



## Background

### Existing knowledge

- In October 2022, the FDA announced a **shortage of amphetamine** mixed salts (Adderall, henceforth referred to as amphetamine), commonly prescribed to treat attention deficient hyperactivity disorder (ADHD) and narcolepsy
- The shortage was partially driven by an **increase in demand**
- Little is known about what demographic groups may be contributing to the increasing demand or **how this shortage impacted patients**

### Objectives

- 1) Describe **trends in first-time ADHD diagnoses and new amphetamine prescriptions** over time
- 2) Describe the percentage of amphetamine prescriptions that were **successfully filled** and periods where patients were **prevented or delayed from receiving their prescriptions**

## Methods

### Data

- A subset of Truveta Data was used; Truveta Data is comprised of **real-world US electronic health record (EHR)** data, which is aggregated, normalized, and de-identified from US health care systems comprising clinics and hospitals
- Data included **conditions, medication requests** (e.g., prescriptions), **medication dispensing** (e.g., fills), **encounters**, and **patient demographics**

### Diagnosis and prescription increases

#### Population

- Patients with at least one outpatient encounter within the prior 2 years (Jan 2021 – Oct 2024)
- Excluded patients with any prior ADHD diagnosis or amphetamine prescription

#### Analysis

- Calculated the rate of **first-time ADHD diagnosis** or **first-time amphetamine prescriptions**, stratified by age group: 0-18 years, 18-29 years, 30-44 years, 45-64 years, and 65+ years
- Diagnosis and prescription populations were analyzed independently
- Linear regression models were used to test for changes over time

### Percentage of prescriptions filled

#### Population

- Patients with at least one amphetamine prescription, Jan 2021 – May 2024
- Patients were required to have prior evidence of a prescription fill

