UPDATE FROM THE OFFICE OF SCIENCE

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Center for Tobacco Products

Disclaimer: This is not a formal dissemination of information by FDA and does not represent Agency position or policy.
• Research Program
  o Overview
  o TCORS 2.0
  o PATH Study

• MRTPA

• ENDS
Office of Science Leadership

Deirdre Lawrence Kittner, PhD, MPH
Deputy Director

Matthew R. Holman, PhD
Director

Glen D. Jones, PhD
Deputy Director
RESEARCH PROGRAM
Cathy L. Backinger, PhD, MPH
Senior Science Advisor
Some areas of focus:

- Research Program
- Partnerships

Dana M. van Bemmel, PhD, MPH
TOBACCO REGULATORY SCIENCE

REGULATORY SCIENCE

• Scientific discipline with independent goals and measures not found in either the basic or applied sciences
• Ensures that scientifically valid techniques, tools, and models are available to evaluate products
• Informs regulatory actions that promote optimal public health outcomes

TOBACCO REGULATORY SCIENCE

• Informs FDA’s regulatory authority
• Recognizes that tobacco products cannot be regulated using FDA’s traditional “safe and effective” standard
• Enables FDA to best assess the “net” population-level health impacts

Regulatory science research is critical to understanding the impact of manufacturing, marketing, and distribution of tobacco products on public health.

Findings have been or may be used to inform CTP’s regulatory activities:
- Issuance of rules and the rulemaking process (e.g., Flavors ANPRM)
- Developing product standards (e.g., Nicotine Product Standard ANPRM)
- Conducting premarket tobacco product application reviews (e.g., SE, EX, PMTA)
- Executing compliance and enforcement actions (e.g., issuance of WLs, CMPs)
- Developing public education campaigns (e.g., “The Real Cost” Youth E-Cigarette Prevention Campaign, Every Try Counts)

These findings and the activities they inform are helping CTP achieve its mission of reducing the morbidity and mortality associated with tobacco use.
ACTIVE CTP PROJECTS BY FISCAL YEAR

Total Number of Research Projects, FY2010-2018 = 478

Some projects captured in multiple years.
CTP-FUNDED PROJECTS BY CURRENT PRIORITY RESEARCH AREAS, FISCAL YEARS 2010-2018

Categories are not mutually exclusive
CTP-FUNDED RESEARCH PROJECTS BY TOBACCO PRODUCT STUDIED, FISCAL YEARS 2010-2018

Number of Research Projects

*FY18 Preliminary Counts
Note: Categories are not mutually exclusive
TCORS - TOBACCO CENTERS OF REGULATORY SCIENCE
## TCORS 2.0

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February 20, 2019 | SRNT Annual Meeting
PATH - POPULATION ASSESSMENT OF TOBACCO AND HEALTH STUDY
Comparison of Nicotine and Toxicant Exposure in Users of Electronic Cigarettes and Combustible Cigarettes

Maciej L. Goniewicz, PharmD, PhD; Danielle M. Smith, MPH; Kathryn C. Edwards, PhD; Benjamin C. Blount, PhD; Kathleen L. Caldwell, PhD; Jun Feng, PhD; Lanqing Wang, PhD; Carol Christensen, PhD; Bridget Ambrose, PhD; Nicolette Borek, PhD; Dana van Bemmel, PhD; Karen Konkel, PhD; Gladys Erives, PhD; Cassandra A. Stanton, PhD; Elizabeth Lambert, MSc; Heather L. Kimmel, PhD; Dorothy Hatsukami, PhD; Stephen S. Hecht, PhD; Raymond S. Niaura, PhD; Mark Travers, PhD; Charles Lawrence, PhD; Andrew J. Hyland, PhD

DUAL USERS HAD SIMILAR OR HIGHER LEVELS OF TOXICANT EXPOSURE THAN CIGARETTE USERS
Changes in Biomarkers of Tobacco Exposure Among Cigarette Smokers Who Start Using ENDS Products: Preliminary Findings From Waves 1 and 2 of the PATH Study

Gabriella Anic, PhD, MSPH; Cindy Chang, PhD, MPH; Brian Rostron, PhD; Carol Christensen, PhD, MPH; Bridget Ambrose, PhD, MPH; Hoda Hammad, MS, MPH; Dana van Bemmel, PhD, MPH; Nicolette Borek, PhD; Maciej Goniewicz, PharmD, PhD; Heather Kimmel, PhD; Mark Travers, MS, PhD; Binnian Wei, MS, PhD; Ray Niaura, MS

In prep
PRELIMINARY FINDINGS: MANY BIOMARKERS OF EXPOSURE DECREASE WHEN EXCLUSIVE SMOKERS TRANSITION TO EXCLUSIVE ENDS USE

Total Nicotine Equivalents (TNE2)

Tobacco Specific Nitrosamines - NNAL

Heavy Metals - Cadmium

Polycyclic Aromatic Hydrocarbons - 1-Hydroxypyrene

Volatile Organic Compounds - Acrolein
SUMMARY OF PRELIMINARY FINDINGS:
TRANSITIONING TO DUAL USE

• Transitioning from exclusive cigarette smoking to dual use:
  o Little change in nicotine exposure
  o Decreased levels of some TSNAs and PAHs but not as much as switching to exclusive ENDS use
  o Does not change levels of most VOCs and heavy metals

