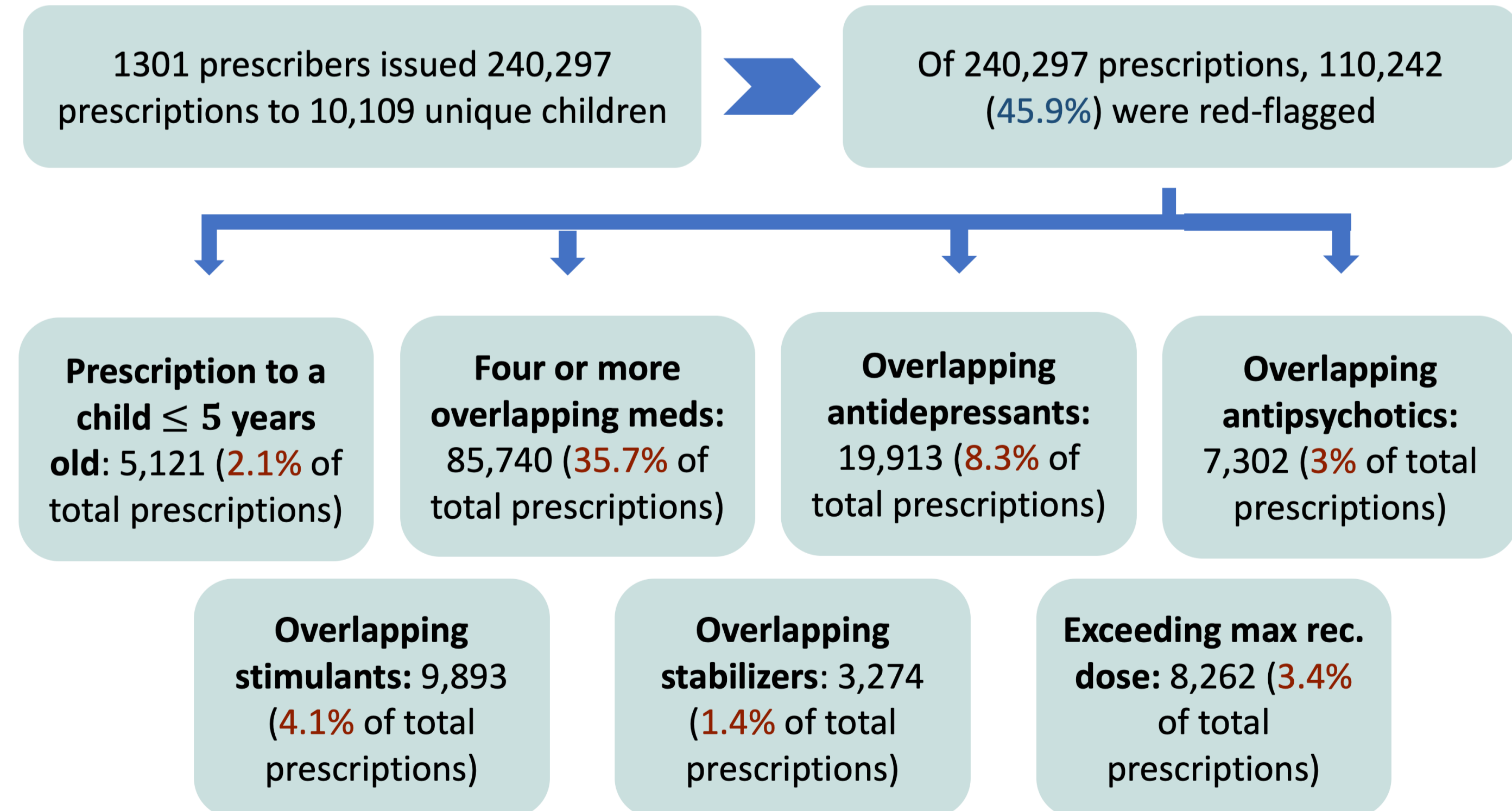
## Statistical Analysis



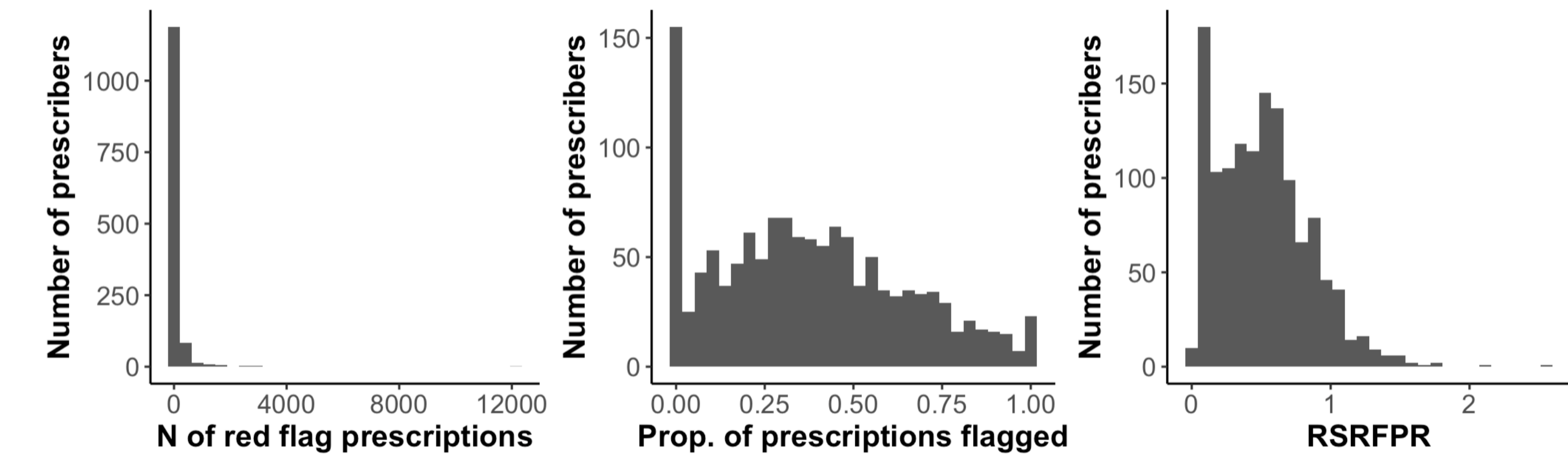
Calculate Risk-Standardized Red Flag Prescription Rate:

$$RSRFPR_i = \left( \frac{\text{Predicted \# red flags for prescriber } i}{\text{Expected \# red flags for prescriber } i} \right) \times \left( \frac{\text{Total \# red flags for all prescribers}}{\text{Total \# prescriptions for all prescribers}} \right)$$

