



SEPSIS
ALLIANCE

THE HEALTHCARE C-SUITE AMR MARKET REPORT:

What Executives Think About Rising Risks
of Superbugs and the Next Pandemic

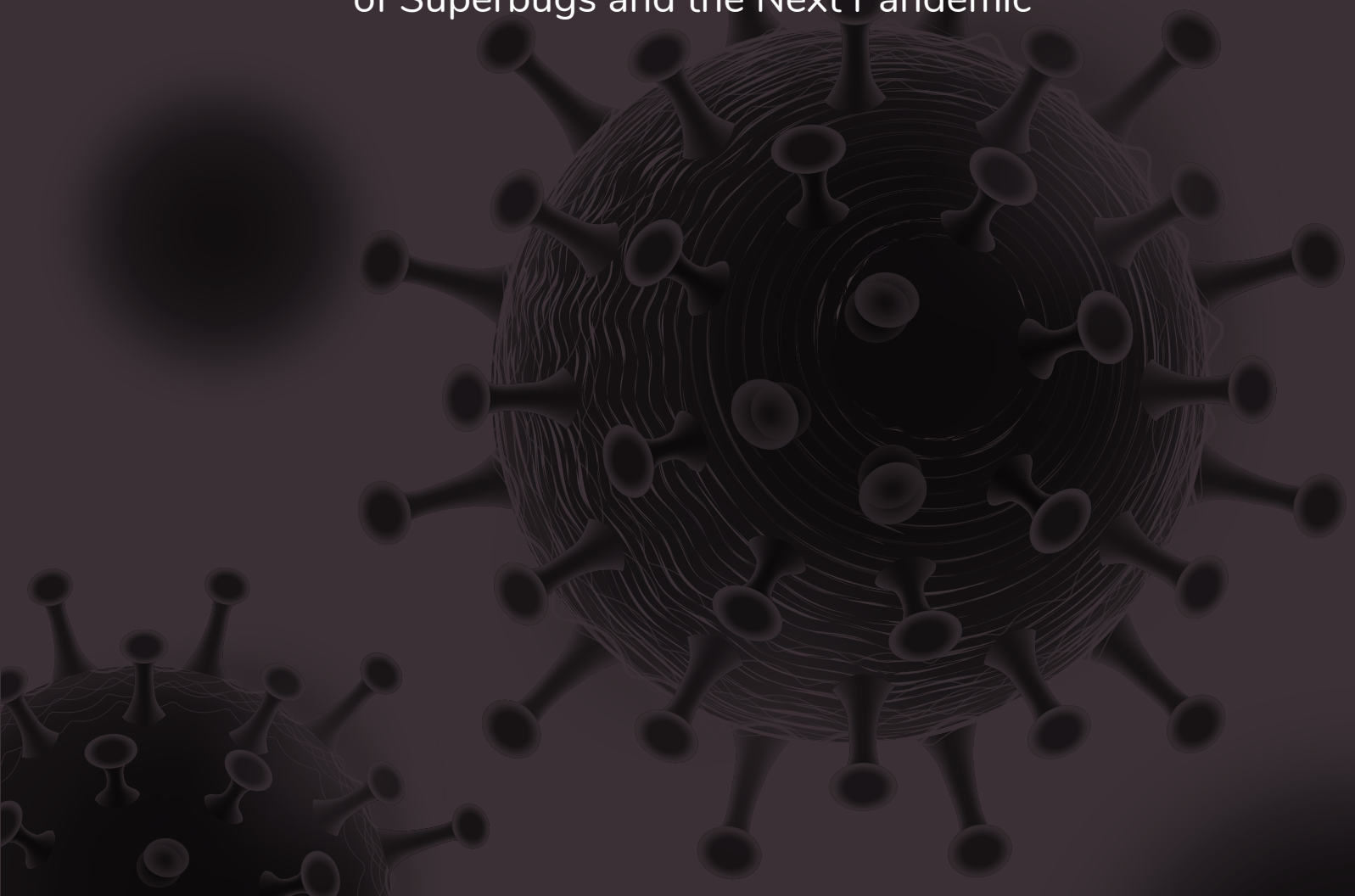


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Introduction

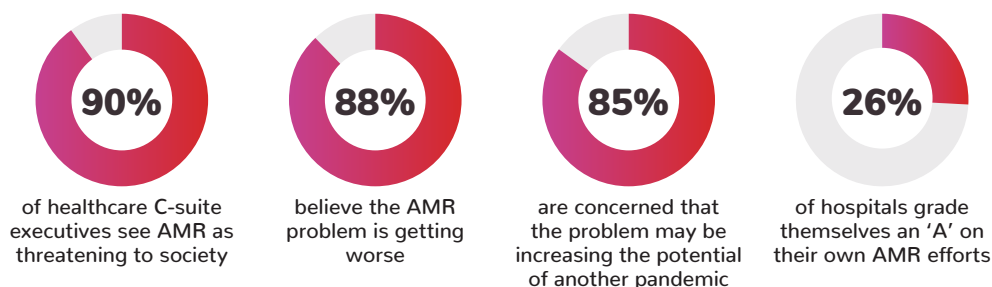
According to the World Health Organization: “Antimicrobial Resistance (AMR) occurs when bacteria, viruses, fungi and parasites change over time and no longer respond to medicines making infections harder to treat and increasing the risk of disease spread, severe illness and death.¹” Healthcare is in the early stages of the battle with antimicrobial resistance. Researchers are finding new superbugs, pharmaceutical companies are not keeping pace with emerging antibiotic-resistant infections, federal policy makers are failing to pass proposed legislation that would financially incentivize drug development, and most Americans are only beginning to learn about safe antibiotic use.

AMR rates, in the meantime, continue rising. In a 2022 report, the Centers for Disease Control and Prevention (CDC) listed 18 antimicrobial resistance threats, explaining that available data shows an alarming 15% increase between 2019 and 2020 in resistant infections that start during hospitalization. And some of the threats are more familiar than many people expect: CDC ranks *c. diff* and gonorrhea as urgent threats, salmonella as a serious threat, and two *Streptococcus* groups as concerning threats, just to name a few examples.²

New research from Sepsis Alliance, conducted by healthcare consultancy Sage Growth Partners, found that healthcare C-suite executives believe the AMR threat is only growing worse.

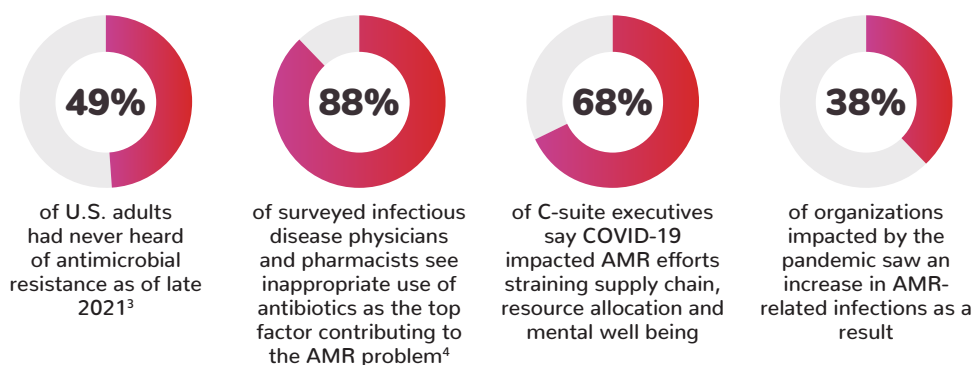
Executive Summary

AMR: A threat to society — and potentially leading to the next pandemic



