A CALL TO ACTION!!
Why Policy, Regulations, and DNP Leaders are Requisites to Influencing the E-cigarette Epidemic
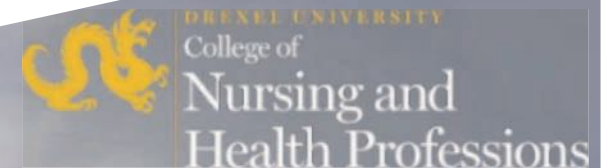

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2019 Twelfth National DNP Conference

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OBJECTIVES

By the end of this presentation, the participant will be able to:

- Analyze the escalating e-cigarette epidemic and surrounding political issues such as economics, societal concerns, and government healthcare policies affecting the regulation of non-cigarette tobacco and electronic nicotine delivery systems (ENDS) products in the United States (U.S) and globally.

- Define ways Doctor of Nursing Practice (DNP) prepared nurses can serve as change agents for policy initiatives and implementation aimed at tobacco control and prevention strategies in various domains including research, academia, clinical practice, administration, and informatics.

- Recognize multifaceted endeavors DNP leaders are poised to serve as catalysts in promoting excellence, political advocacy, evidence-based approaches to improve outcomes, while embracing contributions as interprofessional partners for clinical prevention and population health.

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INTRODUCTION

- Electronic cigarette (e-cigarette) use has become an alarming epidemic yielding major concerns for public health.

  - Predominant use: Young adolescents (11-14 years of age); adolescents (15-17 years of age); and/or young adults (18-25 years of age).

- Cigarette smoking among persons ≤ 18 years of age has declined, while the use of other nicotine delivery devices, particularly e-cigarettes, has grown exponentially.

- The U.S. Surgeon General cited an astounding 900% rise in e-cigarette use among high school students during 2011-2015 surpassing conventional tobacco products such as cigarettes, cigars, or hookahs.

- To protect Americans from the dangers of nicotine and tobacco, especially youth, policy initiatives and regulations are of epic importance at all levels of federal, state, and local governments.

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BACKGROUND

- The tobacco epidemic is one of the greatest public health threats the world has faced attributed to 7 million deaths annually.

- Vaping is the most recent, innovative, and revolutionary products to the market for tobacco and nicotine products -

    - Innovative/revolutionary - no combustion of tobacco, vapors inhale a heated mist

- From the onset - serious health concerns, unknown consequences (individual, second-hand smoke effects, public health, short/long term effects); scientific evidence lacking

- Touted as safer alternative to combustible cigarette smoking; adult-oriented smoking cessation or harm reduction

- Growing body of scientific evidence – harmful effects, dangers

PREVALENCE

Youth Explosion of E-cigarette Culture:

- From 2011 to 2014, the use of e-cigarettes (≥1 past 30 day use) grew rapidly to 13.4% of high school and 3.9% of middle school students.

- E-cigarette use during 2013 – 2014 > tripled (middle school 1.1% to 3.9% - 660,000 to 2 million students; high school 4.5% to 13.4% - 120,000 to 450,000 students.)

- By 2014, e-cigarettes had become the most frequently tobacco product utilized among youth, surpassing conventional cigarette use by adults (> 25 years of age).

