Retrospective analysis of stimulant utilization at a commercial health plan

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THE OHIO STATE UNIVERSITY HEALTH PLAN

Background

- Medications in the stimulant class, including methylphenidates and amphetamines, are indicated for attention deficit/ hyperactivity disorder (ADHD), narcolepsy and binge eating disorder, with the majority of prescriptions utilized in the treatment of ADHD.[1]
- A large analysis of stimulant utilization in the United States found stimulant prescriptions increased more than 5.8-fold between 1993-2015.[1]
- Another large study found the national, population-normalized rate of stimulant dispensing increased by 8.9% between 2014-2019.[2]
- The study also suggested that patterns of stimulant utilization were changing. Female and adult utilizers were increasing at a faster rate; however, male and pediatric utilizers continued to utilize stimulants at higher rates than their counterparts.[2]
- The results also revealed a seasonal fluctuation of stimulant utilization in pediatric utilizers, consistent with school attendance patterns, that is not present with utilizers ≥20.[2]

Objectives

- Evaluate the change in stimulant utilization from 2016 to 2020.
- Determine the impact of time of year on pediatric stimulant utilization.
- Examine whether demographic factors impact stimulant utilization.
- Assess the relationship between stimulant utilization and diagnosis for ADHD, narcolepsy, and/or binge eating disorder.
- Assess the relationship between stimulant utilization and diagnosis for anxiety and/or depression.

Methods

- Members continuously enrolled in each year (2016-2020) and utilizing stimulants were determined by identifying unique utilizers with ≥1 pharmacy claim for a stimulant prescription in a given year and represented as a percent of total continuously enrolled members during the same year.
- Monthly utilization analysis was performed for the period August – July corresponding to academic years beginning 2017-2019 and restricted to members: (i) continuously enrolled for all three years, (ii) 6-17 years of age as of August 1 of each year, and (iii) with only 30-day supply prescription stimulant fills.
- The gender and employment location distributions of continuously enrolled stimulant utilizers were compared to that of the continuously enrolled members.
- Continuously enrolled stimulant utilizers were categorized into different age groups and represented as a percent of total continuously enrolled stimulant utilizers.
- These utilizers were also evaluated to determine the percent with an ICD-10 diagnosis code for FDA-approved conditions [ADHD (F90), Narcolepsy (F50), and/or Binge Eating (G47)] or Anxiety (F33) and/or Depression (F41).
- Note: Figures 3-6 represent data from 2019 as a snapshot of the patterns observed for 2016-2019.

Results

Figure 1. Percent of Members Utilizing Stimulants

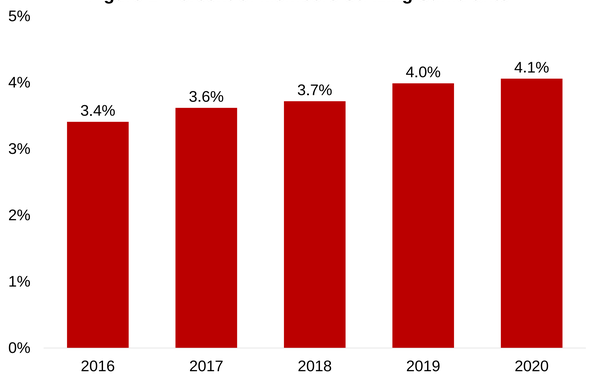


Figure 2. Number of Pediatric Utilizers Through Academic Years

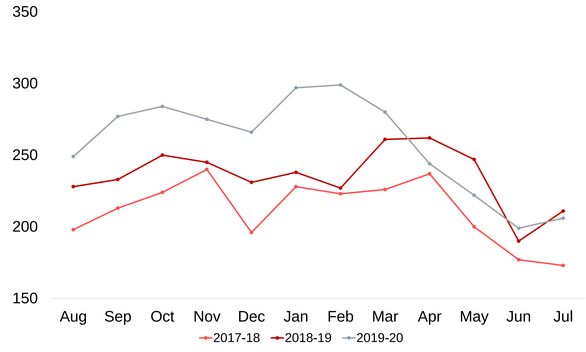


Figure 3. Workplace Location of Enrolled Members and Stimulant Utilizers (2019)

