FDA's Medical Countermeasure Role in Preparedness and Response

National Biosurveillance Integration Center Interagency Biosurveillance Presentation Series and Information-Sharing Forum

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Elizabeth Sadove, JD
Director, MCM Regulatory Policy
Office of Counterterrorism and Emerging Threats
Office of the Commissioner
U.S. Food and Drug Administration

Objectives

- FDA OCET Mission and Functions
- Medical Countermeasures Initiative (MCMi)
- Regulatory Mechanisms for medical product development and use
- Monitoring and Assessment efforts
- Examples: Ebola & Zika Responses

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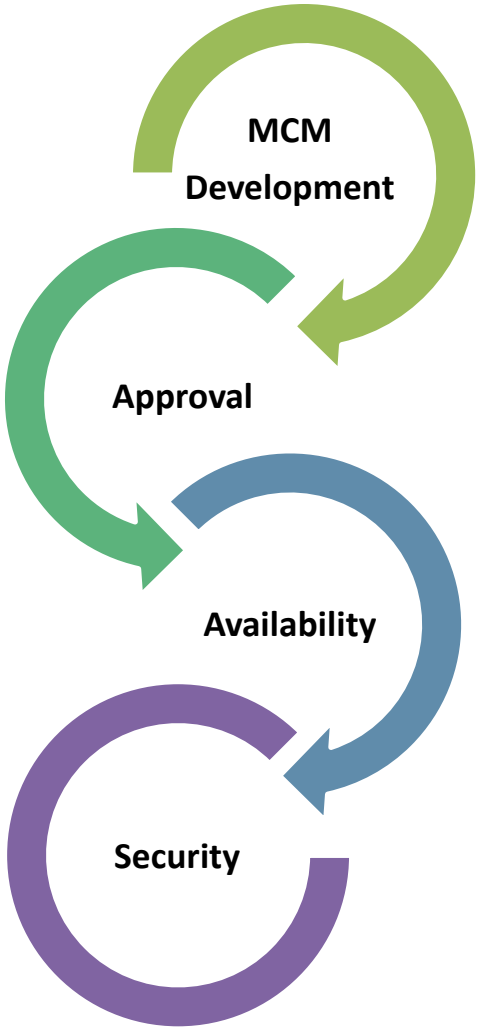
FDA's MCM Mission

FDA's overarching medical countermeasures (MCM) objective is to facilitate the **development** of and **access** to safe and effective MCMs (i.e., drugs, biologics, and devices including diagnostics and personal protective equipment) to counter high-priority chemical, biological, radiological, nuclear (CBRN) and emerging infectious disease threats (e.g., Zika, Ebola, pandemic influenza).



