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WASHINGTON UNIVERSITY  
PEDIATRIC AND ADOLESCENT  
AMBULATORY RESEARCH  
CONSORTIUM

**WU PAARC**

## Research Updates

### Electronic Cigarettes (E-cigs) and Child Safety

A recent WU PAARC survey of 658 parents found that in 1 in 8 (12%) households someone used e-cigs. In 68% of these households, dual use of e-cigs and regular cigarettes occurred, and overall, regular cigarettes were used in 1 in 4 households. Among e-cig users, few parents were aware that e-cigs were addictive, and 40% did not want to stop using them. Three percent reported a child had tried to drink e-liquid, most were unaware of risks to their child via ingestion or skin contact with e-liquid, and a third stored their e-liquid unsafely. Only 15% thought their pediatrician was aware of e-cig use in their household.

Since being introduced into the United States (U.S.) in 2007, the use of e-cigs has dramatically increased. E-cig sales are projected to exceed sales of regular cigarettes by 2023. For a pack-a-day smoker, the annual cost of e-cigs is about half that of regular cigarettes (\$730 vs. \$1825). Recently, "Big Tobacco" (Altria, RJ Renyolds, Lorillard) has entered the e-cig marketplace with products like MarkTen, Vuse, and Blu eCigs.

In the U.S., the sale, use, and advertising of e-cigs are regulated as a drug delivery device, not as a tobacco product, although new regulations are pending. In January 2016, President Obama signed a bill to require that all e-liquid be sold in child-resistant packaging. Currently, roughly 50% of products are sold with childproof caps. Missouri law has required childproof packaging for all e-liquid sold since August 2015.

Although e-cig use may be initiated to reduce use of regular cigarettes, dual

use is common. An immediate concern for young children is that the concentrated nicotine present in a teaspoon of e-liquid can be toxic if absorbed through the skin or ingested. Calls to poison hotline have increased dramatically and in December of 2014, a 1-year-old child died after drinking e-liquid.

Other concerns include:

- Health implications of e-cigs on infants of breast-feeding moms and pregnant mothers are unknown.
- Use of e-cigs by adult role-models in the household may normalize smoking again, possibly leading to higher smoking rates in youth.

Though not addressed in this WU PAARC study, use of e-cigs by adolescents is also a concern. While the prevalence of adolescent cigarette smoking has decreased to 9%, e-cigs usage has rapidly increased. Current estimates suggest that 13% of adolescents have tried e-cigs and 2% use them regularly.

These data are consistent with a 2013 study by Missouri Department of Health and Senior Services in which 12% of high schoolers and 3.5% of middle schoolers had tried an e-cig. In Missouri, e-cigs cannot be sold to minors but these products are easily available to purchase online, even e-liquids containing cannabis.

A recent study found adolescents that smoked e-cigs were over 8 times more likely to start smoking regular cigarettes. Health implications of long term use of e-cigs are unknown but may induce nicotine addiction in e-cig users who do not use regular cigarettes. Also, the e-cig device can be used to vaporize cannabis oils and waxes, possibly increasing the potency of cannabis resulting in greater dependence.

Based on these findings and review of the literature suggests that pediatricians should consider:

- Including e-cigs in your primary prevention message regarding substance use in adolescents.
- Asking all parents and adolescents about use of regular cigarettes and e-cigs in the household.
- Recommending stopping use of regular and e-cigs for health reasons for the user and others.
- If electronic cigarettes must be used, suggest:
  - ◊ E-cigs should not be used around children,
  - ◊ Use brands that have child-proof caps, and
  - ◊ Store e-liquid and e-cigs safely, i.e. locked up and physically out of reach of young children. Do not keep e-liquid bottles in a purse, car, etc.
- Explicitly banning e-cig use in your office.

