CDC AR Year in Review: Progress across One Health

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CDC Definition of One Health

One Health is a collaborative, multisectoral, and trans-disciplinary approach - working at the local, regional, national, and global levels - with the goal of achieving optimal health outcomes recognizing the interconnection between people, animals, plants, and their shared environment.
Any time antibiotics are used, they can lead to resistance. This includes antibiotics use by people and animals, and on crops.
Fighting Antibiotic Resistance Where it Happens

- Detecting, preventing, tracking and treating drug-resistant pathogens in the community.
- Improving antibiotic use and infection prevention, with innovative and proven practices to control spread.
- Rapidly identifying drug-resistant foodborne bacteria to stop and solve outbreaks and help improve prevention.
- Improving international collaboration and capacities for surveillance, infection control, prevention, stewardship, and public health research.
- Exploring unanswered questions about AR and humans, animals, and the environment (e.g., surface water and soil).
National Momentum on AR Since First AR Threats Report

CDC’s AR Threats Report

National Strategy on CARB
- President’s Council of Advisors on Science & Technology Report

National Action Plan for CARB
- Presidential Advisory Committee established

Presidential Message on Antibiotic Awareness Week

2013 2014 2015 2016 2017 2018

ARX Unit established - ARSI
- Congress appropriates funding to implement CARB activities
- U.S. engagement on UN General Assembly High Level Meeting on AMR

2019 Major Announcements
- AMR Challenge concludes at UN General Assembly 2019
- 2nd AR Threats Report published

AMR Challenge launched at UN General Assembly side event
New Drugs Alone Aren’t Enough to Protect Americans

Combating AR requires comprehensive, aggressive action across the U.S. gov’t and around the globe
Collaborations on Global Work to Combat AMR
THE AMR CHALLENGE

CDC led a yearlong initiative to bolster global efforts across sectors and around the world to step up, partner, and play their part in the fight against AMR.

Launched by HHS Sec. Azar at the U.N. General Assembly in Sept. 2018, more than 350 organizations made commitments, including governments, private industry, and civil society from around the world.

CDC celebrated the AMR Challenge Year in September 2019 at the U.N. General Assembly to show the global progress and commitment to continue the fight against AMR.

Learn more on CDC’s website at CDC.gov/drugresistance.

Challenge Focus Areas

Tracking and Data: Share data and improve data collection

Infection Prevention and Control: Reduce the spread of resistant germs

Antibiotic Use: Improve appropriate antibiotic use, including ensuring access

Environment and Sanitation: Decrease antibiotics and resistance in the environment

Vaccines, Diagnostics, Therapeutics: Invest in development and improved access
BY THE NUMBERS

• Commitments from all 50 U.S. states and Washington, D.C., including all state health departments.

• 75+ commitments from 33 countries and across six continents, reaching nearly 3 billion people around the world.

• 26 organizations representing 10,000+ healthcare facilities globally pledged to improve infection control or antibiotic use.

• 47+ major food and agriculture related corporations and organizations committed to reduce and prevent the spread of antimicrobial resistance in animals and food production.

• 47 organizations made commitments related to improving safe drinking water, sanitation, and hygiene (WASH).

• 60+ pharmaceutical and biotech groups committed to develop or provide access to products that will prevent and treat resistant infections.
Goals: National Strategy for Combating Antibiotic-Resistant Bacteria (CARB)

- Slow the emergence of resistant bacteria and prevent the spread of resistant infections
- Strengthen national One Health surveillance efforts to combat resistance
- Advance development and use of rapid and innovative diagnostic tests for identification and characterization of resistant bacteria
- Accelerate basic and applied research and development for new antibiotics, other therapeutics, and vaccines
- Improve international collaboration and capacities for antibiotic-resistance prevention, surveillance, control and antibiotic research and development

https://www.whitehouse.gov/sites/default/files/docs/carb_national_strategy.pdf
CARB 2020 Insights and Exploration

- The current National Action Plan ends in 2020, and PACCARB has requested public feedback on the next iteration.
- Partners commended several CDC programs with requests for continued support across CDC’s AR programs including:
  - National Healthcare Safety Network (NHSN),
  - Antibiotic stewardship,
  - National Antimicrobial Resistance Monitoring System (NARMS),
  - Epidemiology and Laboratory Capacity (ELC) Cooperative Agreement,
  - Data collection and surveillance through the Emerging Infections Program (EIP), and more.
- Throughout this year, CDC has been helping to develop the next iteration of the CARB Action Plan and has interest in advancing work in the environment and in addressing AR internationally.
Success since 2016: Antibiotic Resistance Solutions Initiative

- CDC is supported by +$170M of AR funding for domestic and global activities annually.
- In the past three years, ARSI has invested over $300 million to U.S. health departments to develop the domestic infrastructure to address AR.
- CDC has provided an additional nearly $110 million in research and piloting solutions to 96 public/private institutions (domestic + global), reflecting 158 applied public health research projects.
- CDC’s AR Lab Network has tested more than 100,000 pathogens from public health labs across the U.S.
- CDC has shipped 140,000+ isolates to diagnostic test manufacturers, academic researchers, and pharmaceutical companies.
ELC AR Investments Map
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Innovate: Broad Agency Announcement (BAA) Funding

CDC BAA AR Investments:

- CDC supports innovations and collaborations with investigators to identify and implement new ways to prevent antibiotic-resistant infections and their spread.
- Awardees include educational institutions, nonprofit organizations, state and local government, and private industry for research and development.
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CDC’s Antibiotic Resistance Laboratory Network

Nationwide lab capacity to detect AR in healthcare, food, and community. Tracks resistance to identify outbreaks faster, stop spread, and protect people.

- CDC lab expertise and coordination
- 7 regional labs
- 1 National TB Molecular Surveillance Center
- 56 state and local labs

*** Utah in Process of Replacing Texas ***
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AR Isolate Bank: Sharing Bug Data to Support Drug, Diagnostic Development

CDC gathers resistant bacteria through response and outbreak surveillance programs. CDC analyzes the bacteria’s resistance and shares with researchers. Currently includes at least 23 different panels. Since July 2015, CDC has processed nearly 2,000 orders (more than 140k isolates). New diagnostic tests and antibiotic drugs are developed using the bacteria and data.

New innovations can support earlier diagnoses & more effective treatment options that can slow antibiotic resistance.
CDC’s 2019 AR Threats Report – Coming Soon!

**2013:** CDC published a comprehensive analysis ranking the top 18 AR threats in the U.S., raising the nation’s awareness. The bacteria and fungi were ranked as urgent, serious, or concerning based on level of concern to human health.

**Fall 2019:** Preliminary data shows that prevention is working, but more work is needed, especially global efforts.

- Better data: Used best available data to calculate estimates
- Latest ranking: Assessed threats using same 3 categories; there are more pathogens in the urgent category
- Analyzed data to provide change over time
- New information: Including a Watch List, scientific gaps, action taken, and additional action needed
- As in the 2013 TR, covers HAIs, TB, STDs, and Respiratory, Enteric, and Fungal Infections
Following 2019 TR Release - CDC AR and Pathogen Websites

- Will be updated so that all data match the new 2019 Threats Report
- Advancing the One Health focus
- New and updated infographics
- Broader reach to audiences – veterinarians, animal industry
U.S. ANTIBIOTIC AWARENESS WEEK

NOVEMBER 18-22, 2019

www.cdc.gov/antibiotic-use
Thank you!

For more information, contact CDC
1-800-CDC-INFO (232-4636)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.