

Partnership to Fight Infectious Disease



PARTNERSHIP TO FIGHT
CHRONIC DISEASE

Ken Thorpe, PhD, Chair, Partnership to Fight Chronic Disease

June 26, 2020

PFCD Intro



Chair: Ken Thorpe,
Professor and Chair,
Rollins School of Public
Health, Emory University

Hundreds of partner organizations worldwide with **ONE** message:
You can't manage costs without managing NCDs



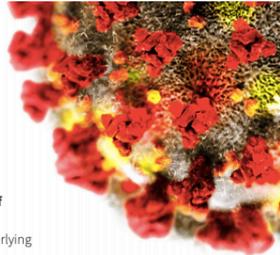
COVID-19's Revealing Linkage with Chronic Disease



PARTNERSHIP TO FIGHT CHRONIC DISEASE
A VISION FOR A HEALTHIER AMERICA

CHRONIC DISEASE AND COVID-19: Who's at Risk and How to Prepare

Older adults and people living with chronic conditions are at higher risk of serious illness from COVID-19. In addition to following all the CDC and WHO recommended precautions, it is important that people with the following underlying health conditions and their loved ones understand how to help minimize risks.



HEART DISEASE
(congenital heart disease, congestive heart failure and coronary artery disease)



CHRONIC KIDNEY DISEASE
(including receiving dialysis)



LUNG DISEASES
(asthma, COPD, cystic fibrosis, emphysema or other conditions associated with impaired lung function or requiring home oxygen)



HIGH BLOOD PRESSURE



CHRONIC LIVER DISEASE



DIABETES OR OTHER ENDOCRINE DISORDERS



BLOOD DISORDERS
(sickle cell disease)



COMPROMISED IMMUNE SYSTEM
(cancer treatment involving chemotherapy or radiation, taking high doses of corticosteroids or other immunosuppressant medications, HIV or AIDS, organ or bone marrow transplant recipient)



DISORDERS OF THE BRAIN, SPINAL CORD, PERIPHERAL NERVE, AND MUSCLE
(cerebral palsy, epilepsy, stroke, intellectual disability, muscular dystrophy, or spinal cord injury)¹



OBESITY



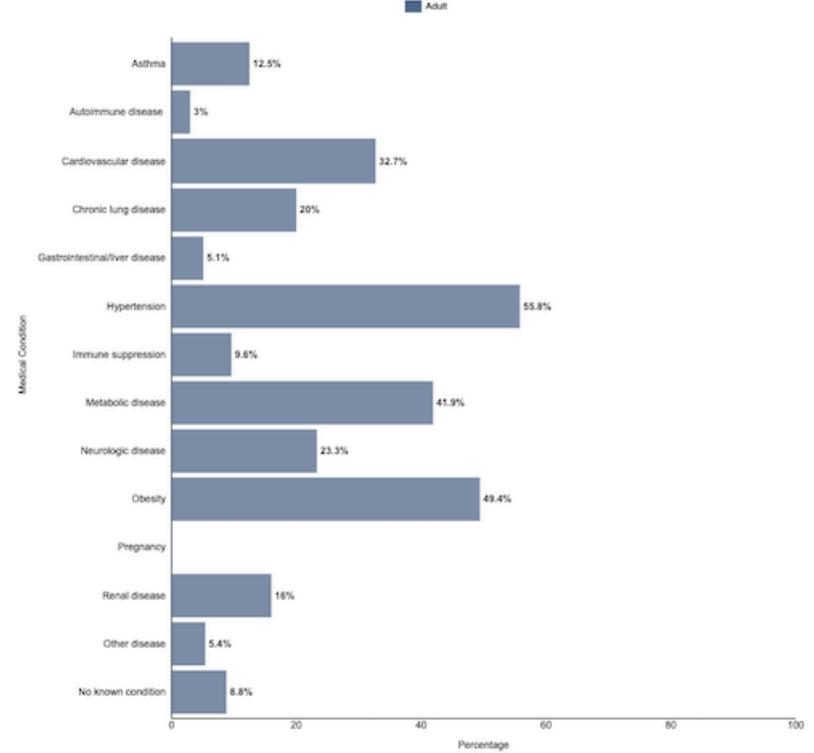
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COVID-NET | A Weekly Summary of U.S. COVID-19 Hospitalization Data



COVID-19 Laboratory-Confirmed Hospitalizations
Preliminary data as of Jun 13, 2020

Selected Underlying Medical Conditions



Understanding the Links Between Chronic Disease and AMR

Economic Analyses on Costs

PHARMACEUTICALS & MEDICAL TECHNOLOGY

By Kenneth E. Thorpe, Peter Joski, and Kenton J. Johnston

Antibiotic-Resistant Infection Treatment Costs Have Doubled Since 2002, Now Exceeding \$2 Billion Annually

DOI: 10.1111/hsr.12111

RESEARCH ARTICLE

HSR Health Services Research

The incremental cost of infections associated with multidrug-resistant organisms in the inpatient hospital setting—A national estimate

Kenton J. Johnston PhD¹ | Kenneth E. Thorpe PhD² | Jesse T. Jacob MD³ | David J. Murphy MD, PhD^{4,5}

¹Department of Health Management and Policy, Center for Outcomes Research, College for Public Health and Social Justice, Saint Louis University, St

Objective: To estimate the cost of infections associated with multidrug-resistant organisms (MDROs) during inpatient hospitalization in the United States.

Undermining Health Gains

- People living with chronic diseases most at risk and have the most to gain from progress/lose from continued erosion
- Threatens care people rely upon – Joint replacement for osteoarthritis, cancer treatments, dialysis, organ transplants
- Our ability to prevent and cure infections is foundational to modern medicine

PFID Goals



Advocating for policy changes that would help activate and support research and development of new treatments and therapies for infectious diseases.



Motivating broad change in the way antibiotics are developed, distributed and consumed.



Reinforcing awareness about the importance of antibiotics, the challenges of antimicrobial resistance to modern medicine and AMR's threat to health.



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CHRONIC DISEASE**



**Partnership to Fight
Infectious Disease**

Today's Speakers



Amanda Jezek

POSITION

Senior Vice President, Public Policy and Government Relations

COMPANY

Infectious Diseases Society of America

LOCATION

Arlington Virginia UNITED STATES



KEVIN OUTTERSON, ESQ.

Executive Director

Kevin Outtersen is a global thought leader on business models for antibiotic development and use. He is Professor of Law and N. Neil Pike Scholar of Health and Disability Law at Boston University School of Law, where he leads multi-disciplinary teams to solve global health issues. Professor Outtersen is the Executive Director and Principal Investigator of CARB-X and a partner in DRIVE-AB.



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CHRONIC DISEASE**

Getting the Public's Perspective



Celinda Lake **LRP** LAKE RESEARCH PARTNERS



Ed Goaes

THE TARRANCE GROUP

Audience Questions for Experts



WITHOUT EFFECTIVE ANTIBIOTICS FOR PREVENTION AND TREATMENT OF INFECTION...



The success of major medical procedures such as **organ transplantation and cancer chemotherapy** could be compromised.



Diabetes management and major surgeries like caesarean sections or hip replacements are becoming increasingly high-risk procedures.



A growing number of infections – such as pneumonia, tuberculosis, gonorrhea, and salmonella – **are becoming harder to treat as the antibiotics currently available become ineffective**. In addition, some infections typically found in children – such as strep throat, ear and sinus infections, and whooping cough – are also becoming concerning threats.

Hospitals and nursing homes managing a wide spectrum of health care demands at once and in close quarters require effective infection prevention and treatment to sustain the lives in their care and protect health care professionals.



Drug resistance is starting to complicate the fight against HIV and malaria, as well.



Increasing amounts of resistant germs could severely impact animal food sources, restaurant, and food service operations.



Longer durations of illness and treatment, often for patients already living with one or more chronic conditions, can mean hospital stays, increased health care costs, productivity losses and significant economic burden on families, caregivers, and entire communities.



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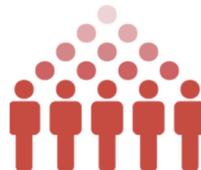
Partnership to Fight
Infectious Disease

Join the #Fight4Health against AMR

THIS IS NOT A FUTURE PROBLEM. IT IS HAPPENING NOW.



