6th Annual Claims Symposium

May 23rd, 2019

The Country Club of Harrisburg
401 Fishing Creek Valley Road
Harrisburg, PA 17112

(717) 237-7100
www.tthlaw.com

Thomas, Thomas & Hafer LLP

6th Annual Claims Symposium

Thursday, May 23rd, 2019
At The Country Club of Harrisburg
401 Fishing Creek Valley Road, Harrisburg, PA 17112
(717) 599-5712

Agenda and Outline

8:00 a.m. – 8:30 a.m.	**Registration and Breakfast**
8:30 a.m. – 8:40 a.m.	**Introduction & Welcome** Hugh P. O'Neill, III, Esq. of Thomas, Thomas & Hafer, LLP
8:40 a.m. – 9:30 a.m.	**Forensic Surveillance – Use of Surveillance Video in Litigation and Accident Reconstruction** *Presented by:* Robert T. Lynch, P.E., DJS Associates, Inc. and Laurence R. Penn, Forensic Animation/Video Specialist, DJS Associates, Inc.
9:30 a.m. – 9:40 a.m.	**Break**
9:40 a.m. – 10:30 a.m.	**Smokeless ≠ riskless: Emerging risks with the rise of e-cigarettes and vaping** *Presented by:* Peter C. Biberstein, Esq., CPCU, Thomas, Thomas & Hafer, LLP
10:30 a.m. – 10:40 a.m.	**Break**
10:40 a.m. – 11:30 a.m.	**Concussion, mTBI and PTSD** *Presented by:* Dr. Christopher D. Royer, Psy.D., Widener University, Clinical Neuropsychologist
11:30 a.m. – 11:40 a.m.	**Break**
11:40 a.m. – 12:30 p.m.	**Mitigating Risk by Effectively Communicating to a Concerned Public in a Time of Crisis** *Presented by:* Keith G. Dorman, Vice President, Communication and Community Relations, UGI Utilities, Inc.
12:30 p.m. – 12:35 p.m.	**Questions and Conclusion**
12:35 p.m.	Buffet Luncheon

Topic:

Forensic Surveillance - Use of Surveillance Video in Litigation and Accident Reconstruction

Presented by:

Robert T. Lynch, P.E.
Senior Collision Reconstruction Engineer
DJS Associates, Inc.
and
Laurence R. Penn
Forensic Animation/Video Specialist
DJS Associates, Inc.

The Latest in Engineering Technology: 2019 Update
The Forensic Engineering Analysis of Surveillance Video: A Real-World Example

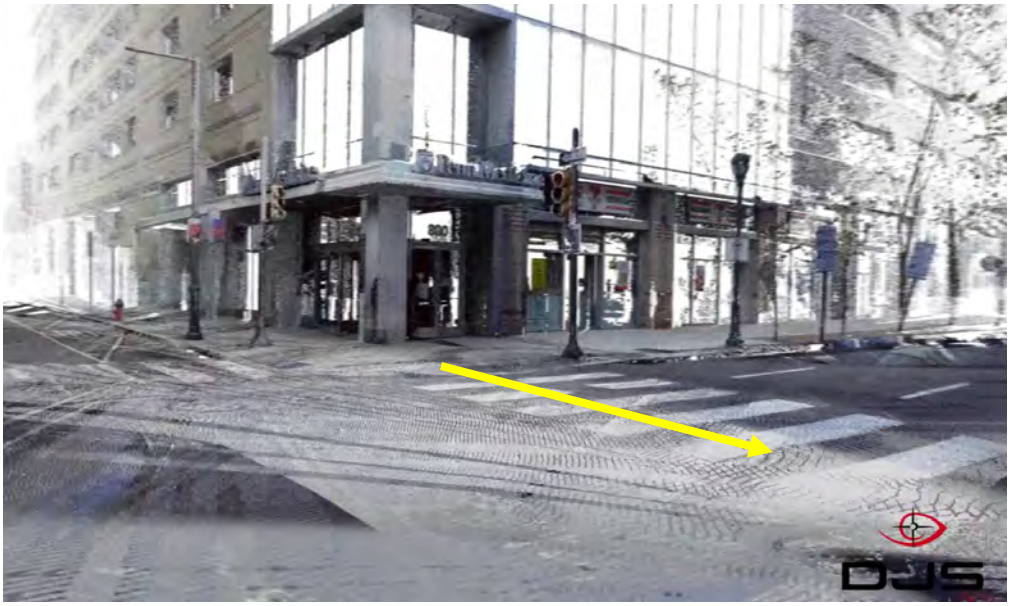
Steven M. Schorr, P.E., Robert T. Lynch, P.E., Laurence Penn
DJS Associates, Inc.

This year's example of new technology in the forensic engineering field was selected due to the prevalence of video in our world and the continued reliance on video in an attempt to figure out what happened in events such as assaults; thefts; vehicle collisions; and anything else that might have been captured wholly or partially on video from a variety of sources.

In today's society where video is routinely captured by phones, surveillance cameras, vehicle cameras, and other sources, the ability to translate video information into data for use in a forensic analysis is critical. This article will discuss, using a real-world, adjudicated pedestrian/motor vehicle collision event, the systematic review required to complete a three-dimensional engineering-based analysis of surveillance video; the sources of the data; the manner in which the data needs to be collected and processed; the software required to perform the analysis; the expected accuracy level of the analysis; and how the results of the analysis can be presented to the trier of fact. This paper will also discuss how the actual video is "corrected" to remove the curvature from the lens; how the video is camera matched within an accurate, three-dimensional environment; how objects within the video are "tracked" within that environment; and how these processes combine to create an accurate, three-dimensional environment illustrating to the Trier of Fact the movements defined in the video from which speeds, spatial relationships, and sight distances can be evaluated.

Collision Event:

The collision in question occurred during the daylight, on a weekday, in the downtown of a center city, urban area. The collision involved a package delivery truck and a pedestrian.



Raw Point Cloud Data From Site Scan
View of Package Vehicle Operator Prior to Right Turn
Arrow is Initial Path of Pedestrian

Specifically, the package truck, which had been stopped for a red signal facing northbound, was executing a right turn to head eastbound when it contacted with the pedestrian who was crossing the east approach of the street that the package truck was attempting to access. The video shows that the pedestrian was southbound, and then turned around to head back northbound when the collision occurred.

The front of the package truck struck the left side of the northbound pedestrian. The collision occurred during the daylight, there were no adverse weather conditions, and the roadway was dry. Portions of the movements of the pedestrian, package truck, other pedestrians, and other vehicles were captured on two surveillance video cameras located north and south of the collision area. One camera was located on the building on the northeast corner, and that camera was facing southbound. The other camera was located on a building on the west side of the northbound roadway but was located over one-half block south of the intersection where the collision occurred. This camera was facing northbound.

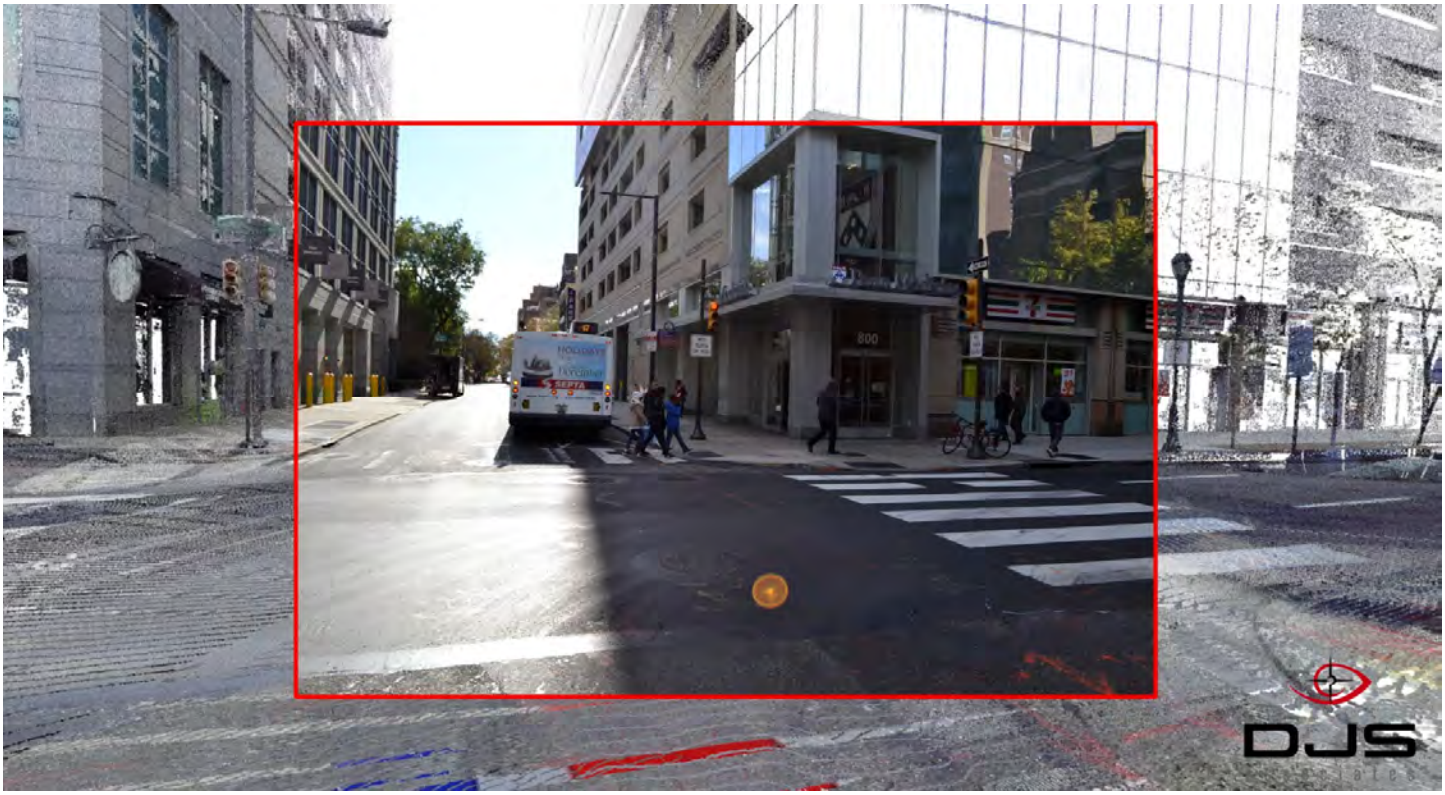
As a result of the collision, questions arose relative to the specific dynamics of the collision (speed and movement of the pedestrian and package truck); the timing of the traffic signal relative to the movement of the package truck and pedestrian; the sight distance available to the package truck operator (should he have seen the pedestrian and if so, for how long); the ability of the package truck operator to avoid the collision, as well as other questions with regard to the actions of both the pedestrian and package truck operator. It was determined that many of these questions could be answered if the movements of the pedestrian and package truck could be accurately reconstructed within a to-scale, three-dimensional environment. By doing so, the actual movement of the package truck and pedestrian, as well as specifically what the vehicle operator could see, could be accurately replicated and evaluated.

Collection of Field Data:

The analysis of the video included "camera matching" the view of the cameras within an accurate, three-dimensional environment. This required the proper collection of data to create the three-dimensional environment. This was done utilizing High-Definition Surveying (HDS) laser scanners and Unmanned Aerial Vehicles* (UAVs – a.k.a. drones). The HDS laser scanning included three-dimensional measurements of all buildings and roadways visible in and around the view of the cameras. The drone data captured a slightly wider cross-sectional area. The data was processed and integrated such that the most accurate, thorough three-dimensional environment could be created and utilized. Accuracy considerations were taken into account in the collection of this data. Machined targets were placed within the HDS laser scans which were used to internally check the three-dimensional measurements; the point cloud data from the HDS laser scans was overlaid and compared to aerial maps of the area; drone data was processed and turned into three-dimensional images with the most sophisticated available software; and then that data was correlated with the HDS laser scans and the aerial images. The internal checks, the overlap, and the redundancy allowed for confirmation of the accuracy of the data. The analysis of the video also required three-dimensional measurements of the package truck. These measurements were also collected utilizing HDS laser scanners and Unmanned Aerial Vehicles* (UAVs – a.k.a. drones). The drone data captured the top of the package vehicle (not visible to the terrestrial placed scanner). The point cloud data from the HDS laser scans was integrated with the three-dimensional measurements created from the drone data. *[*The drone was deployed only after requesting and receiving FAA clearance to fly the UAV in airspace that was not restricted due to relative location to an airport or other considerations.]*

Processing 3D Data:

In an effort to accurately recreate the movements of the bus and the pedestrian in a to-scale, three-dimensional environment, the following steps were taken to perform this engineering analysis of the surveillance video. The site inspection laser scan and drone data were processed, creating an accurate, three-dimensional computer model of the intersection.



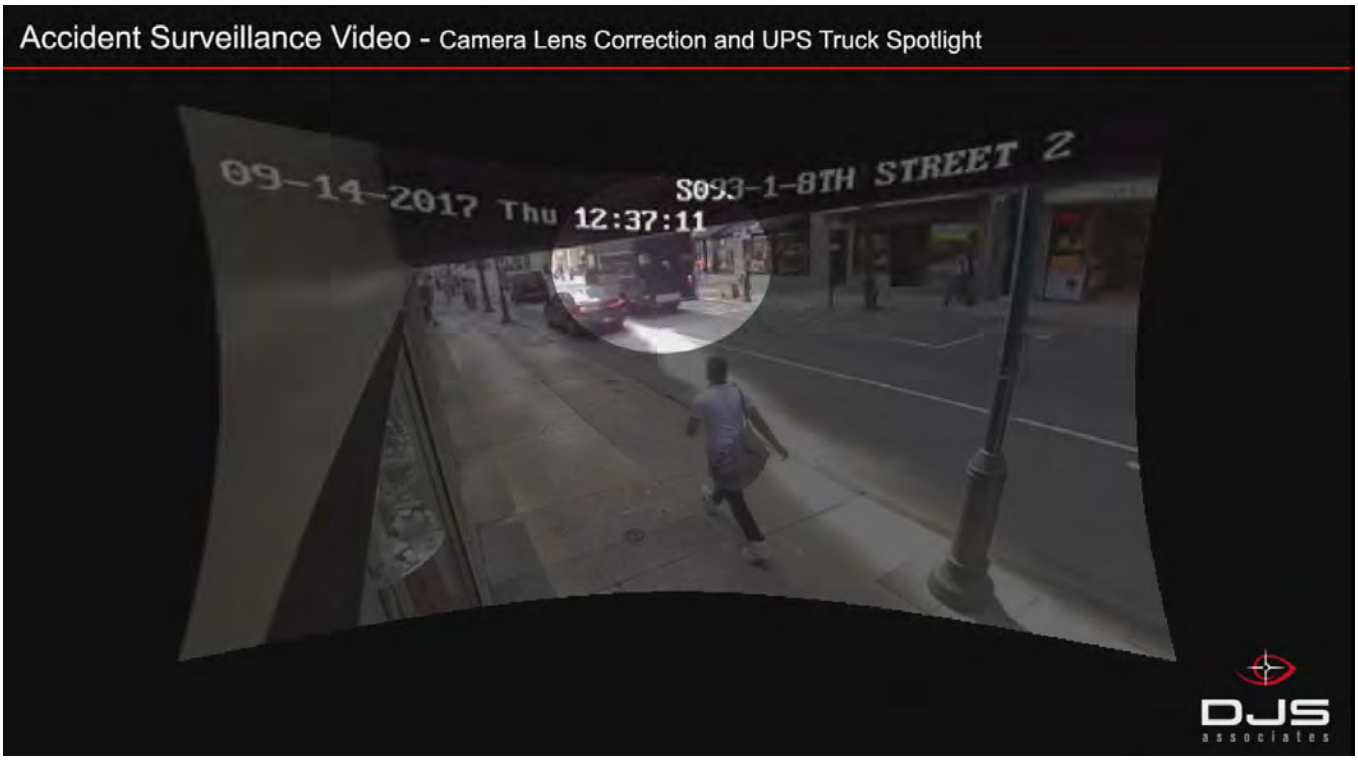
Site Photograph Matched to Raw Point Cloud Data

The vehicle inspection laser scan and drone data were processed to create an accurate, three-dimensional model of the package vehicle. A to-scale pedestrian was also created that matched the height of the pedestrian involved in the incident.

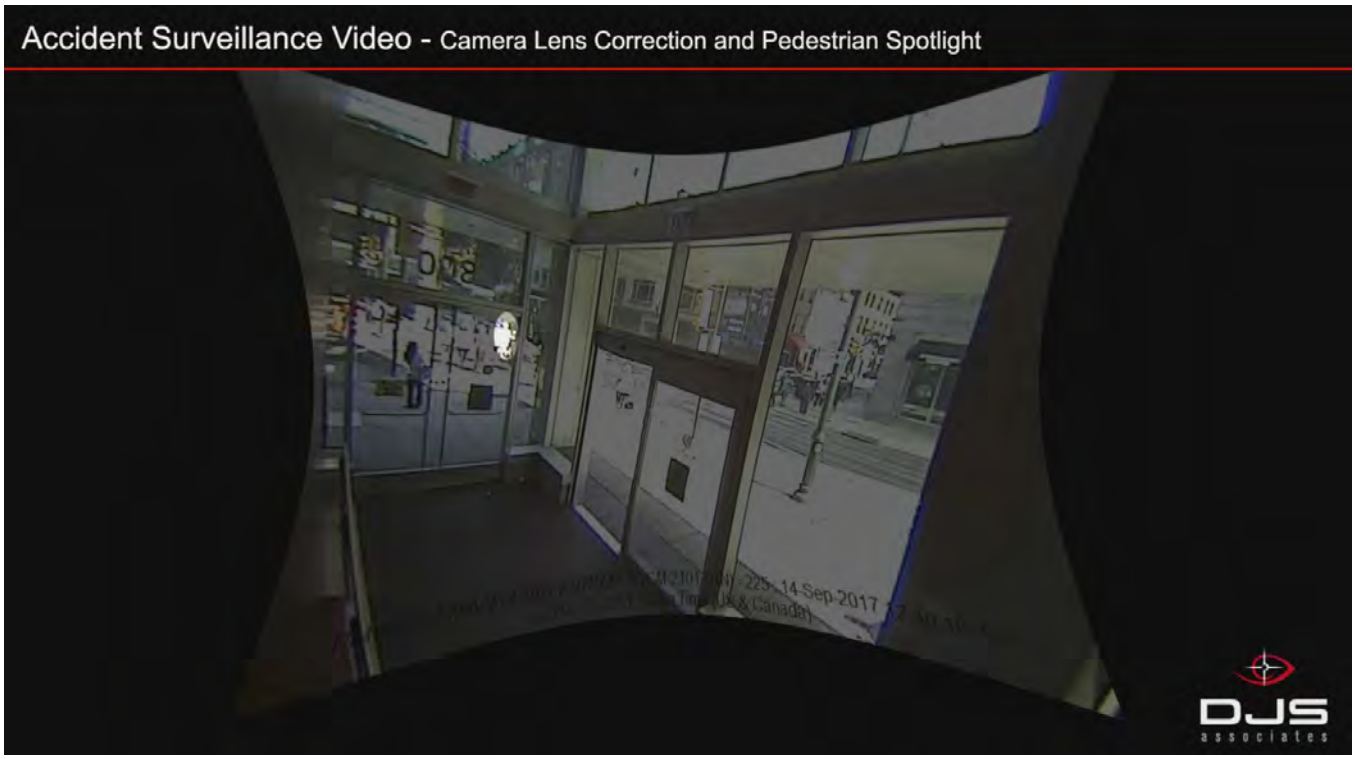
Engineering Analysis:

The provided video showing the movements of the pedestrian and the package vehicle was "corrected" such that the curvature of the image due to the lens of the camera was removed and so that the video images could be used for camera matching and tracking perspective. The frame rate of the video was approximately 30 frames per second.

Once the video images were "corrected," a publicly available, industry-accepted computer software package was utilized to track the movements of the to-scale package vehicle and the to-scale pedestrian within the accurate, three-dimensional environment, as defined in the surveillance video. Specifically, the positions of the package vehicle and the pedestrian were tracked, frame-by-frame, such that those positions could be accurately placed within the three-dimensional computer model of the intersection. Each time a point was tracked, the software defined a level of accuracy based on the defined to-scale environment and the level of clarity of the videos. Both surveillance camera views were tracked, and the results were correlated to one another.



Corrected Northbound Video
Package Vehicle Spotlighted



Corrected Southbound Video
Pedestrian Spotlighted

By tracking the movements of the pedestrian and the package vehicle as seen in the videos, and then placing the movements of the pedestrian and package vehicle within the accurate, three-dimensional model of the

intersection, the relative positions of the vehicle and the pedestrian can be accurately viewed from anywhere within the three-dimensional environment. Additionally, since the environment and the vehicle are to-scale, the view of the package vehicle operator, sitting within the vehicle, can be accurately simulated and defined. That is, the three-dimensional analysis allows one to "see what the package vehicle operator had the ability to see."