- In 2015, > 3 million middle/high school students (1 in every 6) used e-cigarettes (≥1 past 30 day use) and over 25% tried e-cigarettes.
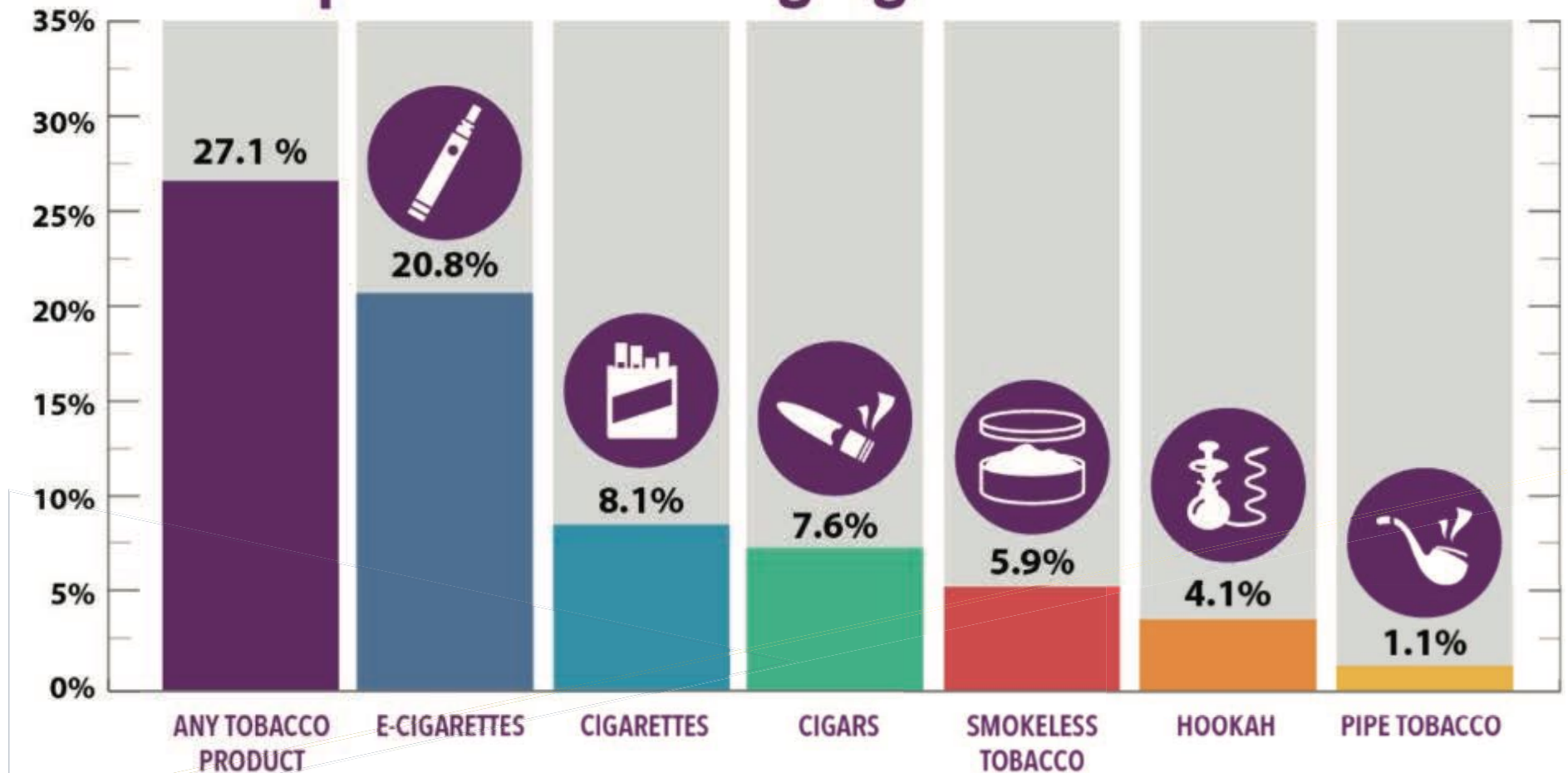
PREVALENCE

- During 2017 to 2018, an alarming increase in e-cigarette use occurred (11.7% to 20.8% among high school students and 3.3% to 4.9% among middle school students (no change among other tobacco products). Over 3.6 million youth using e-cigarettes.

- In 2018, 1:4 high school and 1:14 middle school students used e-cigarettes (≥1 past 30 day use). Over 4.9 million youth using e-cigarettes.

- In 2019, e-cigarettes are the most commonly used tobacco product, over cigarettes, cigars, smokeless tobacco, hookah, and pipes.

  - E-cigarettes are the most commonly used product in combination with other tobacco products.

  - E-cigarette use is highest for males, whites, Hispanics, and high school students.

PROGRESS ERASED

"The skyrocketing growth of young people's e-cigarette use over the past year threatens to erase progress made in reducing youth tobacco use. It's putting a new generation at risk for nicotine addiction," - CDC Director Robert R. Redfield, M.D.

Tobacco product use among high school students—2018

Product	Percentage
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%

PRODUCTS: "ENDS" DELIVERY DEVICES

Electronic nicotine delivery systems (ENDS) describe a rapidly emerging and diversified class of noncombustible tobacco products. Many terms are used to describe ENDS.

> Vapes, vaporizers, vape pens, electronic cigarettes (e-cigarettes or e-cigs), hookah pens, and e-pipes.

Rapidly emerging trend of novel devices to deliver nicotine, flavorings and other additives via an inhaled aerosol – including misuse of substances.

ENDS are diversified and may resemble cigarettes, pens, USB flash drives, or larger devices – tank systems or mods.

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E-CIGARETTES: "VAPING"

- Vaping refers to the vaporization of substances (nicotine, flavorings, cannabis, or other substances in popularity) where oil, liquid, or plant material is heated to a temperature resulting in the release of aerosolized water vapor and active ingredients (e.g. nicotine, cannabis) delivered via inhaled aerosol.