This survey of 158 hospital healthcare C-suite executives determined that almost all indicated AMR is a societal problem that is only becoming more threatening – and could increase the risk of another pandemic.

The research found that C-suite executives believe the factors contributing to the AMR threat include a general lack of education and public awareness, inappropriate use of antibiotics, and the COVID-19 pandemic.



COVID-19 both emphasized the role of infection control and management and breathed new life into the discipline. That presents the opportunity for health systems, hospitals, pharmaceutical companies, and policymakers preparing for increasing antimicrobial resistance to advance awareness about the problem and solutions.

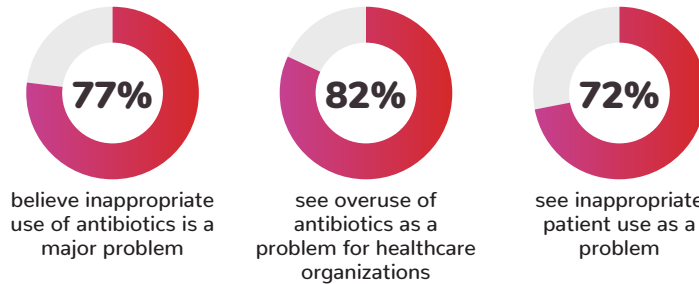


AMR is an inevitability, an evolutionary process that we have to mitigate because we are not seeing the amount of new pharmaceuticals in this realm, or necessary changes in regard to this area that we need to accompany multi-drug-resistant populations.”

Chief Quality Officer, UPMC West Central

The AMR Paradox: Antibiotics are Part of the Problem

Inappropriate antibiotic use is making AMR worse



Healthcare C-suite executives are not alone in the perception that AMR is becoming worse.

The World Health Organization (WHO) in late 2022 published a report finding: “high levels of resistance in bacteria, causing life-threatening bloodstream infections, as well as increasing resistance to treatment in several bacteria causing common infections in the community based on data reported by 87 countries.”⁵

While it’s not the only contributing factor to the WHO’s finding, decreasing the inappropriate use of broad-spectrum antibiotics is an opportunity to improve AMR for U.S. healthcare, according to 77% of the C-suite leaders surveyed for this report.