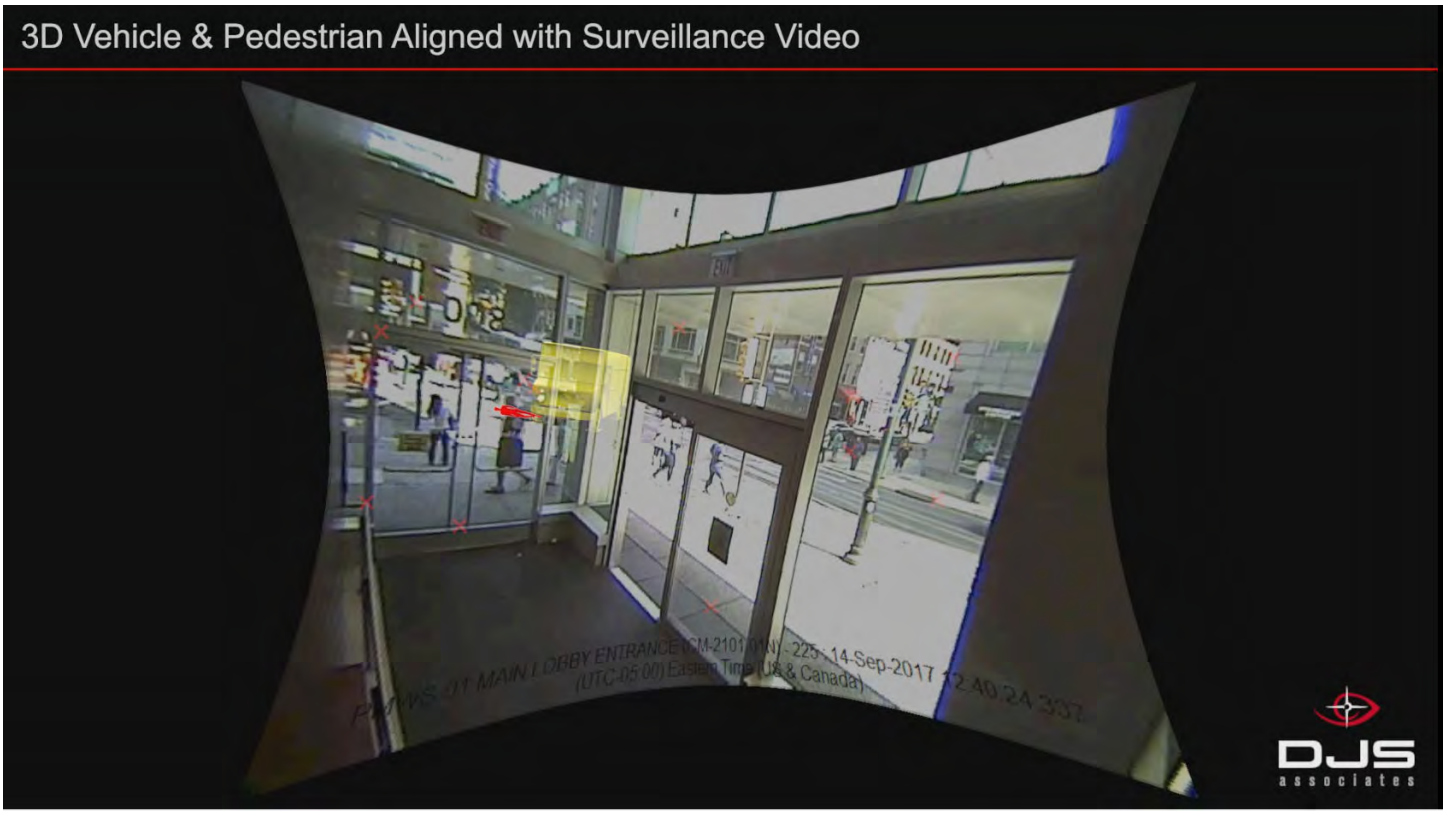


Image Showing Trackers (Red "X"s) Used to Define Package Vehicle and Pedestrian Movement Southbound Video

Package Vehicle and Pedestrian Shown Just After Impact

Since the data does not define precisely where the head/eyes of the package vehicle operator were as he turned, the engineering analysis considered a typical head placement of the vehicle operator and then evaluated what the operator could see when his head was moved a defined distance forward, rearward, to the left, and to the right from that "typical" position. These movements replicated the type of movements reasonable vehicle operators would be required to do as they execute a turn. The location of the package vehicle operator's eyes relative to the seat was defined placing a folding rule alongside the seated vehicle operator as he sat in a chair.

The data was collected in such a manner that the accuracy of the three-dimensional environment, vehicle, and pedestrian could be shown and scientifically proven (in several ways) to the trier of fact. Additionally, the process utilized to track the points from the videos into and within the three-dimensional environment also provided a level of accuracy for each plotted point. As such, the process easily passes any potential arguments presented relative to the *Daubert* standard. Specifically, the technique in question has been tested (in fact, there is software developed that is industry accepted that helps facilitate the analysis); the technique has been subjected to peer review and publication (and the references are available from numerous scientific/engineering-based organizations); the analysis process provides a known error rate; the analysis is based on basic scientific principles which are a foundation for its operation; and the analysis process is utilized and readily accepted within the scientific community as well as the entertainment industry (i.e. movie making).

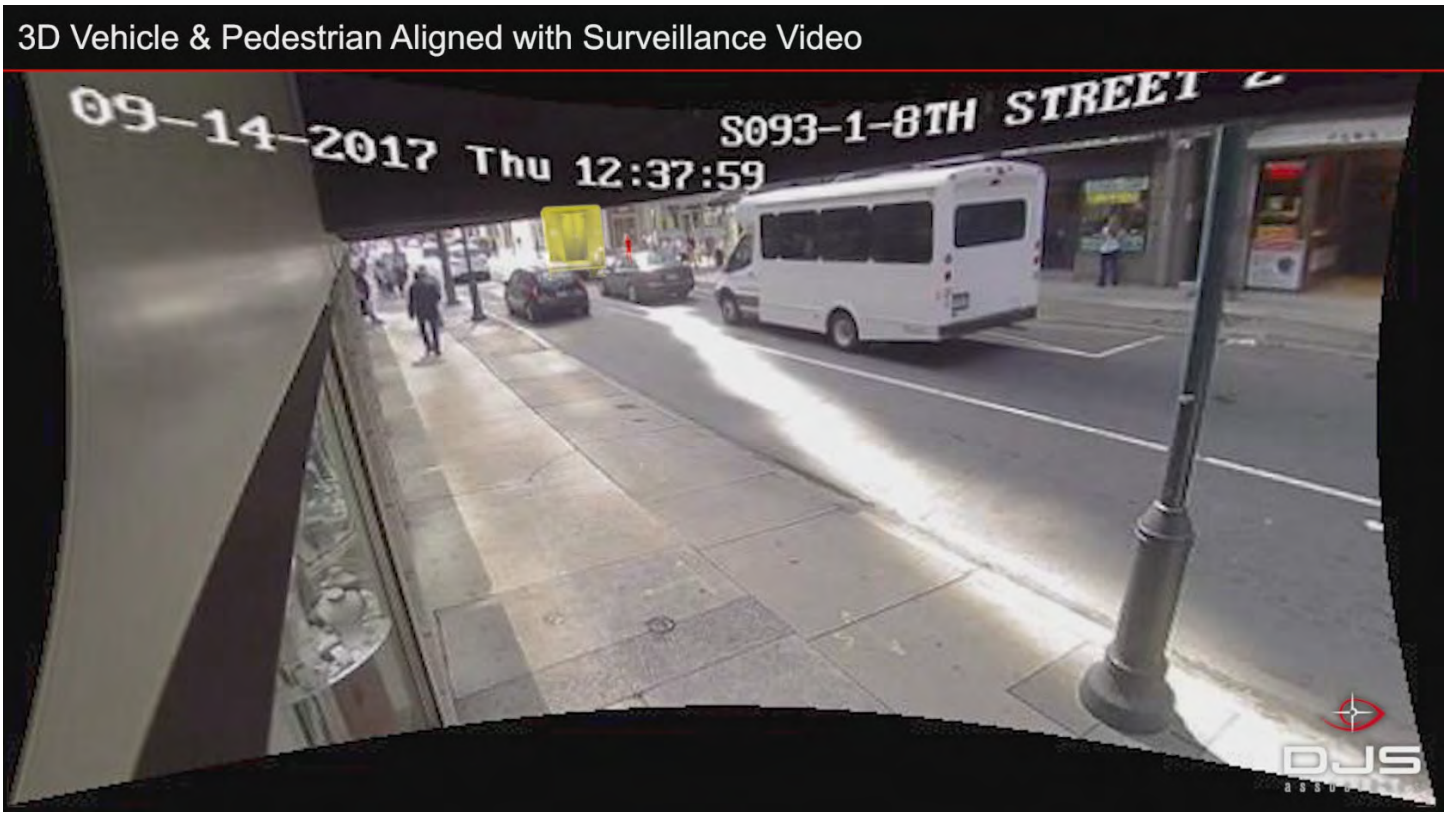


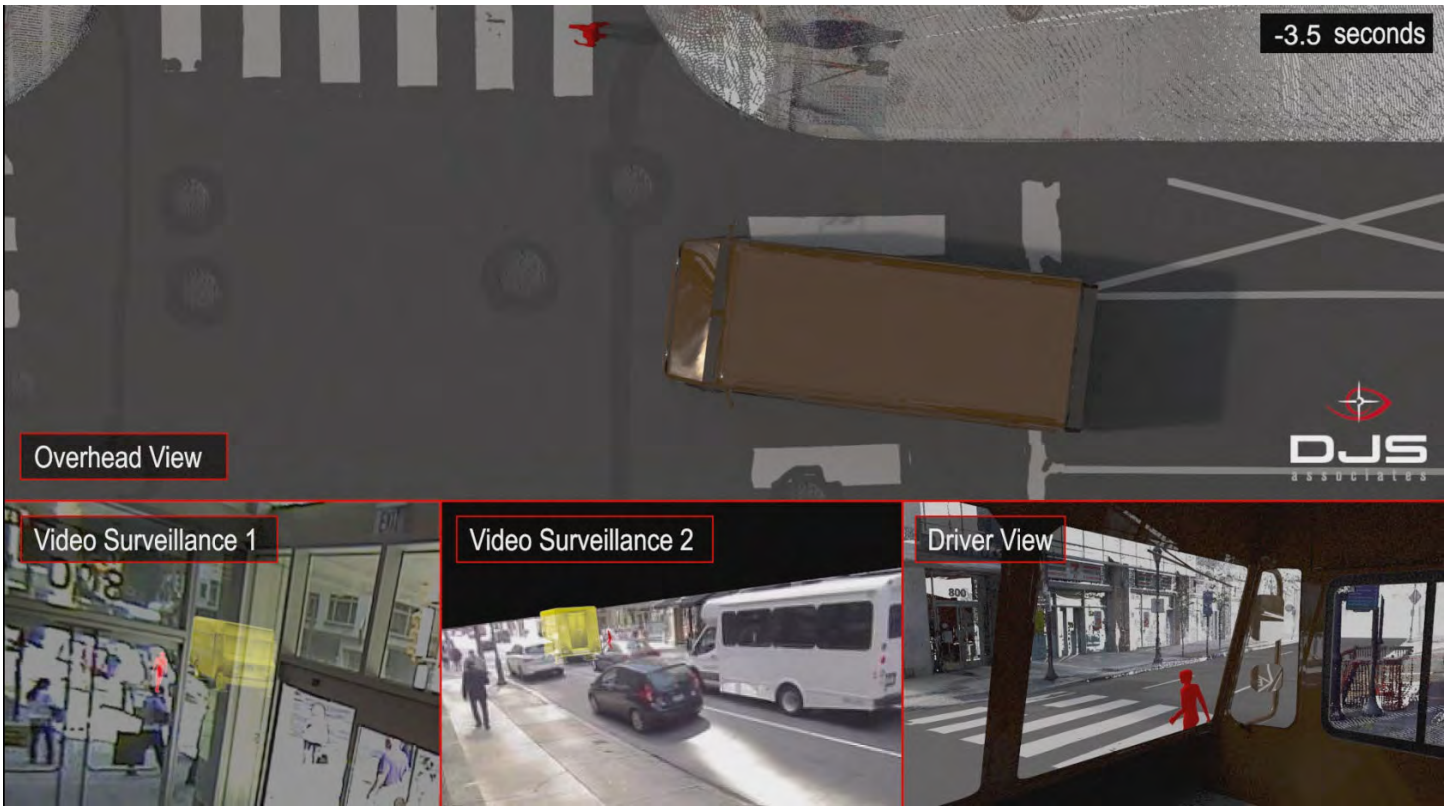
Image Showing Package Vehicle and Pedestrian Movement
Northbound Video
Package Vehicle and Pedestrian Shown Just Prior to Impact

Presentation of Results:

The engineering analysis process provided the opportunity to capture and show the view of the package vehicle operator as he sat at the signal and as he moved through his right turn. The engineering analysis showed that had the package vehicle operator been attentive to the environment and pedestrians in his forward field of vision, he would have been able to view the pedestrian as she crossed the roadway and as she approached and moved in front of the package vehicle.

The manner in which the data was collected and how the analysis was completed allowed for a variety of presentation possibilities. This included a story-board approach where each step of the data collection process was shown; where the correlation of the field data leading to the accurate, three-dimensional environment, vehicle, and pedestrian was shown; where the manner in which the video was corrected was shown; where the tracking of the movement of the pedestrian and package vehicle within the video was shown; where the way in which that data was then transferred to the three-dimensional environment was shown; and finally, what the package vehicle operator could see was shown.

The image on the next page correlates the two views of the surveillance videos to the aerial view of the defined vehicle and pedestrian movements along with the view of the package vehicle operator. The nature of the analysis is such that once it is completed, the manner in which the analysis is shown can be adjusted to the manner in which the case may be presented. It is up to the user to define how best to demonstrate the results of the accurate engineering analysis.



Demonstrative Exhibit Showing Results of Analysis
Accurate Aerial Image of Vehicle Pedestrian Positions
View from Videos
View of Package Vehicle Operator

From the time this engineering-based analysis was completed on this case, technology had moved forward. New software has allowed for the same analysis to be enhanced via interactive software that allows for the smooth and accurate movement of the package vehicle operator's head. That is, using similar controls utilized by video "gamers," the torso and head of the operator can be moved around (as if the operator were leaning forward or looking around) to see what could be seen.

The image on the next page shows three selected views, all directly from the accurate, three-dimensional environment (and does not show the video views as selected for the demonstrative exhibit noted above). In the upper left corner of the exhibit, a scale vehicle operator is shown. The controls to the left of the operator allow the user to move the head and torso of the vehicle operator in the same manner as an actual driver could lean forward and/or to the sides. The image in the upper right corner shows what that vehicle operator could see as he/she is moving his/her head around. This allows for a "real world" analysis rather than a single view of a vehicle operator. The box on the lower portion of the exhibit shows the accurate relative movement of the package vehicle and pedestrian along with shaded areas where, absent any movement of the vehicle operator's head, his/her view would be blocked by the vehicle's "A" post or right-side door frame.

Demonstrative Exhibit Showing Results of Analysis
View of Vehicle Operator's Movement (Interactive)
View of Package Vehicle Operator (Interactive)
Accurate Aerial Image of Vehicle Pedestrian Positions

Now, the latest in technology allows for the trier of fact, through virtual reality glasses, to be placed within the package vehicle and within the three-dimensional environment to move around and see what the operator could see.

As we have noted in the past, technology moves ahead whether we are ready or not. It will be interesting to see what forward steps will be taken when the 2020 update is prepared.

Topic:

Smokeless ≠ Riskless: Emerging Risks with the Rise of Electronic Cigarettes and Vaping

Presented by:
Peter C. Biberstein, Esq., CPCU
Thomas, Thomas & Hafer, LLP

SMOKELESS ≠ RISKLESS: Emerging risks with the rise of e-cigarettes and vaping

Peter C. Biberstein, Esq. CPCU
Thomas, Thomas & Hafer, LLP

E-cigarettes and "vapes"

- What are they?
- How do they work?
- Are they safe?
- Should you be insuring vape manufacturers and retailers?

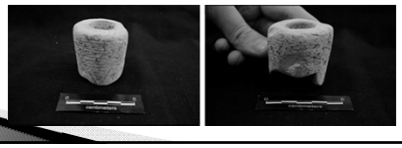
History of Smoking

- *Nicotiana tabacum* in the Andes almost 6,000 years ago
- Archaeological findings show evidence of tobacco smoking in North America almost 4,000 years ago

An illustration of different tobacco species published in the 1909 book St. Nicotine of the Peace Pipe, by Edward Vincent Heward. (Public Domain)

History of Smoking

- The oldest known tobacco pipe in North America from 1685–1530 B.C.
- Native American spiritual ceremonies and the "peace pipe"
- Dried tobacco gifted to Columbus in 1492
- New research into tobacco's role in the Agricultural Revolution



History of Smoking

- Other ancient pipes testing positive for nicotine dating back more than 1,200 years

Tobacco Became Big Business

- Huge cash crop on American Plantations
- Exports from America in the 1600s
- Advertisements in the 1700s

Doctor tested and dentist approved

According to a recent Nationwide survey:

MORE DOCTORS SMOKE CAMELS
THAN ANY OTHER CIGARETTE

CAMELS Costlier Tobaccos

20,679 Physicians
say "LUCKIES
are less irritating"
"It's toasted"
Your Throat Protection against irritation against cough

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Big Tobacco, Bigger Profits

- In 1964, N.Y. Times reported Americans smoked 523 BILLION cigarettes in 1963
- Cigarettes in American Pop Culture

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Evolution of cigarette warning labels

- 1964 U.S. Surgeon General released report on smoking and health
- Federal Cigarette Labeling Act of 1965
- Public Health and Smoking Act of 1969

- 1966

- 1969

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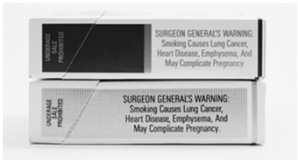
Evolution of cigarette warning labels

- Comprehensive Smoking Education Act of 1984
- Rotating warning labels:
  - SURGEON GENERAL'S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, and May Complicate Pregnancy.
  - SURGEON GENERAL'S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health.
  - SURGEON GENERAL'S WARNING: Smoking by Pregnant Women May Result in Fetal Injury, Premature Birth, and Low Birth Weight.
  - SURGEON GENERAL'S WARNING: Cigarette Smoke Contains Carbon Monoxide.



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Turning Tides

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Crackdown on Advertising

- JOE CAMEL

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Smoking Cessation

2007 – Enter the e-cigarette

- Marketed as safer than smoking
  - Tobacco-free
  - Nicotine not shown to cause cancer
  - Some evidence that e-cigarettes helped some stop smoking
- But nicotine is highly addictive and can still cause many health problems

Can e-cigarettes help you quit?

- The jury is still out
  - Anecdotal evidence
  - Limited research
  - Inconsistent findings
- FDA has NOT approved e- cigarettes as a smoking cessation device

E-cigarettes and "vapes" – what are they?

- Electronic Nicotine Delivery System (ENDS)
- Battery-operated devices that heat liquid and turn it into an aerosol to be inhaled
- The liquids, called e-liquid, e-juice, or vape juice usually contain nicotine

Anatomy of a modern e-cigarette

Components:

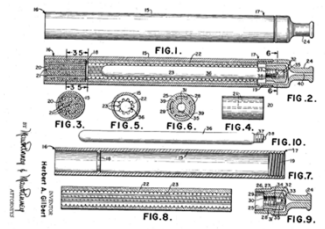
- Battery
- Heating element/atomizer
- Tank/cartridge
- Mouthpiece
- Can be manual or automatic

E-liquid or vape juice – what is it?

- Usually a mixture of propylene glycol, vegetable glycerin, food flavoring, and nicotine
  - Approved for ingestion, not inhalation
- Fill cartridges, pods, tanks, or chambers
- Nicotine-free options

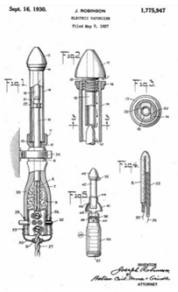
E-cigarettes and "vapes" – Fancy New Technology?

- Not so fast…
- First e-cigarette patented in 1965



Vaporizers

- The first electronic vaporizer was patented in 1930!



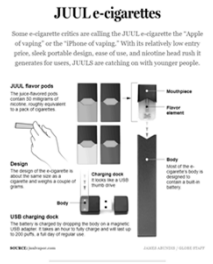
A trend toward vape pods

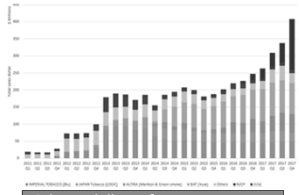
Two Most Common setups:

"Box mods"

"Vape pods"

JUUL – Taking the World By Storm

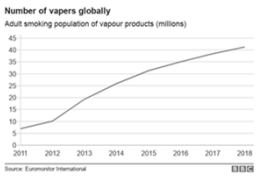




Sales in dollars of e-cigarettes in Nielsen-tracked retail channels: by brand 2011-2017

Altria purchases JUUL Labs in 2018 for over $12 billion

HUMONGOUS Growth Industry



- Worldwide vape market estimated to be $14 billion in 2017
- 19.6% projected CAGR 2018-2023

Regulatory Uncertainty

- Electronic Nicotine Delivery System (ENDS)
  - Vape pens
  - E-cigarettes
  - Electronic pipes
- Regulated by FDA, sort of
  - Deeming Rule →
  - Passed in August 2016
  - Up to 6 year delay in actually regulating ENDS
- FDA guidance videos → not the law!
- *Deeming Tobacco Products To Be Subject to the Federal Food, Drug, and Cosmetic Act, as Amended by the Family Smoking Prevention and Tobacco Control Act; Restrictions on the Sale and Distribution of Tobacco Products and Required Warning Statements for Tobacco Products*
- (81 FR 28974)

Regulatory Uncertainty

FDA categorizes legal obligations based on entity type:

- Retailer
  - Anyone who sells tobacco products to individuals for personal consumption, or who operates a facility where vending machines or self-service displays are permitted, including
    - ENDS e-liquids, devices, hardware, or replacement parts
- Manufacturer
  - Includes importers of *finished products*
- Distributor
  - Furthers distribution of tobacco products
    - At any point from place of manufacture to point-of-sale
- Ban on free samples
  - May smell or handle
  - May NOT light, draw, or puff
- Special warning label for advertisements:

WARNING: This product contains nicotine. Nicotine is an addictive chemical.

Regulatory Uncertainty – Tobacco Misbranding

- Nicotine exposure warnings – 21 USC § 387c(8)(B):
  - Statement that nicotine dangerous substance and potential for nicotine poisoning
  - Describe manner of accidental exposure
  - Include statement about keeping out of reach of children/pets
  - Instructions to seek medical help
- Does this comply?