According to the
CDC, more than
2.8 million
infections resistant
to antibiotics occur
in the U.S. each year.



and more than
35,000
people die
as a result.

www.fightinfectiousdisease.org

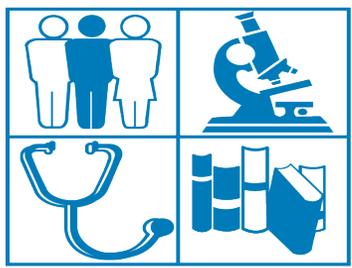


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@ThePFID



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IIDSA

Infectious Diseases Society of America

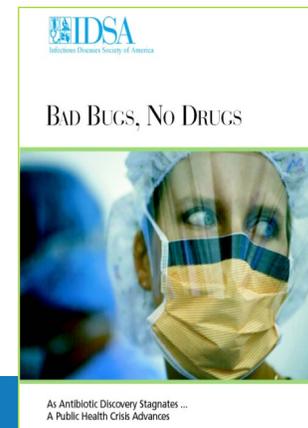
AMR and Chronic Disease: Opportunities for Advocacy & Collaboration

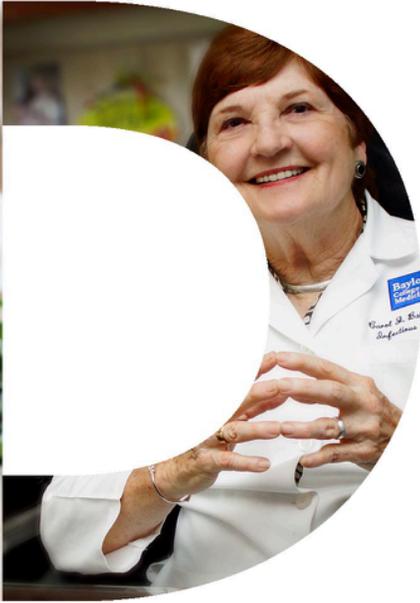
Amanda Jezek

Senior Vice President

Public Policy & Government Relations

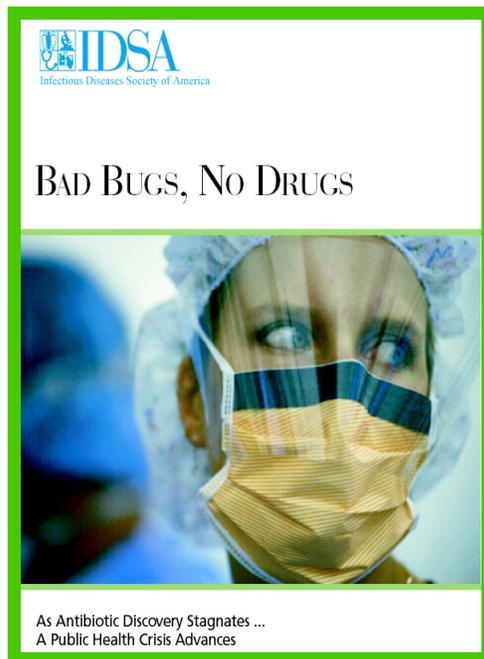
Infectious Diseases Society of America



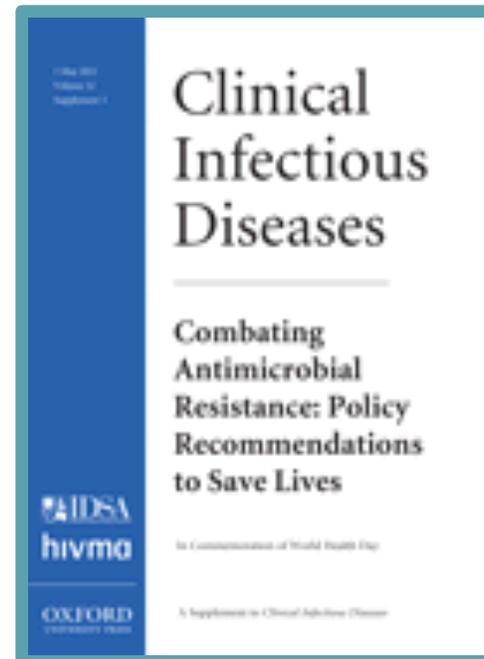


IDSA: Ongoing Commitment to AMR

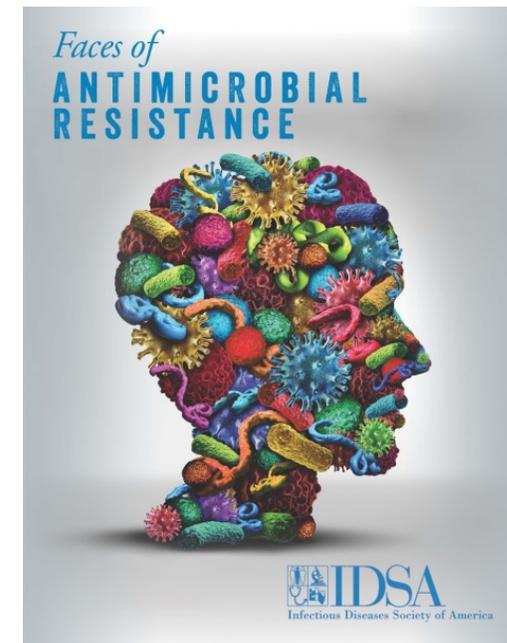
IDSA's 2004 Report on AMR



2011 Combating Antimicrobial Resistance Policy Recommendations



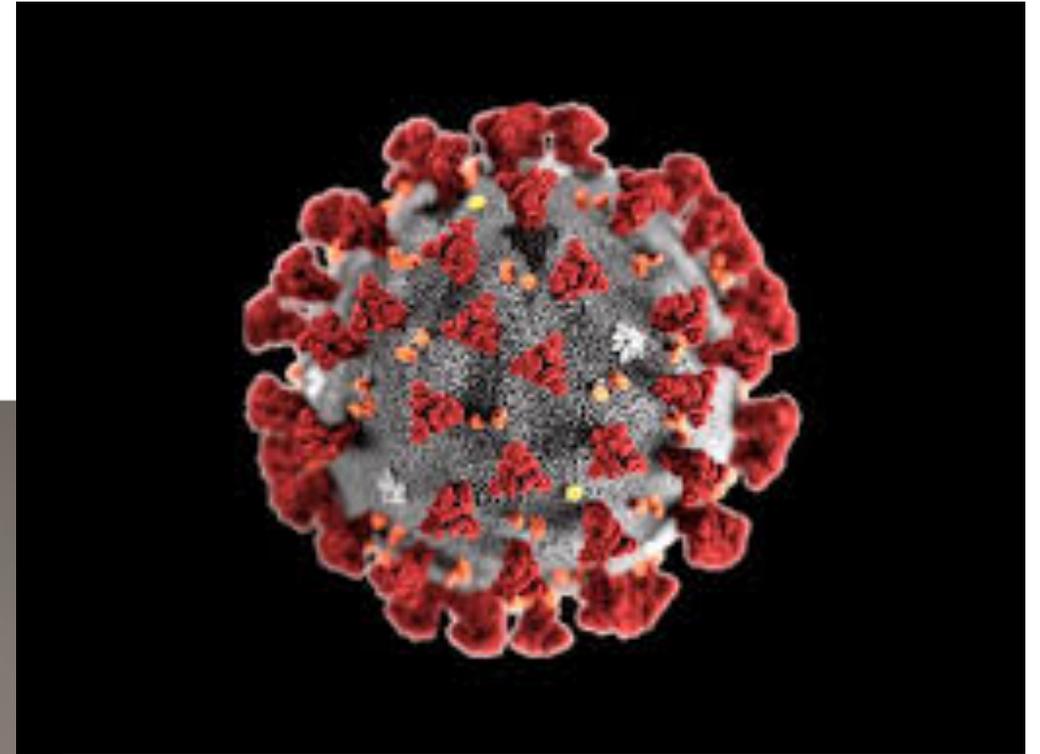
2016 Real Patients: Impact of AMR



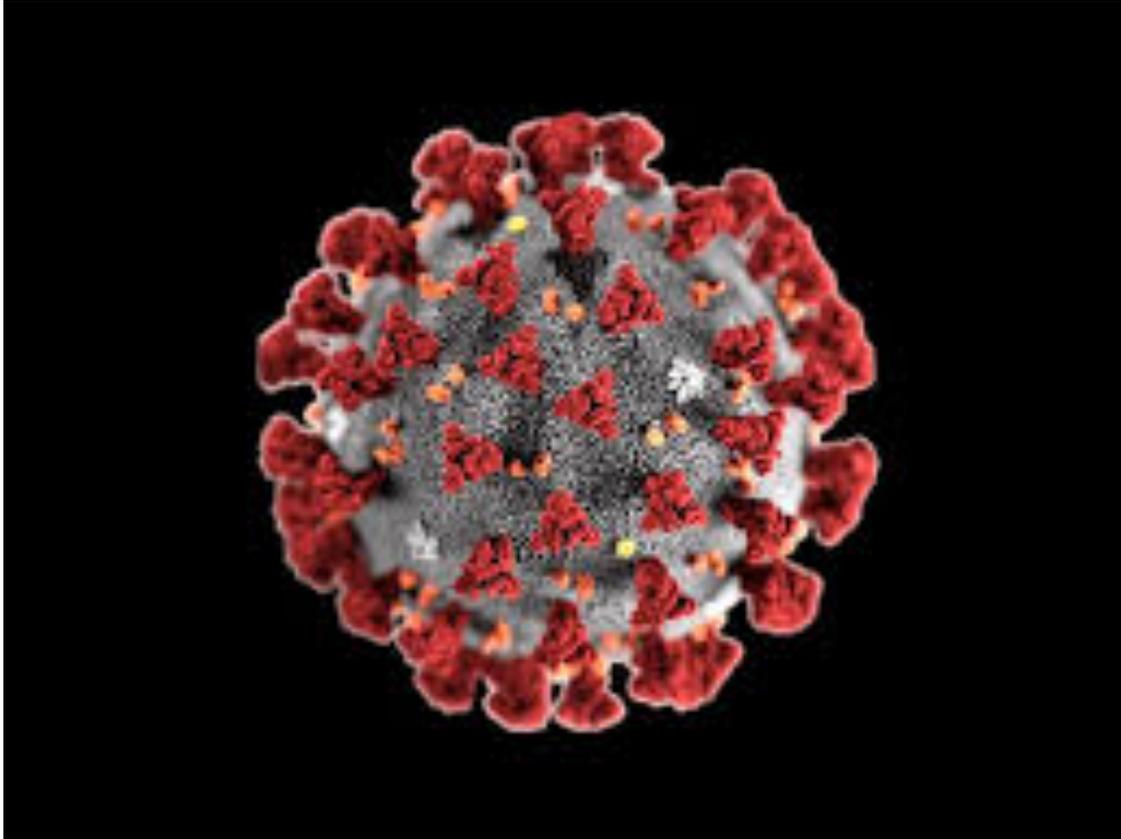
COVID-19 and Antibiotics

Doctors Heavily Overprescribed Antibiotics Early in the Pandemic