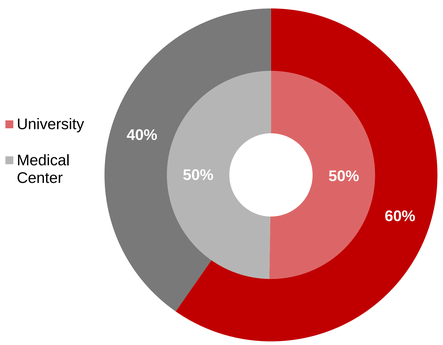


Figure 4. Gender of Enrolled Members and Stimulant Utilizers (2019)

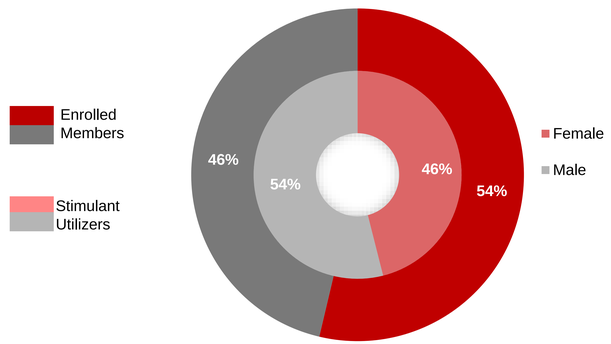


Figure 5. Stimulant Utilizers by Age (Percent with FDA-Approved Indication 2019)

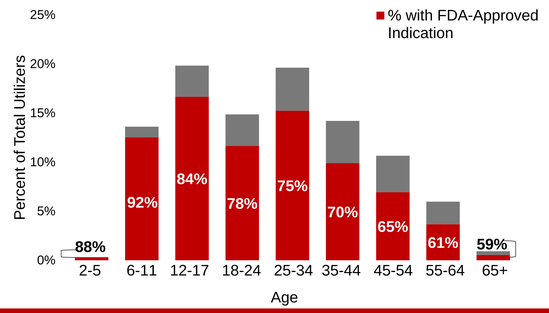
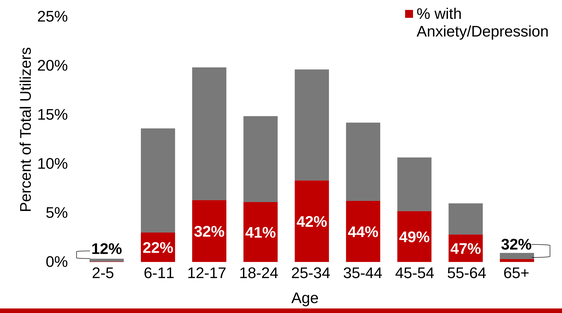


Figure 6. Stimulant Utilizers by Age (Percent with Anxiety/Depression Diagnosis 2019)



Discussion

- The percent of unique stimulant utilizers increased on an annual basis from 2016 to 2020. There was a 19.1% increase in unique utilizers observed during the study period. Unique utilizers increased at a faster rate than stimulant prescriptions as reported in the 2014-2019 national study.[2]
- Pediatric utilization was lowest during months school was not in session, indicating members were utilizing stimulants as needed, which raises concerns regarding the potential side effects associated with the reintroduction of therapy.[2] During the beginning of the COVID-19 pandemic, utilization declined at approximately the same time as the start of the lock down, earlier than the traditional start of summer break.
- A greater proportion of utilizers compared to enrolled members were medical center employees. Workplace factors could have contributed to the disproportionately higher use at the medical center.
- Though a larger percentage of male members utilized stimulants, the percentage of female utilizers increased annually. The hyperactivity symptoms of ADHD present more often in males and are therefore more often identified.[3] However, increased education about the presentation of ADHD in females may be leading to increased diagnoses and subsequent stimulant utilization.[4]
- School-aged children utilized stimulants at a greater rate than other age groups.
- Pediatric utilizers were more likely to have a diagnosis for an FDA-approved indication for stimulants, indicating potential increased off-label prescribing into adulthood.
- Adult utilizers were more likely to be diagnosed with depression and/or anxiety, which are common comorbidities to each FDA-approved indication of stimulants.

Limitations

- Differences in utilization as a result of a change in dosage or number of prescriptions were not considered in this study.
- The number of utilizers with a condition could be underestimated if they did not receive a documented diagnosis during the time period.

Conclusions

- Stimulant utilization is increasing, with higher proportions of utilization in males and medical center employees.
- As the age of a utilizer increases, they are less likely to be diagnosed with an FDA-approved indication for stimulants and more likely to be diagnosed with a psychiatric comorbidity (depression and/or anxiety).

References

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