- Other requirements:
  - Percentage of packaging
  - Font size and style
  - Location – on side most likely to be viewed by a customer

Regulatory Uncertainty – Pending Litigation

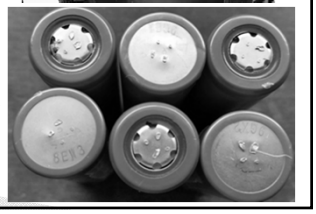
- Nicopure Labs, LLC v. FDA, 16-878 (ABJ) and Right to be Smoke Free v. FDA, 16-1210 (ABJ)
  - Challenge to Deeming Rule as exceeding FDA authority under FD&C Act and arbitrary and capricious under Administrative Procedures Act
  - Argued Tobacco Control Act violated First Amendment Rights
  - Company lost and case is on appeal to D.C. Circuit on First Amendment issues and free sample ban
- Three Pacific Legal Foundation cases
  - Attacking deeming rule and modified risk statement

New Risks of vaping and e-cigarettes

- Battery Explosions
- Nicotine Poisoning
- Underage sales/use
- "Popcorn lung" from Diacetyl and Acetyl Propionyl
- Workers' Compensation risks

Battery explosions

- Rare, but dangerous
- 195 explosions from January 2009-December 31, 2016 (FEMA U.S. Fire Admin.)
- 62% while in use or in pocket
- Two U.S. Deaths
- Rules in flux for manufacturing process

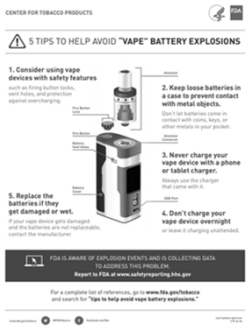


Battery explosions

- Why do they occur?
  - Current generated by lithium-ion batteries
  - Short-circuits
  - Improper storage
  - Improper charging
  - Contact between spare batteries and other metal
  - Quality control
- No clear rules on manufacturing process yet

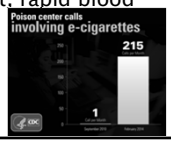
Battery explosions

- FDA had two-day conference in 2017 on battery explosions
- Primary risks:
  - Lack of safety features
  - Carrying removable/spare batteries
  - Charging unattended
  - Improper charging
- Mechanical mods and tinkering



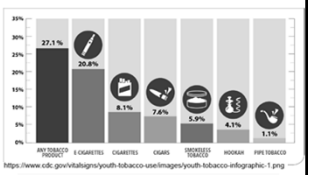
Nicotine poisoning

- Marked increase in calls to poison control due to exposure to e-liquids
  - Over half of calls in CDC study involved children under 5 years old
  - 42% of calls involved adults over age 20
- Not just from overuse
  - Accidental ingestion or skin absorption
  - Spills
  - Leaky pods
- Reports of seizures, trouble breathing, loss of consciousness, irregular heartbeat, rapid blood pressure changes
- Dangerous for pets, too!



Concerns over teenage use

- FDA reports e-cigarettes were the most used "tobacco product" among teens by 2014
- CDC reports 78% increase in teen use 2017-2018
- Data suggests e-cig users more likely to begin smoking
- New proposal to limit flavored e-cigarette sales



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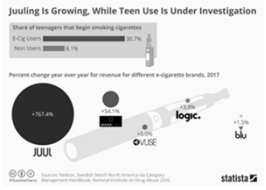
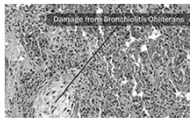
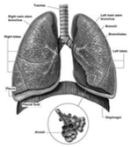


Underage Sales

- Government efforts primarily focused on limiting exposure to teenagers
  - New rules on marketing
  - Limitations on flavors
  - FDA No-Tobacco-Sale Orders against Circle K and Walgreen's
  - Reports of "secret shoppers" in vape shops
  - Legislation in the works to increase national age to 21+
- Growing number of states raising age to 21+
  - 13 states so far - Maryland most recent, NY close behind
  - Many major cities also changing laws locally

Bronchiolitis Obliterans - "Popcorn Lung"





- Damages lungs' smallest airways
  - Coughing
  - Shortness of breath
- Many causes including inhalation of toxic fumes
- "Popcorn lung" from inhalation of Diacetyl used in microwave popcorn
- Harvard study found Diacetyl used in as many as 75% of e-liquids

Workers' Compensation Risks

- Cigarette breaks
  - Larry Brooks v. City of Winston-Salem, N.C. Court of Appeals, No. COA17-1208, 5/15/18
  - Battery explosions injuring fellow workers
- Co-worker nicotine poisoning
- Potential for secondhand smoke/vapor damage is unknown
- E-liquid manufacturers likely exposure to popcorn lung claims in the future

Special Insurance Policies for Vape Businesses

- Unique risks to vape shops and other stores that sell vape kits, e-cigarettes, e-liquids, pods, etc. have led to specialty insurance products
- CGL – Products Completed Operations Exclusion
  - United Specialty Ins. Co. v. E-Cig Vapor Emporium, LLC, 2018 U.S Dist. LEXIS 177951, 2018 WL 5098859 – U.S. District Court C.D. California
    - Summary judgment entered for insurer in declaratory judgment action over coverage and defense cost for injuries from battery explosion in consumer's pocket

New Considerations for Underwriting and Wellness Programs

- Application language may need to be adjusted
- What to do about vaping nicotine-free e-juice?
- Employee benefits – Do vaping employees qualify for tobacco-free benefits?

Subrogation opportunities

- Fire damage due to battery explosions
- Personal injuries due to battery explosions
- Nicotine poisoning due to defective pods
  - Suggestions that failure rates may be as high as 10% with some brands of pods
- Manufacturers of defective batteries and vape devices

T&H THOMAS, THOMAS & HAFER LLP

QUESTIONS

OR

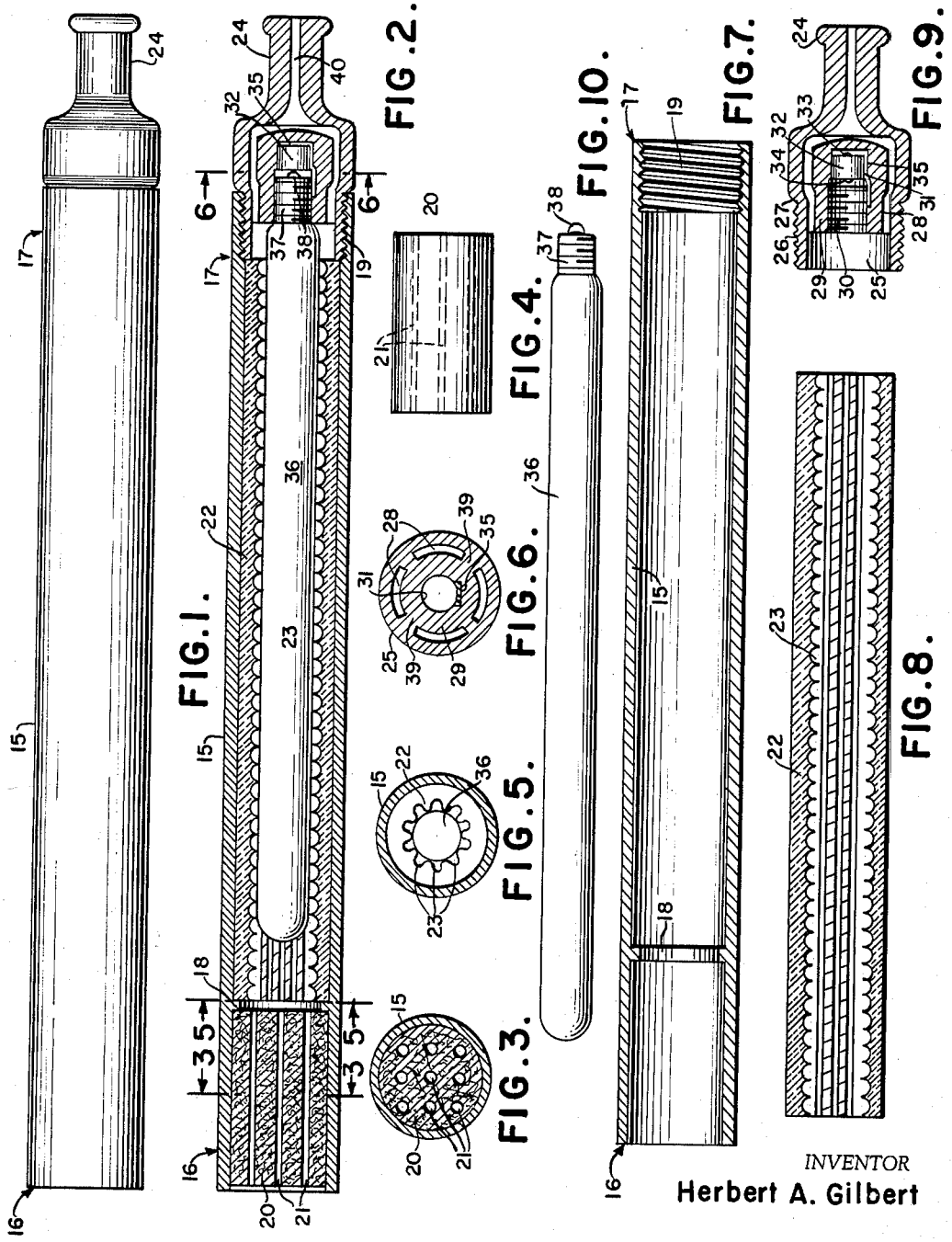
COMMENTS?

T&H THOMAS, THOMAS & HAFER LLP

Aug. 17, 1965 H. A. GILBERT 3,200,819

SMOKELESS NON-TOBACCO CIGARETTE

Filed April 17, 1963



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ATTORNEYS

United States Patent Office 3,200,819 Patented Aug. 17, 1965

3,200,819

SMOKELESS NON-TOBACCO CIGARETTE

Herbert A. Gilbert, 278 McKinley Road, Beaver Falls, Pa.

Filed Apr. 17, 1963, Ser. No. 273,624
10 Claims. (Cl. 128—208)

The present invention relates to a smokeless non-tobacco cigarette and has for an object to provide a safe and harmless means for and method of smoking by replacing burning tobacco and paper with heated, moist, flavored air; or by inhaling warm medication into the lungs in case of a respiratory ailment under direction of a physician.

Another object of the invention is to provide an article of manufacture resembling a cigarette by which air may be drawn through a porous substance of a cartridge which has been moistened with a chemically harmless flavoring preparation, combining moisture and taste following which the moist and flavored air passes through a section of the device heated by a suitable heating element so that warm, moist and flavored air is drawn into the mouth and if desired into the lungs of the user.

A further object of the invention is to provide a smokeless non-tobacco cigarette in which provision is made for circulating the fluid around the heating element in a turbulent manner to suitably raise the temperature of the inhalent mixture, with the purpose that the temperature of the flavored air may approximate that of cigarette smoke.

A further object is to insulate the heat source so that the "cigarette" may be held in the fingers without discomfort to the user's hand.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views:

FIGURE 1 is a side elevational view of the completed article constructed in accordance with the invention in simulation of a cigarette.

FIGURE 2 is a longitudinal section taken through the same with all interior parts assembled.

FIGURE 3 is a cross-sectional view taken on the line 3—3 in FIGURE 2.

FIGURE 4 is a side elevational view of a form of flavor cartridge employed.

FIGURE 5 is a transverse sectional view taken on the line 5—5 in FIGURE 2.

FIGURE 6 is a similar view taken on the line 6—6 in FIGURE 2.

FIGURE 7 is a longitudinal sectional view of a form of outer tube.

FIGURE 8 is a similar view of a form of insulating liner.

FIGURE 9 is a longitudinal sectional view of a form of mouthpiece that may be employed.

FIGURE 10 is a side elevational view of a form of heating element or vacuum tube or bulb that may be employed.

Referring more particularly to the drawings, 15 designates an external tube made preferably in the size, color and form of a cigarette, such tube having an outer end portion 16 and an inner end portion 17.

Subdividing the interior space of the external tube is an internal shoulder 18 which is preferably closer to the outer end portion 16 than to the opposite inner end portion 17, thus dividing the tube into relatively short and substantially longer chambers.

The tube 15 is supplied at the inner end portion 17 with internal threads 19 or some other means of connection for a mouthpiece as later described.

In the outer end portion 16 is detachably fitted a flavor cartridge 20 of some suitable absorbent material, preferably having longitudinal spaced passages 21 therethrough of a small diameter. The cartridge 20 is abutted against the outer edge of the internal shoulder 18 and is of an external diameter to fit snugly into the outer end portion 16 so that it will be held therein by friction or other suitable means.

Within the more forward chamber of the outer tube 15 is received a tubular liner 22 preferably of insulating material and having an internal wall 23 of a form and character to tumble the air or create turbulence therein. This internal wall may be spiralled or rifled as indicated.

A mouthpiece 24 is affixed to the inner end portion 17 of the tube 15 in any appropriate manner, preferably detachably as by external threads 26 on the hollow shank 25 of the mouthpiece which mate with the internal threads 19 in the inner end portion of the outer tube 15.

As shown in FIGURE 2, the free outer end of the hollow shank 25, when fitted home in the outer tube, will encounter and push the insert 22 against the inner wall of the internal shoulder 18 thus holding the insert 22 immovably in place.

The hollow shank 25 will preferably have an outstanding shoulder 27 forwardly of the threads 26 to engage the inner end of the tube 15 in the completely assembled position of the mouthpiece 24 relatively to the outer tube 15.

As best seen in FIGURE 6 showing a cross-section through the hollow shank portion 25 of the mouthpiece, a spider formation is shown providing air draft spaces 28 between the hollow shank 25 and an inner ring 29 spaced inwardly from the hollow shank 25 and connected therewith by radial arms 39. The air draft spaces 28 communicate with the suction orifice 40 of the mouthpiece at the inner end and at the outer end with the space circumscribed by the inner wall 23 of the tubular insert 22.

Within the inner ring 29 is a threaded electric socket 30 and forwardly thereof a battery cavity 31 for detachably receiving a battery 32 having an inner contact 33 and an outer contact 34 with a contact strip 35 between the inner contact 33 and the socket 30.

The heating element is preferably a vacuum tube or bulb 36 having a screw plug 37 for detachable engagement with the socket 30. The screw plug 37 has an end contact 38 adapted to close against the outer battery contact 34. The bulb or tube 36, similar to a light bulb, is preferably elongated and of a diameter to fit within the insert 22 in such manner as to provide an elongated heating passage throughout the length of the bulb and around the complete circumference of the bulb 36.

In assembly, the flavor cartridge 20 can be introduced and removed without regard to the other units of the device.

Before the mouthpiece 24 is assembled to the external tube 15, the liner 22 is slid through the open inner end portion of the tube until the outer end of the liner 22 encounters the internal shoulder 18. The bulb 36 will be mounted to the socket 30 while the mouthpiece 24 is detached from the tube 15 whereupon the bulb 36 may be introduced into the insert 22 as the mouthpiece 24 is put into place and rotated to effect attachment of the mouthpiece to the outer tube 15. The final home position of the parts is indicated in FIGURE 2 in which the hollow shank 25 engages the inner end of the insert 22 while the outer end of the insert is abutted against the internal shoulder 18.

When the bulb 36 is assembled to the socket 30 its tip end 38 will engage the inner battery contact 33 and com-

plete the circuit through the filament of the bulb 36 by the contact strip 35. Thus the bulb 36 will be illuminated or energized before assembly to the external tube 15.

The battery 32 is removable so that when exhausted, a fresh dry battery may be substituted, access to the same being had by first unscrewing the mouthpiece 24 and withdrawing the bulb 36 and subsequently removing the bulb 36 from its socket 30.

The insert 22 is preferably of a ceramic material. By the act of inhalation through the mouthpiece 24, air from the ambient atmosphere is drawn in through the passages 21 of the cartridge 20 which has been impregnated with suitable flavoring material which is picked up by the inhaled air and such air then passes into the heating chamber and is caused to flow around the heating bulb 36, the heated and flavored air finally passing through the mouthpiece 24 into the mouth and also, if desired, into the lungs.

The tumbling of the air around the heat source provides for uniformity of heat transfer while the insert 22 also serves to insulate the basic tube 15 so that it does not become hot to the hand of the user.

The cartridge 20 may be composed of a porous, moisture-holding substance such as felt or plastic sponge although there are many other materials which will serve the purpose.

The impregnation will be by a harmless flavored chemical compound. As suggested, such compounds may be solutions ranging from slightly mentholated water to a solution which would simulate artificially the flavor of Scotch whisky. Many other solutions and flavors may be employed.

The outer tube may be of plastic, fiber glass or any other appropriate material.

The member 24 as shown in the drawings is shaped in the fashion of a mouthpiece but it is not necessary that it be so shaped. The tubular shape of the outer tube 15 may be continued to the right hand end of the mouthpiece if desired to further the illusion of a cigarette.

Some of the advantages of the invention are:

(a) There is no open flame or fire and fire hazard is therefore eliminated.

(b) Nothing is consumed so that there is no smoke, ashes or dirt.

(c) Since the air which enters the lungs of the user comes into contact with only inert materials, there is nothing of an injurious nature being placed into the respiratory system of the user.

(d) Heated medication for respiratory ailments may be induced into the lungs of a user of this invention should a physician feel the same desirable.

(e) Persons who wish to smoke but have been advised against such a practice by their doctor may use this invention to maintain the satisfaction of smoking without any of its disadvantages.

(f) By changing the liquid employed to moisten the cartridge 20, a variety of tastes may be imparted to the warm moist air which serves to duplicate the smoking sensation.

(g) The size and shape of the device according to this invention may approximate the size and shape of a cigarette; therefore its use will not call undue attention to the user. A white coloration of the basic tube 15 and mouthpiece will further add to this illusion.

It is to be understood that various details of the exemplary structures chosen to illustrate the invention are capable of being modified and in some cases omitted without departing from the broad principles of the invention as defined by the more broadly worded of the appended claims.

What is claimed is:

1. A smokeless non-tobacco cigarette comprising

(a) an external tube having inner and outer end portions,

(b) a flavor cartridge in the outer end portion,

(c) heating means in the tube,

(d) a tubular liner also in the tube at least partially surrounding and spaced from the heating means and having

(e) an internal wall shaped to produce turbulence in the air stream drawn through the space between the heating means and tubular liner,

(f) a mouthpiece on the inner end portion of the tube for drawing atmosphere air by inhaling through the outer end portion of the tube including the cartridge and through the space between the heating means and liner and into the mouth of the user, and said cartridge having air passages therethrough communicating at the outer end of the tube with the atmosphere and at the inner end of the tube with said space and ultimately with the mouthpiece for permitting air to be drawn past the flavor cartridge for inhalation by the user at the mouthpiece.

2. A smokeless non-tobacco cigarette as claimed in claim 1 in which the internal wall (e) of the tubular liner is rifled to produce the turbulent effect recited.

3. A smokeless non-tobacco cigarette as claimed in claim 1 in which the tubular liner (d) is of heat insulating material and in which the internal wall (e) is spirally grooved to tumble the air around the heating means.

4. A smokeless non-tobacco cigarette as claimed in claim 1 in which the flavor cartridge (b) comprises

(h) a porous substance moistened with

(i) a chemically harmless flavoring material.

5. A smokeless non-tobacco cigarette as claimed in claim 4 in which the porous substance (h) is traversed by

(j) air passages running lengthwise of the tube opening at the outer end to atmosphere and at the inner end to the space between the heating means and the liner.

6. A smokeless non-tobacco cigarette as claimed in claim 1 in which the tube has

(h) an inwardly projecting division shoulder constituting a stop against the rear edge of which the flavor cartridge is abutted and against the forward edge of which the rear end of the liner is abutted.

7. A smokeless non-tobacco cigarette as claimed in claim 1 in which the mouthpiece (f) includes

(h) a hollow shank detachably interlocked with the external tube and abutted against the inner end portion of the liner.

8. A smokeless non-tobacco cigarette comprising

(a) on external tube having inner and outer end portions,

(b) a flavor cartridge in the outer end portion,

(c) heating means in the tube,

(d) a tubular liner also in the tube at least partially surrounding and spaced from the heating means and having

(e) an internal wall shaped to produce turbulence in the air stream drawn through the space between the heating means and tubular liner,

(f) a mouthpiece on the inner end portion of the tube for drawing atmospheric air by inhaling through the outer end portion of the tube including the cartridge and through the space between the heating means and liner and into the mouth of the user,

(g) said cartridge having air passages therethrough communicating at the outer end of the tube with the atmosphere and at the inner end of the tube with said space and ultimately with the mouthpiece for permitting air to be drawn past the flavor cartridge for inhalation by the user at the mouthpiece,

(h) an electric socket in the mouthpiece, said heating means being an electric bulb having

(i) a plug entered into the socket, and

(j) a battery also in the mouthpiece having electric

connection to the socket and exposed in the socket to the plug for energizing the electric bulb.

9. A smokeless non-tobacco cigarette as claimed in claim 8 further comprising

(k) a battery receiving cavity in the mouthpiece inwardly of the socket,

(l) a battery removably mounted through the socket into the cavity and having

(m) inner and outer contacts, said plug having

(n) an inner end contact for closing against said outer contact, and

(o) a contact strip connecting the inner battery contact with the socket.

10. A smokeless non-tobacco cigarette as claimed in claim 1 in which said mouthpiece (f) comprises

(h) a spider internal construction having

(i) spaced internal and external concentric rings having

(j) air draft spaces therebetween,

(k) radiating angularly spaced arms connecting the rings,

(l) a threaded socket in the inner ring,

(m) a battery cavity in the inner ring inwardly of the socket,

(n) a battery in the cavity electrically connected to the socket, said heating means having a screw plug adapted to be entered into the socket and electrically connected to the battery.