Now they are using lessons from the experience to urge action on the growing problem of drug-resistant infections before it's too late.



COVID-19 and Secondary Infections



- In a study of 41 patients COVID-19, 10 percent had secondary infections. Of those, 31 percent were admitted to intensive care units.
- Another report on 191 patients found that 50% of patients who died had a secondary infection.

AMR and Cancer: Lessons from India

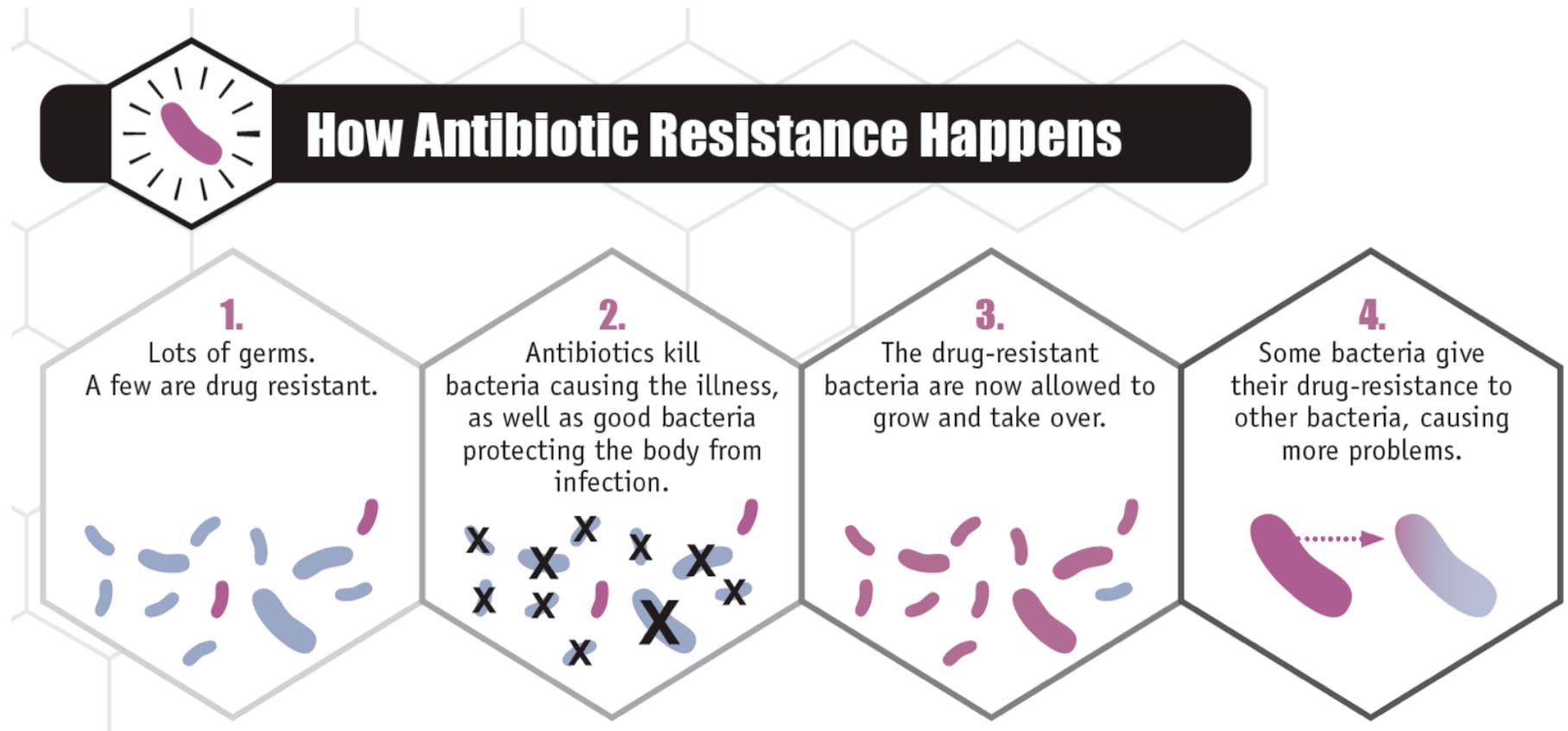
2019 study conducted by Abdul Ghafur, MD, with Apollo Hospitals in Chennai, India, et al:

“Almost two-thirds of cancer patients with a carbapenem-resistant infection are dead within four weeks, vs. a 28-day mortality rate of 38% in patients whose infections are curable.”

“We are facing a difficult scenario—to give chemotherapy and cure the cancer and get a drug-resistant infection and the patient dying of infections. We don’t know what to do. The world doesn’t know what to do in this scenario.”

“However wonderful the developments in the field of oncology, they are not going to be useful, because we know cancer patients die of infections.”

