WHAT’S THE HYPE?
JUUL Electronic Cigarette’s Popularity with Youth & Young Adults
Susan Weisman, J.D., is a senior staff attorney at the Public Health Law Center, where she provides legal technical assistance to public health advocates and to local, state, and federal government officials on tobacco control issues and on issues related to healthy eating, active living, health equity and equity. Her work involves strategic consultations on the development, enactment, implementation, and enforcement of legislation, in-depth policy research on emerging issues, and publications and presentations on topics of interest. Susan has led a series collaborative, community-academic studies in partnership with public health researchers and labor leaders, examining ways to improve unionized workers’ access to and use of tobacco cessation health care benefits. She recently conducted a health impact assessment on building healthy schools in partnership with public health and school environment experts, studying how the placement and design of schools impacts student and community health.

Previously, Susan served for many years as an Administrative Law Judge for the State of Minnesota Office of Administrative Hearings, where she conducted contested case hearings and mediated and arbitrated cases. She began her career as a Legal Aid attorney, representing hearing impaired persons experiencing discrimination in employment, health care, and education settings. Susan holds a B.A. degree from The Ohio State University and a J.D. from William Mitchell College of Law.
LEGAL TECHNICAL ASSISTANCE

- Legal Research
- Policy Development, Implementation, Defense
- Publications
- Trainings

- Direct Representation
- Lobby
Public health concerns

- Most tobacco & nicotine e-juice use starts in youth
- E-cigarettes are the most popular tobacco product for youth
- Exposure to nicotine can harm the developing brain & cause addiction
- Brain development continues into early 20s
- Youth who use e-cigarettes are more likely to use cigarettes & other conventional tobacco products
- Youth are attracted to flavors – most start with flavors
Jeff Willett, Ph.D., M.A., is a vice president for the Truth Initiative Schroeder Institute where he leads a team of researchers focused on a range of tobacco policy issues. He brings a strong applied focus to tobacco research, with a goal of using research to support meaningful change at the community, state and federal levels. Willett has over fifteen years of experience in public health research, evaluation and administration. He is a recognized leader in tobacco prevention, having served as a contributor to the CDC’s Best Practices for Comprehensive Tobacco Control Programs (2014) and on several expert panels and advisory committees focused on tobacco prevention. His research interests are focused on the relationship between tobacco control policies and health disparities. Before joining Truth Initiative, Willett had served as vice president for programs and policy at the Kansas Health Foundation and as a senior research scientist/bureau director with the New York State Department of Health. Willett holds a doctoral and master’s degree in sociology from the University of Nebraska.
Erika Mansur, J.D., is the Youth Tobacco Attorney and an Assistant Attorney General for the Arizona Office of the Attorney General. Her primary responsibility is running Arizona’s state youth tobacco inspections program, Counter Strike. In this role, she has developed a statewide diversion program for individuals and businesses that violate the state prohibition on selling tobacco to minors. She worked closely with Arizona’s FDA Tobacco Inspection program to develop a system of joint federal and state tobacco inspections. These efforts have led to a nearly 30% reduction in the instance of tobacco sales to minors in Arizona. She is also a co-chair of the Joint AGO/DHS Tobacco Control Working Group and the NAAG Tobacco Retailing Working Group, where much of her work revolves around the intersection of law, public health, and public health policy. Ms. Mansur holds undergraduate degrees in Geological Sciences and French Literature, which naturally led to law school. She is a graduate of the Sandra Day O’Connor College of Law at Arizona State University.
Kimberlee Homer Vagadori, MPH, is the Project Director for the California Youth Advocacy Network (CYAN). Working in tobacco control for 17 years, she is an expert on college tobacco-free policy, youth and young adult advocacy, and tobacco industry sponsorship issues and has successfully coordinated system-wide policy initiatives in California. Ms. Homer Vagadori also provides technical assistance and training to local, state, and national organizations on issues such as youth engagement in local advocacy, tobacco and the environment, emerging tobacco products, campus-based cessation services, and tobacco industry targeting of youth and young adults.
JUUL: Recognition, use and perceptions

JEFFREY WILLETT
VICE PRESIDENT, SCHROEDER INSTITUTE
What is JUUL?

- Not your typical e-cigarette
  - nicotine salts
  - IT product design
- “By accommodating cigarette-like nicotine levels, JUUL provides satisfaction to meet the standards of smokers looking to switch from smoking cigarettes.”
- Pods with nicotine liquid available in a range of flavors.
- Every JUUL flavored pod contains nicotine.
JUUL – Nicotine Delivery

The absorbed nicotine level over time for different smoking methods:
- **Cigarette**
- **JUUL**
- **Average e-cigarette**

The chart shows the nicotine absorption over time after the first puff, with different methods resulting in varying nicotine peaks.