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RICHARD A. GAUDET, *Primary Examiner.*

Quicktake

Vaping

By Anna Edney

Updated on November 2, 2018, 1:04 AM EDT

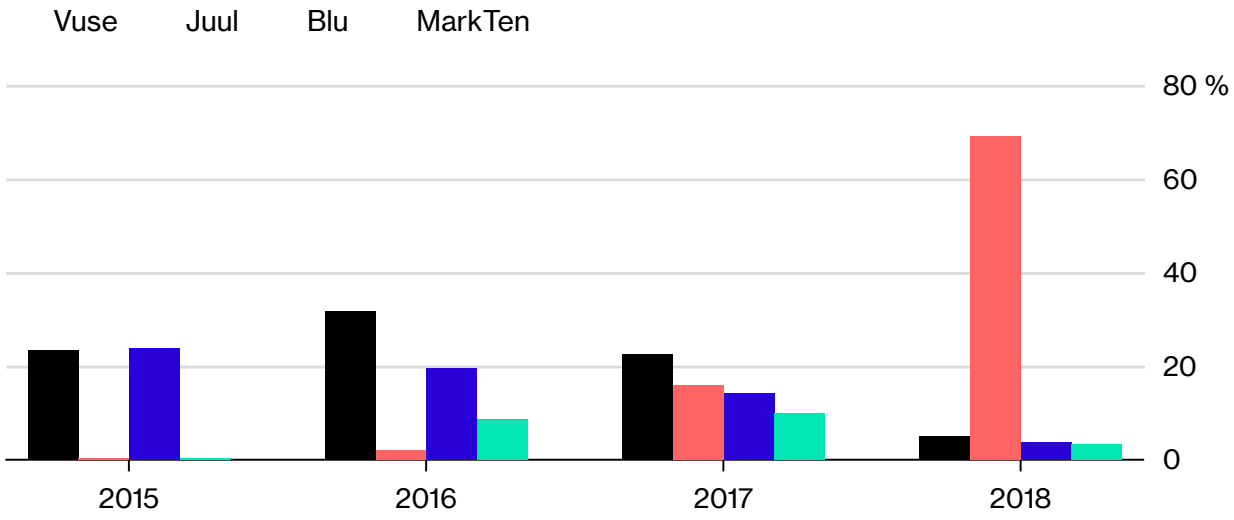
As cigarette smoking declines worldwide, tobacco companies increasingly have turned to a new product line to make up for lost revenue: vaping products. Using an e-cigarette, vapers get a hit of stimulating nicotine without resorting to an incinerated stick of tobacco. These products are marketed as less risky alternatives to cigarettes, and some studies show they are, although there isn't enough long-term data to make a definitive conclusion. Also, they may not be harmless, and some research suggests they lead young users to try traditional cigarettes. Consequently, vaping has provoked one of the most robust debates among public-health specialists in years. Some are pushing for curbs where they don't already exist, out of safety concerns and fear the popularity of the devices will slow gains in the war on smoking. Others see vaping products as a valuable tool to help smokers quit, and thus as a means for accelerating that fight.

The Situation

Declaring that the U.S. was experiencing an epidemic of teen vaping, the nation's Food and Drug Administration warned in September that it was considering tightening regulations on e-cigarettes. Officials said vaping among high-schoolers rose 75 percent from 2017 to 2018, according to preliminary data. That meant that about 20 percent of the students were indulging. A single product accounts for much of the boom: the Juul e-cigarette. Created by two product

designers who were ex-smokers, the Juul is sleek, so it looks cool, and it's tiny, enabling the young user to palm it and discreetly take a hit when a teacher (or parent) isn't looking. And, like many other vaping devices, its refills come in tasty flavors such as mango and mint. The FDA is considering prohibiting flavorings, which, except for menthol, are forbidden in regular cigarettes. In 2017, the agency said it wanted to ensure an industry with the potential to reduce smoking wasn't stymied by regulation. But in the face of the youth vaping explosion, it gave e-cigarette makers until early November to either face new rules or convince the agency they would combat use of their products by those under 18, who can't legally buy them. Of about 80 countries that regulate e-cigarettes, 27 – including Brazil, Greece, Saudi Arabia, Turkey and Thailand – ban their sale altogether. Worldwide, the market for vaping products was estimated at about $14 billion in 2017 and is growing rapidly.

Crowned Juul
Percentage share of U.S. market in dollar terms for e-cigarettes



Source: IRI Data
Note: Data for 2018 are through Oct. 26.

The Background

A Chinese pharmacist and smoker named Hon Lik gets credit for developing the e-cigarette in 2003. It appeared in the U.S. and Europe by 2006. Today, vaping products take many forms and deliver varying levels of nicotine, an alkaloid present in tobacco that is addictive. Early versions looked like regular cigarettes or were housed in sleek, metallic tubes. More recent models are more like fat pens. The Juul resembles a USB flash drive. Inside an e-cigarette, a battery heats nicotine liquid. The puffer inhales nicotine and exhales aerosol. There's no burning tobacco and thus no smoke or tar. A related line of products, so-called heat-not-burn devices, contain tobacco that's heated to significantly less than the temperature at which a regular cigarette combusts.

The Argument

The evidence so far suggests that vaping is a safer choice than lighting up. A 2016 scientific paper examining 22 studies concluded that exclusive use of vaping devices produces just 5 percent of the mortality risks associated with smoking. Even if the products help people stop smoking, one concern is that they'll never give up vaping and so would have been better off quitting another way. Another worry: As the practice becomes increasingly normalized, it will attract more people who never would have smoked. A 2018 review of 800 studies conducted by the U.S. National Academies of Sciences, Engineering and Medicine found "no evidence whether or not e-cigarette use is associated with long-term health effects," but the practice is too new for there to be significant data. It's plausible, yet not proven, that e-cigarette aerosols can damage tissue and cause disease, including cancer. The effects on humans of nicotine are not well-studied, although adolescents appear to be particularly vulnerable to it, with some evidence suggesting it can harm brain development. The National Academies' review found substantial evidence that young vapers are more likely than non-vapers to try regular cigarettes. However, a review of studies commissioned by Public Health England concluded that it hasn't been established that they become regular smokers.

The Reference Shelf

The review of vaping studies by the U.S. National Academies of Sciences, Engineering and Medicine and another commissioned by Public Health England.

The FDA's Center for Tobacco Products' website gives its position on e-cigarettes.

The Public Health Law Center's interactive map shows e-cigarette regulation in each U.S. state.

A Bloomberg editorial on the dangers of vaping.

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First published July 17, 2014

In this article

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PUBLIC HEALTH ENGLAND
Private Company

Letters

RESEARCH LETTER

Electronic Cigarette Sales in the United States, 2013-2017

Electronic cigarettes (e-cigarettes) deliver an inhaled aerosol to the user that typically contains nicotine, flavorings, and other additives.[1] e-Cigarettes come in many shapes and sizes but generally contain a battery, a heating element, and an e-liquid reservoir.[1]

e-Cigarettes could help adult smokers if used as a complete substitute for conventional cigarettes.[1,2] However, research on the effectiveness of e-cigarettes for smoking cessation is inconclusive,[2] and e-cigarettes are not currently approved by the US Food and Drug Administration as a cessation aid.[1,2] Moreover, e-cigarette aerosol can contain harmful constituents,[1,2] and use of these products among young people is a public health concern.[1] Most e-cigarettes deliver nicotine, which is addictive and can harm the developing adolescent brain.[1]

National self-reported surveys traditionally provide annual estimates of tobacco product use. In 2016, 3.2% of US adults and 11.3% of US high school students were current users of e-cigarettes.[3] However, e-cigarettes are an evolving product class, and retail sales data available at more frequent intervals (eg, weekly) can complement annual surveys and identify emerging trends.[1] This study assessed e-cigarette sales in the United States during 2013-2017.

Methods | e-Cigarette retail sales data were licensed from the Nielsen Company for convenience, club, and discount/dollar stores, mass merchandisers, supermarkets, pharmacies, and military commissaries. Sales data reflect all documented sales in the store types monitored; internet and "vape shop" sales are not captured. Data came in 4-week aggregates, from December 16, 2012, through January 8, 2018, for the 48 contiguous states and Washington, DC.

Unit sales of e-cigarette products (number of sales by Universal Product Code) were assessed for the 5 top-selling manufacturers based on 2017 sales volume and brand ownership. Other manufacturers were grouped into an "other" category. Market share was calculated by dividing each manufacturer's unit sales by total sales. Trends were assessed using JoinPoint version 4.5.0.1 (National Cancer Institute), a segmented regression analysis application, to assess average monthly percentage change (AMPC) and 95% confidence intervals, accounting for structural breaks. Monte Carlo permutation determined if the AMPC differed from zero (2-sided $\alpha = .05$).

Results | During 2013 and early 2014, "other" manufacturers dominated the e-cigarette market. British American Tobacco sales increased 146% during 2014-2017 (AMPC, 6.1 [95% CI, 4.3-7.9]) and led sales from late 2014 into late 2017 (**Figure**, panel A). JUUL Laboratories sales increased 641% from 2016 (2.2 million) to 2017 (16.2 million) (AMPC, 15.5 [95% CI, 13.8-17.2]). By December 2017, JUUL Laboratories' monthly sales (3.2 million) surpassed those of British American Tobacco (2.7 million).

During 2016-2017, JUUL Laboratories' average annual market share of total e-cigarette sales increased 515%, from 2% to 13% (Figure, panel B) (AMPC, 15.9 [95% CI, 12.9-18.9]). By December 2017, JUUL Laboratories' sales comprised 29% of total e-cigarette sales, giving it the greatest market share.

Discussion | e-Cigarette sales volume and market share in the United States varied considerably during 2013-2017. Although no single manufacturer dominated the market through 2013, British American Tobacco sales surged in 2014 and led into 2017. However, consistent with a recent study,[4] JUUL Laboratories held the greatest market share by the end of 2017. This was attributable to the increased sales of an e-cigarette resembling a USB flash drive, called JUUL. Although rapid uptake of other e-cigarette brands has occurred after their introduction, JUUL's high nicotine concentration, discreet shape, and flavors could be particularly appealing to, and problematic for, youths.[5] Media reports suggest the JUUL device is being used among youths in schools, including classrooms.[5]

This study could not assess purchaser age. These sales could reflect products purchased by adults to attempt smoking cessation or products obtained directly or indirectly by youths; a recent analysis found retail stores were the primary location where youths reported obtaining the JUUL device and refill pods.[6] Also, the study did not include purchases from all locations e-cigarettes are sold, so sales may be underestimated.

e-Cigarettes have the potential to benefit some people and harm others.[1,2] Progress in maximizing the potential benefits of e-cigarettes and minimizing risks at the population level could be hindered by youth use of these products.[1] Continued monitoring of e-cigarette sales and use is critical to inform public health policy, planning, and practice.[1]

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Accepted for Publication: June 29, 2018.

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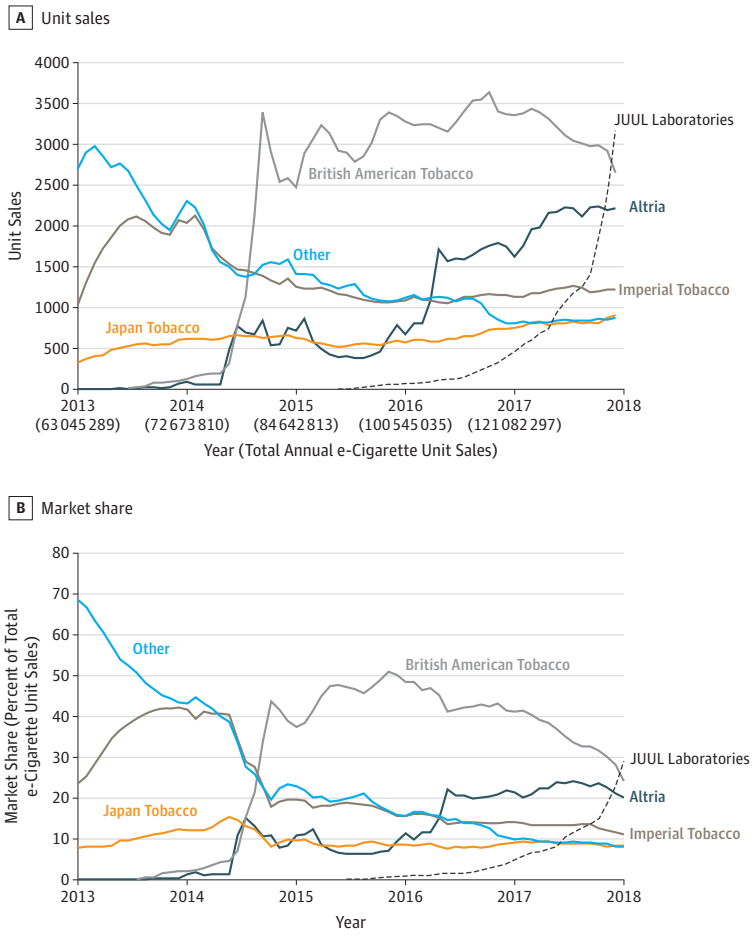
Figure. e-Cigarette Unit Sales and Market Share of e-Cigarette Unit Sales, by Manufacturer—United States, 2013-2017



A, e-Cigarette unit sales (number of sales by Universal Product Code). B, Market share for e-cigarette sales (calculated by dividing each manufacturer's unit sales by total unit sales). Data were aggregated by manufacturer, and sales for the 5 top-selling manufacturers and all others combined (based on 2017 unit sales) are presented. The 5 top-selling manufacturers and the corresponding e-cigarette brands sold by those manufacturers (based on 2017 brand ownership) were Altria (MarkTen, Green Smoke); British American Tobacco (Vuse); Imperial Tobacco (blu); Japan Tobacco (Logic); JUUL Laboratories (JUUL); and other (all other brands combined). For consistency in the figure, unit sales and market share are reported according to the owner of the reported brands as of 2017. Before 2014, blu was owned by Lorillard Tobacco Company; before 2017, JUUL was owned by Pax Laboratories.

Author Contributions: Ms Gammon and Dr Rogers had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.
Concept and design: King, Marynak, Rogers.
Acquisition, analysis, or interpretation of data: All authors.
Drafting of the manuscript: King, Gammon, Marynak.
Critical revision of the manuscript for important intellectual content: All authors.
Statistical analysis: King, Gammon, Rogers.
Obtained funding: King.
Administrative, technical, or material support: King, Gammon, Rogers.
Supervision: King, Rogers.

Conflict of Interest Disclosures: All authors have completed and submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest and none were reported.

Funding/Support: This work was funded by the US Centers for Disease Control and Prevention (CDC).

Role of the Funder/Sponsor: The CDC participated in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, and approval of the manuscript; and decision to submit the manuscript for publication.

Disclaimer: The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the CDC.

Additional Contributions: We thank Ellen M. Coats, MS (Research Triangle Institute), for analytic assistance provided as a paid contractor to the CDC Office on Smoking and Health.

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Presence of High-Intensity Sweeteners in Popular Cigarillos of Varying Flavor Profiles

In 2009, the Family Smoking Prevention and Tobacco Control Act banned characterizing flavors (primary recognizable

Written By:
Stacy Simon (/cancer/acs-medical-content-and-news-sta. .html)
Senior Editor, News

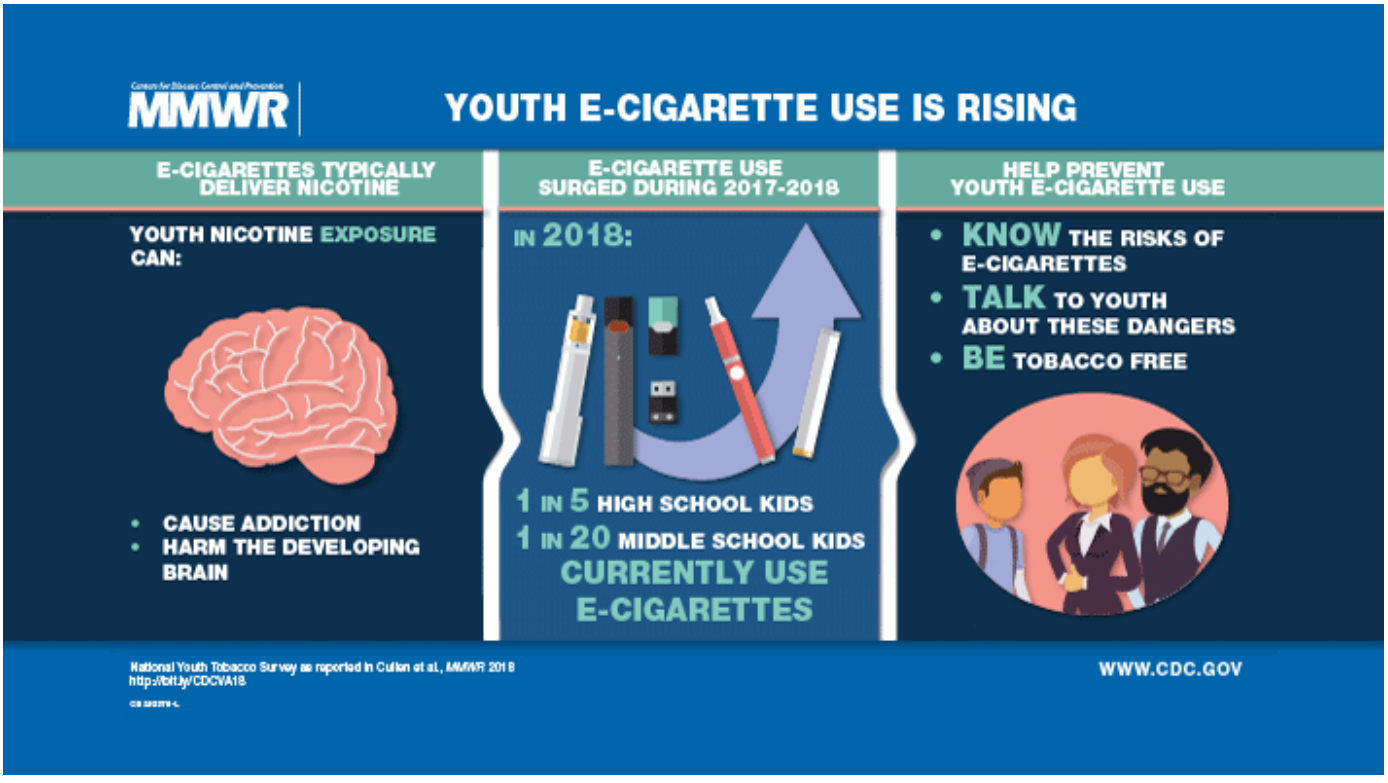
Tagged In

Cancer Updates (/latest-news.html?tag=content-type:cancer-updates)

Smoking Tobacco (/latest-news.html?tag=cancer-topics:smoking-and-tobacco)

FDA Proposes Regulations as Teen E-Cigarette Use Skyrockets 78% in 1 Year

Nov 21, 2018



Use of e-cigarettes (/cancer/cancer-causes/tobacco-and-cancer/e-cigarettes.html) (also known as vaping) by high school students has jumped 78% since last year, according to the US Centers for Disease Control and Prevention (CDC). And it has jumped 48% among middle schoolers. The US Food and Drug Administration (FDA) is responding with a proposal to restrict youth access to flavored nicotine products, which the CDC blames for contributing to the surging popularity of vaping. The report was published November 15, 2018 in *Morbidity and Mortality Weekly Report (https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a5.htm?s_cid=mm6745a5_w)*.

Cliff Douglas, American Cancer Society Vice President, Tobacco Control, said, "The unprecedented 78 percent increase in e-cigarette use among our kids in just one year, from 2017 to 2018, threatens to create a new generation of addicted tobacco users, making it paramount that the FDA act as aggressively and expeditiously as possible to stem this dangerous turn of events."

E-cigarettes in schools

Since e-cigarettes hit the US market in 2007, they have become more and more popular with American adolescents and teens. By 2014, e-cigarettes were the most commonly used tobacco product among high-school and middle school students.

The CDC report analyzes results from the National Youth Tobacco Survey, a cross-sectional, voluntary, school-based, self-administered, pencil-and-paper survey of US middle and high school students. It asks the students whether they have used a variety of tobacco products, how recently, and how often.

The survey shows that among high school students, current e-cigarette use increased from 1.5% in 2011 to 20.8% in 2018. During 2017-2018 alone, e-cigarette use currently reported by high schoolers increased from 11.7% to 20.8% -- a 78% increase. Among middle school students, current e-cigarette use increased from 0.6% in 2011 to 4.9% in 2018. During 2017-1018 alone, e-cigarette use currently reported by middle schoolers increased from 3.3% to 4.9% -- a 48% increase.

The CDC report attributes this dramatic rise in vaping to the popularity of JUULs (/latest-news/juul-e-cigarettes-and-youth-what-you-need-to-know.html) and other e-cigarettes shaped like a USB flash drive. They are easy to hide, have a high nicotine content, and come in fruit, candy, and other flavors that appeal to youth.

The new statistics show that students who vape are using flavored e-cigarettes more often than ever. Use of flavored e-cigarette liquid increased from 60.9% to 67.8% among high school students just last year. High school students who currently vape are also doing so more frequently. The proportion who reported use of e-cigarettes on more than 20 of the past 30 days increased from 20% in 2017 to 27.7% in 2018.

FDA response

The FDA is responding to the report with a series of proposals aimed at limiting sales of e-cigarette products to minors. "E-cigarettes have become an almost ubiquitous – and dangerous – trend among youth that we believe has reached epidemic proportions. This troubling reality is prompting us to take

even more forceful actions to stem this dangerous trend, said FDA Commissioner Scott Gottlieb, MD. "Based on our evidence, we believe the presence of flavors is one component making these products especially attractive to kids. The mandate to reverse this trend in youth addiction to nicotine is one of my highest priorities."

The proposals include:

- Ending sales of e-cigarette products in flavors that appeal to kids, such as cherry, vanilla, crème, tropical, and melon, by banning their sale in many retail locations and manufacturers' online stores that are accessible to minors. Tobacco, mint, and menthol flavors, however, would not be included because Gottlieb says he wants adults to be able to use them as a quit-smoking tool.
- Banning flavors in cigars, including little cigars – which look just like cigarettes and are popular with adolescents and teens.
- Banning the marketing of e-cigarette products to children (/latest-news/report-more-and-more-teens-seeing-e-cigarette-ads.html), such as using popular children's cartoon or animated characters, or names of products favored by kids like brands of candy or soda.
- Banning menthol flavor in cigarettes and cigars.