• Cigarette smoking patterns at Wave 2 impact changes in biomarkers
PRELIMINARY FINDINGS: THE ONLY SIGNIFICANT NNAL DECREASE AMONG DUAL USERS WAS FOR SOME-DAY CIGARETTE SMOKERS AND DAILY E-CIGARETTE USERS
Use of ENDS Among Youth, PATH Study, Wave 4, 2016–2017

Hoda Hammad, MS, MPH; Amanda Johnson, MHS; Samson Gebreab, PhD, MSc; Nicolette Borek, PhD
PATH Branch, Division of Population Health Science

In prep
USE OF ENDS AMONG YOUTH, PATH STUDY, WAVE 4, 2016–2017

- New ENDS users
  - 96% used a flavored ENDS product the first time

- Current youth ENDS users
  - 97% used a flavored ENDS product in the past month
  - 70% used ENDS products “because they come in flavors I like”
MRTPA - MODIFIED RISK TOBACCO PRODUCTS APPLICATIONS
• Snus (General Snus)

• Claim
  o Using General Snus instead of cigarettes puts you at lower risk of mouth cancer, heart disease, lung cancer, stroke, emphysema, and chronic bronchitis.

• Docket: FDA-2014-N-1051

• TPSAC meeting: February 6, 2019
Moist snuff (Copenhagen Snuff Fine Cut)

Claim

- IF YOU SMOKE, CONSIDER THIS: Switching completely to this product from cigarettes reduces risk of lung cancer. (Yes/No/Abstain)

Votes: 8=Yes; 1=Abstain

Docket: FDA-2018-N-3261

TPSAC meeting: February 6-7, 2019
• Heated Tobacco Product (IQOS System with Heatsticks)

• Claims
  o Modified Risk Claim #1:
    ▪ The IQOS system heats tobacco but does not burn it.
    ▪ This significantly reduces the production of harmful and potentially harmful chemicals.
    ▪ Scientific studies have shown that switching completely from cigarettes to the IQOS system can reduce the risks of tobacco-related diseases.
  o Modified Risk Claim #2:
    ▪ Switching completely to IQOS presents less risk of harm than continuing to smoke cigarettes.
  o Modified Risk Claim #3:
    ▪ The IQOS system heats tobacco but does not burn it.
    ▪ This significantly reduces the production of harmful and potentially harmful chemicals.
    ▪ Scientific studies have shown that switching completely from cigarettes to the IQOS system significantly reduces your body’s exposure to harmful or potentially harmful chemicals.

• Docket: FDA-2017-D-3001 (closed)

• TPSAC meeting: January 24-25, 2018
• Snus (Camel Snus)

• Examples of claims*
  o Smokers who switch completely from cigarettes to Camel Snus can significantly reduce their risk of lung cancer, oral cancer, respiratory disease, and heart disease.
  o Smokers who SWITCH COMPLETELY from cigarettes to Camel Snus can greatly reduce their risk of lung cancer, oral cancer, respiratory disease, and heart disease.
  o Smokers who SWITCH COMPLETELY from cigarettes to Camel Snus can greatly reduce their risk of lung cancer and respiratory disease.

• Docket: FDA-2017-N-4678

• TPSAC meeting: September 13-14, 2018

*Applicant submitted other modified risk claims in the proposed advertising.
Today, FDA published a revised draft guidance “Use of Investigational Tobacco Products” – This is a revision to an already published draft guidance (published 2015). This revised draft guidance aims to clarify the FDA’s thinking on investigational tobacco products and replaces the previously published draft guidance.

When final, the guidance will:

- Describe the current thinking of FDA regarding the definition of “investigational tobacco product”
- Discuss the kind of information FDA intends to consider in making enforcement decisions regarding the use of investigational tobacco products – until regulations are issued and become effective or the FDA provides written notice of its intent to change its enforcement policy

The revised draft guidance will be available for **public comment for 60 days** beginning tomorrow.
ENDS - ELECTRONIC NICOTINE DELIVERY SYSTEMS
• Tobacco marketplace is rapidly evolving.

• Research, surveillance and evaluation mechanisms must be:
  o More frequent
  o More nimble
  o More product-specific

• Importance of a diverse partnership in meeting these shared data needs:
  o Government, private, non-profit
  o Federal, state, local, and international
• Public Hearing and Request for Comment—Eliminating Youth Electronic Cigarette Use: The Role for Drug Therapies (January 2019)

• Soliciting research through FDA Broad Agency Agreement (FDABAA-19-00123, Amendment 1)
  o Contract mechanism with rolling application
  o Proposal submitted by investigators to meet an FDA-identified scientific priority
  o Offeror proposes budget based on work proposed
  o Scientific priorities in Section 2.6 were added:
    ▪ Development of data or methods to quantify the factors driving initiation and continuation of tobacco use among youth
    ▪ Understanding of youth attitudes toward e-cigarettes and tobacco cessation
    ▪ Identification of youth tobacco users who may benefit from treatment with drugs intended for cessation
    ▪ Development of methods and study designs appropriate for the evaluation of behavioral or drug therapies for youth tobacco cessation
As you develop studies and proposals, consider:

- Commissioner’s announcements
- Announcements of ANPRMs, NPRMs
- MRTPA submissions
- Changes in the market place
- Emerging technologies
- Ability to obtain real-time data

What will be the specific rule or other regulatory decision that could potentially be supported based on your research?
Thank you.

Questions?