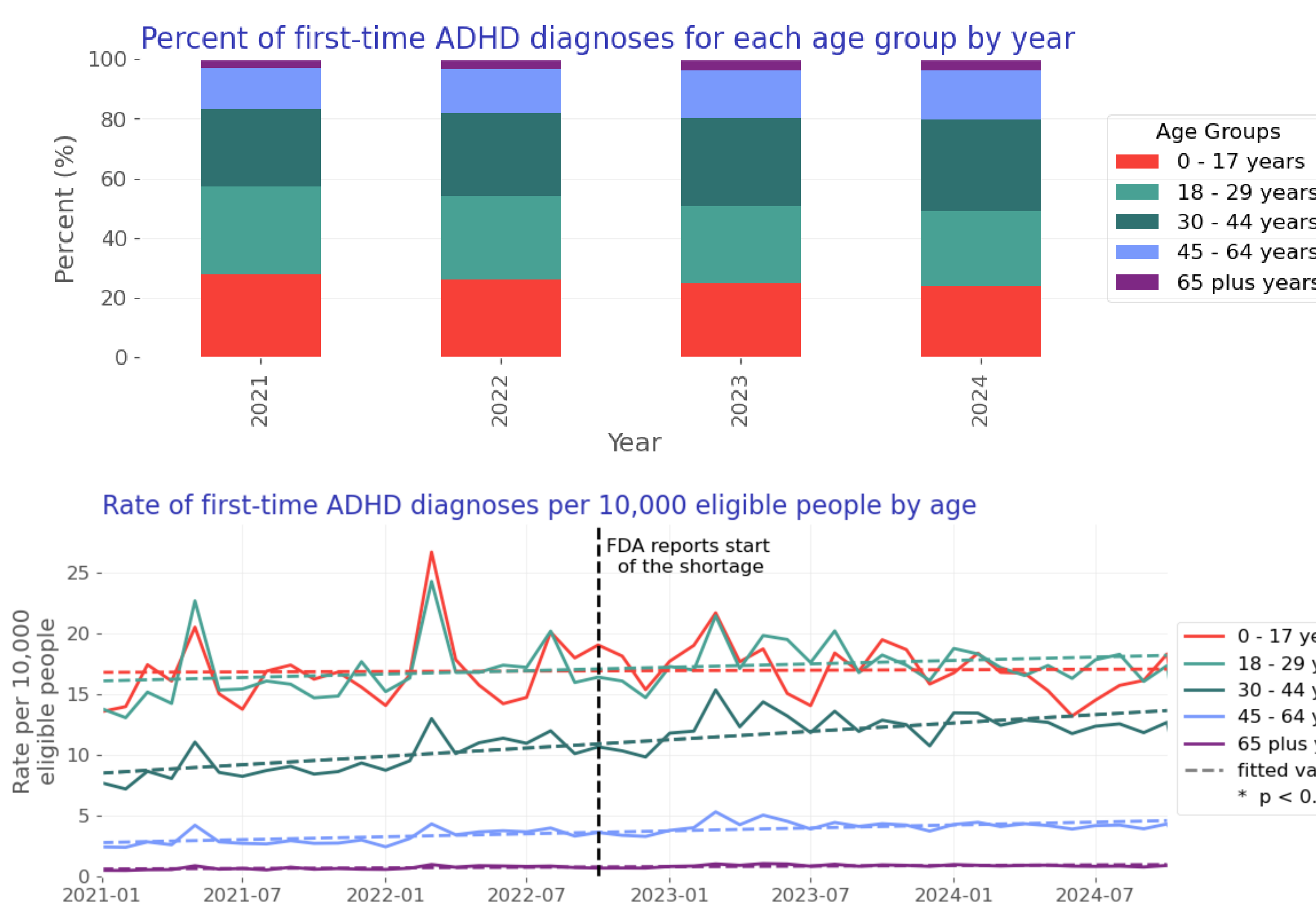
#### Analysis

- Determined days between prescription and fill
- **Calculated the rate of prescriptions that were filled within 5-, 10-, and 30-days**
- Describe periods of low fill rates

## Results

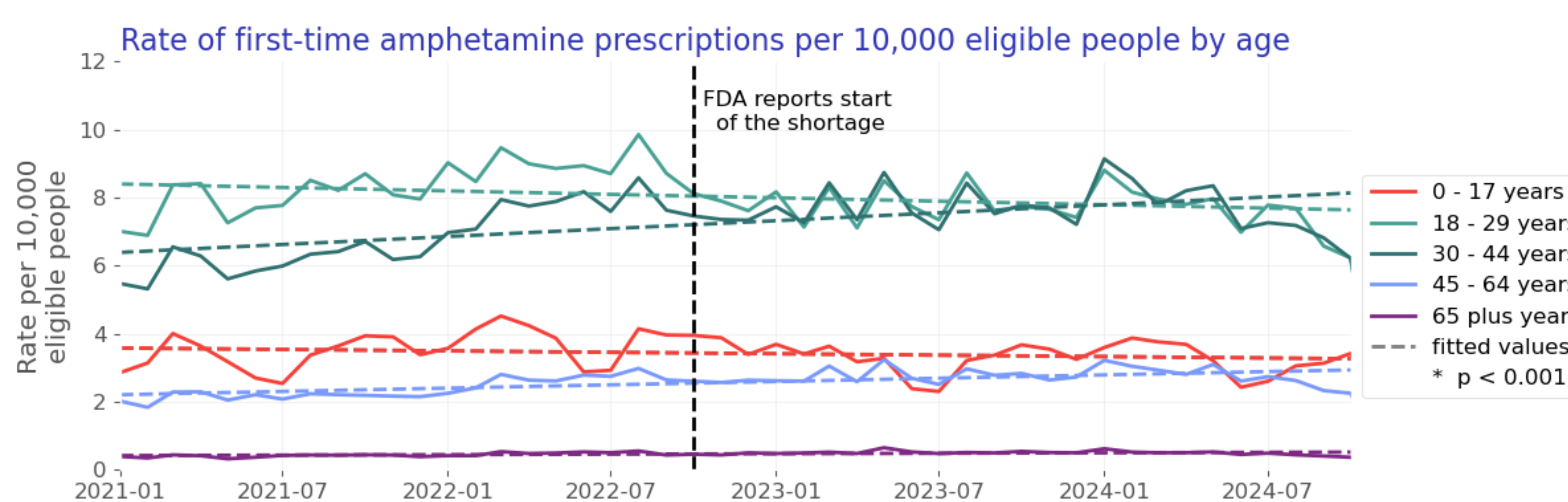
### First-time ADHD diagnoses

- **1,033,117 people** received a first-time ADHD diagnosis within the study period
- Highest first-time diagnosis rates occurred among those under 29 years
- Significant increases in the rate of first-time ADHD diagnoses were observed for all age groups over 30 years old ( $p < 0.001$ )
- **The greatest rate of increase was seen in the 30-44-year-old population**, with an increase of 0.1 new diagnoses per month per 10,000 eligible people



