This study uniquely analyzes the trends in cigarette use disorder in American adolescents.

However, in recent years, the fall of traditional cigarettes have been replaced by an alarming rise in e-cigarette use specifically among adolescents in the United States signaling a potential upcoming healthcare crisis among American adolescents.

Various legislative efforts have been tried at state level.

Prior to Aug 2016, e-cigarettes regulation varied significantly among the states and prevalence of e-cigarette use also differed greatly geographically as well.

In Aug 2016, e-cigarettes changed from a variety of state regulations to officially being regulated by FDA such as banning access to minors as well as restricting ability to advertise as safer than other tobacco products.

This study uniquely analyzes the trends in e-cigarette popularity by states before and after the change in e-cigarette legislation in 2016.

Methods

Data from the Youth Risk Behavioral Surveillance System Data was analyzed for prevalence of e-cigarette use among U.S. high school students and geographic patterns over time for years 2015 and 2017 (i.e. before and after the initiation of the FDA regulation in 2016).

Data was filtered by education of “high school” and locations of U.S. states as well as categories divided by submeasures of “current e-cigarette user,” “ever e-cigarette user,” and “frequent e-cigarette user.”

Results

- In 2015, 24.1% of U.S. high school students surveyed identified as a current e-cigarette user.
- Prevalence varied from high of 31.2% in West Virginia to low of 13.4% in Washington D.C.
- Interestingly in 2017, only 13.2% of U.S. high school students surveyed identified as a current e-cigarette user.
- There were also significant differences geographically as highlighted in table.
- Although prevalence of “current e-cigarette users” actually decreased among U.S. high school students from 24.1% in 2015 to 13.2% in 2017, the prevalence of “frequent e-cigarette users” increased from 3.0% in 2015 to 3.3% in 2017.

Conclusions

- E-cigarette use differed significantly among states with certain states having dramatic change in adolescent e-cigarette use rates from 2015 to 2017.
- Given that e-cigarette use among youth has been on the rise in more recent years, findings from this study have implications for understanding how future legislative efforts can be leveraged more effectively in some states than in others to impact e-cigarette use among youth.
- Understanding these recent trends may further assist in staying at the forefront of both patient care and advocacy for these particularly vulnerable patients.