- Regardless of novel delivery devices, use of nicotine containing products in *any form* present dangers and are unsafe.

JUUL

- JUUL is a brand of e-cigarette that is shaped like a USB flash drive (easy to conceal).

- Like other e-cigarettes, JUUL is a battery-powered device that heats a nicotine-containing liquid to produce an aerosol that is inhaled.

- JUUL is currently the top-selling e-cigarette brand in the U.S.

- All JUUL e-cigarettes have a high level of nicotine (higher addiction potential; risk of nicotine poisoning).

  A single JUUL pod contains as much nicotine as a pack of 20 regular cigarettes

- Other companies sell e-cigarettes that look like USB flash drives. *(ie.* MarkTen Elite - a nicotine delivery device and PAX Era - marijuana delivery device that looks like JUUL)

JUUL

MarkTen Elite

PAX Era

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E-CIGARETTE: SURGE

Flavorings Attributed to Increased Surge:

- Between 2017-2018, among high school students who currently used e-cigarettes, the use of flavored e-cigarettes increased as well.

    - Flavored e-cigarette 60.9% to 67.8%

    - Menthol use increased from 42.3% to 51.2% among all current e-cigarette users—including those using multiple products—and from 21.4 % to 38.1% among exclusive e-cigarette users.

- Flavored tobacco products appeal to youth, top three reasons this population uses e-cigarettes, and majority of youth using tobacco started with a flavored product.

- Youth whose first tobacco product was flavored are more likely to become current tobacco users than those whose first product was tobacco-flavored.

NICOTINE: HEALTH RISKS

Harmful Effects and Health Concerns:

Nicotine is highly addictive and can uniquely harm the adolescent brain.

- Brain development begins during fetal growth childhood into adolescent years to about age 25. Adolescent years are vital to brain development.

- Nicotine exposure during youth/young adulthood can alter the brain pathways, leading to a lifetime addiction.

- Risks of long-lasting effects - mood disorders, permanent lowering of impulse control.

- Nicotine changes the way synapses are formed and alters brain pathways. Harmful consequences – behavioral/cognitive impairments, memory issues, attention, and executive function impairments.

Nicotine in adolescence "gateway drug" - increase addiction risk to smoking cigarettes and other illicit drugs.

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Side effects of **Nicotine**
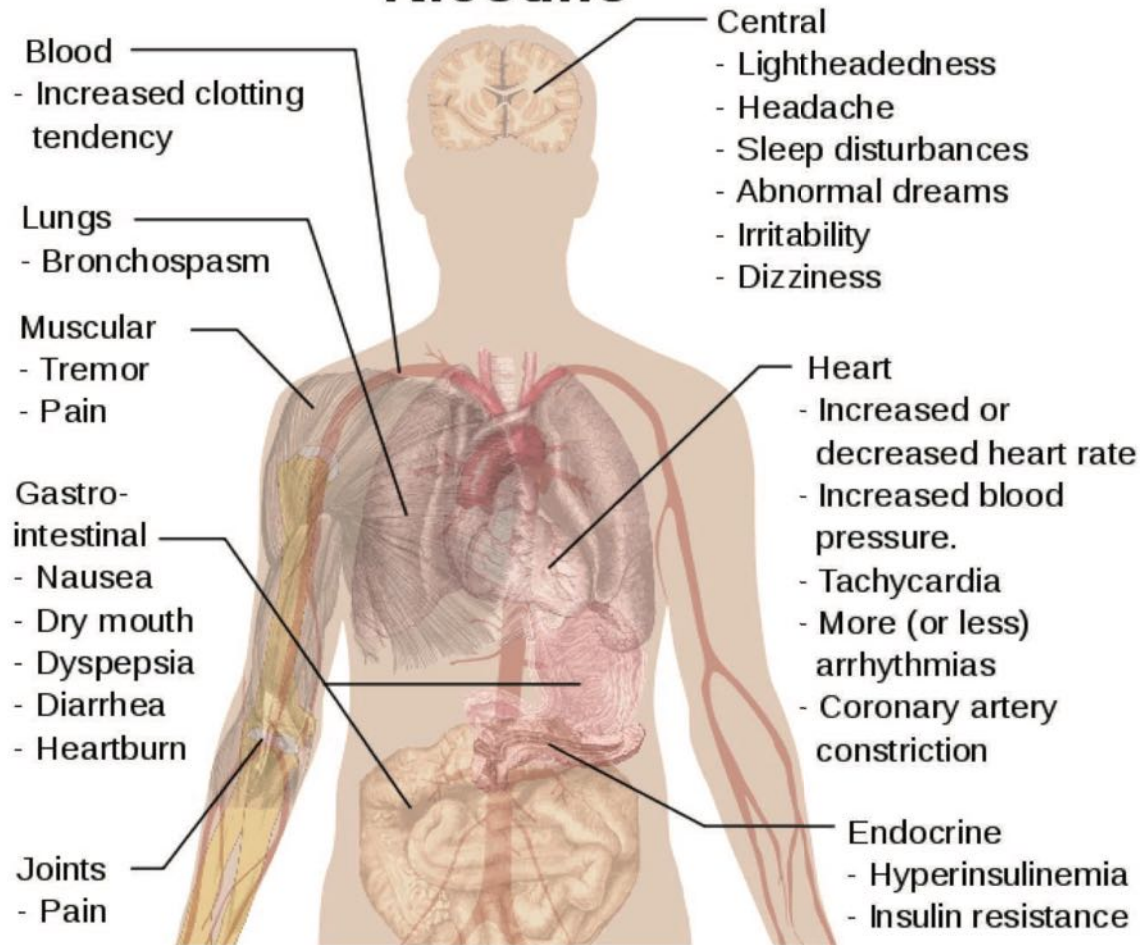
NICOTINE: HARM