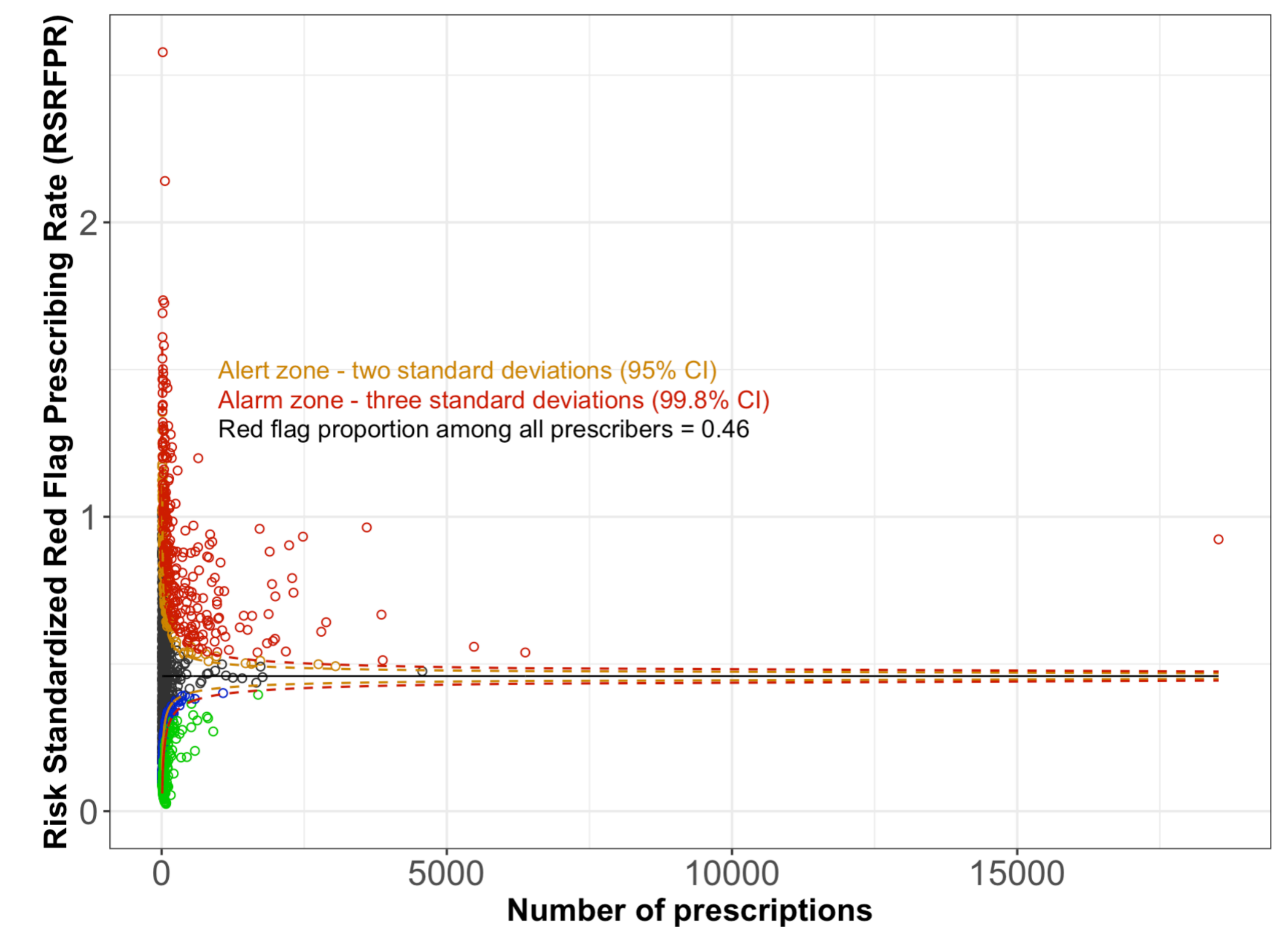
## Results



- 1,098 (84%) prescribers issued ≥ 1 one r.f. prescription
- 4,371 (43.2%) children received at least one red-flagged prescription
- Of these, # of r.f. prescriptions right skewed, with median of 11 (IQR:4 to 30)



- Model icc = 38.7%, C-statistic = 0.72
- 114 (8.8%) were between two and three standard deviations above the benchmark
- 258 prescribers (19.8%) were more than three standard deviations above it



## Conclusions

- Active monitoring of r.f. prescriptions and reevaluation of continued appropriateness of prescriptions may help ensure that children are not placed on nonessential medications any longer than necessary
- Limitations: not including diagnosis info, med indication, or presence of nonpharmacological interventions
- r.f. prescriptions that are inappropriate for one child may be clinically appropriate/necessary for another
- r.f. criteria are understandable, can be communicated to prescribers, and enable prescribers to set tangible benchmarks for improvement within their practices.