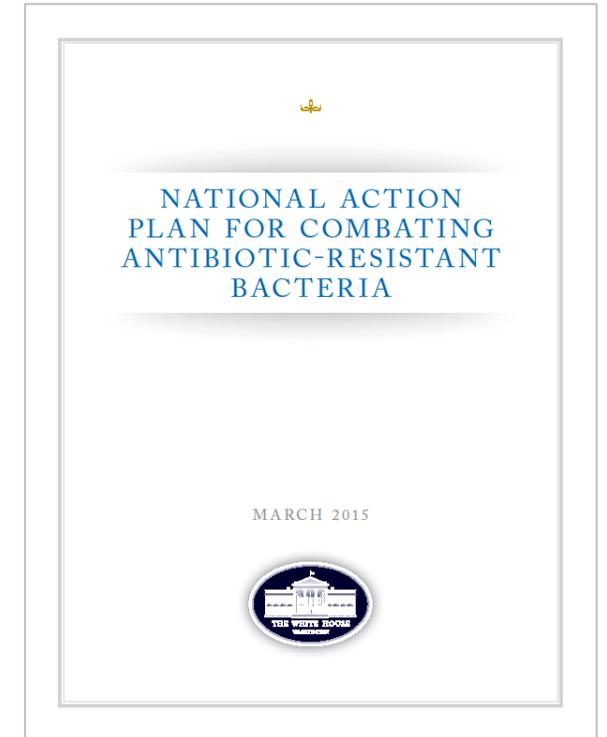
Antibiotic Resistance: When Bacteria Can Defeat Antibiotics



Overuse and misuse of antibiotics speeds the development of resistance.

Federal AMR Strategy

- March 2015 National Action Plan for Combating Antibiotic Resistant Bacteria (CARB)
- 5 Goals
 - Slow resistance, prevent infections
 - One health surveillance
 - Rapid diagnostics
 - New antibiotics
 - Global coordination



Antibiotic Stewardship

Coordinated strategies to optimize antibiotic use with the goal of improving patient health outcomes and minimizing unintended consequences of antibiotic misuse (drug toxicity, *Clostridioides difficile* infection, antibiotic resistance)



Opportunities for Collaboration

S-FAR

Stakeholder Forum on Antimicrobial Resistance

Convened by:



IDSA

Infectious Diseases Society of America

S-FAR Activities

- Annual “Hill Day” and congressional briefing on of AMR funding
- Sign-on letters on AMR policy initiatives
- Engagement with policymakers



Questions

For additional information, contact me at ajezeke@idsociety.org.

Fighting superbugs with innovation

CARB-X funds and supports antibacterial R&D

Kevin Outterson

Combating Antibiotic-Resistant Bacteria Biopharmaceutical Accelerator (CARB-X)

Disclaimer

The views herein are personal and do not necessarily reflect the views of CARB-X or any CARB-X funder.

Major AMR development initiatives worldwide



USD 1.2B (2010-19)

Phase 2 and 3 product development against 21st Century Health Threats, including drug-resistant bacteria, and CARB-X



Euro 700M (2014-20)

Basic science, novel therapeutics, diagnostics, economic models. Priority pathogens including pathogens on WHO priority list. Member states only. Small royalty

BILL & MELINDA GATES foundation

USD 124M (2018-22)

Targets prevention of drug-resistant infections in low- and middle-income countries (LMICs). Disease surveillance, vaccine development, economic modeling, and CARB-X. Global



Euro 234M (2012-24)

Novel therapeutics, diagnostics, surveillance, prevention, stewardship. WHO priority pathogens. Non-dilutive. Member states only



USD 502M (2016-21)

Hit-to-lead to Phase 1 product development of therapeutics, diagnostics, and preventatives against WHO and CDC priority drug-resistant bacteria. Non-dilutive. Global



USD 1.4B (2016-18)*

Basic research, SBIRs, pre-clinical services and other R&D against bacterial threats, for vaccines, therapeutics and diagnostics. Non-dilutive. Global.

**Mostly antibacterial, but also includes viral, fungal, and parasite resistance*



Euro 270M (2017-23)

Novel therapeutics, optimize antibiotics, develop combinations. WHO priority pathogen list. Non-dilutive. Global.



USD 165M (2018-23)

Lead optimization to Phase I development of therapeutics & diagnostics against priority drug-resistant bacteria defined by WHO and CDC. Dilutive. US and European companies



GBP 315M (2018-21)

Funded through Global AMR Innovation Fund (GAMRIF) and the Fleming Fund to help LMICs tackle AMR. Fleming Fund (surveillance capacity) & GAMRIF (innovative R&D) both have a 'One Health' focus.



GBP 175M (2016-21)

Drug-resistant infections program focused on policy, strengthening evidence for action, clinical trial capabilities and innovative product development including CARB-X.

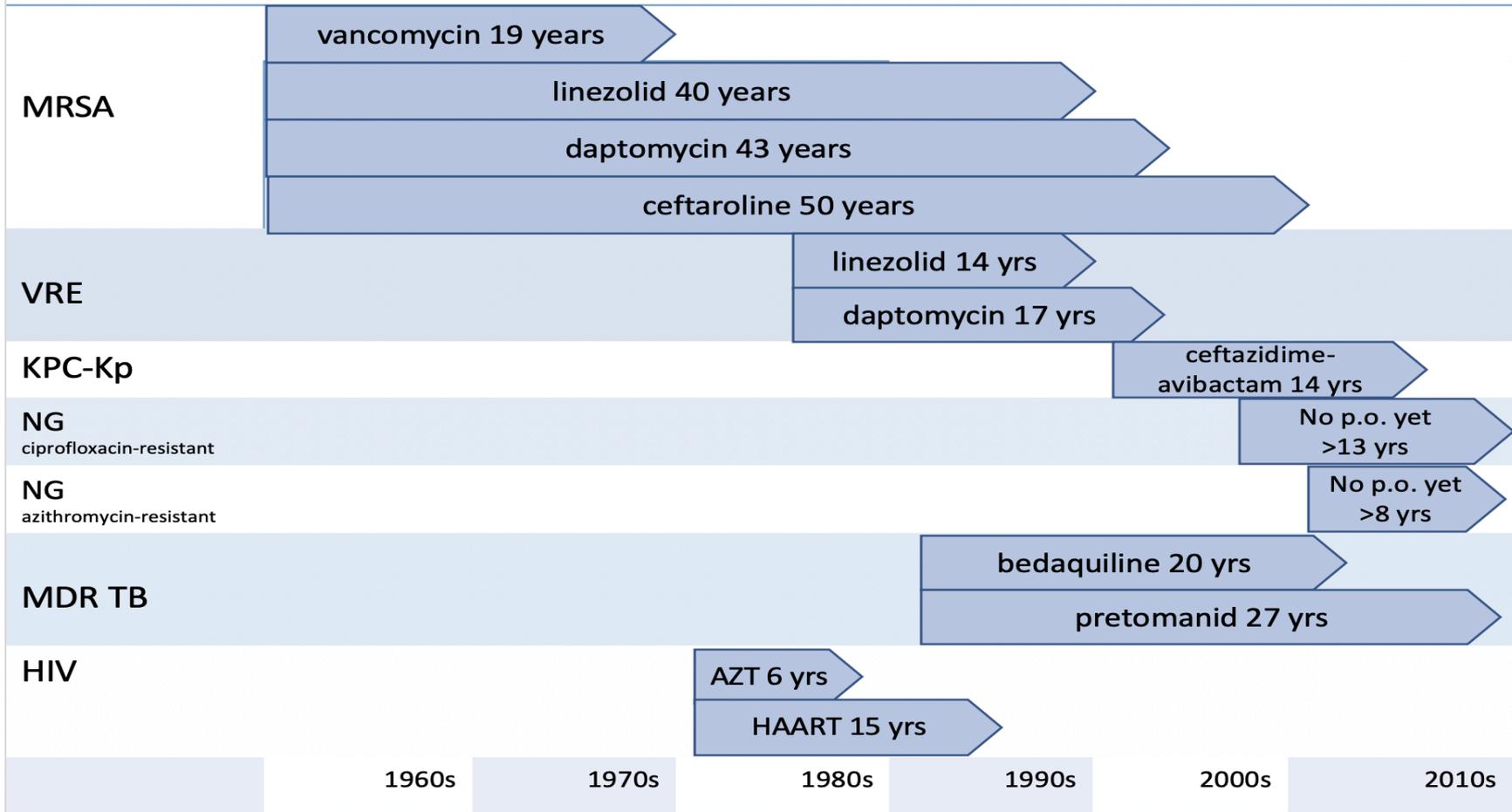


Euro 500M (2018-28)

Support of national research programs as well as contributions to international initiatives like CARB-X, GARDP and JPIAMR

No quick fixes for deadly infectious diseases

It takes years to develop drugs for new pathogens



Identifications: CDC AR Threats 2019, at 35; MRSA 1960 (Jevons MP 1961. BMJ); VRE 1986 (Uttley AHC, et al. Lancet 1988); KPC-Kp 2001 (Yigit H, et al. AAC 2001); NG-CR 2007 (CDC, MMWR 2007); NG-AR 2012 (Soge OO, et al, STD 2012); MDR-TB 1992 (Vallarino ME, et al., Pub H Rep 1992); HIV 1981. Drug approvals: Vancomycin approved 1958, but US usage did not grow until 1979 (Kirst HA 1998. AAC). Other approvals from Drugs@FDA.gov.