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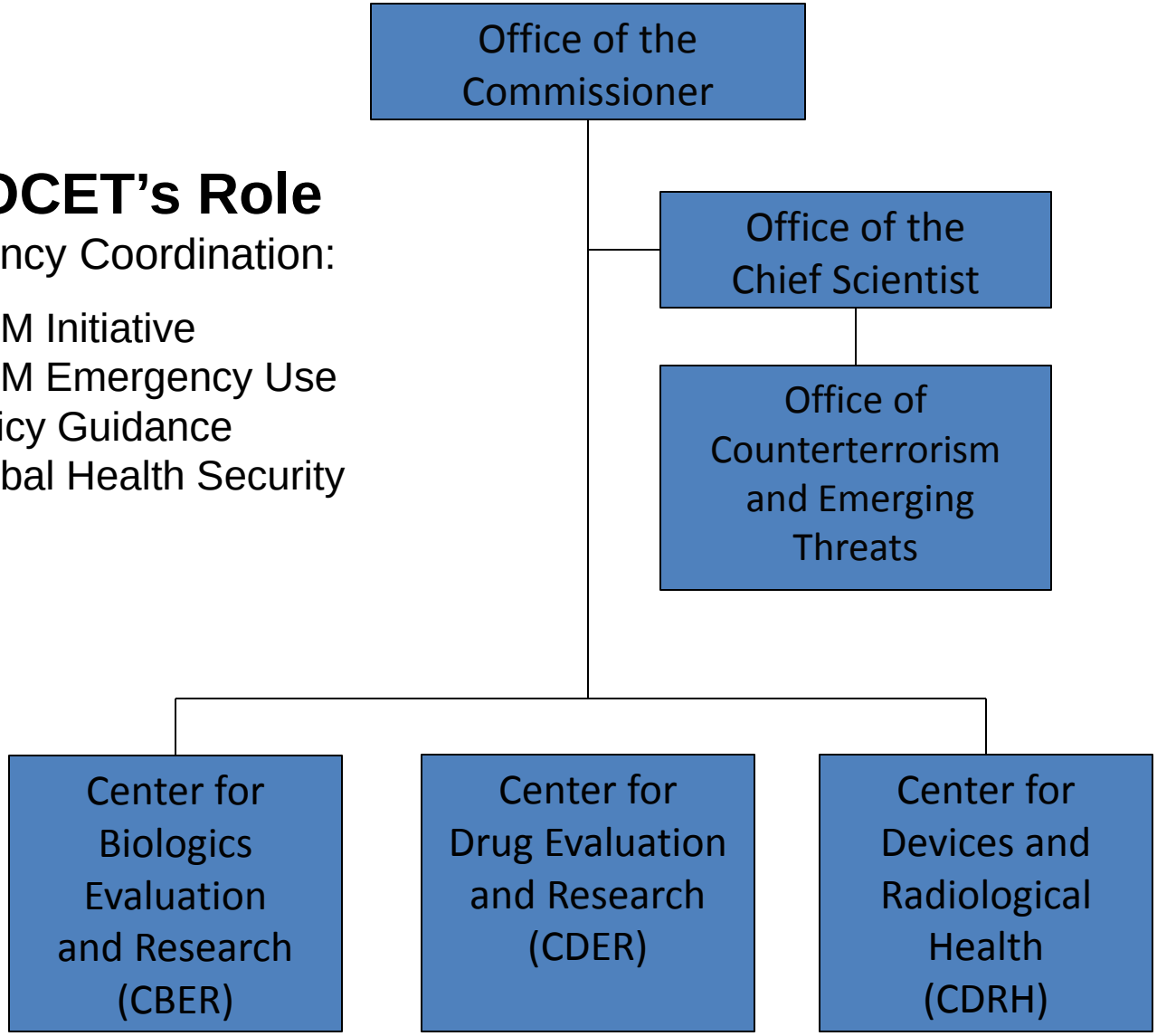
FDA OCET's Role

Cross-Agency Coordination:

- MCM Initiative
- MCM Emergency Use
- Policy Guidance
- Global Health Security



MCMi Focus Areas

Promote the *development* of MCMs by enhancing FDA's regulatory processes and fostering establishment of clear regulatory pathways for MCMs; to facilitate *timely access* to MCMs by establishing effective regulatory policies/mechanisms