The proposals follow an action by the FDA in September 2018, in which the FDA issued more than 1,300 warning letters and fines to retailers who illegally sold e-cigarette products to minors, the majority of which were blu, JUUL, Logic, MarkTen XL, and Vuse.

Health and advocacy groups have been critical of the FDA for not going far enough. In a statement on the American Academy of Pediatrics website, President Colleen A. Kraft, MD, MBA, FAAP writes, "FDA action to prohibit menthol cigarettes and flavored cigars, proven starter products for young people, will save thousands of today's children from death and disease due to smoking. But just as flavored cigarettes appeal to children and teens, so do flavored e-cigarettes. FDA can and must do more to protect children and teens from these dangerous products."

No youth should use e-cigarettes

The American Cancer Society and the FDA warn that no youth should use nicotine products. Most e-cigarettes contain nicotine. And, some that claim to be nicotine-free have been found to contain nicotine. There is evidence that nicotine harms the brain development of teenagers. Nicotine is also highly addictive. Studies have shown that vaping by youth is strongly linked to later use of regular cigarettes and other tobacco products.

JUUL is now the overwhelming favorite e-cigarette product among young people. They are small and easy to hide. They look like USB flash drives and can be charged in a computer. They give off very little vapor or odor. Adolescents and teens are known to use them in school restrooms and even in the classroom. JUULs have a higher amount of nicotine per puff than some other types of e-cigarettes and that may make them

even more addictive. Scientists are still learning about how e-cigarettes affect health (/latest-news/report-whats-known-about-the-harms-and-benefits-of-e-cigarettes.html) when they are used for long periods of time.

Research has found that the vapor in e-cigarettes contain some harmful and cancer-causing chemicals, although in significantly lower amounts than cigarette smoke. Secondhand vapor may also contain harmful substances, and scientists are still learning about the effects of exposure to secondhand vapor.

The smoke-free and tobacco-free policies at schools, businesses, healthcare institutions, and other organizations should also cover e-cigarettes. This will help non-users avoid being exposed to potentially harmful e-cigarette vapor.

Reviewed by Citations

The American Cancer Society medical and editorial content team (/cancer/acs-medical-content-and-news-staff.html)

Our team is made up of doctors and oncology certified nurses with deep knowledge of cancer care as well as journalists, editors, and translators with extensive experience in medical writing.

FDA NEWS RELEASE

FDA announces comprehensive regulatory plan to shift trajectory of tobacco-related disease, death

For Immediate Release:

July 28, 2017

Español (/news-events/comunicados-de-prensa/la-fda-anuncia-un-plan-de-control-integral-para-cambiar-la-trayectoria-de-las-enfermedades-y-muertes)

The U.S. Food and Drug Administration today announced a new comprehensive plan for tobacco and nicotine regulation that will serve as a multi-year roadmap to better protect kids and significantly reduce tobacco-related disease and death. The approach places nicotine, and the issue of addiction, at the center of the agency's tobacco regulation efforts. The goal is to ensure that the FDA has the proper scientific and regulatory foundation to efficiently and effectively implement the Family Smoking Prevention and Tobacco Control Act. To make certain that the FDA is striking an appropriate balance between regulation and encouraging development of innovative tobacco products that may be less dangerous than cigarettes, the agency is also providing targeted relief on some timelines described in the May 2016 final rule that extended the FDA's authority to additional tobacco products. The agency will also seek input on critical public health issues such as the role of flavors in tobacco products.

Tobacco use remains the leading cause of preventable disease and death in the United States, causing more than 480,000 deaths every single year. In addition to the devastating human toll caused mainly by cigarette smoking, tobacco also causes substantial financial costs to society, with direct health care and lost productivity costs totaling nearly $300 billion a year. A key piece of the FDA's approach is demonstrating a greater awareness that nicotine – while highly addictive – is delivered through products that represent a continuum of risk and is most harmful when delivered through smoke particles in combustible cigarettes.

"The overwhelming amount of death and disease attributable to tobacco is caused by addiction to cigarettes – the only legal consumer product that, when used as intended, will kill half of all long-term users," said FDA Commissioner Scott Gottlieb, M.D. "Unless we change course, 5.6 million young people alive today will die prematurely later in life from tobacco use. Envisioning a world where cigarettes would no longer create or sustain addiction, and where adults who still need or want nicotine could get it from alternative and less harmful sources, needs to be the cornerstone of our efforts – and we believe it's vital that we pursue this common ground."

The FDA plans to begin a public dialogue about lowering nicotine levels in combustible cigarettes to non-addictive levels through achievable product standards. The agency intends to issue an Advance Notice of Proposed Rulemaking (ANPRM) to seek input on the potential public health benefits and any possible adverse effects of lowering nicotine in cigarettes. Because almost 90 percent of adult smokers started smoking before the age of 18 and nearly 2,500 youth smoke their first cigarette every day in the U.S., lowering nicotine levels could decrease the likelihood that future generations become addicted to cigarettes and allow more currently addicted smokers to quit.

"Because nicotine lives at the core of both the problem and the solution to the question of addiction, addressing the addictive levels of nicotine in combustible cigarettes must be part of the FDA's strategy for addressing the devastating, addiction crisis that is threatening American families," said Commissioner Gottlieb. "Our approach to

nicotine must be accompanied by a firm foundation of rules and standards for newly-regulated products. To be successful all of these steps must be done in concert and not in isolation."

The FDA is committed to encouraging innovations that have the potential to make a notable public health difference and inform policies and efforts that will best protect kids and help smokers quit cigarettes. To make this effort successful, the agency intends to extend timelines to submit tobacco product review applications for newly regulated tobacco products that were on the market as of Aug. 8, 2016. This action will afford the agency time to explore clear and meaningful measures to make tobacco products less toxic, appealing and addictive. For example, the FDA intends to develop product standards to protect against known public health risks such as electronic nicotine delivery systems (ENDS) battery issues and concerns about children's exposure to liquid nicotine. It also will provide manufacturers additional time to develop higher quality, more complete applications informed by additional guidance from the agency.

The agency plans to issue this guidance describing a new enforcement policy shortly. Under expected revised timelines, applications for newly-regulated combustible products, such as cigars, pipe tobacco and hookah tobacco, would be submitted by Aug. 8, 2021, and applications for non-combustible products such as ENDS or e-cigarettes would be submitted by Aug. 8, 2022. Additionally, the FDA expects that manufacturers would continue to market products while the agency reviews product applications.

Importantly, the anticipated new enforcement policy will not affect any current requirements for cigarettes and smokeless tobacco, only the newly-regulated tobacco products such as cigars and e-cigarettes. This approach also will not apply to provisions of the final rule for which compliance deadlines already have passed, such as mandatory age and photo-ID checks to prevent illegal sales to minors. It also will not affect future deadlines for other provisions of the rule, including, but not limited to, required warning statements, ingredient listing, health document submissions, harmful and potentially harmful constituent reports, and the removal of modified risk claims, i.e., "light," "low," or "mild," or similar descriptors.

In order to further explore how best to protect public health in the evolving tobacco marketplace, the agency also will seek input from the public on a variety of significant topics, including approaches to regulating kid-appealing flavors in e-cigarettes and cigars. In particular, the FDA intends to issue ANPRMs to: 1) seek public comment on the role that flavors (including menthol) in tobacco products play in attracting youth and may play in helping some smokers switch to potentially less harmful forms of nicotine delivery; and 2) solicit additional comments and scientific data related to the patterns of use and resulting public health impacts from premium cigars, which were included in the FDA's 2016 rule. Additionally, the agency plans to examine actions to increase access and use of FDA-approved medicinal nicotine products, and work with sponsors to consider what steps can be taken under the safety and efficacy standard for products intended to help smokers quit.

"This comprehensive plan and sweeping approach to tobacco and nicotine allows the FDA to apply the powerful tools given by Congress to achieve the most significant public health impact," said Mitch Zeller, J.D., director of the FDA's Center for Tobacco Products. "Public input on these complex issues will help ensure the agency has the proper science-based policies in place to meaningfully reduce the harms caused by tobacco use."

To complement these larger policy considerations, the FDA plans to issue foundational rules to make the product review process more efficient, predictable, and transparent for manufacturers, while upholding the agency's public health mission. Among other things, the FDA intends to issue regulations outlining what information the agency expects to be included in Premarket Tobacco Applications (PMTAs), Modified Risk Tobacco Product (MRTP) applications and reports to demonstrate Substantial Equivalence (SE). The FDA also plans to finalize guidance on how it intends to review PMTAs for ENDS. The agency also will continue efforts to assist industry in complying with federal tobacco regulations through online information, meetings, webinars and guidance documents.

The FDA, an agency within the U.S. Department of Health and Human Services, promotes and protects the public health by, among other things, assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation's food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.

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240-402-9548

Consumer:

888-INFO-FDA

Related Information

- Protecting American Families: Comprehensive Approach to Nicotine and Tobacco (/news-events/speeches-fda-officials/protecting-american-families-comprehensive-approach-nicotine-and-tobacco)
- FDA's New Plan for Tobacco and Nicotine Regulation (/tobacco-products/newsroom/fdas-comprehensive-plan-tobacco-and-nicotine-regulation)
- FDA Center for Tobacco Products (/tobacco-products)

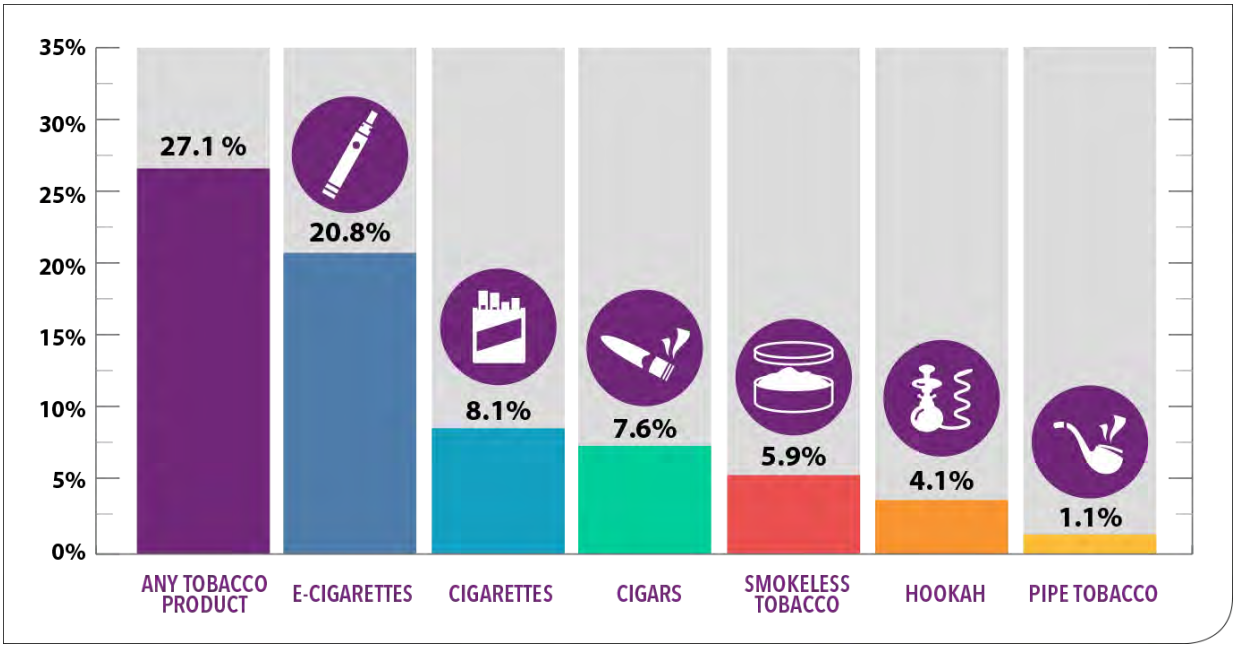
Agency to pursue lowering nicotine in cigarettes to non-addictive levels and create more predictability in tobacco regulation

More Press Announcements (/news-events/newsroom/press-announcements)

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

Vital Signs

Data Visualization: Tobacco Product Use Among High School Students — 2018



View Larger

Text Description:

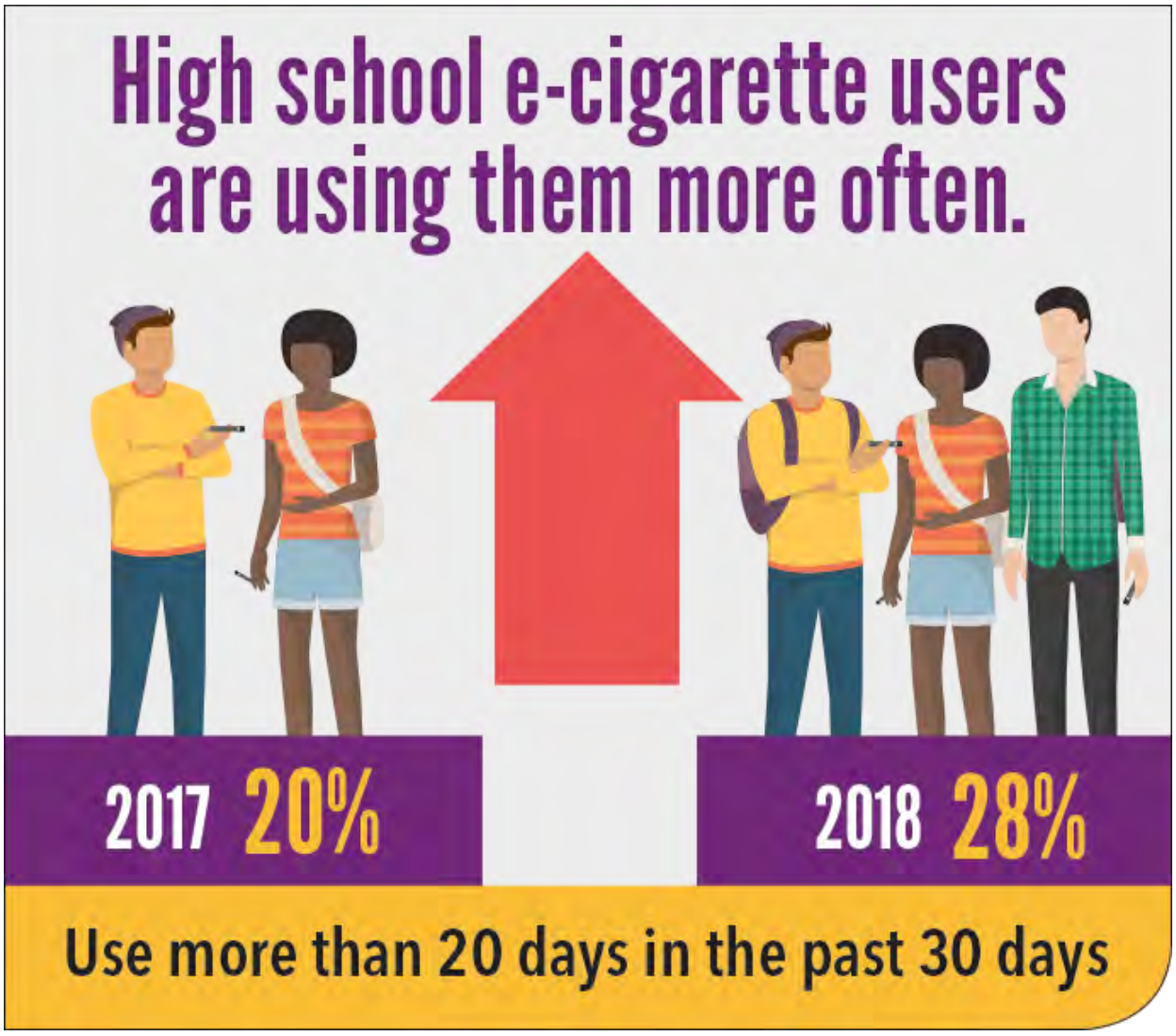
Tobacco product use among high school students—2018

Any Tobacco Product 27.1%
E-cigarettes 20.8%
Cigarettes 8.1%
Cigars 7.6%
Smokeless Tobacco 5.9%
Hookah 4.1%
Pipe Tobacco 1.1%

SOURCE: Tobacco Product Use Among Middle and High School Students — United States, 2011-2018. Morbidity and Mortality Weekly Report (MMWR), February 2019.

Top of Page

Data Visualization: High School E-cigarette Users are Using Them More Often.



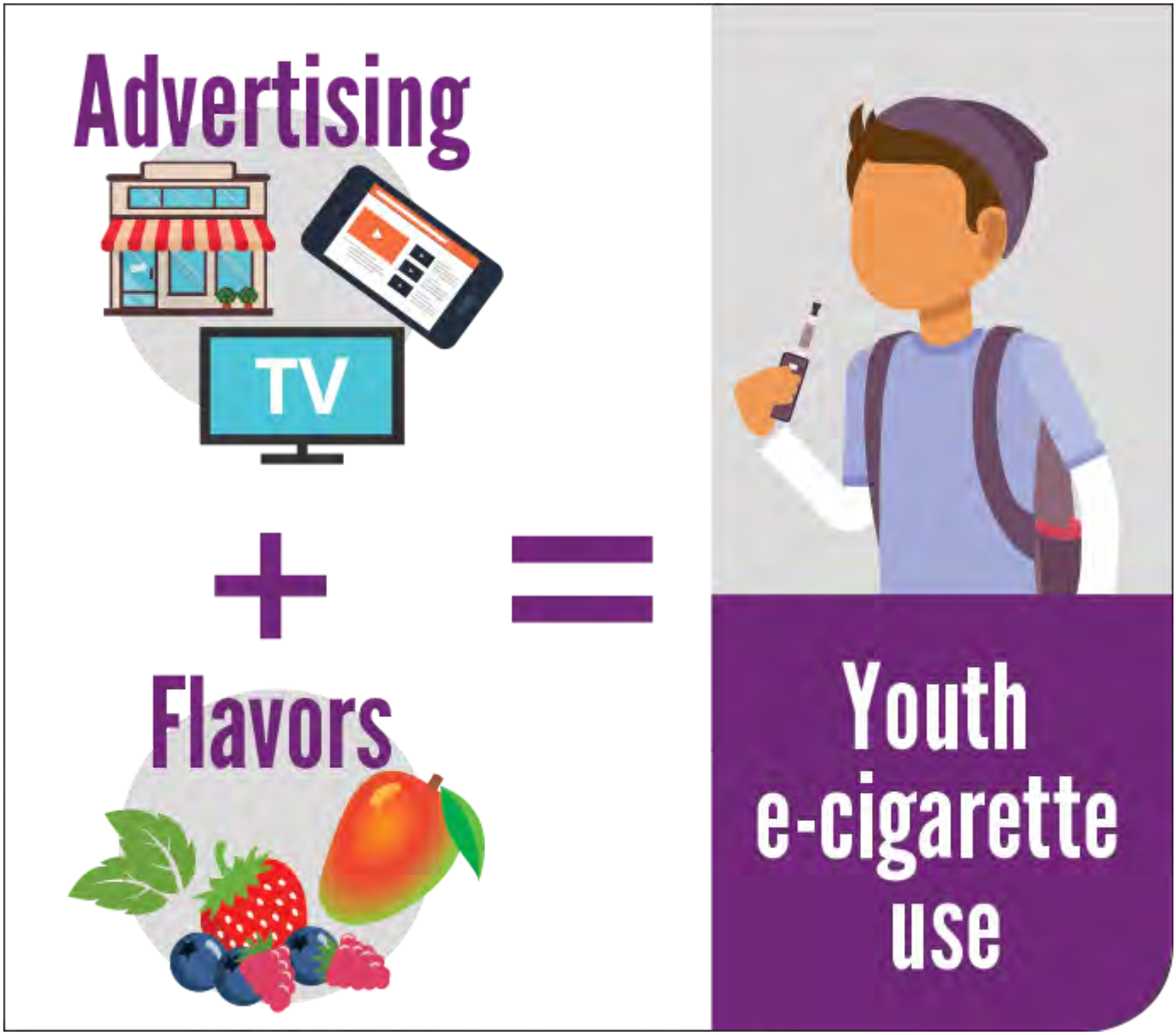
Text Description:

High school e-cigarette users are using them more often.
2017: 20%
2018: 28%
Use more than 20 days in the past 30 days

SOURCE: Tobacco Product Use Among Middle and High School Students — United States, 2011-2018. Morbidity and Mortality Weekly Report (MMWR), February 2019.

