RESEARCH TO INFORM FDA REGULATORY ACTIONS

Presented by
Cathy L Backinger, PhD, MPH
Deputy Director for Research
Office of Science

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Since 2009, CTP had authority to regulate tobacco products intended for human consumption to reduce harm across the population.

Regulate the manufacture, marketing, and distribution of cigarettes, cigarette tobacco, roll-your-own, and smokeless.
On August 8, 2016 regulation went into effect that “deems” all products meeting the statutory definition of tobacco product, including components or parts (but excluding accessories), to be subject to FDA’s tobacco product authorities, including:

- ENDS (e-cigarettes, e-cigars, vape pens, etc.)
- All cigars
- Pipe tobacco
- Nicotine gels
- Waterpipe (hookah)
- Dissolvables not already under the FDA’s authority
- Future tobacco products
WHAT IS TOBACCO REGULATORY SCIENCE?

- Tobacco regulatory science involves the application of the best available science to specific regulatory questions.

- Tobacco regulatory research translates general scientific knowledge into the specific scientific findings which serve as actionable information for regulatory decisions and actions.

- To do this tobacco regulatory science evaluates distinct situations to determine the effect on public health.
SOME CRITICAL CTP ACTIVITIES

Product standards
Product review
Compliance
Public education
PRODUCT STANDARDS
Product standards are one example of tobacco product regulation

Through rulemaking, the Tobacco Control Act allows adoption of “…tobacco product standards… appropriate for the protection of public health.” Sec 907.

- Nicotine yields
- Reduction or elimination of constituents, including smoke constituents
- Construction, components, ingredients, additives, constituents, and properties of the tobacco product
- Provisions for testing or measuring product characteristics
- Restrictions on sale and distribution
- Form and content of labeling for the proper use of the tobacco product
PRODUCT STANDARDS – STATUTORY QUESTION

- Is a product standard appropriate for the protection of public health, considering:
  - The risks and benefits to the population as a whole
  - The increased or decreased likelihood that existing users of tobacco products will stop using such products
  - The increased or decreased likelihood that those who do not use tobacco products will start using such products?
PRODUCT STANDARDS – OTHER DECISION POINTS

Does a specific marketed product meet the standard?

To answer this question, the standard should be

- Justifiable
- Appropriate
- Unambiguous
- Measureable
PRODUCT STANDARDS

- Research should:
  - Be specific
  - Be directly relevant to the situation
  - Measure alternatives above and below the standard
PRODUCT REVIEW
PRODUCT REVIEW

- Includes:
  - Investigational tobacco products
  - New product review
  - Substantial equivalence (SE)
  - Exemption from SE
  - Modified risk tobacco products

- Applicant must provide adequate evidence for FDA to make a finding

- FDA uses scientific research to evaluate the evidence provided by the applicant
PRODUCT REVIEW – STATUTORY QUESTIONS

- **PMTA** - Is the marketing of a new product appropriate for the protection of public health?

- **SE** - Do differences between a new product and a predicate product raise different questions of public health?

- **MRTP** - Will the product as it is actually used by consumers significantly reduce the harm and risk of tobacco-related disease to individual tobacco users and benefit the health of the population as a whole?
PRODUCT REVIEW CONSIDERATIONS

**Information**
- Materials
- Ingredients
- Design
- Composition
- Constituents
- Other features
- Marketing

**Impact**
- Appeal
- Addictiveness
- Behavior/use
- Exposure
- Pharmacokinetics
- Toxicity
- Perception
- Initiation
- Cessation

**Public health**
- Morbidity
- Mortality
COMPLIANCE AND ENFORCEMENT
FDA is responsible for implementing and enforcing the provisions of the TCA and regulations that restrict the manufacturing, sale, distribution, and marketing of tobacco products. FDA monitors for industry compliance through surveillance, inspections, and investigations of tobacco product retailers, distributors, importers, and manufacturers, and issues enforcement actions when violations are found.
Under section 902 of the FD&C Act, a product is adulterated if, among other things:

