A CDC Framework for Preventing Infectious Diseases: *Sustaining the Essentials and Innovating for the Future*

- To provide a roadmap for improving our ability to prevent infectious diseases through a strengthened, adaptable, and multi-purpose U.S. public health system

- To guide collective public health action at a time of resource constraints, while advancing opportunities to improve the nation’s health through
  - new ideas
  - partnerships
  - technical innovations
  - validated tools
  - evidence-based policies
CDC’s ID FRAMEWORK

Three Overarching Elements

Element 1. Strengthen public health fundamentals, including infectious disease surveillance, laboratory detection, and epidemiologic investigation

Element 2. Identify and implement high-impact public health interventions to reduce infectious diseases

Element 3. Develop and advance policies to prevent, detect, and control infectious diseases
Priorities for Element 1

Element 1. Strengthen public health fundamentals, including infectious disease surveillance, laboratory detection, and epidemiologic investigation

• Modernize infectious disease surveillance to drive public health action

• Expand the role of public health and clinical laboratories in disease control and prevention

• Improve capacity for epidemiologic investigations and public health response

• Advance workforce development and training to sustain and strengthen public health practice
Examples of Key Activities to Meet Element 1 Priorities

**Modernize infectious disease surveillance**

- Improving collection and communication of timely, accurate, and complete surveillance data
- Advancing meaningful public health use of electronic health records
- Advancing partnerships, policies and incentives, and training that enhance capacity of clinical laboratories to test for microbes of public health concern
- Intensifying surveillance for unusual health events
- Using evolving health IT tools to provide rapid feedback and alerts to hospitals, clinicians, patients, and public health practitioners
  - Providing feedback to hospital administrators and public health officials on the efficacy (and cost-effectiveness) of infectious disease prevention practices
Examples of Key Activities to Meet Element 1 Priorities

**Expand laboratory detection and reporting**

- Developing, validating, and disseminating diagnostic innovations
  - multi-pathogen and point-of-care tests
  - new tools and assays for detecting and characterizing emerging threats
  - tools and techniques for analyzing large amounts of protein or nucleic acid data

- Improving information flow among clinicians, clinical labs, public health labs, and CDC

- Conducting long-range planning to ensure continued capacity at CDC to serve as a national and global reference center for all infectious diseases

- Developing new and advancing existing standards and protocols for safe and rapid transfer of patient specimens to clinical and public health laboratories
Examples of Key Activities to Meet Element 1 Priorities

*Improve epidemiologic investigations and public health response*

- Developing innovative tools for outbreak investigations—incorporating new technologies such as bioinformatics, portable digital devices, and high-performance computing to improve information exchange across jurisdictions

- Developing pre-event investigative performance measures and protocols (e.g., protocols for collecting data on risk factors, disease severity, and other clinical information)

- Using lessons learned from outbreak responses to strengthen overall preparedness, including distribution and use of emergency medical countermeasures and diagnostics development

- Coordinating across CDC and with external partners to facilitate collaborative efforts for rapid response to infectious disease outbreaks of unknown etiology
Examples of Key Activities to Meet Element 1 Priorities

Advance workforce development and training

- Expanding access to high-quality public health e-learning products and training
- Providing guidance and training for public health workers on integrating IT health tools into all aspects of public health practice and “e-health”
- Assisting public health departments in transitioning to expanded roles in healthcare quality assurance, assessment, and policy development
- Engaging partners to extend the reach of public health messages through the use of new communication tools and channels, such as working with medical/nursing schools and professional organizations to develop public health messages for use by healthcare providers
Element 2. Identify and implement high-impact public health interventions to reduce infectious diseases

- Identify and validate high-impact tools for disease reduction
- Use proven tools and interventions to reduce high-burden infectious diseases

Box 3.1 Infectious disease issues of special concern

- Antimicrobial resistance
- Chronic viral hepatitis
- Food safety
- Healthcare-associated infections
- HIV/AIDS
- Respiratory infections
- Safe water
- Vaccine-preventable diseases
- Zoonotic and vectorborne diseases
Priorities for Element 3

Element 3. Develop and advance policies to prevent, detect, and control infectious diseases

- Ensure the availability of sound scientific data to support the development of evidence-based and cost-effective policies
- Advance policies to improve prevention, detection, and control of infectious diseases
Examples of Key Activities to Meet Element 3 Priorities

Ensure availability of sound scientific data to support development of evidence-based, cost-effective policies

- Assessing the national burdens of high-mortality infectious diseases
- Identifying public health activities with high return on investments
- Developing strategies for sustaining and expanding public/private collaborations to improve healthcare quality
- Creating predictive models for disease emergence, disease spread, outbreak response, and disease elimination
- Monitoring rates of and risk factors for foodborne illness to inform food safety policy and regulatory action
- Monitoring the effectiveness of strategies to reduce behaviors that increase individual risk for infectious diseases
Examples of Key Activities to Meet Element 3 Priorities

Advance policies to improve prevention, detection, and control of infectious diseases

• Activities that help make disease prevention a standardized, routine part of healthcare, including policies designed to improve
  ↑ Healthcare delivery to encourage early disease detection and treatment
  ↑ Healthcare practices to prevent HAIs and other healthcare adverse events
  ↑ Secure exchange of health information
  ↑ Protection of both patients and healthcare workers
  ↑ Incentives (e.g., medical reimbursement) for preventive services and practices
Examples of Key Activities to Meet Element 3 Priorities

Advance policies to improve prevention, detection, and control of infectious diseases (cont.)

- Efforts to increase community/individual action to prevent infectious disease, including policies and initiatives designed to enhance
  - Availability of public health information through new communication channels
  - Community resilience during outbreaks and unusual public health events
  - Delivery of preventive services to vulnerable and marginalized populations
  - Utilization of clinical and preventive services by persons with or at risk for infectious diseases
  - Judicious use of antibiotics through messages targeted to patients, parents, and healthcare providers
  - Understanding of the benefits of vaccination and the risks and dangers of vaccine-preventable diseases
  - Health literacy and the understanding of social practices and behaviors that facilitate or prevent disease spread