Cardiovascular Effects:

Hemodynamic effects secondary to catecholamines

(↑ in heart rate and blood pressure; vasoconstriction of arteries/vessels; endothelial dysfunction; atherosclerosis acceleration)

E-CIGARETTE: AEROSOL

E-cigarette aerosol that users breathe from the device and exhale can contain harmful and potentially harmful substances, including:

- Nicotine (even marketed as containing zero % nicotine have been found to contain nicotine)
- Ultrafine particles that can be inhaled deep into the lungs
- E-liquid components - Flavorings
  - Such as diacetyl, a chemical linked to serious lung diseases (COPD, bronchiolitis obliterans, "popcorn lung")
- Vaping-induced inflammatory reactions – may mimic metastatic cancer
- Metallic toxins such as nickel, tin, and lead
- Pulmonary toxicity (additives)
- Decreased lung development
- Volatile organic compounds
- Cancer-causing chemicals

OTHER HEALTH EFFECTS

E-cigarettes:

Brief exposures to e-cigarette aerosol and additives, such as propylene glycol, have been reported to be a respiratory and eye irritant in patients without asthma.

High-powered e-cigarettes comprising tank systems have the capacity to heat nicotine liquids to high temperatures producing cancer-causing carcinogens in the vapor such as formaldehyde and acetaldehyde.
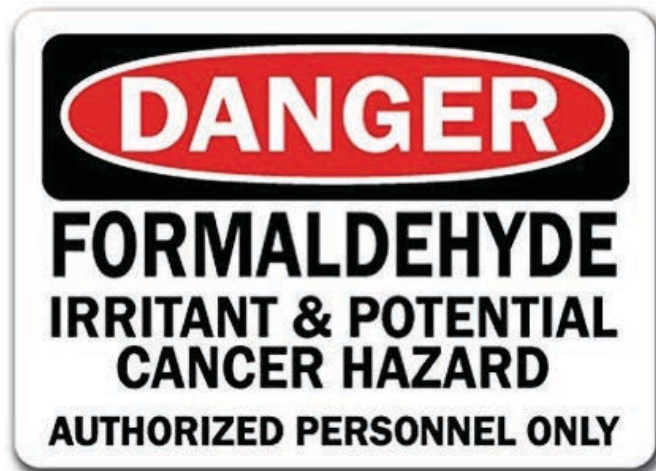
MARKETING

- Robust marketing and colorful advertising campaigns youth directed proliferated between 2011-2013. One study found television advertisements soared 256% reaching > 24 million youth.

- In 2014, e-cigarette manufacturers spent $125 million advertising their products in the U.S

- Three most commonly reported reasons for e-cigarette use among youth; *#1 appealing youth-friendly flavorings* (2-perceived low-harm as compared to conventional tobacco products; 3-curiosity).

- > 9 of 10 young adult e-cigarette users reported e-cigarettes flavored to taste like menthol, alcohol, fruit, chocolate, or other sweets.

- Evidence emerging suggest flavorings when vaporized at high temperatures result in chemical reactions of toxic levels of carbonyl compounds (e.g. formaldehyde) although the health effects are incomplete.

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vape fluid

ice cream

MENTHOL

ARE YOU KIDDING ME?!?