On the right side of the image, there is an advertisement for JUUL, highlighting a 5% strength product with 59 mg/ml nicotine.
In March, 2018, JUUL represented 54.6% dollar share of the e-cigarette traditional retail market.

On April 24th, the FDA requested that JUUL Labs, Inc. submit documents relating to marketing practices and research on marketing, effects of product design, public health impact, and adverse experiences and complaints related to JUUL.

Source: Nielsen Total US xAOC/Convenience Database and Wells Fargo Securities, LLC
Purpose of Truth Initiative

JUUL studies: To learn more about JUUL awareness, use, perceptions and terminology
November 2017 JUUL study findings

- 25% of 15-24 year olds recognized JUUL
- 10% had ever used a JUUL; 8% used in past 30 days
- Use significantly higher for males, higher SES and 18-24 year olds
- 25% of those who recognized JUUL referred to use as “JUULing”
- Most were not aware that JUUL pods always contain nicotine.
April 2018 JUUL Study

Included 12-14 year olds and expanded questions related to JUUL use.

Sample

- Source: Qualtrics panel, N=1,025
- Age: 12-17 year olds (50% 12-14, 50% 15-17)
- 50% male, 50% female
- Data collected online, 4/3/18 to 4/9/18.
Awareness

Among entire sample, N=1,025 12-17 year olds

Do you recognize this product?

- Overall: 38%
- 12 to 14: 34%
- 15 to 17: 43%

Awareness among 15-17 was 21% in November.

Greater awareness may reflect increased attention at schools and by media.

Seen JUUL used at school?

- JUUL: 18%
Ever and Past 30-Day Use of JUUL

Among entire sample, N=1,025 of 12-17 year olds

Ever Use
12-14 = 5.2%
15-17 = 7.8% (was 7.0% in November)

Past 30-Day Use
12-14 = 4.6%
15-17 = 6.5% (was 6.1% in November)
Which JUUL flavor pod used most recently?

Among past 30-day users:
- Fruit medley: 30%
- Mango: 28%
- Cool mint: 18%
- Crème brulee: 8%
- Classic menthol: 6%
- Cool cucumber: 6%
- Tobacco: 4%

Ever used marijuana with JUUL?

Among ever users:
- 30%
Product Access

Those who “used in past 30 days” were asked how they bought or got the JUUL devices they had used over the past 30 days. Respondents could select multiple response options.

- 74% reported a physical retail location
- 52% reported social sources
- 6% reported Internet

While Internet was not the most common point of access, 89% of youth who attempted to purchase online were successful.
Product Perceptions

Among those who recognized JUUL (n=394)

JUUL more or less harmful than cigarette?
- A lot/little more harmful: 12%
- Equally harmful: 41%
- A lot/little less harmful: 47%

JUUL more or less addictive than cigarette?
- Much/slightly more addictive: 32%
- Equally addictive: 50%
- Much/slightly less addictive: 18%
Summary
Conclusions

• JUUL represents 50+ of e-cigarette retail market share and 38% of 12-17 year olds recognized a JUUL device. Nearly 1-in-5 youth have seen JUUL used at their school.

• JUUL users largely report use of fruity and sweet flavors. Of youth who have ever used JUUL, one-in-three have used marijuana with the device.

• Youth largely obtained JUUL through physical retail outlets or social sources. Youth reported relative ease obtaining JUUL devices online.

• Nearly half of those who are aware of JUUL believe it is “a lot” or “a little” LESS harmful than cigarettes. One-in-three believe JUUL is “much” or “slightly more” addictive than cigarettes.
Next Steps
Other JUUL studies being planned

- Adult JUUL use, including extent to which JUUL used as a cessation aid.
- Social media studies.
- E-Cig Landscape – study focused on changes over time in the e-cigarette market (nicotine strength, marketing).

Source: Health Media Collaboratory, NORC at the University of Chicago
Thank you

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E-Liquid Lab Testing and School Resource Officer Outreach in Arizona

Erika Mansur
Youth Tobacco Program
Arizona Office of the Attorney General
Disclaimer

- The views and opinions expressed in the following PowerPoint slides are those of the individual presenter and should not be attributed to the Arizona Office of the Attorney General.
- The material presented is for educational purposes only and does not constitute legal advice.
Tobacco Use by Youth

* “E-cigarettes” were defined in each year’s study slightly differently to reflect current usage and brands, with 2015 questions specifically referencing both e-cigarettes and “vape-pens, hookah-pens, e-hookahs, e-cigars, e-pipes, personal vaporizers or mods.” Future studies may further delineate between devices.