### PLEASE WELCOME NEW MEMBERS:

**Dr. Earline Brownridge**

**Dr. Seth Brownridge**

Brownridge Pediatrics

**Dr. Alla Dorfman**

**Dr. Lori Buffa**

**Dr. Angela Jones**

Cloverleaf Pediatrics

**Dr. Cecilia Yu**

O'Fallon Pediatrics

**Amy Hauch, PNP**

Pediatric Healthcare Unlimited

*Please let us know if your practice has added new providers who might be interested in becoming WU PAARC members.*

## RESEARCH UPDATE

### Firearm Safety in the Home

Although household ownership of firearms has declined from about 50% in the 1970's to 31% in 2014, more Americans now own guns for protection than any other reason. According to previous findings, American children and adolescents who live in and visit homes with firearms are at an increased risk of fatal and non-fatal firearm-related injuries, suicide, and homicide. In 2013, 2,465 children and adolescents under 20 years old died from firearm related incidents, 15,091

visited emergency rooms and 6,213 were hospitalized. In Spring, 2015, WU PAARC conducted a survey to assess if parents were open to receiving household firearm safety advice from their pediatrician and to identify what information parents would find useful. Thirteen practices participated in the survey.

The survey was completed by 1246 parents and the manuscript is being prepared for submission. Results will be disseminated to you upon publication.

## YOU CAN GET INVOLVED

Faculty in the Division of Allergy, Immunology, and Pulmonary Medicine and Pamela Bates, the chief technologist in the PFT Lab at SLCH, are offering training to support optimal use of spirometry (PFTs) in the office setting. Asthma guidelines recommend annual spirometry for all children with more than very mild intermittent asthma, but the test is not widely used. Training is recommended to address the:

- technical difficulties in obtaining accurate, reliable results,
- difficulty in interpretation of PFT results, especially change over time, and
- implementation issues in the primary care setting.

Call or email Sherry Dodd at 314.454.8914 or [dodd\\_s@kids.wustl.edu](mailto:dodd_s@kids.wustl.edu) if you would like to attend an upcoming session.

## A SPECIAL THANK YOU!

*Thank you to the following practices for their participation with the Electronic Cigarettes and Child Safety, Firearm Safety in the Home, and the HPV Project:*

Brownridge Pediatrics, Caryn Garriga Pediatrics, Children's Clinic, Cloverleaf Pediatrics, Esse Health Creve Coeur Pediatrics, Esse Health Florissant Pediatrics, Fenton Pediatrics, Forest Park Pediatrics, Heartland Pediatrics, Johnson Pediatric Center, Mercy Clinic Pediatrics—Washington, Nagireddi Pediatrics, Northwest Pediatrics—Florissant, Pediatric Healthcare Unlimited, Rainbow Pediatrics, Southwest Pediatrics, St. Louis Pediatric Practitioners, Strashun Pediatrics, Tots thru Teens, Way to Grow Pediatrics, and WingHaven Pediatrics.

## CURRENT RESEARCH

WU PAARC members have reported difficulties with implementation of CDC recommendations for HPV vaccination and your concerns are backed up by national data. In 2013, only 37.6% of females and 13.9% of males eligible for the vaccine had completed the 3-dose series. There is an obvious disparity in uptake when compared with Tdap (86%) and the meningococcal (78%) vaccines.

In May, 2015, we began to address this complex challenge by investigating dimensions of the HPV vaccination delivery process in primary care offices.

Our first step was to survey WU PAARC providers to better understand current practices and provider opinions regarding the Human Papilloma Virus (HPV) vaccine. Subsequently, we collaborated with two other practice-based research networks; PittNet and The Dartmouth Co-op. Thank you to the forty-seven WU PAARC providers that participated in the provider survey!

The second step of the project was to conduct a telephone survey of parents to determine attitudes and behaviors on the use of adolescent vaccines, especially the HPV vaccine. Twelve practices and 217 parents participated in the parent survey.

In addition, we received a small pilot grant to develop an intervention to test an approach to improve implementation of the vaccine. An Advisory Group of four WU PAARC providers and two parents of adolescents are currently involved in the development of the intervention. Providers and staff from 10 practices are participating in face-to-face key informant interviews to identify best practices and barriers associated with completion of the 3-dose series of HPV vaccine. In addition, chart audits are being performed to assess HPV vaccine coverage in the 10 practices.



Visit the new WU PAARC website at:  
[wupaarc.wustl.edu](http://wupaarc.wustl.edu)

for additional resources and information on current and previous WU PAARC research projects



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AT THE ANNUAL  
WU PAARC DINNER!**