GUMMY BEAR FLAVORS Vapor Eliquid

SUB ZERO
X STRENGTH MENTHOL
ULTRA NIC SALTS

E-CIGARETTES: PUBLIC HEALTH THREAT

Alarming national public health threat warranting immediate and coordinated action

- Tobacco/Nicotine Use: social determinant, national priority

- Many unanswered question about short- and long-term safety data; risks and impact to health

Rapid rise popularity experimentation –

- Regulatory issues related to the products

  - Lack of quality control and other standards in the manufacturing of e-cigarettes

Tobacco control policies and regulations are paramount

- Preventive policies are needed to protect the youth, young adult, and public health
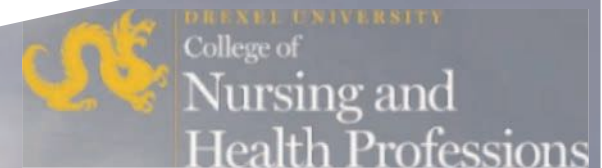
FDA: REGULATIONS

2016 Historical Action was exercised by the FDA under the *Family Smoking and Prevention and Tobacco Control Act 2009*

- Final deeming rule exercising regulatory authority over ENDS including e-cigarettes as a tobacco product and cigars, hookah, pipe tobacco, nicotine gels and dissolvables

- FDA regulations: manufacturing, distribution, & marketing of ENDS

    Import, packaging, labeling, advertising, promotion, sale

    Includes components and parts of ENDS (excludes accessories)

FDA: A *Call to Action* position addressing e-cigarette use and manufacturers perpetuating youth access

- Drastic leap: Comprehensive regulatory plan for tobacco and nicotine regulation as a public health initiative roadmap; goal – significantly reduce tobacco-related disease, death, and harm-reduction – targeting youth

FDA NEW Regulations

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FDA: REGULATIONS

2016 FDA Regulations of ENDS Warnings

> *By 2018* – all "covered" tobacco products under the final ruling must include a "required warning statement" abiding by FDA provisions set forth for labeling and warning statements

2017 FDA Comprehensive Plan for Tobacco and Nicotine Regulation

- Multi-year roadmap to better protect youth and significantly reduce tobacco-related disease and death in the U.S.

- Key component – Youth Tobacco Prevention Plan (preventing access, curbing marketing, education about dangers

2014 FDA "*The Real Cost*" Campaign

- Developed and launched its 1st tobacco prevention campaign; recognized 2015 & 2016 Social media awards

- Branches of campaigns (ie. smokeless tobacco, e-cigarettes)

FDA: REGULATION
A CALL TO ACTION!

2017 A Call to Action - Six Goals:

1) First, do no harm

2) Provide information about the dangers of e-cigarette use

3) Continue to regulator e-cigarettes at the federal level to protect public health

4) Programs and policies to prevent e-cigarette use among youth/young adults

5) Curb advertising/marketing that encourages youth to use e-cigarettes

6) Expand surveillance, research, and evaluation related to e-cigarettes

   *Under each goal are related strategies to guide efforts towards e-cigarette reduction among youth and young adults.

Collective Endeavor - Diverse Stakeholders:

To achieve these goals, working together is vital. Individuals/families; civic/community leaders; public health/health care professionals; e-cigarette manufacturers and retailers; voluntary health agencies; researchers; and other stakeholders.

DNP: INFLUENCE POLITICAL

- Concerns by public health advocates exist as the proposed regulations do not include regulations of marketing practices or flavored nicotine products targeting the youth.

- Added hazards include a rise in vaping other substances such as the concoction of chemicals, cannabis, or synthetic drugs. Legalization of medical and recreational marijuana use in some states are reasons rooted in escalating use of vaporized cannabis use among youth.