What is CARB-X?

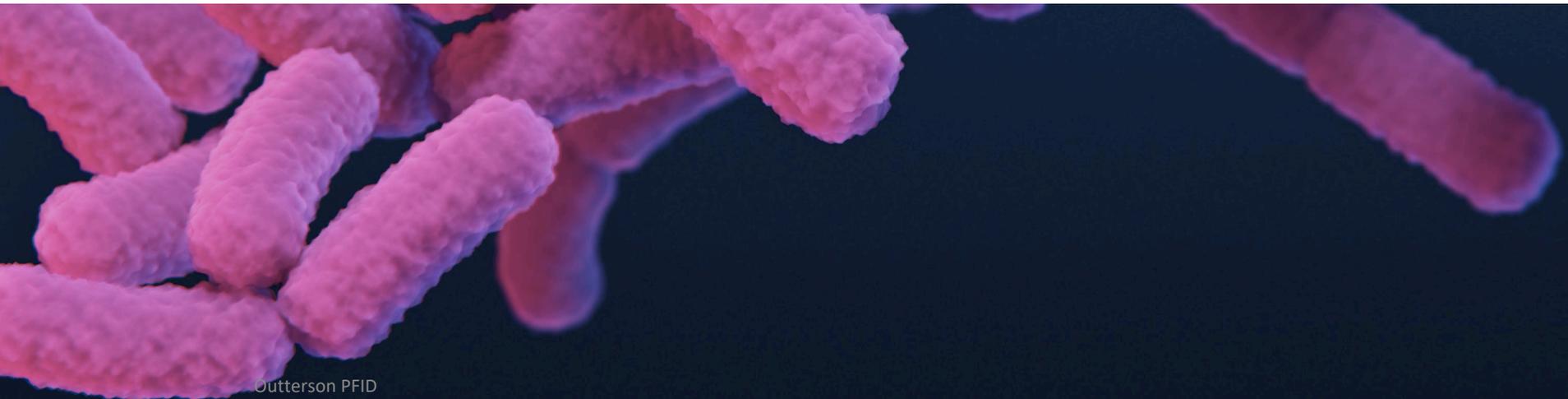
A global non-profit partnership created in 2016 to support the early development of antibiotics, vaccines, diagnostics and other products to combat the most serious drug-resistant bacteria

Investing up to **US\$500 million** in non-dilutive funding to support antibacterial R&D in 2016-21



CARB-X funds 42 R&D projects in 8 countries

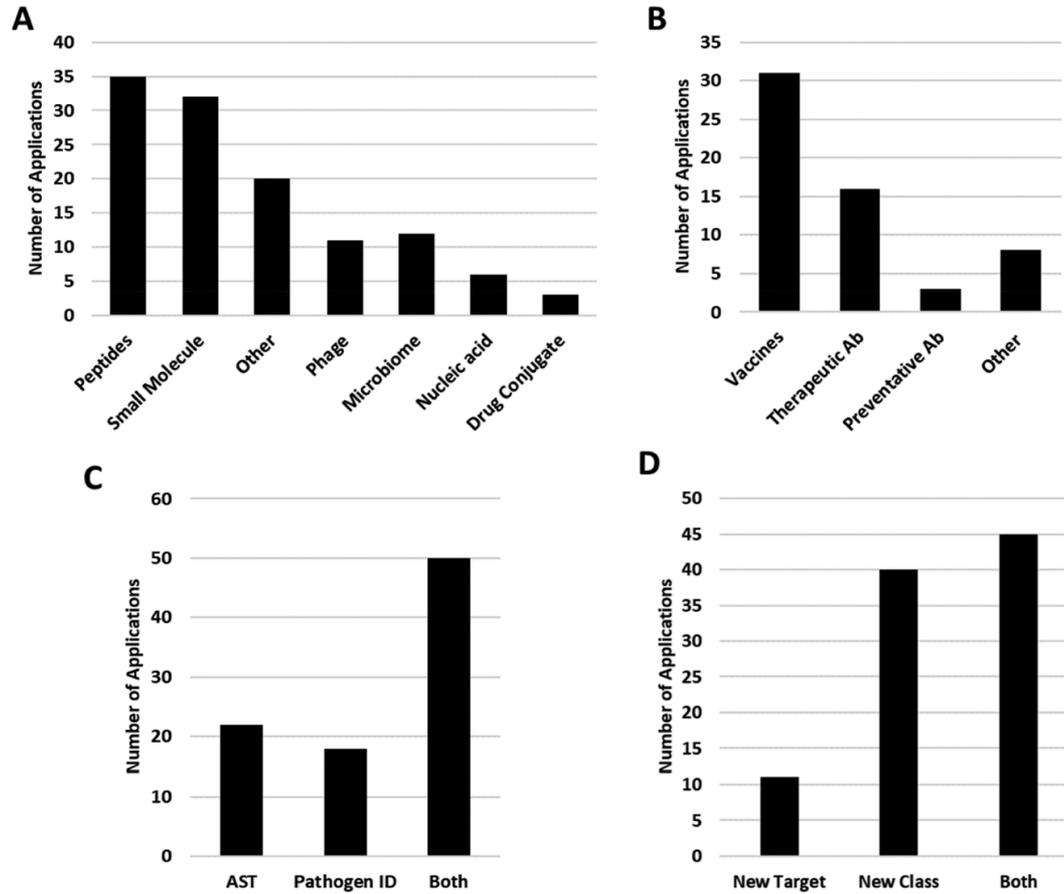
- **33** new classes of antibiotics and non-traditional therapeutics, inc. microbiome
- **6** rapid diagnostics
- **3** vaccines
- Treatment/prevention of infection in cystic fibrosis, pneumonia, bloodstream, sepsis, urinary tract, and more



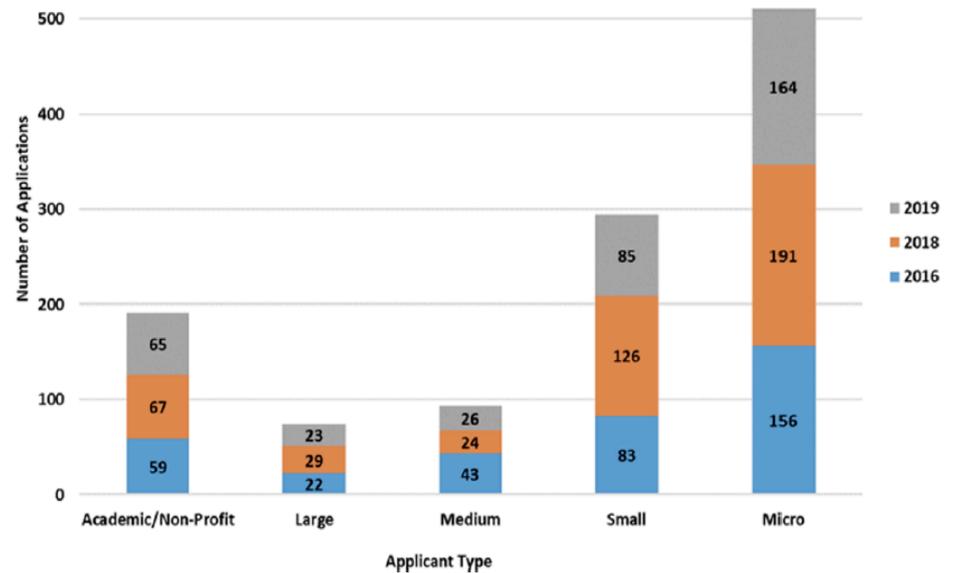
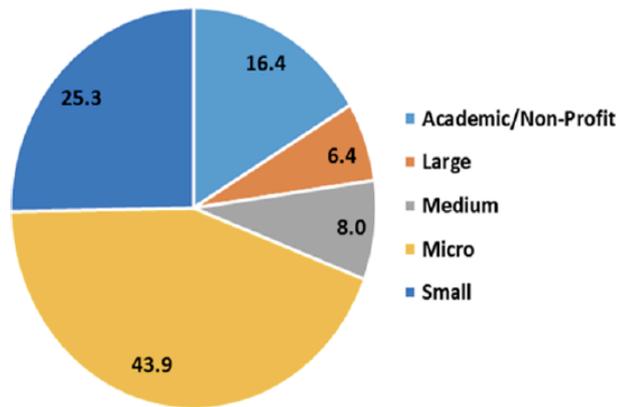
CARB-X is making progress