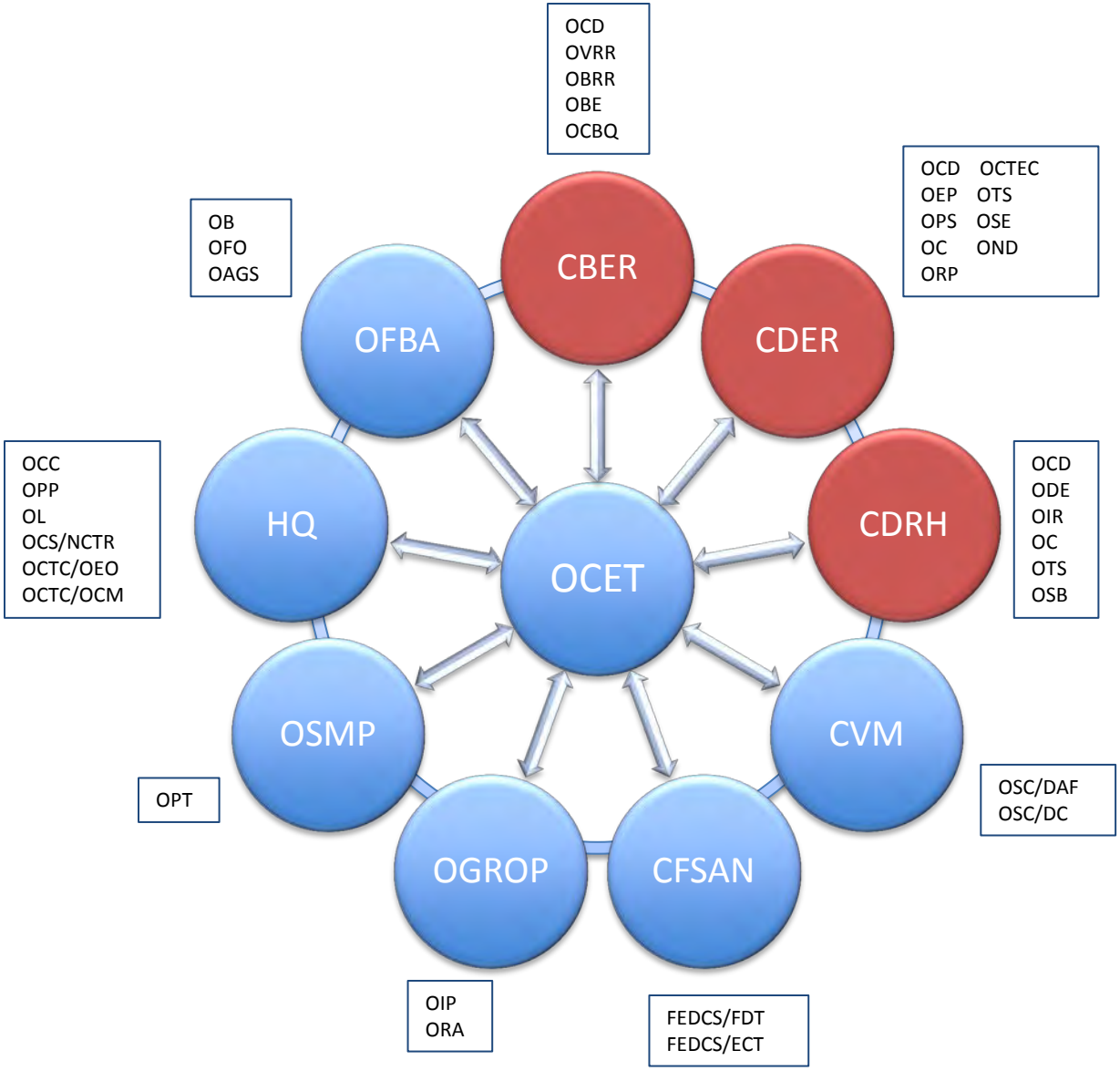
Public Health and Security Action Teams

MCM Regulatory Science

MCM Legal, Regulatory, and Policy Framework

Professional Development

FDA MCM Coordination



External Stakeholders

FDA

PHEMCE

NGOs

FDA

Think Tanks

Industry

Academia

Public

State & Local

FDA's MCM Roles

FDA has numerous roles throughout the MCM lifecycle, including but not limited to:

- Facilitating development of MCMs; approving, licensing, clearing, and regulating MCMs
- Using legal mechanisms to prepare for and facilitate emergency use (e.g., Emergency Use Authorizations (EUAs), other emergency use authorities)
- Ensuring consumer protection against fraudulent claims; enforcing against misbranded and adulterated products
- Monitoring MCM use for adverse events (e.g., through MedWatch, VAERS) to ensure safety and efficacy of FDA-regulated products
- Collaborating with government partners (e.g., HHS, NIH, CDC, DOD, State, tribal local, and territorial (STLT) public health partners) – for preparedness and response