- Globally, taxation has been used as an effective means to reduce cigarette consumption with approximately a 10% increase in price resulting in a 1% decrease in smoking prevalence.
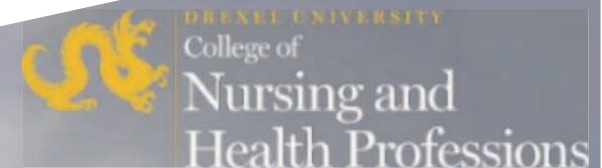
* Resources to remain current – Sign up:
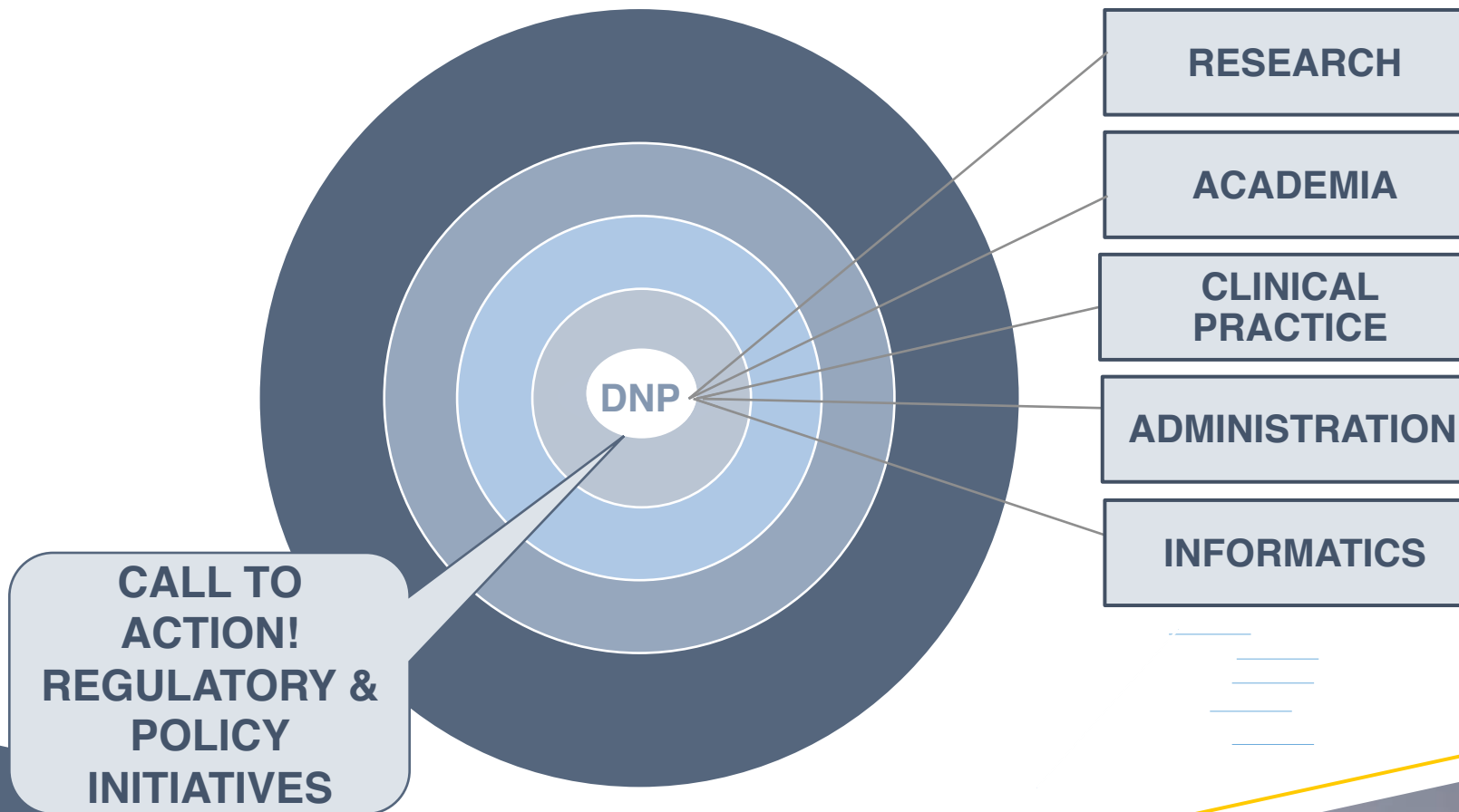
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FDA Voices on Policy: Recent Perspectives on Policy Topics

FDA CTP: Letters to to Industry

CDC Vital Signs

RESEARCH:
DNP CATALYST FOR CHANGE

Comprehensive Research is critical to identify and characterize the potential health risks from e-cigarette use, particularly among youth and young adults.

Focused Research on policy, economics, and the e-cigarette industry will aid in the development and implementation of evidenced-based strategies and best practices.

More Research is needed to better understand the use of e-cigarettes and its relationship to the user of other types of tobacco products.

Sustained and Comprehensive Implementation of population-based strategies, in coordination with the regulation of tobacco products by the FDA.

Continued Research investments and cessation-related initiatives including Smoke-free Teen by the National Institute of Health's National Cancer Institute can reduce all forms of tobacco product use and initiation among U.S. youths.

Monitor Trends and patterns of use in the e-cigarette market.

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ACADEMIA:
DNP CATALYST FOR CHANGE

Lack of Knowledge can be a result of healthcare providers receiving little or no formal training in either their academic or practice setting on screening, treating, or providing referrals to youth and their families in regards to e-cigarette use.

DNP-Prepared Nurses can play a key role in clinical practice and as faculty in higher education.

Incorporation of Evidence-Based guidelines and best practices preparing the nursing graduate in responding to the e-cigarette crisis.