But much more needs to be done to support and sustain innovation and deliver antibiotics that patients need to fight superbug infections

Innovation in the CARB-X portfolio

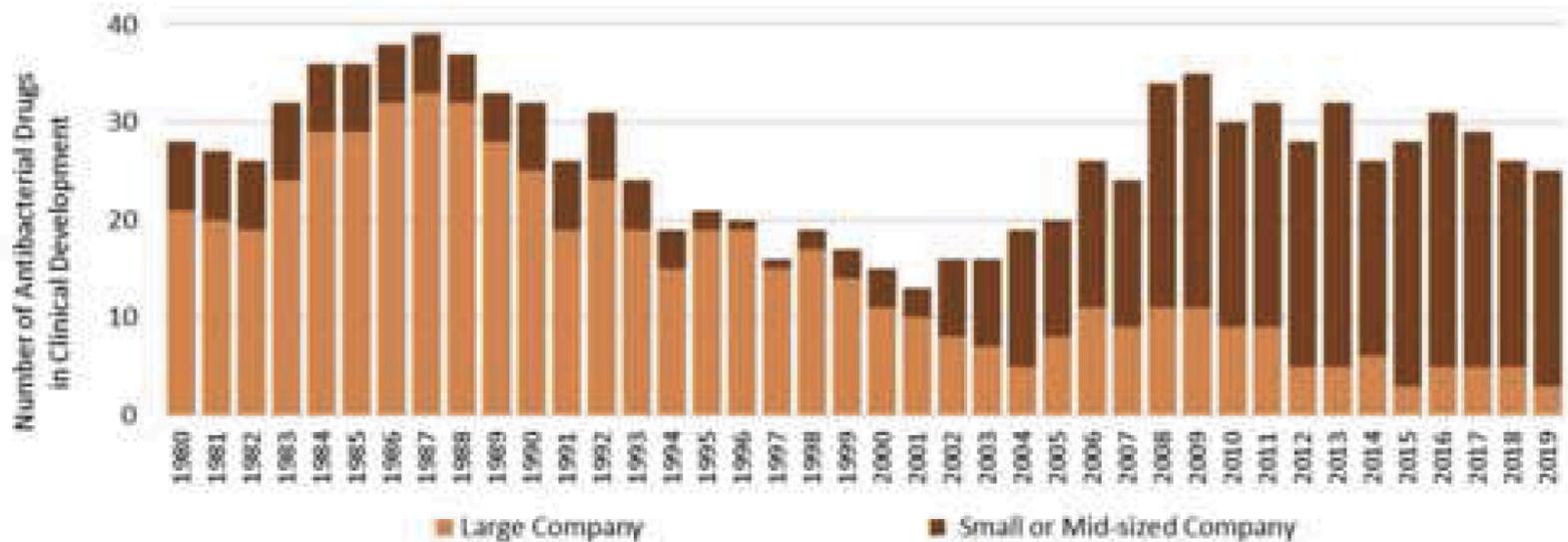


Size distribution of applicants for funding 2019



Big pharmaceutical companies are reducing their investment in antibacterial R&D

c. Antibacterial drugs in development by sponsor size



CARB-X

Combating Antibiotic-Resistant Bacteria

Thank you!

www.carb-x.org

Partnership to Fight Infectious Disease

Findings based on a nationwide survey of
1000 likely general election voters

June 2-5, 2020



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Lake Research Partners

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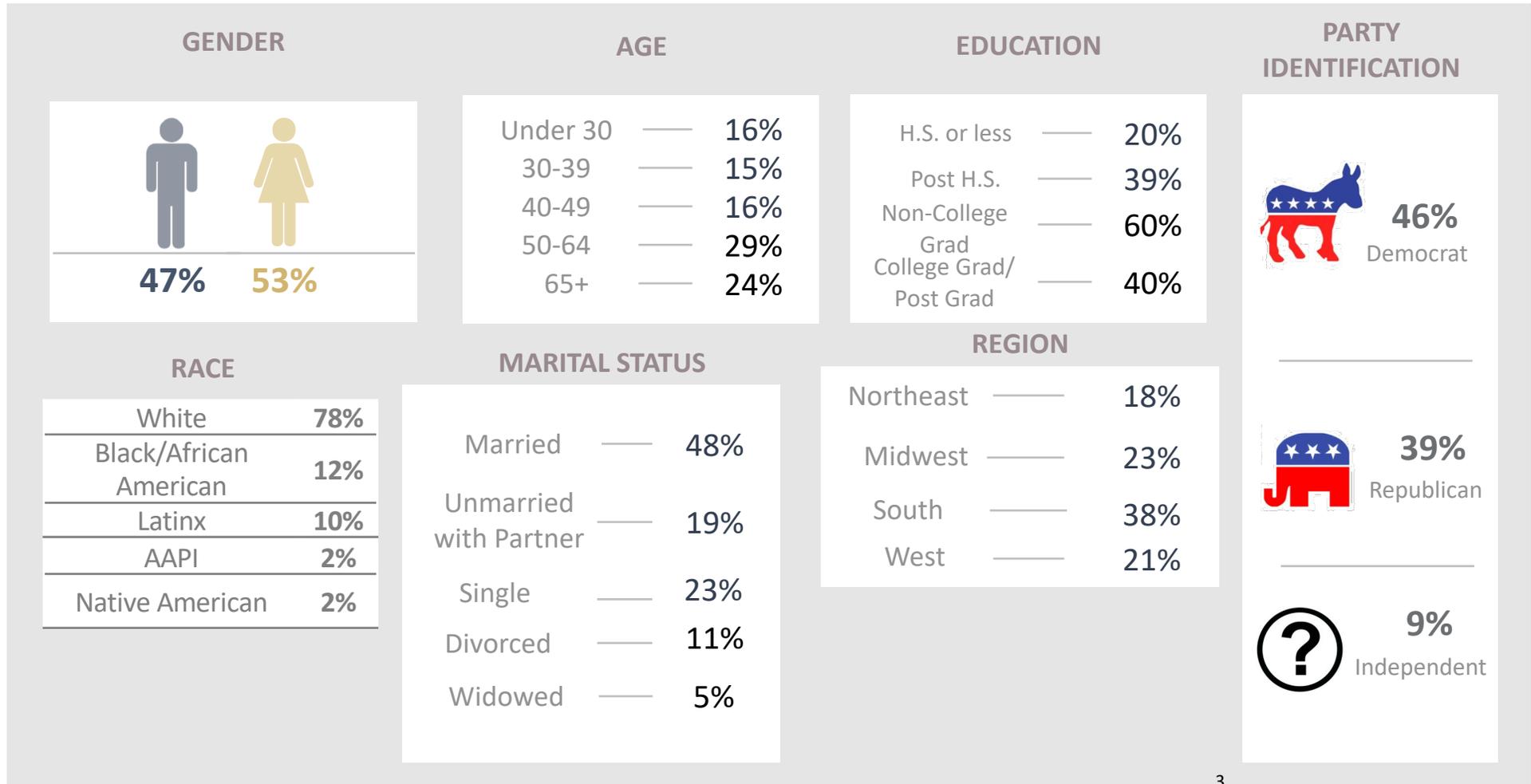
Ed Goeas
Brian Nienaber

Celinda Lake
David Mermin
William Lawler

Methodology

- Lake Research Partners and the Tarrance Group designed and administered this survey that was conducted between June 2-5, 2020 via online panel. The survey reached 1000 likely 2020 general election voters nationwide.
- The sample was stratified by gender, age, region, race, and party identification to reflect the demographic composition of likely voters. Where there were slight differences between our survey sample and the expected voting population, data were weighted accordingly.
- In interpreting survey results, all sample surveys are subject to possible sampling error; that is, the results of a survey may differ from those which would be obtained if the entire population were interviewed. The size of the sampling error depends upon both the total number of respondents in the survey and the percentage distribution of responses to a particular question. For example, if 50% of respondents answered “Yes” to a particular question, we can be 95% confident that the true percentage will fall within 3% of this percentage, or from 47% to 53%.