Data Visualization: Youth E-cigarette Use

Data Visualization: Tobacco Use By Youth Is Rising | VitalSigns | CDC



Text Description:

Advertising + Flavors = Youth e-cigarette use

Data Visualization: Increase in Youth E-cigarette Use Happened at Same Time as Increased JUUL Sales

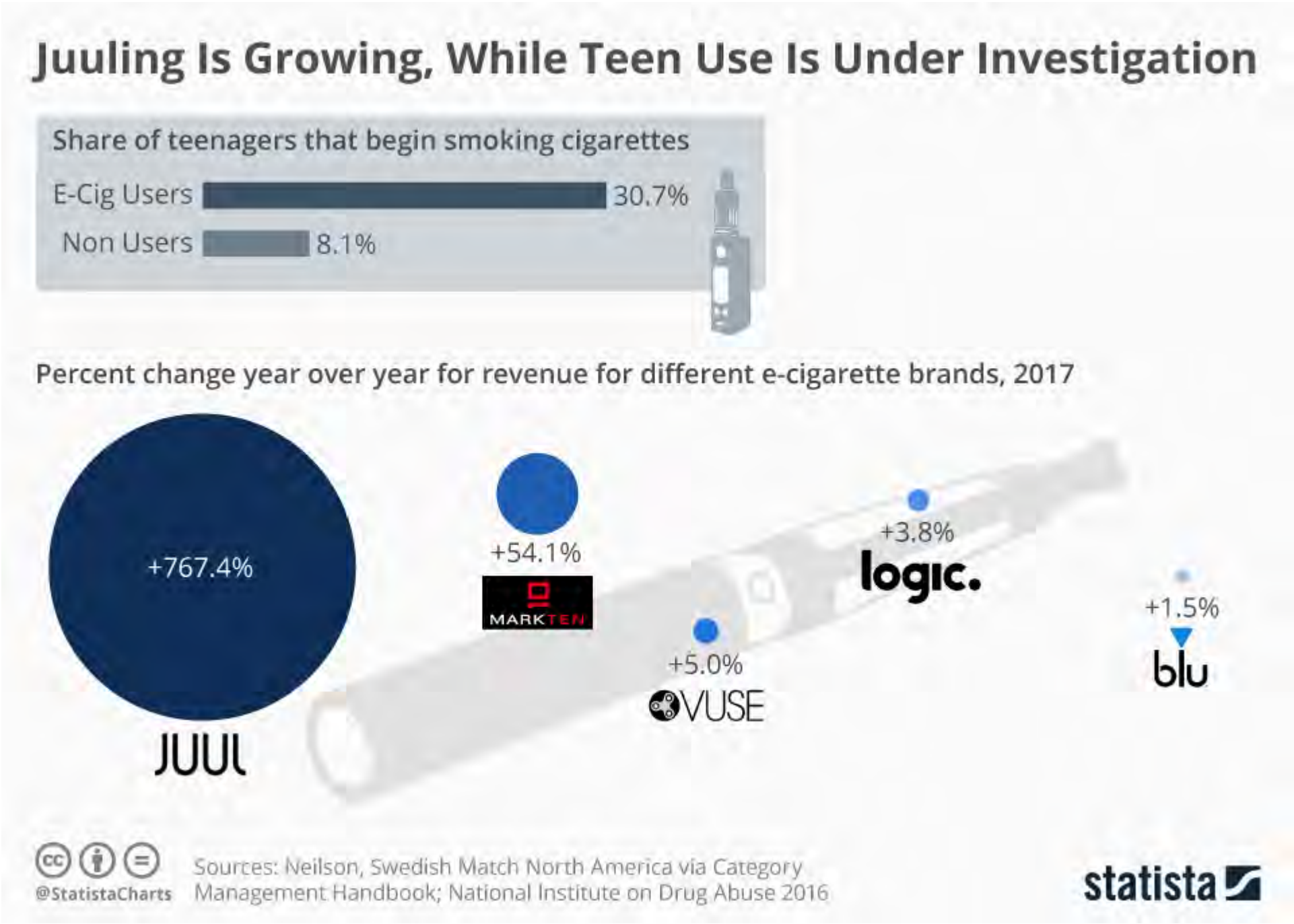
Text Description:

JUUL Pods & Flavors
Nicotine Levels (Labels: “1 JUUL Pod = 1 Cigarette Pack”)

https://www.cdc.gov/vitalsigns/youth-tobacco-use/data-visualization.html

For More Information
1-800-CDC-INFO (232-4636)
TTY: 1-888-232-6348
Web: www.cdc.gov (https://www.cdc.gov)

Centers for Disease Control and Prevention
1600 Clifton Road NE
Atlanta, GA 30333
Publication date: February 11, 2019


Juuling Is Growing, While Teen Use Is Under Investigation
Share of teenagers that begin smoking cigarettes
E-Cig Users
30.7%
Non Users
8.1%
Percent change year over year for revenue for different e-cigarette brands, 2017
+767.4%
JUUL
+54.1%
MARKTEN
+5.0%
VUSE
+3.8%
logic.
+1.5%
blu
@StatistaCharts
Sources: Neilson, Swedish Match North America via Category Management Handbook; National Institute on Drug Abuse 2016
statista

Transportation Security Administration

Electronic Cigarettes and Vaping Devices

Carry On Bags: Yes

Checked Bags: No

The FAA prohibits these devices in checked bags. Battery-powered E-cigarettes, vaporizers, vape pens, atomizers, and electronic nicotine delivery systems may only be carried in the aircraft cabin (in carry-on baggage or on your person). Check with your airline for additional restrictions. Remove all electronic cigarette and vaping devices from carry-on bags if checked at the gate or planeside.

For more prohibited items, please go to the 'What Can I Bring?' page.

The final decision rests with the TSA officer on whether an item is allowed through the checkpoint.

Federal Aviation Administration

Pack Safe
Electronic cigarettes, vaping devices

Battery-powered E-cigarettes, vaporizers, vape pens, atomizers, electronic nicotine delivery systems

These devices are battery powered and have a heating element that vaporizes liquid (that may or may not contain nicotine). These devices are prohibited in checked baggage and may only be carried in the aircraft cabin (in carry-on baggage or on your person). They may not be used or charged on the aircraft. When a carry-on bag is checked at the gate or planeside, all electronic cigarette and vaping devices, along with any spare lithium batteries, must be removed from the bag and kept with the passenger in the aircraft cabin.

WARNING: Lithium batteries must be handled with extreme care. Lithium batteries must be compatible with the device. Installed batteries must not be more powerful than what the device is designed for. Homemade "modified" battery packs–whether installed in a device or carried as a spare–are forbidden on aircraft. Spare (uninstalled) lithium batteries must be placed in carry-on baggage. See separate entry in this table for spare lithium batteries.

Page last modified: May 31, 2018 5:46:35 PM EDT

5 TIPS TO HELP AVOID **"VAPE" BATTERY EXPLOSIONS**

1. Consider using vape devices with safety features

such as firing button locks, vent holes, and protection against overcharging.

2. Keep loose batteries in a case to prevent contact with metal objects.

Don't let batteries come in contact with coins, keys, or other metals in your pocket.

3. Never charge your vape device with a phone or tablet charger.

Always use the charger that came with it.

4. Don't charge your vape device overnight

or leave it charging unattended.

5. Replace the batteries if they get damaged or wet.

If your vape device gets damaged and the batteries are not replaceable, contact the manufacturer.

FDA IS AWARE OF EXPLOSION EVENTS AND IS COLLECTING DATA TO ADDRESS THIS PROBLEM.

Report to FDA at www.safetyreporting.hhs.gov

For a complete list of references, go to **www.fda.gov/tobacco** and search for **"tips to help avoid vape battery explosions."**

FOR IMMEDIATE RELEASE
November 15, 2018

Contact: HHS Press Office
202-690-6343
media@hhs.gov

Secretary Azar Comments on Data Showing Rising E-Cigarette Use Among Youth

Health and Human Services Secretary Alex Azar issued the following statement regarding the sharp uptick in e-cigarette use among youth reported in the 2018 National Youth Tobacco Survey:

“America’s youth are facing a public health crisis that threatens an entire generation: skyrocketing use of nicotine products, brought on by access to flavored products in particular. Use of these products, including e-cigarettes, menthol cigarettes, and cigars, put our youth at risk for a lifetime of nicotine addiction.

E-cigarettes present an important, potentially lifesaving opportunity to help currently addicted adult smokers quit combustible cigarettes. But in trying to build this off-ramp from a deadly addiction, we cannot let e-cigarettes become an on-ramp for kids to enter a lifetime of nicotine addiction and tobacco use.

New data from the National Youth Tobacco survey show the number of teenagers using e-cigarettes almost doubling in just the last year. But we can use a targeted approach to tackle this challenge: The data also show that kids not only choose flavored products more often than adults do, but also that flavors are a major reason they use these products in the first place. Flavors increase the likelihood of kids progressing from experimentation to regular use, and a portion of them will go on to use combustible tobacco products, with the huge added dangers of tobacco-related disease.

FDA’s enforcement efforts and policy framework would restrict access to most flavored e-cigarettes and limit the chances of youth beginning to use these products, while ensuring the products are available to adult smokers as an alternative to combustible cigarettes.

Our obligation at HHS is always to the public health, and we believe FDA’s goals strike the right public health balance in addressing the multifaceted challenge we have before us today.”

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Note: All HHS press releases, fact sheets and other news materials are available at https://www.hhs.gov/news.

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Last revised: November 15, 2018

FDA Statement

FDA pursues order barring specific retailers from selling tobacco products as part of its continuing efforts to target youth tobacco use

Agency escalates enforcement action against local Walgreens, Circle K retail locations for repeatedly selling tobacco products to minors

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For Immediate Release

February 7, 2019

Statement

The U.S. Food and Drug Administration today initiated enforcement action against certain retail locations of **Walgreen Co. (https://www.regulations.gov/document?D=FDA-2019-R-0310-0001)** and **Circle K Stores Inc. (https://www.regulations.gov/document?D=FDA-2019-R-0312-0001)** for repeated violations of restrictions on the sale and distribution of tobacco products, including sales of cigars and menthol cigarettes to minors. The agency filed complaints seeking No-Tobacco-Sale Orders (NTSO), which seek to bar the two specific retail locations from selling tobacco products for 30 days. The two retail outlets that are the subject of these NTSO actions are a Walgreens store in Miami, Florida, and a Circle K store in Charleston, South Carolina. Notably, Walgreens is currently the top violator among pharmacies that sell tobacco products, with 22 percent of the stores inspected having illegally sold tobacco products to minors.

“I will be writing the corporate management of Walgreens and requesting a meeting with them to discuss whether there is a corporate-wide issue related to their stores’ non-compliance and put them on notice that the FDA is considering additional enforcement avenues to address their record of violative tobacco sales to youth. We all share the important responsibility of keeping harmful and addictive tobacco products out of the hands of kids. Retailers in particular – especially those who position themselves as health-and-wellness-minded businesses – are on the frontlines of these efforts and must take

that legal obligation seriously. I'm also deeply disturbed that a single pharmacy chain racked up almost 1,800 violations for selling tobacco products to minors across the country. I have particular concerns about whether the pharmacy setting is influencing consumer and retailer perceptions around tobacco products in a way that's contributing to these troubling findings," said FDA Commissioner Scott Gottlieb, M.D. "The FDA will continue to hold retailers accountable by vigorously enforcing the law. We are also evaluating our data on other large, national retail chains to identify other entities that also have high rates of repeat violations and are considering what additional measures we should pursue. While many of our recent enforcement actions focused on the illegal sales and marketing of e-cigarettes, today's announcement is a reminder that youth access to all tobacco products remains a public health problem. No child should be using any tobacco or nicotine-containing product. And no retailer should be illegally selling these products to minors. As part of our Youth Tobacco Prevention Plan, we'll continue to employ all the tools at our disposal to monitor, penalize and prevent sales of all tobacco products, including e-cigarettes, to minors at brick-and-mortar stores and Internet storefronts as we work to ensure these products are sold in ways that make them less accessible and appealing to kids."

An estimated 4.9 million middle and high school students reported current (past 30 days) use of any tobacco product in 2018, according to **preliminary results (https://www.cdc.gov/mmwr/volumes/67/wr/mm6745a5.htm?s_cid=mm6745a5_w)** of the 2018 National Youth Tobacco Survey. An **epidemic-level rise in e-cigarette use (/NewsEvents/Newsroom/PressAnnouncements/ucm625917.htm)** over the last year has led overall tobacco product use to increase by 38 percent among high school students (to 27.1 percent) and by 29 percent among middle school students (to 7.2 percent) in the last year, reversing the declines seen in the last few years.

Because tobacco use is almost always initiated and established during adolescence, early intervention – including making sure tobacco products aren't being sold to kids – is critical. One of the ways the FDA combats youth tobacco use is through its compliance and enforcement efforts. In particular, the agency provides **education and training (/TobaccoProducts/GuidanceComplianceRegulatoryInformation/Retail/ucm237741.htm)** opportunities to retailers to encourage compliance with restrictions on sales to minors, monitors compliance through surveillance, inspections and investigations, and then takes action when violations occur.

When violations are found, the agency generally issues warning letters and may take enforcement actions, including civil money penalties and NTSOs. Since its retailer enforcement program began in 2010, the FDA has issued more than 81,570 warning letters to retailers for violating the law, initiated more than 19,800 civil money penalty cases and issued 145 NTSOs, as of Dec. 31, 2018.

The NTSO action against this Walgreens outlet follows the issuance of more than 1,550 warning letters and 240 civil money penalty actions against Walgreens stores nationwide for unlawful tobacco product sales to minors. This is, however, the first NTSO action taken against a Walgreens store. While the NTSO action against Circle K is not its first, it marks the first time the agency has initiated an NTSO complaint for the sale of deemed products (cigars) to minors. Since 2010, the FDA has issued over 1,045 warning letters and 205 civil money penalty actions to retailers doing business as Circle K for sales to minors. To put Walgreens' rate of violations into perspective, among other national, corporate-owned chains, 17.5 percent of Walmart Inc. stores inspected had violations for illegal sales of tobacco products to minors. Additionally, 14 percent of Dollar General Corp. stores inspected, and 9.6 percent of Rite Aid Corp. stores inspected had illegally sold tobacco products to minors.

Under the law, the FDA may pursue an NTSO against a retail outlet that has committed a total of five or more repeated violations of federal tobacco regulations within 36 months. After the FDA initiates an NTSO action by filing a complaint, a retailer has the opportunity to respond to the complaint, and must generally do so within 30 days. Retailers who receive an NTSO complaint from the FDA may enter into a settlement agreement or respond with an answer and contest the allegations before an administrative law judge. If an NTSO goes into effect, a retailer is responsible for ensuring that the establishment does not sell tobacco products during the specified period. Removing or covering up tobacco products are examples of steps that a retailer may choose to take to ensure compliance with an NTSO, but these specific actions are not required. It is up to the retailer to decide what measures to take to ensure no regulated tobacco products are sold at the store during the time period specified in the order. The FDA plans to conduct unannounced compliance check inspections during that period to check whether each establishment is complying with the terms of the order and will take further action if necessary. Consumers and other interested parties can report a potential tobacco-related violation of the Food Drug & Cosmetic Act, including sale of tobacco products to minors, by using the **FDA's Potential Tobacco Product Violation Reporting Form (https://www.accessdata.fda.gov/scripts/ptvr/index.cfm)**.

The FDA, an agency within the U.S. Department of Health and Human Services, protects the public health by assuring the safety, effectiveness, and security of human and veterinary drugs, vaccines and other biological products for human use, and medical devices. The agency also is responsible for the safety and security of our nation's food supply, cosmetics, dietary supplements, products that give off electronic radiation, and for regulating tobacco products.

###

Inquiries

Media

Michael Felberbaum (mailto:michael.felberbaum@fda.hhs.gov)
240-402-9548

Consumers

888-INFO-FDA

Related Information

- **FDA's Youth Tobacco Prevention Plan (/TobaccoProducts/PublicHealthEducation/ProtectingKidsfromTobacco/ucm608433.htm)**

- CTP Compliance & Enforcement (/TobaccoProducts/GuidanceComplianceRegulatoryInformation/ucm232109.htm)
- Compliance Check Inspections of Tobacco Product Retailers (http://www.accessdata.fda.gov/scripts/oce/inspections/oce_insp_searching.cfm)

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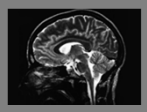
2017 (/NewsEvents/Newsroom/PressAnnouncements/2017/default.htm)

2016 (/NewsEvents/Newsroom/PressAnnouncements/2016/default.htm)

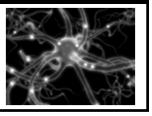
Topic:
Concussion, mTBI and PTSD

Presented by:
Dr. Christopher D. Royer, Psy.D.
Widener University
Pennsylvania Licensed Psychologist



Christopher Royer, Psy.D.

Concussion, mTBI and PTSD:



Definitions

- ACRM: LOC<30 minutes, PTA<24 hours, any alteration in mental status at the time of injury, transient or ongoing neurologic symptoms (e.g. headache)
- WHO: LOC<30 minutes, PTA <24 hours, confusion and disorientation at the time of injury, transient neurological abnormalities

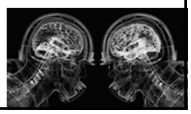
Severity

- Mild: GCS 13-15, PTA<1 hour, LOC <30 minutes
- Moderate: GCS 9-12, PTA1-24 hours, LOC 30 minutes – 24 hours
- Severe: GCS<8, PTA >24 hours, LOC >24 hours

- GCS=Glasgow Coma Scale, PTA=Post Traumatic Amnesia, LOC=Loss of Consciousness

Concussion in the DSM-V

- Neurocognitive Disorder
- Impairment of memory, attention, executive function, perceptual, language, social
- One or more of the following occurring immediately after the injury:
  - Loss of Consciousness (LOC)
  - Posttraumatic Amnesia
  - Disorientation and Confusion
  - Neuro Signs
  - Neuroimaging Findings



Concussion and TBI, a Continuum of Severity

- **CONCUSSION TBI**

- **MECHANISM OF INJURY**
- **APPROPRIATE TREATMENT**
- **PRE-INJURY FACTORS**

Mechanism of Injury

Appropriate Treatment

- Rest (A little)
- Assessment of physical injuries
- Education
- The importance of Psychology
- Gradual return to activity
  - Can use Return to Play model

When to go to ED

- Concern for intracranial injury
  - Repeated vomiting
  - Severe or worsening headache
  - Seizure activity
  - Unsteady gait or slurred speech
  - Weakness or numbness
  - Unusual behavior
  - Signs of basilar skull fracture
  - Decreased mental status

Pre Injury Factors

- Previous Concussions/TBI
- Medical Status
- Psychiatric Conditions
- Learning Problems
- AD/HD
- Stress

Concussion Recovery

- 17-28% have rapid recovery (1 day)
- 56-68% have gradual recovery (1-7 days)
- 10-19% have prolonged recovery (1 week – 1 month)
- 2-5% have persistent symptoms (>1 month)

Signs and Symptoms

- Physical
  - Headache, fatigue, dizziness, gait disturbance, light and noise sensitivity, visual disturbance
- Sleep
  - Difficulty falling asleep and staying asleep
- Mood/Behavior
  - Impulse control, anger, anxiety, depression, suicidal thoughts, personality
- Cognitive
  - Concentration, memory, processing speed

Headache

- Most common symptom
- Can be very disabling
- Characterized by a constant pain usually helped by rest
- May be worse if history of headache or family history of headache
- Medications and Modifications

Fatigue

- Can be a problem for some
- Encourage activity in small amts and increase as tolerated
- Frequent breaks
- Scheduled rest periods
- Learned behavior

Dizziness

- Difficult to treat
- Meclizine
- Evaluate for secondary cause such as inner ear trauma
- PT/OT

Light and Noise sensitivity

- Reduce light
  - Sunglasses
- Reduce noise
  - Reduce exposure to crowds
  - Private lunches/activities
  - Ear plugs

Visual Disturbance

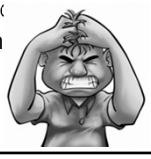
- Resolves with time
- Patching
- Visual therapy

Sleep

- Screen and treat aggressively
- Sleep Hygiene/Routines
- Meds

Impulse Control/Disinhibition/ Anger/Irritability

- Challenging
- Behavior modification strategies
  - Disengage
  - Distract
- Provide support to learn effective strategies to deal with frustrati
- Negative discipline n
- Medications



Anxiety/Depression

- Early on
  - Worry about not working, functioning in typical roles
  - Falling behind
- Later
  - Anxiety disorder
  - Depression
  - Adjustment
- Treatment
  - Antidepressants
  - Counseling
  - Psychiatric treatment

Concentration

- Concentration
  - Psychostimulants
  - Accommodations

Memory

- Verbal
- Visual
- Amantadine
- Aricept
- Speech therapy for cognitive training
- Work accommodations
  - Reduced workload
  - Reduced hours

Post concussion syndrome

- Is it a true physiological entity or is it mainly a psychological occurrence?
- Comparing trauma patients with and without brain injury
- There is a behavioral health overlay.
- The sick role.

Post Concussion Syndrome

- **Expectation as Etiology**: preformed expectations about effects of head injury, misattribute common complaints to head injury
- **"Good Old Days" Hypothesis**: "Before this happened I had an IQ of 200!"
- **Nocebo Effect**: expectations of sickness and associated emotional distress cause the sickness in question
- **Diathesis-Stress Model**: interaction b/n physiological, psychological, motivational and iatrogenic factors

Multiple Concussions

- Literature suggests that multiple concussions possibly cause negative outcomes and long term-deficits

Multiple Concussions

- History of prior concussion linked to:
  - Decreased cognitive performance on baseline testing
  - Prolonged recovery in a mixed high school/college sample
  - Greater likelihood of reporting depression
  - Greater incidence of MCI
  - 3-6x as likely to experience another concussion
  - Case reports of chronic traumatic encephalopathy (CTE)

Neuropsychology

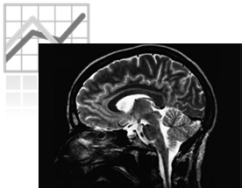
The Role of a Neuropsychologist

- Assessment
- Management
- Education

- Provides objective evidence of other potential factors that may be causing symptoms.
- Serves as a consultant to professionals engaged in the individual's care and recovery.

Traditional Batteries

- Clinical interview/history
- Intelligence
- Learning and Memory
- Attention
- Language
- Executive Functions
- Speed
- Emotion/Behavior
- Test Taking Effort



Emotional/Behavioral

- Very common co existing condition in concussions
- Disruptive to overall recovery
- Inter-connected with the family culture
  - Depression
  - Anger
  - Anxiety
  - PTSD

Factors that Influence Cognitive Complaints

- Depression
- Anxiety
- Pain
- Somatization
- Secondary gain (emotional)
- Secondary gain (financial)

What can professionals do to help?

- Provide a timely and thorough assessment and treatment plan.
- Provide accurate education about the expected recovery.
- Provide follow up services frequently.
- Address physical, cognitive and psychological issues directly and soon after the event.
- Encourage a team approach with consistent goals.

What doesn't help?

- Over-stating the potential problems and prolonged recovery time for concussions.
- Shying away form identifying pre-event factors.
- Predicting long term impairments when this is very uncommon.
- Pushing appointment times far out in the future.

The Presence of Litigation

	Headache	Dizziness	Irritability	Memory problems	Conc. problems
College students[1]	36%	18%	36%	17%	42%
Chronic pain[2]	80%	67%	49%	33%	63%
Depressed[3]	37%	20%	52%	25%	54%
PI claimants (non tbi)[4]	77%	41%	63%	46%	71%
mTBI[5]	42%	26%	28%	36%	25%

1. Sawchyn et al., 2000; 2. Radanov et al., 1992; 3.Trahan et al., 2001; 4. Dunn et al., 1995; 5. Ingebrigtsen et al., 1998

Signs of Potential Secondary Gain or Symptom Magnification

- Excessive recovery time for mild injuries
- Disability report that is disproportionate to the severity of the injury
- Severe memory deficits on NP tests
- Poor scores on easy items
- High degree of lateralization on NP tests.
- Failing formal validity measures
- Pattern of test scores inconsistent with researched scores for the particular syndrome.