** “Cigars” are defined as cigars, cigarillos, or little cigars, with youth use typically predominantly cigarillos, little cigars, and flavored little cigars.
E-cigarette Use in Arizona

“Shocking” Survey Result: Most Teen E-Cigarette Users Don’t Vape Nicotine

“Only about a fifth of high school e-cigarette users knowingly used nicotine-laced liquids...”

“These results, the researchers say, suggest attempts by policymakers to ban the sale of e-cigarettes to youths based on the assumption that they are always used to inhale nicotine may not be supported by evidence.”
“Knowingly”

- E-liquid content is a big unknown across the board
- Studies have found inconsistencies with labelling and actual nicotine content
- How do we know what kids are actually vaping?
School Resource Officer (SRO) Outreach

- **Phase 1:**
  - Existing relationship with Scottsdale School District SROs
  - SROs identified issue...in seventh and eighth graders in addition to high schools
  - Collect e-cigs, liquid vials, cartridges from SROs
  - Test nicotine content
Actual Nicotine Content in confiscated e-cigarettes

*Over 44mg/mL
Content testing performed at the ADHS Lab

- 57% of products taken directly from students in school had over 44mg/mL of nicotine. Almost all of these samples were from liquid taken from Juul or Juul-like “pods” or cartridges.

- Nicotine may be life-threatening with as little as 60mg.
Food Emergency Response Network (FERN)

- Founded after September 11\textsuperscript{th}, 2001.
- Primarily focused on food defense and in recent years moving incorporating more food safety testing.
- Network of Laboratories that share methods for the detection of toxins in foods.
Nicotine

- FERN screening methods are validated to detect at level 1% of the LD$_{50}$ of the analyte of interest.
- Nicotine is one of the analytes that are screened for in FERN methods.
- Limit of detection for FERN’s screening method by GC/MS, ~ 1 ppm.
E- Liquids

- Limit of detection for FERN’s screening method, ~ 1 ppm.
- E-liquids concentration of nicotine range are between 1.0 % to 5.0 % (10,000 ppm to 50,000 ppm).
- Using our current screening methodologies, the concentration of nicotine would have ruined our lab’s instruments.
FERN Chemistry Activations

Melamine

Nicotine
Nicotine Method

- Switched from GC/MS to LC/MS with same column used to test for melamine.
- Sample preparation is just add internal standard and dilute a 10,000x.
- Instrument time is just 10 minutes a sample.
- Limit of quantification is 0.17 %.
- Limit of detection is 0.010 %
Lessons Learned

- E-liquid cartridges leak.
- The nicotine present in E-liquid may be considered hazardous waste under RCRA or comparable state laws and should be handled and disposed of accordingly.
And the winner is... Juul

"WHY DON'T I GET A BUZZ ANYMORE?"

You have become addicted.
Just one of many:
https://www.instagram.com/juulnation/?hl=en
Nicotine poisoning and addiction may go unrecognized

“It’s not like I am constantly feeling like I have to do it. But I do probably go to the bathroom once every two hours or so to ‘Juul.’”

“feel sick after hitting it for a while. Especially to my stomach.”

“I'd get the spins and I'd feel almost drunk and very nauseous which I absolutely hate.”

“Every time I rip juul for however long, I get a weird, stuck feeling in my stomach and it gives me a light stomachache.”

“I got some juice in my system last night and felt like &^%$. And got nicotine in my lips and some in my mouth.”

The two days he went without, “it was all [he] could think about.”
SRO Outreach

- Phase 2
  - Presentation to ASROA Annual Conference
  - Statewide e-cigarette/e-liquid collection is ongoing
  - Collaboration with ADHS and ADE to develop educational materials for SROs, school nurses, students, teachers, and parents
Questions?

- Erika Mansur
- Erika.mansur@azag.gov
Juuling...A New Addiction in Schools?

Presented by
Kimberlee Homer Vagadori, MPH
California Youth Advocacy Network

April 26, 2018
California Youth Advocacy Network (CYAN)

- Funded by the California Tobacco Control Program
- Statewide training and technical assistance agency
- Focus on youth and young adult engagement in tobacco control
JUUL Use In California Schools

Early 2017

• Outreach from schools re: use of JUULs by youth
  – Correspondence primarily from higher populated communities and regions of California
Youth and Young Adult Focus Groups
Spring 2017

• Focus groups with youth (14-17 year olds) and young adults (18-24 year old)
• Recruited through community partners
• Products discussed:
  – E-cigarettes
  – Little cigars
  – Menthol
  – Smokeless Tobacco
  – Marijuana (Blunts)
April – May 2017

• 12 focus groups
  – 5 youth
  – 7 young adult*

• Locations
  – Alameda County
  – Orange County
  – Sacramento County
  – Santa Barbara County

• Total participants
  – 78 youth
  – 73 young adults
Conversations re: Use

Participants were asked...