Profile of Survey Respondents

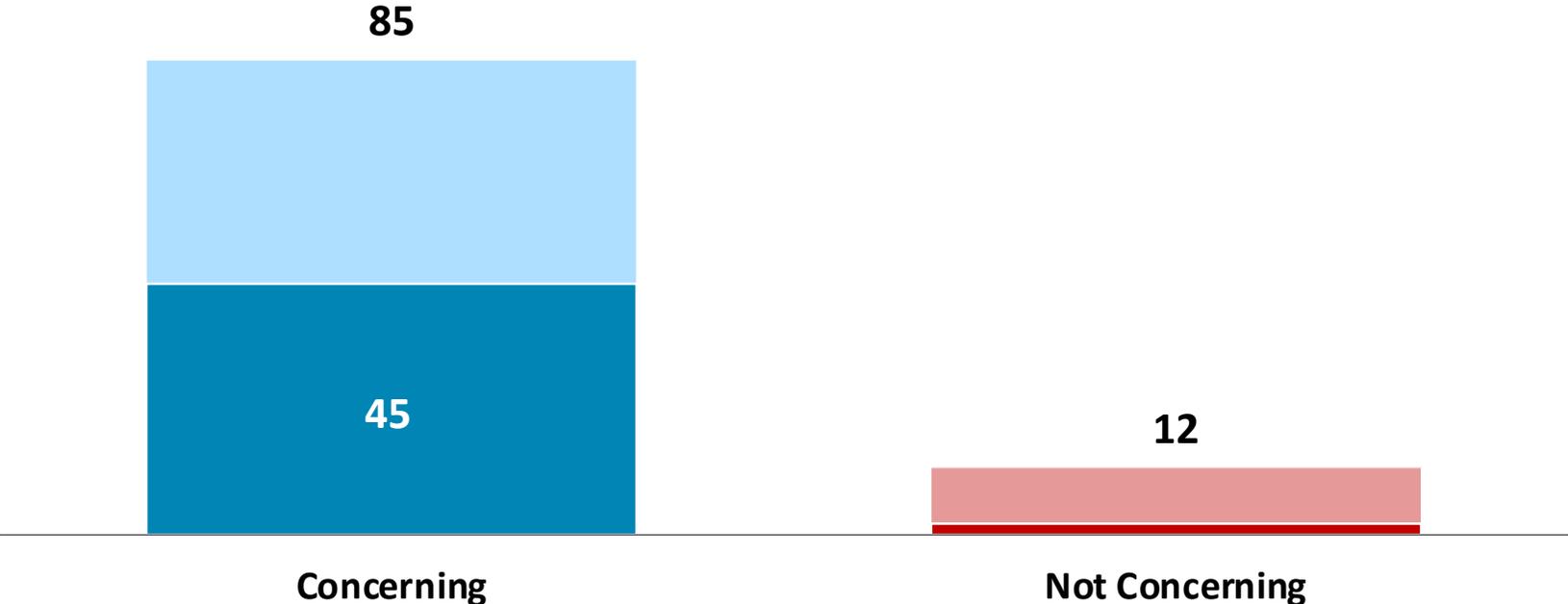


Summary of Key Findings

- Voters are deeply concerned about the issue of antimicrobial resistance (AMR) and many are already familiar with the issue.
- Voters want developing new antibiotics to be a top or high priority and they don't think enough the research currently being done is enough.
- COVID has not taken any urgency away from the issue; in fact it has made voters think more about being prepared for the next public health crisis.
- Voters are open to a wide range of solutions to encourage the development of new antibiotics, such as a public and private partnership, and direct investment by the government in research into new antibiotics.
- Support for developing new antibiotics is bipartisan, and voters want to hear where their representative stands on the issue.

After learning basic background information on AMR, 85% voters are very or somewhat concerned about AMR. Intensity is high as well, with nearly half of voters saying they are very concerned.

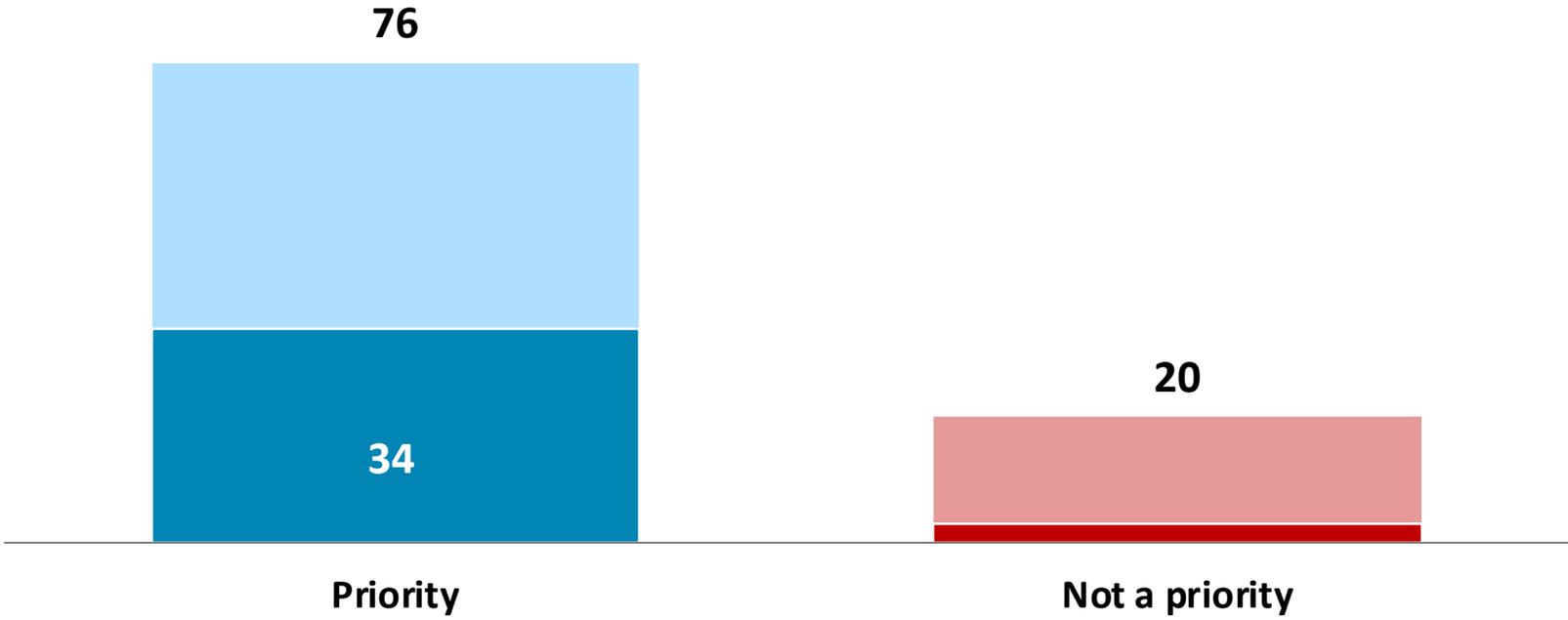
How concerned are you about the issue of antimicrobial resistance?



- Somewhat Concerned
- Very Concerned
- Not too concerned
- Not at all concerned

This concern translates into support for research into new antibiotics. About 3 in 4 voters support making developing new antibiotics to combat antibiotic resistance a top or high priority in public health.

How high of a priority would you put on developing new antibiotics to combat resistant bacteria?