Acquisition of Knowledge and Provision of the Skill set necessary to address the health and safety implications of adult & youth nicotine use and exposure needs to be incorporated in curriculum and clinical practicum course objectives.

Educational programs at the baccalaureate, master's, and doctorate levels of professional nursing, including advanced nursing practice

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CLINICAL PRACTICE: DNP CATALYST FOR CHANGE

DNPs Possess the clinical experience, leadership skills, and knowledge regarding research and evidence-based practice (EBP) to serve as powerful advocates for healthcare policy development and implementation.

Education Initiatives in medical and nursing practice can enhance the ability to assess and synthesize data, make clinical judgments, and enhance diagnostics decisions. The development of appropriate plans of care and anticipatory guidance may be a sustainable long-term solution related to the evolving public health epidemic.

Encourage Parents to become engaged and educated on the risk of e-cigarette use enabling the parent/caregiver to set an example by being tobacco-free and educate their own youth about the harmful effects of e-cigarettes, other nicotine products, and vaping of illicit substances.

Tobacco-Free Education, open discussions about the harms of tobacco and nicotine products, protecting youth from indirect exposure (tobacco smoke or aerosol from e-cigarettes) are illustrations.

ADMINISTRATION:
DNP CATALYST FOR CHANGE

Implement a comprehensive strategy and/or policies to address e-cigarette within the organization, agency, or professional venue serving as a DNP administrative leader.

Build a cadre of champions to lead teams of interprofessional health care teams to address, implement, and evaluation outcomes.

Meetings with various diverse stakeholders to achieve e-cigarette reduction strategies.

Participate in national and international e-cigarette research groups, public health groups or consortiums and disperse the information in an organization/agency team venue.

Encourage professional development opportunities within the organization/ agency furthering knowledge acquisition for administrators, providers, professional staff, and/or employees.

Ensure resources are available to support best practices and optimize health outcomes.

INFORMATICS:
DNP CATALYST FOR CHANGE

Surveillance and evaluation efforts:

Track Patterns of e-cigarette use through cross-sectional surveys and through panels that follow the same people, including youth and young adults, over time;

- **Monitor trends** in the e-cigarette retail market by type of product;

- **Examine the channels** and messaging in the e-cigarette marketplace to inform proactive counter-marketing strategies.

- **Data collection, evaluation, and interpreting.**

Assess the short- and mid-term health effects of e-cigarette use by youth and young adults and track long-term consequences;
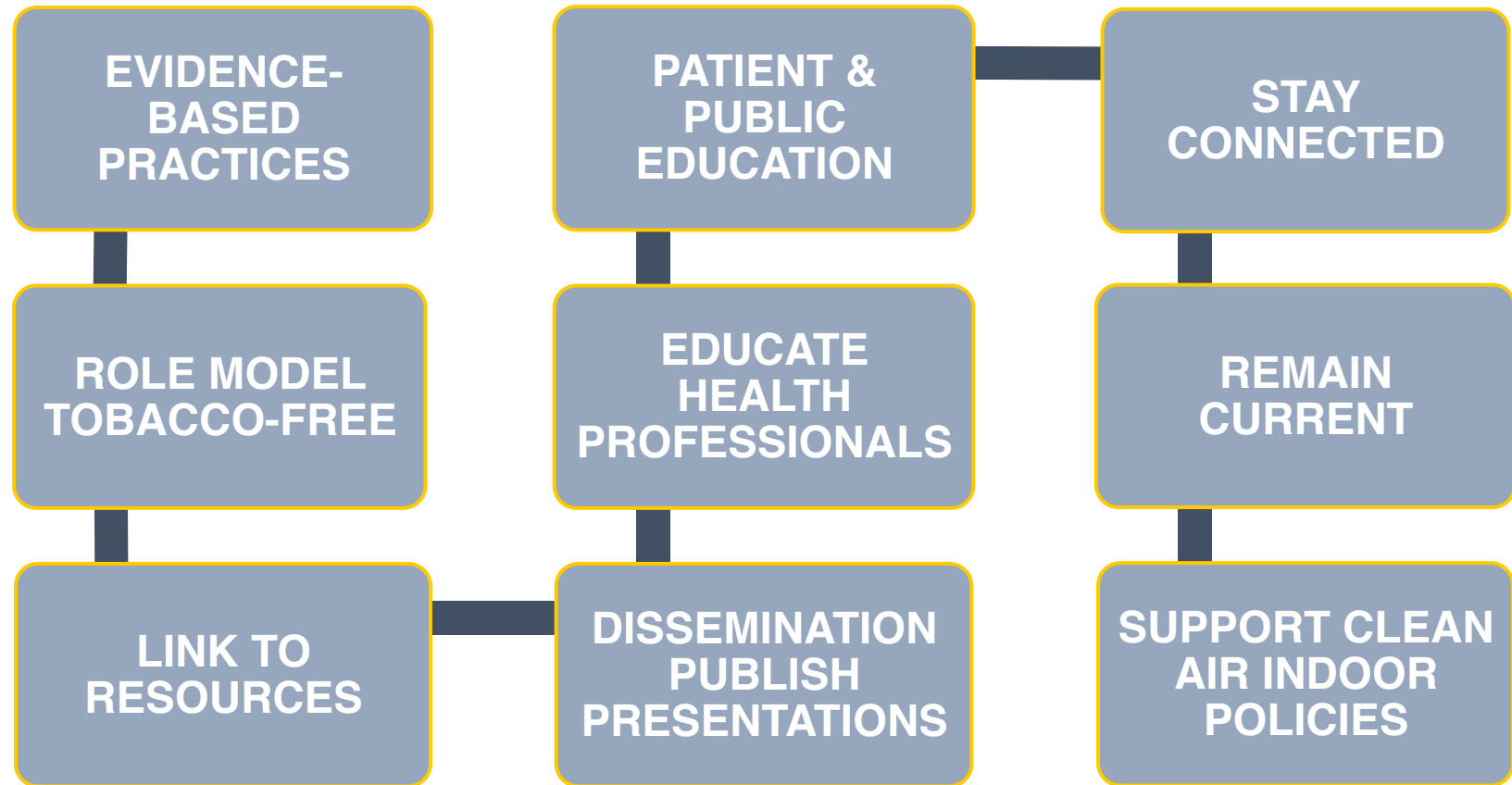
- **Examine** the risk factors and other risk behaviors that may be associated with using e-cigarettes; and