### First-time amphetamine prescriptions

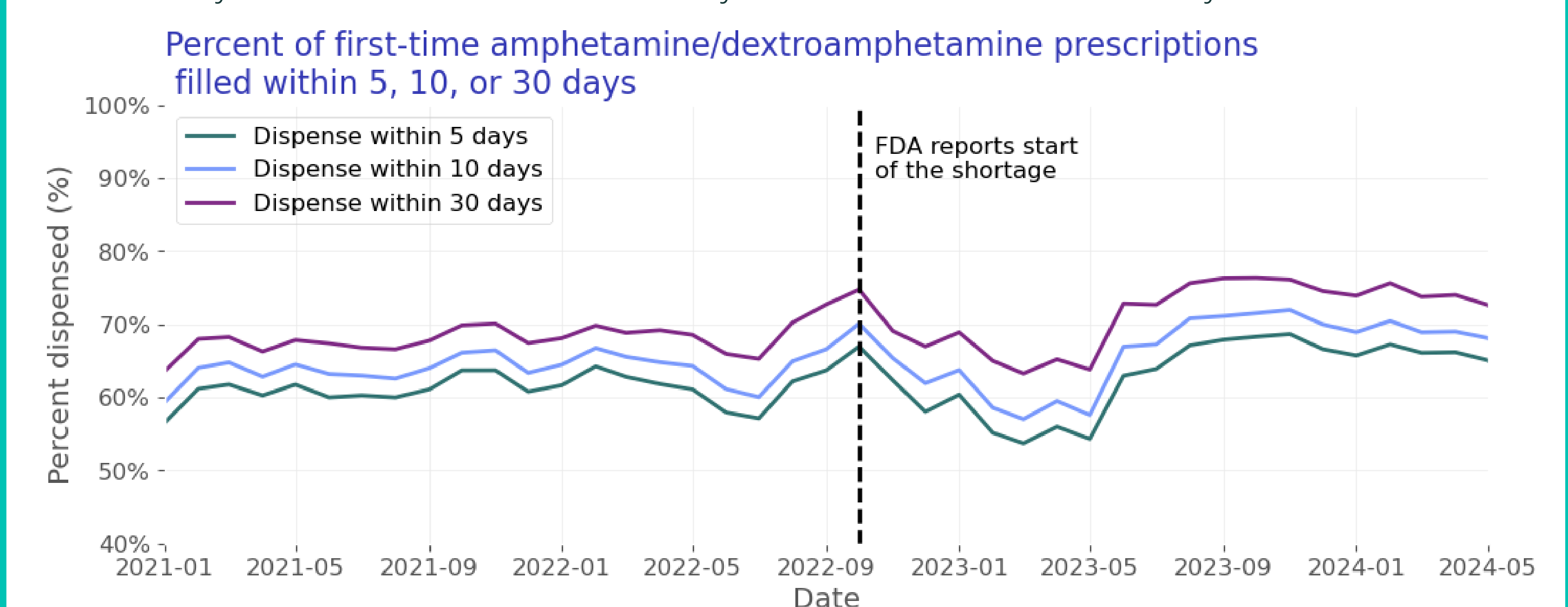
- **520,408 people** received a first-time amphetamine prescription within the study period
- Significant increases in the rate of first-time prescriptions were observed for all age groups over 30 years ( $p < 0.001$ )
- **The greatest rate of increase was seen in the 30-44-year-old population**, with an increase of 0.04 new diagnoses per month per 10,000 eligible people