- It has an added poisonous or deleterious substance that renders the product injurious to health
- Manufacturer did not pay user fees
- It is not in conformity to product standards
- It does not have a marketing order, if required
- It does not meet Tobacco Product Manufacturing Practices, if required
- It is in violation of Modified Risk claim restrictions
A product is misbranded if:
- It has false or misleading labeling or advertising
- Is missing required information on labeling
- It does not include directions for use as required by the Secretary
- It was manufactured in an establishment not in compliance with registration requirements
- The manufacturer has not reported the components, ingredients and constituents as required by the Secretary
- It does not bear labeling required by a product standard
• Data that supports compliance actions are strongest if they are specific to that case
• Generalized research can supplement evidence collected during surveillance, inspections, and investigations to enable the agency to determine whether there has been a violation of the law
FDA maximizes its impact on public health by focusing public education efforts on at-risk audiences such as general market youth who are already experimenting with cigarettes or open to it, multicultural including African American, Hispanic, Asian/Pacific Islander, and American Indian/Alaska Native youth, rural youth, and lesbian, gay, bisexual, and transgender (LGBT) young adults.
PUBLIC EDUCATION

- Scientific research can
  - help identify misperceptions among users and non-users of tobacco products
  - demonstrate new approaches to communication which would promote greater public understanding of the risks associated with the use of tobacco products
  - help understand the messages that can be used to reach vulnerable groups
  - help guide the creation of messages that resonate with the audience and promote behavior change
  - show how information can be provided in a format that is understandable and not misleading to a lay person
**Toxicity** - Understanding how tobacco products and changes to tobacco product characteristics affect their potential to cause morbidity and mortality, including animal and cell culture models as well as novel alternative toxicology approaches that test the toxicity of tobacco smoke, aerosols, or specific constituents in tobacco.

**Addiction** - Understanding the effect of tobacco product characteristics on addiction and abuse liability.

**Health Effects** - Understanding the short- and long-term health effects of tobacco products. Highest priority areas include cardiovascular or respiratory health effects, including inflammation. Other health effects including cancer, oral health or reproductive health may be included within projects but should not be the primary focus of the TCORS.
SCIENTIFIC DOMAINS

**Behavior** - Understanding the knowledge, attitudes, and behaviors related to tobacco product use and changes in tobacco product characteristics.

**Communications** – Understanding how to effectively communicate to the public and vulnerable populations regarding nicotine and the health effects of tobacco products, including media campaigns, and digital media.

**Marketing Influences** – Understanding why people become susceptible to using tobacco products (both classes of products and products within classes) and transitions between experimentation, initiation to regular use and dual use. Topics may include tobacco industry marketing such as advertising, point-of-sale, digital media, and promotions.

**Impact Analysis** – Understanding impact of potential FDA regulatory actions.
The term "characteristic" encompasses:
- materials
- ingredients (including additives and flavors)
- design
- composition
- heating source
- other features of a tobacco product including harmful and potentially harmful constituents

Product characteristics can be incorporated into all of the scientific domains.
NON-RESPONSIVE RESEARCH TOPICS

Although the following research topics may be within FDA CTP’s regulatory authorities to fund, they are *not* to be included in the FOA and will be deemed nonresponsive:

- Studies of short-term health effects and/or acute topography/clinical pharmacology testing of early generation ENDS products
- Mechanistic studies/basic science of disease development unless biomarkers of harm with predictive value for disease development associated with tobacco product use is an outcome
- Short-term studies of the acute effects of reduced nicotine content cigarettes
- Graphic health warnings for cigarette packages and advertisements
- Communicating harmful and potentially harmful constituents to the public
- Impacts of marketing restrictions on adults
- Descriptive studies of demographics and/or risk perceptions that describe only exposure to advertising without linking exposure to tobacco use behaviors
THE SCIENCE OF TOBACCO REGULATION

- **Product**
  - Chemistry
  - Engineering
  - Microbiology

- **Tobacco Product User**
  - Toxicology
  - Pharmacology
  - Clinical medicine
  - Addiction
  - Product use behavior

- **Population as a Whole**
  - Environmental assessment
  - Epidemiology
  - Consumer perception
  - Statistical analysis
  - Evaluation
IN SUMMARY

When designing and carrying out studies:

- Be as specific as possible about
  - The characteristics of the product
  - The population being studied
  - The impact on population health
- Be measurable
- Evaluate other possible levels of the variables being examined
THANK YOU