Neuropsychology IME Service

- Pre-evaluation consultation(s)
- Record Review
- Comprehensive Neuropsychological assessment including measures of cognitive functioning, mood, psychiatric problems and validity/test-taking effort
- Comprehensive report
- Deposition, arbitration and trial testimony as needed.

Helpful Materials for the IME

- Any hospital/ER records
- CT/MRI/EEG results
- Neurology/Neurosurg notes
- Rehab Medicine notes
- Psychiatry notes
- Preoinjury PCP notes
- Other Preinjury documentation

A Few Thoughts About PTSD

ANXIETY/ADJUSTMENT

Event or Experience + Emotional Distress

PTSD

Specific Event or Experience + Specific Symptoms

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THANK YOU

Topic:

Mitigating Risk by Effectively Communicating to a Concerned Public in a Time of Crisis

Presented by:

Keith G. Dorman, Vice President
Communication and Community Relations
UGI Utilities, Inc.

Mitigating Risk by Effectively Communicating to A Concerned Public in Times of Crisis

Presented by
Keith Dorman
Vice President, Communications and Community Relations

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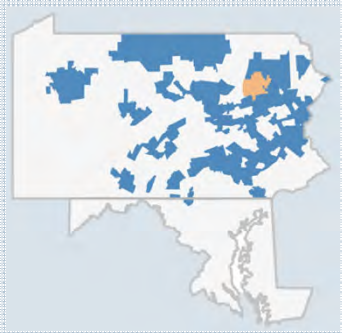
UGI Utilities, Inc.



Gas Utility
UGI Utilities (gas, ~642,000 customers)

Electric Utility
UGI Electric (electric, ~62,000 customers)

Regulated gas & electric utilities serving over **700,000** customers

Most contemporary distribution system in Pennsylvania

Service territories lie within or adjacent to the Marcellus Shale production area

2nd Largest gas utility in Pennsylvania[1] serving 44 of 67 counties

[1] Based on total customers

Crisis Incidents Occur Daily

- Can be natural or man-made
- Can affect any company, institution, or community
- Instantaneous news / social media coverage
- A question of "when" not "if" a crisis will occur

Incident: Allentown 2011

- February 9, 2011 around 10:50 PM a natural gas explosion occurred @ 542 and 544 North 13th Streets in Allentown
- 5 individuals lost their lives (4adults, one child)
- 350 people evacuated, including residents of senior citizen home
- 2 homes completely destroyed in explosion
- Adjacent 6 homes damaged / later demolished
- External damage to approximately 37 other homes and 10 businesses
- Incident followed San Bruno (CA) and Philadelphia explosions

Incident: Millersville 2017

- July 2, 2017 a natural gas explosion occurred in Millersville, PA
- 1 UGI employee was killed, 2 others were injured by the explosion
- Local municipal water employee also injured
- 1 home was completely destroyed
- Adjacent 4 homes damaged
- Debris covered a significant area

Managing Community Perceptions

- Community Concerns
  - Loss of family members / loved ones
  - Damage to homes / residents displaced
  - Multiple languages
  - Concerns over safety of cast iron main sparks calls
- Company community outreach / response
  - High visibility operations efforts
  - Teams go door-to-door with assistance within 72 hours
  - Media relations effort, plus local TV on-air interview
  - United Way Fund established /employee contributions

Community Information Sources

Public Information Challenges

- Impose order on chaos: implement plan
- Align with ICS protocol
- Develop clear messages
- Conduct ALL interactions in an open, interactive style
- Continuously provide information resources to audiences
- Follow agency rules / protocols on release of information

Communicating During Investigations

- Investigators: preserve the integrity of the investigation
- Different agencies have different rules on release of information
- Media responses reviewed / approved by agency before release (NTSB)
- Informal communications to residents permitted
- Community meetings on approved topics permitted

Preparing for Community Interactions

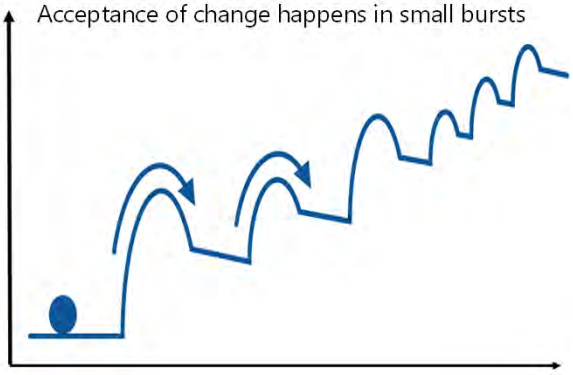
- ✓ Know your desired outcome, develop messages that support it
- ✓ Use all of the resources available to help you prepare
- ✓ Identify community concerns; practice responses to concerns
- ✓ Articulate implications AND mutual gains for the community
- ✓ LISTEN AND HEAR

Using 'Mutual Gains' Principles

- Learn story / acknowledge concerns of community members*
- Encourage joint fact-finding
- Be open to minimizing and / or compensating impacts
- Act in a trustworthy fashion at all times
- Focus on building long-term relationships
- **Accept responsibility and admit your mistakes**

*most important

Public Information Challenges



Managing Community Interactions

- Plan and train on delivery of response to community members
- Clearly articulate information regarding incident / response / recovery efforts to community
- LISTEN AND HEAR community responses

Communicate with Policy Audiences

- Engage collaboratively with regulators
- Be willing to participate in federal and state legislative hearings
  - send senior officers to testify
  - participate in State and Federal agency meetings
- Set appropriate limits on sharing information / protect the investigation

Internalizing the Lessons

- Prepare and train for incidents; assume 'when' not 'if'
- Run the business: maintain focus on safe and reliable performance
- Prepare to respond to a range of outcomes
- Take responsibility for decisions and actions
- COMMUNICATE

Thank You

Your Comments, Questions and Opinions Are Important

UGI

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Faculty Information

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Hugh has decades of experience representing individuals and companies in Civil Litigation and administrative matters. He has successfully litigated cases in Pennsylvania, New Jersey and the Federal Courts.

He has frequently lectured on long term care liability issues, long term care administrative regulations and professional risk management issues to individuals and companies.

Hugh has written articles regarding the implementation of electronic medical records and associated risk management issues.

Practice Areas:
Government Entity & Civil Rights, Medical Malpractice & Professional Licensure, Nursing Home & Assisted Living Care Litigation

Education:
Widener University School of Law, J.D., cum laude, 1993
- Moot Court Honor Society
- American Jurisprudence Award in Evidence

University of Scranton, B.A., 1990

Bar Admissions:
Pennsylvania, 1993
U.S. Court of Appeals 3rd Circuit, 1994
Eastern District of Pennsylvania, 1994
Middle District of Pennsylvania, 2001
U.S. Supreme Court, 2006

Professional Associations and Memberships:
Dauphin County Bar Association
Defense Research Institute (DRI)
Pennsylvania Association of Mutual Insurance Companies (PAMIC)

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DJS associates
Forensic Consulting, Technology & Animations

ROBERT T. LYNCH, P.E.
Sr. Collision Reconstruction Engineer

EDUCATION:

Penn State University, University Park, PA, Post-Baccalaureate Credit Certificate Program in Human Factors Engineering and Ergonomics, 2018
University of Virginia, Charlottesville, VA, MS Mechanical Engineering, 2007
Franklin & Marshall College, Lancaster, PA, BA Physics, 2005
Franklin & Marshall College, Lancaster, PA, BA Mathematics, 2005

CONTINUING EDUCATION:

Human Factors, NJAAR, May 2017, Branchburg, NJ
Event Data Recorder Use in Traffic Crash Reconstruction – Update, Abington PA, October 2016
Accessing and Interpreting Heavy Vehicle Event Data Recorders, SAE International, May 2016
Roadway Signal & Design Applications for Crash Investigation, NATARI, June 2015
Heavy Vehicle Crash Reconstruction, Northwestern Univ. Center for Public Safety, May 2012
Pedestrian and Bicycle Accident Investigation, NATARI, October 2011
Digital Photography for Accident Investigation, NATARI, October 2011
CDR Analysis and Applications Update Course, Crash Data Specialists LLC, September, 2011
CDR Technician and Data Analyst Certification Training, Collision Safety Institute, June 2010
Traffic Crash Reconstruction, University of North Florida Institute of Police Technology and Management, January 2010

PROFESSIONAL LICENSES AND CERTIFICATIONS:

Licensed Professional Engineer in Virginia
Traffic Accident Reconstructionist (ACTAR #2261)
Licensed Remote Pilot, Small Unmanned Aircraft System (Drone)

PROFESSIONAL MEMBERSHIPS:

American Academy of Forensic Sciences (AAFS)
Human Factors and Ergonomics Society (HFES)
Illumination Engineering Society (IES)
National Society of Professional Engineers (NSPE)
Pennsylvania Society of Professional Engineers (PSPE)
Society of Automotive Engineers (SAE)
National Association of Subrogation Professionals (NASP)
National Association of Professional Accident Reconstruction Specialists (NAPARS)
National Association of Traffic Accident Reconstructionists and Investigators (NATARI)

EXPERIENCE:

August 2016 – Present

Sr. Reconstruction Engineer - DJS Associates, Inc., Abington, PA. Consulting Engineer in the areas of collision reconstruction, pedestrian collisions, nighttime visibility analysis, heavy vehicle reconstruction and Crash Data Retrieval (CDR). Use of 3D laser scanning technology, electronic surveying equipment, digital photography and videography to investigate and document sites and vehicles. Services rendered on behalf of both defendant and plaintiff in civil and criminal matters. Services are rendered throughout the United States.

August 2007 – August 2016

Mechanical Engineer - ARCCA, Inc., Penns Park, PA
Consulting Engineer in the areas of collision reconstruction, visibility issues, product safety, and human protection and crashworthiness systems. Recorded, processed, and analyzed test data for various dynamic and quasi-static tests. Scanned vehicles and sites using 3D laser scanning equipment, processed point cloud data, and created animations for use as trial exhibits.

August 2005 – August 2007

Graduate Research Assistant – University of Virginia, Charlottesville, VA
Explored neuronal connections in biological organisms to assess the effects of decreased motor function and to identify potential improvements in physical rehabilitation techniques for humans. Created both mechanical and computer models of the swimming motion of the medicinal leech to simulate the effect of various neuronal deficiencies.

January 2005 – May 2005

Robotics Team Leader – Franklin & Marshall College, Lancaster PA
Organized a committee of professors, administrators, and engineering professionals to establish and promote the F&M Robotics program. Led a team of college students from multiple science disciplines to design, create and control a prototype autonomous computer-controlled robot to extinguish fires in hazardous areas.

May 2004 – December 2004

Industrial Engineer – Stoner Incorporated
Evaluated engineering processes using LEAN manufacturing principles (modeled after the Toyota Production System) to cut waste and improve efficiency. Created and implemented protocols to optimize raw materials restocking procedures. Fabricated, tested and installed pneumatic safety equipment on manufacturing lines.

PRESENTATIONS:

"Reconstructing Nighttime Collisions", National Association Subrogation Professionals Webinar, June 2018

"Drones: Capturing Data for Reconstruction", 5th Annual Claims Symposium, Harrisburg, PA, May 2018

"Reconstructing Vehicle Collisions and Other Events Using New World Technology", National Association Subrogation Professionals, Austin, TX, November 2017

"Using the Monte Carlo Method for a Crush Analysis", 2017 Joint Annual Conference hosted by NATARI, Glassboro, NJ, August 2017

"Accuracy of the DriveCam Event Data Recorder", 2017 Joint Annual Conference hosted by NATARI, Glassboro, NJ, August 2017

"Black Box Technology: Automobiles, Busses, Trucks & Trains", 2017 NJAJ Boardwalk Seminar, Atlantic City, NJ, April 2017

"Engineering Technology Update", Pennsylvania Bar Institute, Philadelphia, PA, October 2016

"Scene and Vehicle Investigation and Documentation", Advanced Disposal, Carlisle, PA, September 2016

PUBLICATIONS:

Lynch, R.T., McDonough, D.M. and Keon, T. (2012) An Update to the Dynamic Response Index (DRI) Model for Use in Assessing Seat Performance in Military Ground Vehicles, SAFE Symposium, 2012

Lynch, R. T., Modeling the Leech Swim System: Sensory Feedback and Stability Analysis, University of Virginia, 2007

0718

DJS associates

Forensic Consulting, Technology & Animations

Laurence R. Penn, Forensic Animation/Video Specialist

Laurence's professional and technical skills are focused in the digital visual arts, 3D animation technology, and programming fields. He received a bachelor's degree in Fine Arts from the Maryland Institute College of Art, certification in Digital Video Forensic Analysis and various online certifications for Visual Effects. Laurence joined DJS Associates in 2016 and assists with engineering computer animations, as well as analyzes video surveillance to re-create camera and object motion within a 3D world. He creates engineering computer animations through processing scan data, modeling, texturing, animating and compositing the final rendered deliverables. In addition to camera and object motion tracking for 3D scene reconstructions, Laurence performs digital video forensic analysis for authenticity and tampering. "Using various programming languages, he is able to efficiently automate repetitive 3D analysis tasks and produce interactive, multimedia-rich demonstratives. Outside of the forensic field, Laurence has programmed several interactive Apps and online tools, created tradeshow and medical animations, and delivered visual effect shots for a number of independent films.

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Associate

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Peter's background includes experience with a large national insurance firm where he accumulated bench and jury trial experience, and obtained his Chartered Property Casualty Underwriter (CPCU) designation.

Peter also previously worked for a private law firm where he represented clients in traffic, personal injury, medical malpractice, and workers' compensation claims in Washington, D.C., Virginia, and Maryland.

During law school, Peter interned with the San Bernardino County Public Defender, the Cato Institute, and the Transportation Security Administration, and was a member of the Mock Trial Skills Board and Alternative Dispute Resolution Skills Board.

Practice Areas: Construction, Surety & Design Professionals, General Liability, Insurance Coverage & Bad Faith

Education:
The George Washington University Law School, J.D.
- Mock Trial Skills Board
- Alternative Dispute Resolution Skills Board

The University of Kansas, B.A.
- Phi Beta Kappa

Bar Admissions
- Virginia, 2013
- District of Columbia, 2013
- Maryland, 2015
- U.S. District Courts for the Eastern District of Virginia and the District of Columbia
- Missouri (inactive), 2012

Memberships:
- Fairfax Bar Association
- Virginia Trial Lawyers Association

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Education

Doctor of Psychology, Widener University (May 1994)
Graduation Award for Distinction in Clinical Psychology
Master of Arts, Clinical Psychology, Widener University (Aug 1992)
Bachelor of Arts, Haverford College (May 1987)
Jesuit High School, Tampa Fl.

Licensure

Pennsylvania Licensed Psychologist

Appointments

Clinical Assistant Professor: Philadelphia College of Osteopathic Medicine, Psychology Department. Teaching Doctoral level courses in Research Design and Methodology, Statistics, Biological Basis of Behavior, Introduction to Neuropsychology, Advanced Psychological Assessment, Learning Theories, Rehabilitation Psychology and Dissertation Seminar. Serve on dissertation committees, administrative committees and mentor student advisees (July, 2002 – July 2009). **Adjunct Faculty** (March 1999 – June, 2002).

Adjunct Faculty: Widener University, School of Human Services. Taught Doctoral level courses in Introduction to Neuropsychology, and Practicum in Neuropsychological Appraisal. Served on dissertation committees.(September, 1994 – August 1998).

Member, Board of Directors: Delaware County Blind/Sight Center (November, 1996 August, 1998).

Member, Pennsylvania Psychological Association, General Assembly: Insurance and Managed Care Committee (June 2012 – present). Electronic Media Coordination Committee (2013-present). Committee on Diversity and Multiculturalism (September 2015-present). Insurance Committee (2015-present).

Consulting Neuropsychologist, Penn State Hershey Concussion Program (September 2010 – present)

Member, Cumberland-Perry Mental Health/IDD Advisory Board (October 2015-present).

Reviewer, LSAC (April 2018 – present)

Clinical Experience

Clinical Neuropsychologist: Private Practice. Conduct neuropsychological evaluations and provide cognitive and psychological treatment to a diverse population of brain injury, neurological and academically challenged patients. Diagnostic evaluation, treatment planning, behavioral intervention, cognitive remediation, and consultation with clinical team members. Conduct IME and Forensic evaluations. (December 2008 – present)

Director of Psychology: Physicians of Rehabilitation, Industrial and Spine Medicine. Manage clinical staff, train interns and practicum students, maintain budget and oversee billing. Conduct neuropsychological evaluations and provide cognitive and psychological treatment to a diverse population of brain injured and neurological patients. Diagnostic evaluation, treatment planning, behavioral intervention, cognitive remediation, and consultation with clinical team members. Conduct IME and Forensic evaluations. Provide consultation to business and marketing personnel (June 2000 – December 2008). Staff Neuropsychologist (August 1999 – May 2000).

Neuropsychologist: HealthSouth Rehabilitation Hospital of Mechanicsburg. Provided neuropsychological assessment and intervention for inpatient and outpatient brain injury, stroke and neurological patients. Consulted with interdisciplinary clinical team regarding treatment issues and program development. (August, 1998 – July, 1999).

Director of Neuropsychology: Independence Rehab. Administrative duties and coordination of a six member neuropsychology staff. Assigned and monitored individual cases. Developed and implemented administrative policies and procedures. Managed department budget and material resources (October 1996 – July, 1998).

Neuropsychologist: Independence Rehab. Comprehensive neuropsychological evaluations with acute, outpatient, day program, and residential brain injury patients. Developed rehabilitation service programs. Consulted with geriatric day care and assisted living. Individual psychotherapy, group psychotherapy, cognitive remediation, and vocational counseling. Director of Program Evaluation - included creation of outcome measures, data analysis, and reporting of results. Director of Internship Training - included supervision of post-doctoral fellows, interns, and practicum students. Consulted with an interdisciplinary team. Marketing activities. (July 1995 – October, 1996).

Postdoctoral Fellowship: Independence Rehab Services and Cooper Hospital Department of Neurosurgery, under the supervision of David W. Ellis Ph.D. Comprehensive neuropsychological evaluations with acute, outpatient, day program, and residential brain injury patients. Evaluations for the National Acute Brain Injury: Hypothermia study. Created and developed rehabilitation service programs. Psychotherapy, cognitive remediation, and vocational counseling. Consultation with an interdisciplinary team. (July 1994 - June, 1995).

Clinical Experience, continued

Internship Rotation II: Albert Einstein Medical Center, Neuropsychology Laboratory, under the supervision of Terri Morris Ph.D. ABPN. Neuropsychological evaluation of inpatients on the Geropsychiatry, Psychiatry and Medical wards, as well as outpatient referrals. Participated in ongoing research, and consulted with hospital staff. (July 1993 - June 1994).

Internship Rotation I: Center for Psychological Services, under the supervision of Donald Jackson Psy.D. Long and short term psychotherapy with adults, couples and children. Psychological evaluations with adults and children, as well as family assessment. Consulting position with the Philadelphians Concerned About Housing, including psychotherapy, assessment and program evaluation. (July 1992 - June 1993).

Practicum III: New Medico of Philadelphia, under the supervision of James S. Langan Psy.D. Neuropsychological evaluation, individual and group therapy with inpatient brain injury patients. (Sept 1991 - June 1992).

Practicum II: Southern Home Services, under the supervision of R. Dandridge Collins Ph.D. Individual therapy and psychological assessment with children participating in partial hospitalization and day treatment settings. (Sept 1990 - June 1991).

Summer Internship: Mediplex Rehab Camden, under the supervision of John Capuco, Psy.D. Neuropsychological assessment with brain injury patients. Both inpatient and outpatient settings. (June 1990 - Aug 1990).

Practicum I: Delaware County Association for the Blind, under the supervision of Harry T. Kilpatrick M.S. Psychological assessment, individual and group therapy with blind and visually impaired adolescents and adults. (Sept 1989 - June 1990).

Other Experience

Research Assistant: New York State Psychiatric Institute. Analyzed data and organized a data management system, trained data collectors on research instruments and maintained computing facilities for the Training in Community Living Project and the Family Support Demonstration Project. (Sept 1987 - Aug 1989).

Computer Skills: Working knowledge of PC Hardware and operating systems, Windows, Word, Excel, PowerPoint, iOS systems

Presentations

Adjustment to Blindness, presented to the convention of the Pennsylvania Association for the Blind. (1991)

Assessment and Treatment of the Blind and Visually Impaired, presented at the 1992 Pennsylvania Psychological Association convention.

Presentations, continued

Adjustment to Blindness: Psychological and Neuropsychological Aspects, presented to the convention of the Pennsylvania Association For the Blind. (1993)

State of the Art Vocational Evaluation: Neuropsychological Aspects, presented to the convention of the Pennsylvania Association For the Blind. (1994)

Adjustment and Rehabilitation for Individuals with Blindness or Visual Impairment, presented to the PA Bureau of Blindness and Visual Services All Staff Training. (1998)

Psychosocial Understanding of Blindness and Visual Impairment; The Road to Empowerment, presented to the Spring Conference for Service Providers in the Field of Visual Impairment. (1999)

The Neuropsychology of Psychiatric Disorders, six hour CE workshop presented to Philhaven (May, 2003)

Beyond HIV and AIDs, Neuropsychological Aspects: three hour CE workshop presented to York Family Services (Oct, 2003)

Supervision in Crisis Situations: one hour CE workshop presented at the Philadelphia College of Osteopathic medicine (Oct 2005)

The Evidence and Outcomes of Cognitive Rehabilitation: one hour CE workshop presented to the Capital Area Regional Stroke Symposium (Oct 2007)

Practicing in Hospital Settings: presented to the Pennsylvania Psychological Association Conventions (2008, 2009). Talk done in conjunction with membership in the PPA Hospital Practice Committee.