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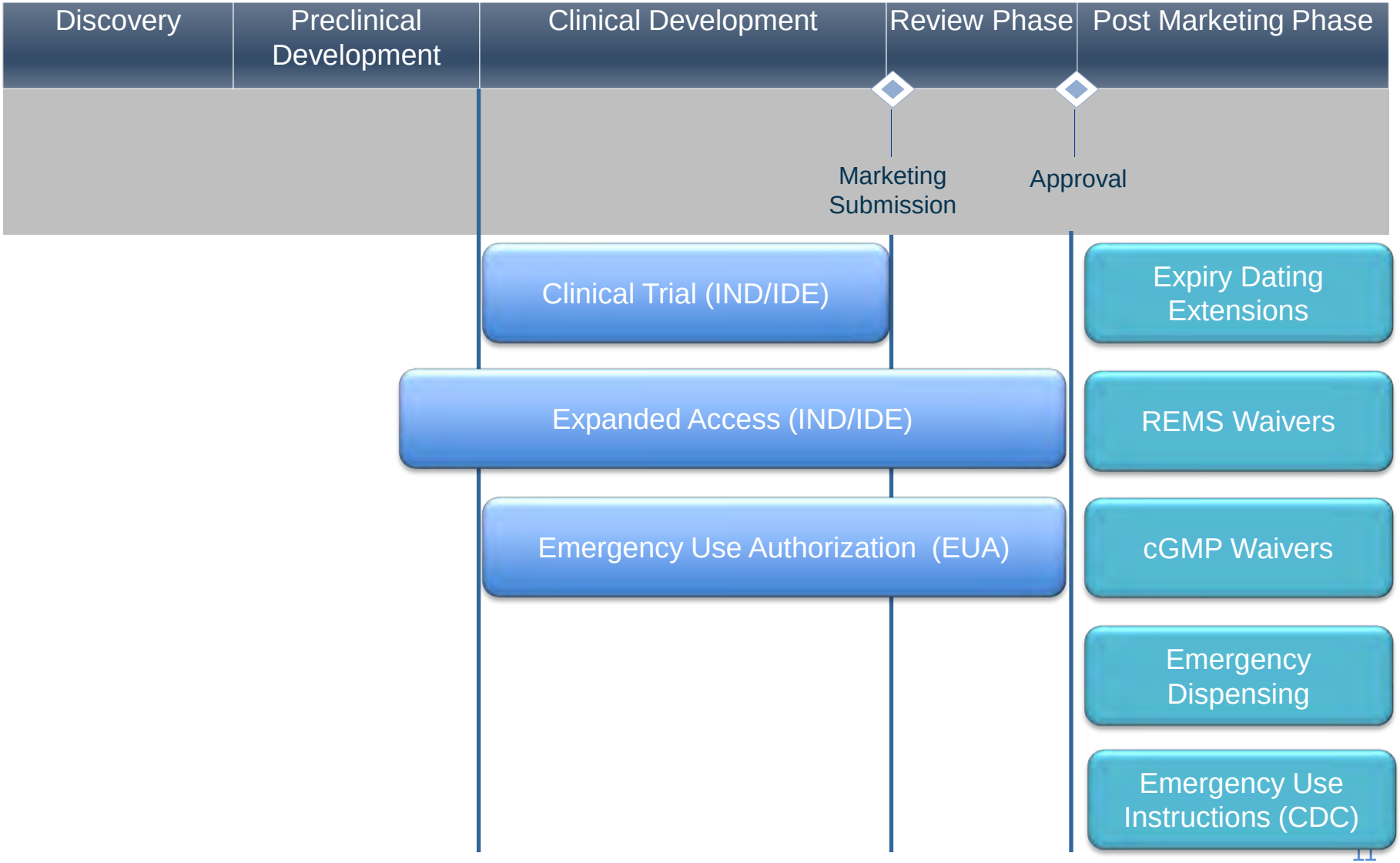
What Makes MCMs Different?

- Some MCMs may be available based on little or no human clinical data demonstrating that they are effective against the disease/condition
  - Traditional research and approval pathways may be infeasible or unethical making the emergency the only opportunity to collect data in humans
- Legal/regulatory authorities may be needed to facilitate:
  - Some MCMs needed for a response might not be approved, licensed, or cleared by FDA for the emergency (or any) use (e.g., Ebola MCMs offered through clinical trials, EUA for use of unapproved antiviral during 2009 H1N1 response)
  - Others might be approved for the emergency use (e.g., doxy for PEP anthrax), but need to be dispensed using non-traditional methods
- These differences make it is important to obtain near-real time information to inform decisions about use of the product during the public health emergency

Facilitating Development and Availability

- Mechanisms to expedite or facilitate development
  - Fast Track
  - Priority Review
  - Accelerated Approval
  - Animal Rule
- In situations where MCMs are available but not yet approved for the particular indication, FDA has a variety of mechanisms to facilitate access
  - Investigational Use (e.g., IND, IDE, Expanded Access)
  - Emergency Use Authorization