### Percentage of amphetamine prescriptions filled

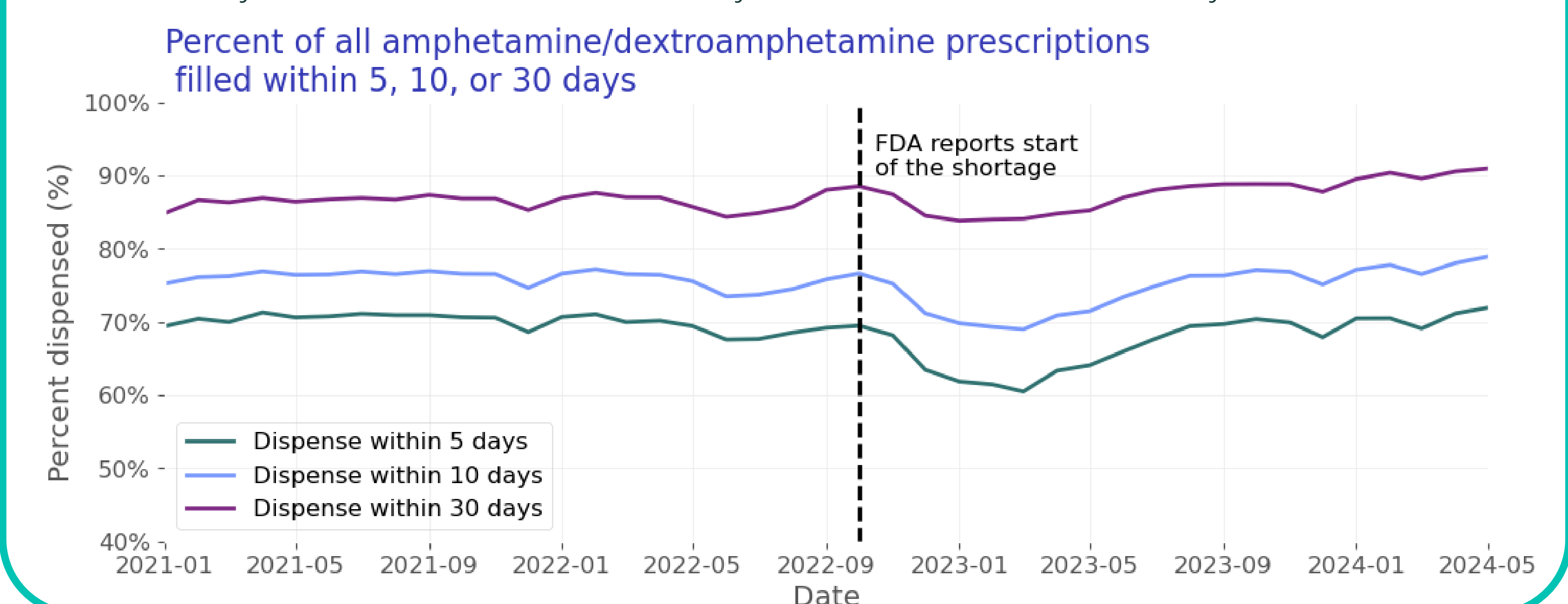
#### First-time prescription fills

- **181,467 people** had first-time amphetamine prescriptions
- The percentage of first-time prescriptions filled reached a relative peak in October 2022. Percent of prescriptions filled within:
  - 5 days: 66.9%
  - 10 days: 70.1%
  - 30 days: 74.7%
- The percentage of first-time amphetamine prescriptions filled was lowest in **March 2023 - 53.7% of first-time prescriptions were filled within 5 days**
- Feb–Apr 2023 decrease compared to 3 months prior to the shortage:
  - 5 days: 14.5%
  - 10 days: 13.1%
  - 30 days: 11.1%



#### Overall prescription fills

- **498,491 people** had 4,542,097 prescriptions in this analysis.
- **Similar trends were seen between first-time and overall prescription fills**
- Amphetamine prescription fills reached their lowest points in **March 2023**; Feb–Apr 2023 decrease compared to 3 months prior to the shortage:
  - 5 days: 10.6%
  - 10 days: 7.8%
  - 30 days: 3.8%



## Discussion

- **Older adults are driving new demand:** Both first-time prescriptions and first-time ADHD diagnoses have risen significantly among adults over 30, suggesting shifting patterns in who is being diagnosed and treated for ADHD.
- **Delayed access to prescriptions:** Although the shortage was declared in October 2022, its worst impacts on prescription fill rates weren't seen until March 2023, highlighting a delayed but sharp disruption in access.

An increase in adults over 30 receiving ADHD diagnoses and amphetamine prescriptions may have contributed to the Adderall shortage; patients reached peak delays in the ability to access prescriptions in March 2023.

