

Tracking the course of vaping and cigarette smoking across adolescence: the Child to Adult Transition Study

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Background: Adolescence is characterised by incident substance use which carries risks for lifelong harms. In Australia, public health measures have limited adolescent smoking, but there has been rapid uptake of vaping over the past decade and the natural history of vaping across adolescence is yet unknown.

Methods: We used data from 1181 participants from the prospective, longitudinal Child to Adult Transition Study, recruited in 2012 at age nine. We report annual prevalence of vaping, smoking, and dual use, and incidence, age of uptake, and order of first product use from nine annual waves of data spanning ages 12-21. Multiple imputation addressed missing data. Recruitment for the last wave (wave 13) was immediately prior to the introduction of new policy intended to limit access to vaping.

Results: Prevalence of vaping at any frequency (46.9%, 95% CI:43.6%,50.3%), smoking (32.9%, 95% CI:30.0%,35.9%), and dual use (27.8%, 95% CI:24.9%,30.6%) peaked in wave 12 (mean age 20). Daily vaping had the highest frequency (17.2%, 95% CI:14.7%,19.8%) in wave 13 (mean age 21). For smoking and dual use, the highest frequency of daily use was also in wave 12 (smoking: 5.3%, 95% CI:3.8%,6.7%; dual use: 3.0% (95% CI:1.9%,4.2%)). Cumulative incidence by wave 13 was 75.8% (95% CI:73.0%,78.7%) for vaping and 60.2% (95% CI:56.7%, 63.7%) for smoking. Use ≥ 4 days/week in ≥ 2 consecutive waves was 17.3% (95% CI:14.8%,19.8%) for vaping and 6.3% (95% CI:4.6%,8.0%) for smoking. Of those who vaped and smoked during adolescence, 40.1% (95% CI:35.2%,45.0%) started with vaping, 23.9% (95% CI:19.5%,28.4%) started with smoking, and 35.9% (95% CI: 31.1%,40.7%) initiated both at the same wave.

Conclusion: These patterns of vaping and smoking in young Australians affirm that regulations and public health initiatives are urgently needed to prevent uptake of all nicotine and tobacco products.

Disclosure of Interest Statement: Nothing to disclose