- Know what the products are
- Products safe
- Where they’ve heard about the products
- Know people who use products
- Negative experiences with products
- Other perceptions of products
- DID NOT ask about tobacco use until after focus groups (wanted them to feel comfortable sharing)
Electronic Smoking Devices

Cig-a-Like
- Same size and shape as tobacco cigarettes
- Nicotine solution sold in a pre-filled cartridge

Vape Pens
- Larger device
- May look like an ink pen
- User fills pen with nicotine solution

Juul
- Closed system
- Uses nicotine salts

Mods or Tanks
- Largest device
- Contains a big battery which creates more aerosol
- User fills with nicotine solution

Hookah Pens
- Flavored e-cigarette designed to taste like hookah-smoke
- Often a big larger in size than a cig-a-like e-cigarette
Focus Group Results

• Little knowledge about product

• Knowledge:
  – Cheap
  – Don’t have to buy a whole new thing to use
  – Super discreet
  – Really strong
  – Vapor is subtle and smooth (not a thick smoke)
JUUL Use In California Schools

Late 2017

• Contacted by JUUL lobbyist
• Partnership with Office of the Attorney General, Department of Education, California Tobacco Control Program, and CYAN
• Statewide survey to identify problem of JUUL use in California schools
  – Seeking information on what products were used and confiscated on K-12 campuses
JUUL Partnership with California Schools

Early 2018

- Communication with various states re: outreach to schools
- JUUL outreach to California schools, districts, and Department of Education
  - Promoting JUUL Youth Prevention Program
  - Identified specific schools and districts proposing to work with
JUUL’s Youth Prevention

• JUUL Strategy
  – Assessment of problem in schools
    • Identify targeted schools
    • Engage law enforcement and school leaders
    • Youth JUUL user focus groups
  – Design alternative prevention program
    • Using “best practice resources,” create Saturday School
    • Partner with schools to host
    • Outreach to school partners (e.g., National School Boards Conference)
  – Develop technological solutions to prevent students from using
    • Funding to schools
JUUL Youth Prevention

Saturday School
- Two programs – Student and Parent
- Alternative to suspension
- Focus on nicotine and addiction, marijuana
- Three sessions (60 minutes each) for youth
- One session for parents

Technological Solution
- Place “nodes” on K-12 schools that would jam the JUUL devices so it cannot be used
Response to JUUL Youth Prevention Program

- Amended survey to include questions on JUUL’s outreach to schools
- Correspondence with Tobacco Use Prevention Education (TUPE) Coordinators throughout CA
  - Email with information about:
    - JUUL Youth Prevention Program
    - Guidance on partnerships with tobacco companies
    - Stanford Tobacco Prevention Toolkit
  - Secondary email to complete survey
- Outreach to local and regional tobacco control partners
Stanford Tobacco Prevention Toolkit

- Online Toolkit for K-12 educators
- Includes educational modules for educators, administrators, parents/guardians, and others working with youth
- *Funded by Tobacco-Related Disease Research Program, California Department of Education, CVS Health Foundation*

[Link](http://tobaccopreventiontoolkit.stanford.edu)
Ongoing Efforts

• Continued collaborative efforts and outreach
  – Office of Attorney General, California Department of Education, California Department of Public Health, California Youth Advocacy Network
  – National partners and other states
  – Track JUUL problems in community, outreach to schools and organizations

• School-Based Surveys
  – February Survey – outreach to TUPE programs
  – May Survey – outreach to school administrators and School Resource Officers (SRO)

• Focus groups and youth/young adult discussions
• Youth/young adult prevention materials
Thank You

Contact Information

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RESOURCES

FACT SHEETS

JUUL & the Guinea Pig Generation: Public Health Concerns About Use by Young People  (Public Health Law Center, 2018)

JUUL and Youth: Rising E-Cigarette Popularity  (Campaign for Tobacco-Free Kids, 2018)

JOURNAL ARTICLE

Jeffrey G. Willett et al., Recognition, use and perceptions of JUUL among youth and young adults, Tobacco Control (4/2018)

OTHER MATERIALS

National public health leaders’ letter to FDA urging immediate action (4/18/2018)

FDA statement on enforcement actions & new youth tobacco prevention plan to stop youth use of and access to JUUL and other e-cigarettes (4/24/18)

Stanford Medicine Tobacco Prevention Toolkit: Unit 6 – Why should I be worried about JUULs?
REGULATING JUUL: FEDERAL, STATE & LOCAL POLICY OPTIONS

REGISTER FOR OUR NEXT JUUL WEBINAR: Friday, June 15th, noon CST

- Sales
- Use
- Marketing
- Pricing
- Ingredient disclosure & lab testing
- FDA regulations and enforcement actions
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