- **Create a model** to develop and track the public health impact of e-cigarettes.

Care quality & patient safety: Data analytics to support EBP and advance nursing science.

Incorporate growing technology into current policies.

QUICK STRATEGIES:
DNP CATALYST FOR CHANGE

EVIDENCE-BASED PRACTICES	PATIENT & PUBLIC EDUCATION	STAY CONNECTED
ROLE MODEL TOBACCO-FREE	EDUCATE HEALTH PROFESSIONALS	REMAIN CURRENT
LINK TO RESOURCES	DISSEMINATION PUBLISH PRESENTATIONS	SUPPORT CLEAN AIR INDOOR POLICIES

E-CIGARETTES: IN THE NEWS

First Lawsuit Filed by a State (May 2019):

- **North Carolina is suing** e-cigarette manufacturer JUUL for allegedly marketing its products to youth and misleading the public about the health risks of the products.

- "As a result of JUUL deceptive and unfair practices North Carolina kids are at risk of addiction to nicotine." – N.C. Attorney General J. Stein.

First U.S. City to Ban E-cigarettes (June 2019):

- **San Francisco** signed a bill banning the sale and distribution of JUUL and other e-cigarettes

- Seeking to curb the epidemic of youth vaping

- Advocates support the city acting where federal regulators have not – protecting youth and prohibiting the sale of untested products until they undergo FDA review

DNP: INFLUENCE THROUGH POLICY

DNPs are prepared to:

- Systematically participate in the health policy decision-making processes at the state, national, and global levels.

- Include e-cigarettes in policies and programs related to conventional cigarette smoking at the national, state, local, tribal, and territorial levels.

- Advocate for effective and evidence-based strategies to prevent tobacco/nicotine use among youth/young adults.

The National League for Nursing (NLN), the American Nurses Association (ANA), and the American Association of Colleges of Nursing (AACN) expect nurses to address policy as part of their professional role responsibility; AACN - "*Essentials*" documents.

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DNP: UNIQUE ROLE OPPORTUNITIES

- DNP-prepared nurses are poised to adopt an **active role** in curtailing the rapidly evolving e-cigarette revolution to **advocate, influence, develop, and implement policy**.

- DNP leaders are prepared to serve as **catalyst for change** in various domains – research, academia, clinical practice, administration, and informatics.

- DNP-graduates are equipped to **lead**, **influence** evidence-based care, improve outcomes, and contribute as interprofessional partners developing sustainable long-term solutions to combat the evolving public health epidemic.

- DNPs have the ability for **improving the quality of care**, benefiting patient outcomes related to the multiple health issues surrounding nicotine use.

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CALLING ALL DNP LEADERS...
CHANGE BEGINS WITH YOU!
INFLUENCE, IMPACT and IMPROVE

QUESTIONS?

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