The Role of Neuropsychological Evaluations In Case Management: presented at the 2011 State Federation of Physician Health Programs conference, April, 2011

Collaborative Management of Sports-Related Concussions: Presented at the Pennsylvania Psychological Association Convention, June 2012

Top Ten Techs for Psychologists: Presented at the Pennsylvania Psychological Association Convention, June 2013

Evaluating Capacity: Presented at the Pennsylvania State Protective Services and Ombudsman Convention, April 2013, and again for the Pennsylvania Psychological Association Convention, June 2014.

A Primer on Assessing and Defending Traumatic Head Injuries in the Wake of the NFL Controversy: Presented at the Munich RE Conference, October 2014

Presentations, continued

Concussion, mTBI and Post-concussion Syndrome: Presented to Workman's Compensation Conference, October 2014

Numerous talks, inservices and grand rounds presented in the areas of neuropsychology, stress management, interpersonal problem solving skills, and dementia.

Bibliography

Ellis, D W., Spivack, G., Royer, C., & Goldberg, K. (1995) Treatment Outcome After Coma. Paper Presented to the First World Congress on Brain Injury, 1995

Ellis, D.W., Royer, C., & Goldberg, K. (1996) Definitions, Assessment, and Treatment of the Comatose Patient: A Neuropsychological Perspective, in Leon-Carrion ed. *Neuropsychological Rehabilitation: Fundamentals, Directions and Innovations*, St Lucie Press.

Bramley, Harry, Hong, Justin, Zacko, Christopher, Royer, Christopher & Silvis, Matthew (2015) Mild Traumatic Brain Injury and Post-Concussion Syndrome: Treatment and Related Sequela for Persistent Symptomatic Disease. *Sports Medicine and Arthroscopy Review* (In Press)

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Dynamic leader with extensive experience in creating and directing effective and efficient integrated communication and outreach programs that deliver powerful messages aimed at building positive brand identity, strengthening reputation and profitable growth.

PROFESSIONAL EXPERIENCE / ACCOMPLISHMENTS

UGI UTILITIES, INC., Reading, PA

Vice President, Communications and Community Relations (5/17 - Present)

Reports to CEO and directs all internal, external and customer communication programs via traditional, digital and social media channels for Pennsylvania's largest natural gas utility. Also directs all Company community outreach, donation and employee volunteer programs. Leads Company change management program; prepares Executive communications for C-Suite team; and conducts special projects aimed at building UGI brand and image. Leads staff of nine (five Communications professionals, and four Community Relations professionals).

Director, Corporate Communications and Community Relations (7/12 – 5/17)

Directed all internal, external and customer communication programs via traditional, digital and social media channels for UGI. Conceived and launched Company Community Relations program. Led staff of eight professionals (four Communications professionals, and four Community Relations professionals).

BURSON-MARSTELLER, LLC, Pittsburgh, PA **2007-2012**

Director, Public Affairs Practice (1/07 – 6/12)
Public Affairs Practice Market Leader. Built seven-figure profit center in Burson-Marsteller's Pittsburgh office. Counseled firm's US and worldwide clients on crisis response, merger and acquisitions communications, policy advocacy, strategic positioning, and brand and image-building initiatives. Crafting successful campaigns aimed at influencing decision makers. Trained clients on successful media interaction and how to relating to concerned publics. Issues specialties included energy, environment, manufacturing, healthcare and infrastructure.

Significant Client Projects

- Conducted facility siting public communication programs for multi-state electric utility
- Provided siting communications and community outreach support to GSA Region 3
- Counseled and delivered crisis communication programs for clients experiencing fatal accidents or facing major litigation
- Assisted international client with outreach and communication on US acquisition
- Developed suites of internal merger communication tools for multiple clients
- Crafted and delivered key communications for use with clients' bargaining unit members

KLE MANAGEMENT GROUP, Pittsburgh, PA **2000-2006**

Managing Director / Owner *(8/00 – 12/06)*
Owned and operated a successful consultancy serving clients ranging from Fortune 500 companies to local non-profits. Provided management consulting, communications and outreach support services on energy, environment, infrastructure and healthcare.

Significant Achievements

- Provided all communications for Reliant Energy acquisition of GPU generation facilities
- Successfully led and conducted PIT-BRAC "save the base" initiative
- Formed and led small business coalition supporting electric choice in Pennsylvania
- Crafted and installed client communication and issues management department structures
- Sold business to Burson-Marsteller.

CONSOLIDATED NATURAL GAS, Pittsburgh, PA **1990-2000**

Director, Policy Management and Economic Development
Developed innovative communications products and services for multi-state integrated natural gas holding company. Provided strategy advice to CNG's Chairman on national consumer issues affecting profitable growth of CNG. Led multi-state economic development and marketing programs and policy management and analysis program.

Public Affairs, Peoples Natural Gas
General Manager (1995–98), ***Director,*** (1993–95*)*, ***Manager***
Conducted all corporate communications programs on behalf of Pittsburgh-based natural gas utility company, including media, government affairs, community and charitable giving programs. Personally represented company as registered lobbyist before the US Congress and key federal regulatory agencies.

HILL AND KNOWLTON PUBLIC AFFAIRS WORLDWIDE, Wash., DC **1988-1990**

Vice President, Environment and Energy Policy
Developed successful practice providing federal and state policy analysis and advocacy services to a broad list of electric utility, manufacturing, energy producing and international government clients. Developed successful electric utility Clean Air Reauthorization practice.

Senior Associate, Energy and Environment
Researched, analyzed and presented policy papers, lobbying tools and briefings to clients.
Briefed foreign clients on US policy affecting market opportunities.

AMERICAN GAS ASSOCIATION, Arlington, VA **1980-1988**

Director, Government Relations Programs
On behalf of more than 300 natural gas pipeline and distribution companies, directed coalition initiatives, state and local policy development efforts, public affairs education programs, and industry political action committee. Contributed to outcomes such as the repeal of wellhead price controls, and full funding of Low Income Home Energy Assistance Program.

EDUCATION

B. S., Humanities and International Relations
Georgetown University School of Foreign Service

COMMUNITY / PROFESSIONAL AFFILIATIONS

Chair American Red Cross Tri-County Chapter **2013-Present**
Chair Pennsylvania Economy League – Central Division **2014-Present**
Chair, Board of Directors of Landmarks Development Corporation **2008-2012**

REFERENCES AVAILABLE UPON REQUEST

Thomas, Thomas & Hafer LLP has grown into one of the largest litigation firms in Pennsylvania since our start in 1977. Our practice has evolved over the years from our small firm roots to serve the growing needs of our client base, while still maintaining a focus on personalized, cost-effective representation.

Initially based in Harrisburg, the firm also maintains offices in Allentown, Pittsburgh, Philadelphia and Wilkes-Barre, Pennsylvania, as well as Baltimore, Maryland, Washington, D.C., Clinton, and Marlton, New Jersey, facilitating the firm's ability to provide services throughout Pennsylvania, Maryland, New Jersey, Virginia, Ohio, West Virginia, and the District of Columbia.

The firm's experience and expertise extends into numerous legal forums, including federal and state courts, several administrative agencies, professional licensing disciplinary boards, and arbitration panels such as the National Labor Relations Board. The firm's vast experience and effective advocacy in these forums has resulted in our receiving a firm-wide AV rating from Martindale-Hubbell, and has led to several of our attorneys being named among "The Best Lawyers in America" and as "Pennsylvania Super Lawyers."

In addition to spanning numerous forums, the firm serves a multitude of practice areas important to our clients. The firm offers legal advice and representation in a wide variety of matters, including general liability defense, healthcare and professional licensure, insurance coverage and bad faith, administrative agency, appellate practice, workers' compensation, employment law, government entity and civil rights, transportation, real estate, construction and surety, lead paint poisoning and subrogation matters. Each of the firm's attorneys has a unique set of experiences and practice interests which go beyond those general areas of the law. Thomas, Thomas & Hafer LLP attorneys, together with their practice areas and experiences, are:

Executive Partners

PETER J. SPEAKER, born Williamsport, PA, 1957; admitted to PA Bar, 1985; U.S. District Courts, Middle District, 1987, Eastern District 1988 and Western District, 2001, of PA; U.S. Court of Appeals, 3rd Circuit, 1987; U.S. Supreme Court, 1990. Education: LaSalle College (B.A., maxima cum laude, 1980); Temple University School of Law (J.D., 1985). Deputy Attorney General, Commonwealth of PA, Office of Attorney General, Torts Litigation

Section, 1985-1986. Memberships: PA Defense Institute, Past President; PA Association of Mutual Insurance Companies (PAMIC), Claims Committee. Member: Dauphin County, PA and American Bar Associations. Rated "AV Preeminent" by Martindale-Hubbell. Areas of concentration: personal injury, uninsured and underinsured motorists, insurance coverage and bad faith, subrogation and general litigation. E-mail address: pspeaker@tthlaw.com

JAMES J. DODD-O, born Philadelphia, PA, 1959; admitted to PA Bar, 1985; MD Bar, 1986; NJ Bar, 1987; FL Bar, 1989. Education: PA State University (B.S., 1981); University of Pittsburgh (J.D., 1985). Member, Order of Barristers. Notes and Comments Editor, University of Pittsburgh Law Review, 1984-1985. Author, "The Emperor's New Clothes: A Survey of Significant Court Decisions Interpreting PA's Sovereign Immunity Act and Its Waivers." 32 Duquesne Law Review 1 (1993). Member: Lehigh County and PA Bar Associations. Rated "Distinguished" by Martindale-Hubbell. Areas of concentration: medical malpractice, personal injury defense and subrogation. E-mail address: jdoddo@tthlaw.com

THOMAS P. MCGINNIS, born Pittsburgh, PA, 1960; admitted to PA Bar 1986; WV Bar 1995; U.S. District Court, Western District of PA, 1986, Middle District of PA, 1996, and Northern District of WV, 1996; U.S. Court of Appeals, 3rd Circuit, 1990, 6th Circuit, 1995; U.S. Supreme Court, 2003. AV Peer Review Rated as determined by Martindale-Hubbell peer review rating system. Education: University of Pittsburgh (B.A., cum laude, 1983); University of Pittsburgh School of Law (J.D., 1986). Memberships: Defense Research Institute, Pennsylvania Defense Institute. Member: Allegheny County, PA and American Bar Associations; Federal Bar Association-Western PA Chapter (Past President and Membership Chair), Academy of Trial Lawyers of Allegheny County. Rated "AV Preeminent" by Martindale-Hubbell. Areas of concentration: general liability, governmental entity and civil rights, labor and employment law, insurance coverage and bad faith and subrogation. E-mail address: tmcginnis@tthlaw.com

EDWARD H. JORDAN, JR., born 1951; admitted to PA Bar, 1978; U.S. Supreme Court, 1985; U.S. Court of Appeals, 3rd Circuit; U.S. District Court, Middle and Eastern Districts of PA; Listed in "The Best Lawyers in America." Education: Western Kentucky University (B.A., 1974; M.S. Public Service, 1975); Dickinson School of Law (J.D., 1978). Omicron Delta Kappa. Named in Pennsylvania Super Lawyers, 2005 - 2017. Named in Best Lawyers in America, 2008 to present. Assistant District Attorney, Dauphin County, 1978-1980. Taught prospective Municipal and State Police Cadet's courses in evidence,

investigative techniques and search and seizure. Member: Dauphin County (Chairman, Workers' Compensation Section, 1995) and PA Bar Associations, Hearing Committee member, Disciplinary Board, Commonwealth of PA (2010 to present), Workers Compensation Council, 2010 - 2014). Rated "Distinguished" by Martindale-Hubbell. Areas of concentration: workers' compensation, employment law and administrative law. E-mail address: ejordan@tthlaw.com

TODD B. NARVOL, born Pittsburgh, PA, 1959; admitted to Pennsylvania Bar, 1984; Maryland Bar 2006; U.S. District Court, Western, Middle and Eastern Districts of Pennsylvania; U.S. Court of Appeals, 3rd and 4th Circuits; U.S. Supreme Court. AV Peer-Review Rated as determined by Martindale-Hubbell peer review rating system. Education: University of Pittsburgh (B.S., magna cum laude, 1981); Dickinson School of Law (J.D., 1984). Law Clerk to U.S. Magistrate Judge J. Andrew Smyser, U.S. District Court, Middle District of Pennsylvania, 1984-1986; Deputy District Attorney, Dauphin County, Pennsylvania, 1986-1990; Chief Deputy District Attorney, Dauphin County, Pennsylvania, 1990-1994. Memberships: Trucking Industry Defense Association (TIDA), American Trucking Association, Inc. (ATA); Defense Research Institute (DRI); Pennsylvania Defense Institute. Member: Dauphin County and Pennsylvania Bar Associations. Rated "AV Preeminent" by Martindale-Hubbell. Areas of concentration: transportation and catastrophic auto-accident litigation; fire-loss, construction and commercial litigation; suspected insurance-fraud investigations; and white collar and transportation-related criminal defense. E-mail address: tnarvol@tthlaw.com

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Compensation Section (Vice-chairman, 2001) and Pennsylvania Bar (Member, House of Delegates, 1991-1994, 2007-present) Associations. Member of the Workers' Compensation Council of the Pennsylvania Bar Association (Statewide Section Chairman, 2004-2005); Act 57 Regulations Committee. Has been listed in "*The Best Lawyers in America.*" Named a "*Pennsylvania Super Lawyer*", and is a Fellow in the Trial Lawyer Honorary Society of the Litigation Counsel of America. Appointed by Pennsylvania Supreme Court to the Disciplinary Board of the Supreme Court of Pennsylvania (2009-present). Rated "AV Preeminent" by Martindale-Hubbell. Areas of concentration: workers' compensation, employment law and insurance coverage. *[Chair: Workers' Compensation Section]* E-mail address: bmclemore@tthlaw.com

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concentration: worker's compensation, labor law and general litigation. E-mail address: emchugh@tthlaw.com

KEVIN C. McNAMARA, born Harrisburg, PA, 1962; admitted to Pennsylvania Bar, 1994; U.S. District Court, Middle District of Pennsylvania, 1994; Eastern District of Pennsylvania, 2011; Education: University of Texas at San Antonio (B.B.A., magna cum laude, 1990); Dickinson School of Law (J.D., 1994); 1988-1991 Sergeant, U.S. Air Force. Member: Dauphin County Bar Association. Rated "Distinguished" by Martindale-Hubbell. Areas of concentration: general liability, insurance coverage, products liability and workers' compensation. E-mail address: kmcnamara@tthlaw.com

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Law (J.D., 1982); Member Pennsylvania Defense Institute, Bar Association of Lehigh County (President, 2005) and American Bar Association. Rated "Distinguished" by Martindale-Hubbell. Areas of Concentration: natural gas distribution, insurance coverage, products and premises liability. *[Chair: General Liability Section]* E-mail address: jholko@tthlaw.com

MICHAEL H. BURGOYNE, born Munich, West Germany, 1957; admitted to Marlyand Bar, 1986; U.S. District Court, District of Maryland, 1987; District of Columbia, 1993; U.S. Court of Appeals, 4th Circuit, 1994. Education: University of Maryland (B.S.M.E., 1990); University of Baltimore (J.D., 1986). Member City of Baltimore, Maryland and District of Columbia Bar Associations; American Society of Mechanical Engineers, Maryland Association of Defense Trial Counsel. Rated "AV Preeminent" by Martindale-Hubbell. Areas of concentration: general, premises and property liability; insurance defense and lead paint poisoning matters. E-mail address: mburgoyne@tthlaw.com

MONICA E. O'NEILL, born Kophaza, Hungary, 1953; admitted to New York Bar, Pennsylvania Bar, and NJ Bar. Education: Roger Williams College (B.A., magna cum laude, 1976); Temple University School of Law (J.D., 1979). Former Assistant District Attorney, Kings County, Brooklyn, New York. Member Philadelphia Loss Conference, IASIU Delaware Valley Chapter, of Counsel, and Philadelphia Bar Association. Rated "AV Preeminent" by Martindale-Hubbell. Areas of Concentration: general and property liability, SIU and construction. E-mail address: moneill@tthlaw.com

MARK J. POWELL, born Steubenville, OH, 1976; admitted to Pennsylvania Bar 2001. Education: West Virginia University (B.A., 1998); West Virginia University College of Law (J.D., 2001). Areas of concentration: workers compensation and insurance subrogation. E-mail address: mpowell@tthlaw.com

PAUL J. CROOKS, born London, England. Admitted to Pennsylvania Bar, 1991, U.S. District Court, Western District of Pennsylvania, 1991. Education: University of Kent, (B.A.); Duke University, University of North Carolina School of Law, (J.D.). Rated "Notable" by Martindale-Hubbell. Areas of concentration: employment law and workers' compensation. E-mail address: pcrooks@tthlaw.com

SCOTT D. McCARROLL, born Williamsport, PA, 1978. Admitted to Pennsylvania Bar, 2004. Education: Indiana University of Pennsylvania (B.A., summa cum laude, 2001);

Dickinson School of Law of the PA State University (J.D., 2004), Woolsack Society. Areas of concentration: general liability, insurance coverage and bad faith, civil rights and subrogation. E-mail address: smccarroll@tthlaw.com

JAMIE L. DeSISTO, born Waterville, ME, 1972. Admitted to Maryland Bar 1997, District of Columbia Bar 1999, U.S. District Court, Fourth Circuit, 1997. Education: Saint Anselm College (B.A., cum laude, 1994); American University, Washington College of Law (J.D., 1997). Member Maryland Bar Association, District of Columbia Bar Association, Maryland Defense Counsel, Association of Compensation Insurance Attorney's. Conversant in Spanish. Areas of concentration: workers' compensation, general liability. E-mail address: jdesisto@tthlaw.com

CHARLES B. PEOPLES, Admitted to Maryland Bar 2008, The Virginia Bar and The District of Columbia Bar; U.S. District Court for the District of Maryland, U.S. Court of Appeals, Fourth Circuit, U.S. Court of Appeals, D.C. Circuit. Education: Bethany College (B.A., summa cum laude, 2005); University of Maryland School of Law (J.D., 2008). Served as Judicial Law Clerk to the Honorable Robert A. Zarnoch and the Honorable James R. Eyler, Maryland Court of Special Appeals. Member: Defense Research Institute, Maryland Defense Council, Inc. Areas of concentration: general liability. E-mail address: cpeoples@tthlaw.com

ARTHUR K. HOFFMAN, born, Harrisburg, PA 1953; admitted to Pennsylvania Bar, 1980. Listed in Best Lawyers in America, 2008 to Present. Education: Northwestern University (B.A., 1975); George Washington University (J.D., 1979). Member Dauphin County and Pennsylvania Bar Associations, Pennsylvania Defense Institute. Rated "Distinguished" by Martindale-Hubbell. Areas of concentration: professional licensure, nursing home and long term care litigation, medical malpractice, civil litigation, administrative litigation and hospital staff privileges and credentialing litigation. E-mail address: ahoffman@tthlaw.com

MARK R. HAMILTON, admitted Pennsylvania bar 1979. Education: Duke University (B.A., 1976); University of Pittsburgh School of Law (J.D., 1979). Rated "AV Preeminent" by Martindale-Hubbell. Areas of concentration: general liability, governmental entity & civil rights, insurance coverage & bad faith, labor & employment law. E-mail address: mhamilton@tthlaw.com

JOHN T. HUSKIN, JR., born Baltimore, MD, 1961; admitted to Pennsylvania Bar, 1994; California Bar, 1990. Education: Washington & Lee (B.S., 1983); California Western School of Law (J.D., 1990). Former associate partner with the San Francisco law firm of Mullen & Filippi and product engineer with International Rectifier in El Segundo, California. Memberships: Pennsylvania Defense Institute, PSIA, and National Council of Self-Insurers. Member Dauphin County Bar, Pennsylvania Bar and California Bar Associations. Rated "Distinguished" by Martindale-Hubbell. Areas of concentration: employment law, workers' compensation and insurance subrogation. E-mail address: jhuskin@tthlaw.com

HUGH P. O'NEILL, III, born Philadelphia, PA; admitted to Pennsylvania Bar, 1993; U.S. District Court, Eastern District of Pennsylvania, 1994 and Middle District of Pennsylvania, 2001; U.S. Court of Appeals, 3rd Circuit, 1994. Education: University of Scranton (B.A., 1990); Widener University School of Law, Moot Court Honor Society (J.D., cum laude, 1993). Member Pennsylvania Bar Association. Rated "Distinguished" by Martindale-Hubbell. Areas of concentration: medical malpractice, professional liability. E-mail address: honeill@tthlaw.com

LAURA J. HERZOG, born Wayne, NJ, 1959; admitted to Maine Bar, 1985; Pennsylvania Bar and New Jersey Bar, 1991. Education: Rutgers College, New Brunswick, NJ (B.A., with honors, 1981); Boston University School of Law (J.D., 1985). Edward F. Hennessey Scholar (1984); Staff Editor, Boston University International Law Journal. Member Lehigh County and Pennsylvania Bar Associations. Rated "Distinguished" by Martindale-Hubbell. Areas of Concentration: products liability, medical malpractice, subrogation. E-mail address: lherzog@tthlaw.com

KATHERINE E. BAVOSO, born Port Jervis, NY. Admitted to Pennsylvania Bar and New Jersey Bar, 2002. Education: University of Florida (B.S., 1999); Dickinson School of Law of The Pennsylvania State University (J.D., 2002). Dickinson Environmental Law Review (2000-2002). Rated "AV Preeminent" by Martindale-Hubbell. Areas of concentration: workers' compensation, general litigation. E-mail address: kbavoso@tthlaw.com

SUZANNE B. MERRICK, born South Bend, IN, 1959; admitted to Pennsylvania Bar, 1986; U.S. District Court for the Western District of Pennsylvania, 1986; U.S. Court of Appeals, 3rd Circuit, 1990, U.S. Supreme Court, 2000. Education: University of Notre Dame (B.A., 1981); Notre Dame Law School (J.D., 1986). Rated "Distinguished" by Martindale-

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05/7/2019