Facilitating Availability



FDA's Ebola Response

- Challenges:
  - Minimal health care and public health infrastructure
  - Limited capacity to provide supportive care
  - MCMs under development were in the early stages
  - Global coordination/competition
- Lessons Learned:
  - Clinical trials can be conducted under most challenging circumstances, with:
  - Resources
  - Science
  - Expertise
  - Bridging law and science
  - Collaborations

FDA'S ZIKA RESPONSE

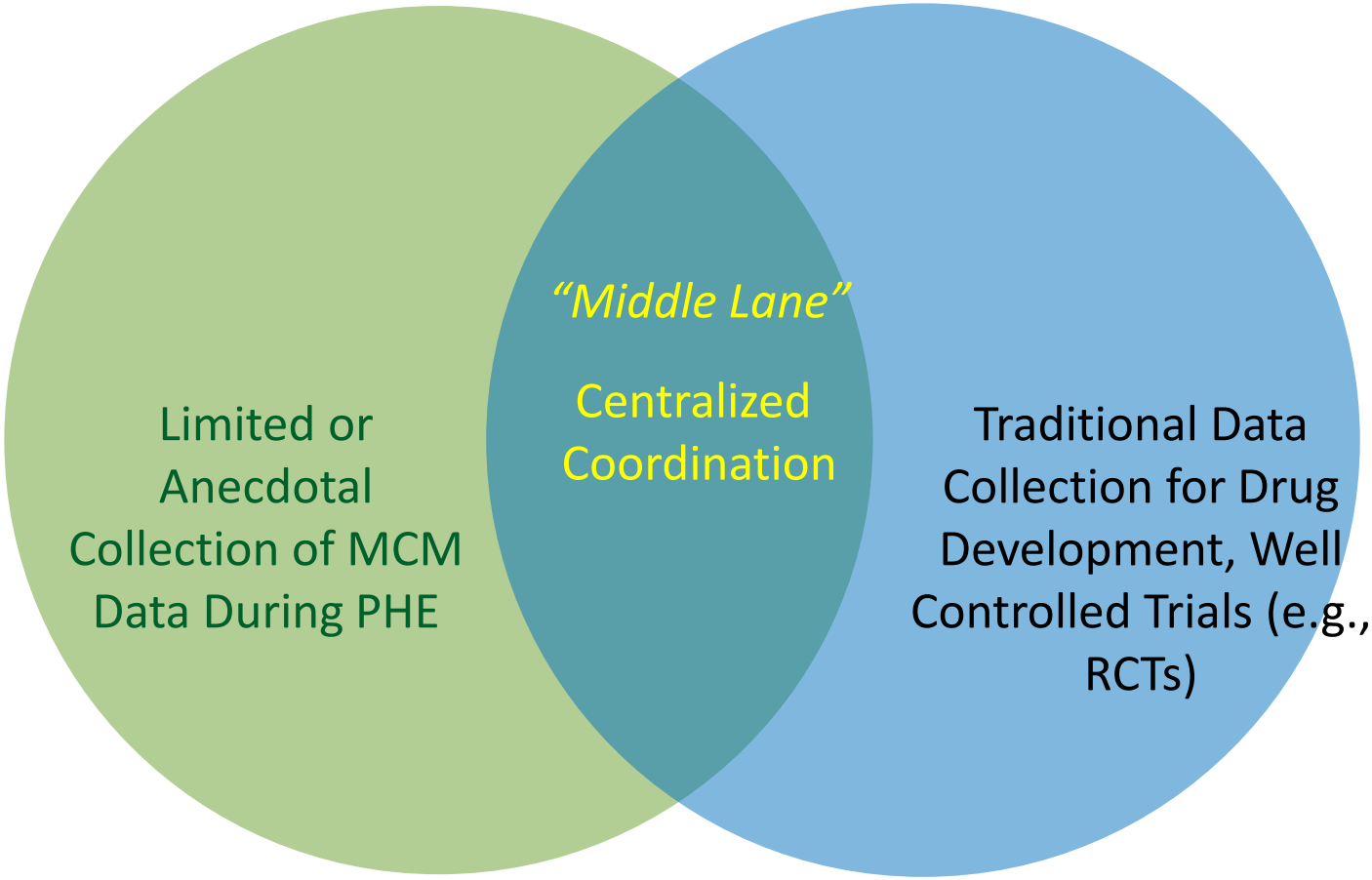
- FDA is fully engaged with the US government, private sector, international community, and other partners in responding to the Zika virus outbreak, helping to help minimize the impact of the Zika outbreak
- Currently, no FDA-approved, licensed, or cleared medical products available to prevent, treat, or diagnose Zika virus
- **5 primary areas of activity include**:
  - (1) Blood safety
  - (2) Clinical diagnostic tests
  - (3) Vector control
  - (4) Vaccine development, and
  - (5) Monitoring for fraudulent products