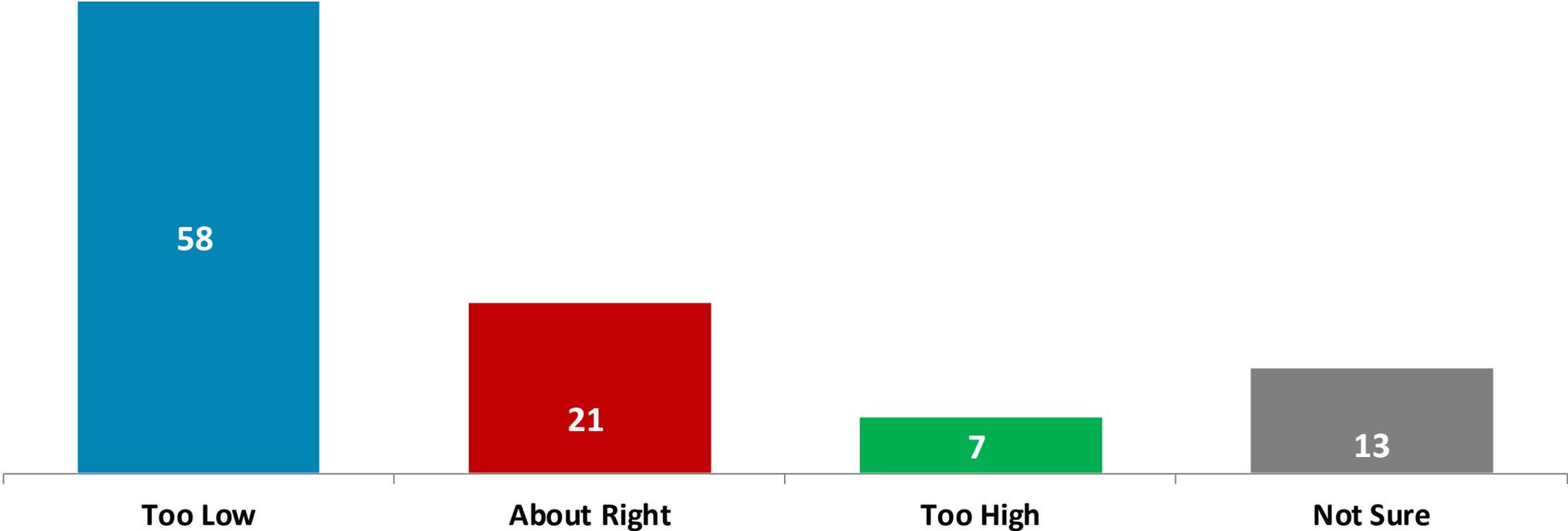


A high priority
A top priority

Somewhat of a priority
Not much/not a priority at all

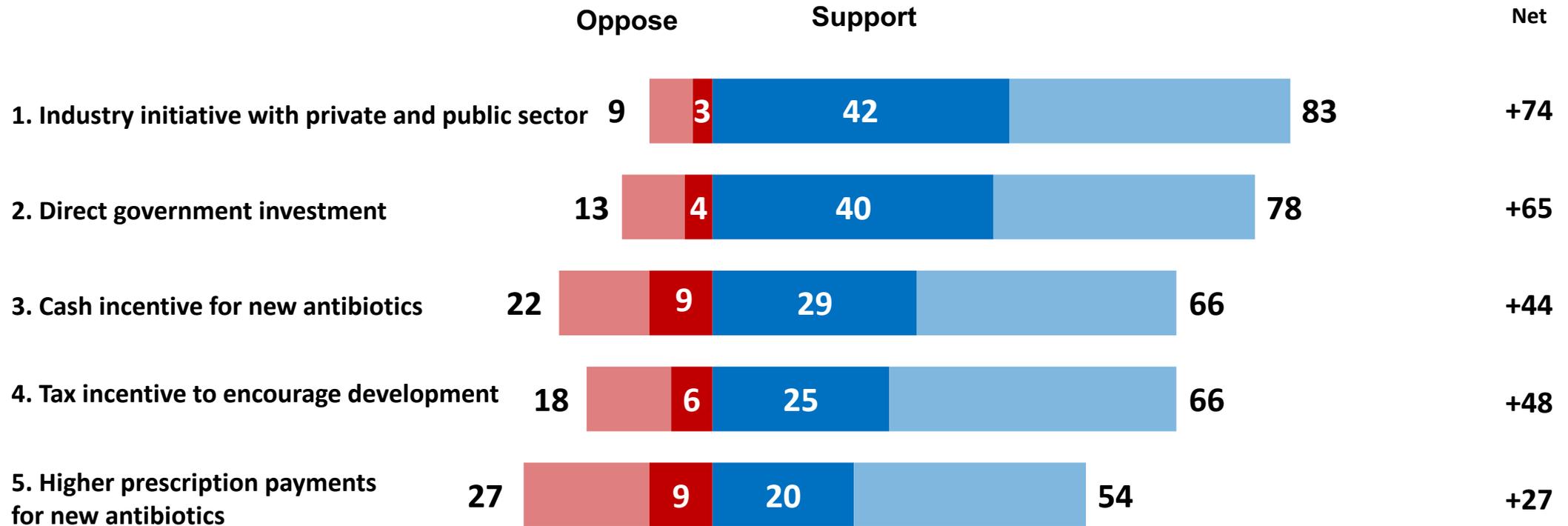
A majority of voters believe that more research needs to be done; fewer than 1 in 10 think there is too much research being done.

Is the amount of research being done on new antibiotics...



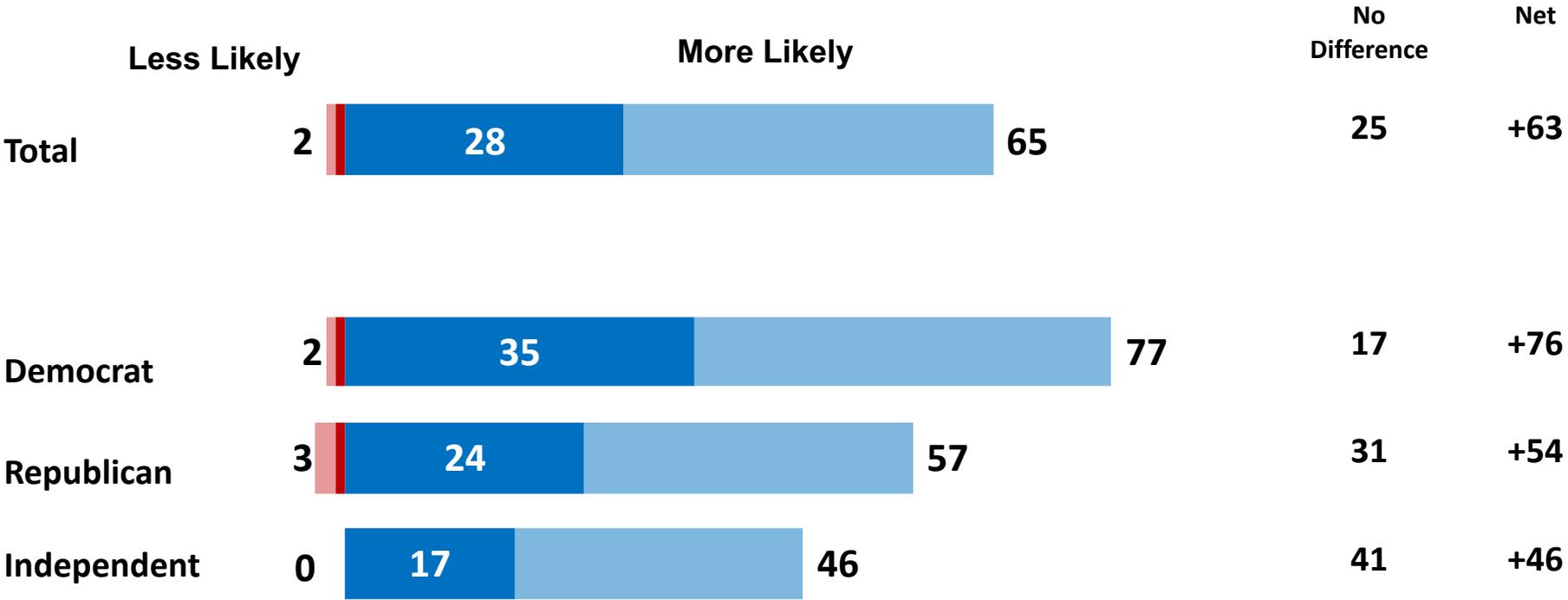
Voters support many solutions, but especially support an industry led initiative and direct government investment in new development.

Do you support or oppose this idea to encourage development of new antibiotics?



Two-thirds of voters say that they are more likely to vote for a candidate that supports the development of new antibiotics. There is no political downside to taking this position.

Would you be more likely or less likely to vote for a political candidate who supports making the development of new antibiotics a priority?



LRP LAKE RESEARCH PARTNERS

Strategy · Precision · Impact



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