Conducting Science Research During a PHE

PUBLIC HEALTH EMERGENCY	TRADITIONAL MEDICAL PRODUCT R&D

• Intent – respond and mitigate
• Unplanned/unexpected
• Chaos or controlled chaos
• Large numbers of individuals
• Potential for simultaneous administration/multiple products
• Rapid decision making/response
• STLT and federal government actors/roles/ authorities, with potential private/non-profit sector involvement
• Limited primary provider oversight/ tracking of MCM use/monitoring of MCM adverse events and outcomes
• Limited reporting or information dissemination
• Potential for non-traditional locations for receiving care (e.g., PODs, alternate care sites)
• Resource shortages (staff, space, supplies)
	• Intent – generalizable knowledge
	• Planned/deliberate
	• Well controlled clinical trials
	• Smaller numbers of individuals
	• Stepwise progression/single product
	• Careful decision making/time
	• Strict oversight and monitoring
	  • Informed Consent/process
	  • IRB Review and Approval
	  • Adverse event reporting
	• Traditional health care settings (e.g., hospitals with appropriate record keeping capabilities)
	• Sufficient health care staffing

Establishing a Middle Lane



Recognizing MCM response realities, complexities, and goals, the objective is to establish a "Middle Lane" to bridge the gap between limited or no data collection during a PHE and traditional Randomized Controlled Trial (RCT) data collection used for drug development

MCM Monitoring and Assessment Federal Efforts

- FDA is co-leading a PHEMCE-wide effort to develop a national (i.e., not just federal) capability to monitor safety and assess effectiveness of MCMs that have been dispensed/administered during a public health emergency
- **Envision**: A national capability that builds on existing MCM dispensing/ administration (e.g., POD, hospital) and data system capabilities to monitor and assess MCM use (i.e., safety, compliance, effectiveness) through data collection, analysis, and multidirectional communication to enable assessment and decision-making at all levels during public health emergencies
- Focus of efforts thus far include:
  - Electronic Health Record Capabilities: Studies to assess feasibility of accessing antiviral and vaccine data from different types of data systems/partners (e.g., Health Information Exchange, DOD and VA, Sentinel networks, National Device Evaluation System)
  - HANDI MCM Pilot: Using mobile technology to facilitate MCM data collection (collaboration with Denver Health)
  - Linking clinical trial networks: Prepositioning protocols within the United States Critical Illness and Injury Trials Group (USCIIT); BARDA project to develop a centralized clinical research organization with adaptive design protocols

Additional Resources

- **FDA Zika Response Updates Website**
  - http://www.fda.gov/EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/MCMIssues/ucm485199.htm
  - Available in Spanish and Portuguese:
    - http://www.fda.gov/EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/MCMIssues/ucm497802.htm
    - http://www.fda.gov/EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/MCMIssues/ucm499738.htm
- **FDA Medical Countermeasures Initiative (MCMi)**
  - www.fda.gov/medicalcountermeasures
- **FDA EUA Website** (*official updates, current & terminated EUAs, guidance*)
  - www.fda.gov/EmergencyPreparedness/Counterterrorism/ucm182568.htm
- **FDA Draft Guidance on EUAs and other MCM Emergency Use Authorities**
  - http://www.fda.gov/RegulatoryInformation/Guidances/ucm125127.htm (April 2016)
- **FDA MCM Emergency Use Authorities Website** (*official updates*)
  - http://www.fda.gov/EmergencyPreparedness/Counterterrorism/MedicalCountermeasures/MCMLegalRegulatoryandPolicyFramework/ucm411432.htm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