46% of C-suite executives consider non-compliant patients who do not finish their complete course of antibiotics to be a major problem. Yet, 34% say that healthcare executives should focus on creating and promoting responsible antibiotic prescribing among healthcare professionals – while 14% say they should focus on strengthening surveillance and monitoring of antimicrobial use.

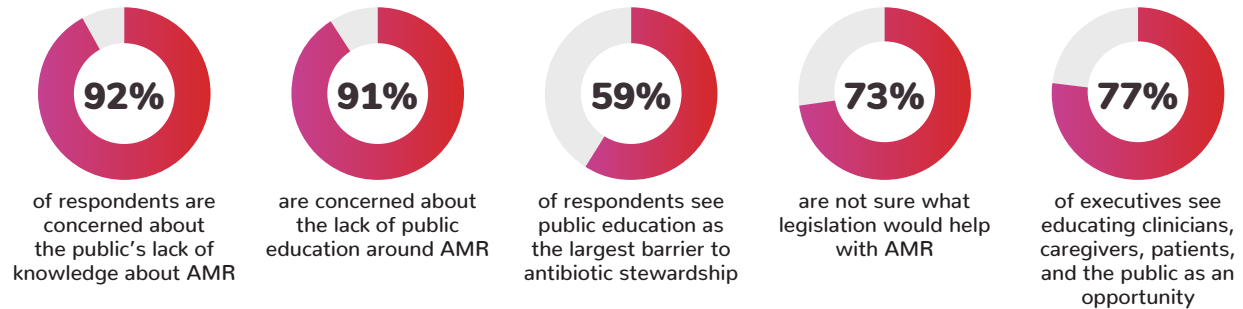


Education is very important. We have monthly trainings so our physicians are focused on not over-medicating or overusing antibiotics. Our staff educate patients on antibiotics to ensure they complete the full course, and understand what could happen if they do not finish the antibiotics.”

CEO, Jefferson Community Health & Life

Lack of AMR Education Spans From Healthcare to the General Public

The most significant contributor to the AMR problem?



Public awareness that AMR is a growing threat is lacking so it follows that 77% of surveyed C-suite executives see educating clinicians, caregivers, patients, and the public as an opportunity.

When we asked executives how they would distribute 100 points across several initiatives for addressing AMR, the scale being that more points equate to greater importance, survey respondents indicated they would allocate 36% to improve education for patients and healthcare professionals – thus education substantially outranks all other options.

C-suite executives interviewed for this report explained that comprehensive education needs to target healthcare executives and administrators, front-line clinicians, and the general public.

Education efforts targeting clinicians need to include information about AMR, superbugs, and the best way to inform patients seeking antibiotics about why they are not appropriate for all conditions. At the same time, the public needs to be made aware of how taking antibiotics when they are not necessary can contribute to the rise of antibiotic-resistant superbugs. A C-suite executives recommended public service announcements with a broad overview of the importance of starting treatments early, the risks of not taking all of the antibiotics, and instructions about storing them properly.

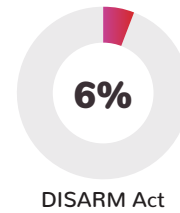
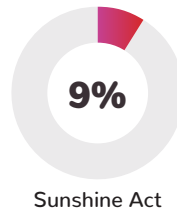
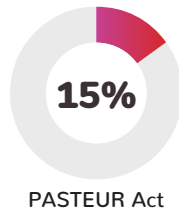
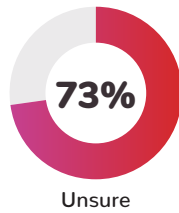
Across the board, education is critical right now as healthcare is expanding into retail settings, telemedicine on smartphones, or a variety of different options to get treatment for acute respiratory illness or UTIs, as examples where patients lacking health literacy might not be aware when antibiotics are not the best course of treatment.

C-suite executives and policymakers need to be working to establish consistent education and training relative to strict clinical guidelines, and the mature auditing necessary to ensure quality care, the executives said.

“There is still a fair amount of health literacy that the healthcare industry needs to achieve, so many patients have limited interest in antimicrobial resistance reduction. Clinicians need to design and openly communicate treatment plans for illnesses where antibiotics are not effective and could even make things worse.”
Chief Quality Officer, UPMC West Central

Federal Policy: A Solution Hiding in Plain Sight

What legislation can help address AMR?



Our research illustrates that C-suite executives are largely unaware of key legislative efforts – notably the PASTEUR Act – that promise to help address antimicrobial resistance.

Nearly three-quarters of health system and hospital executives said they do not know exactly which specific legislative measures would benefit AMR efforts.

For even the most commonly recognized, the PASTEUR Act, 72% are not adequately familiar with its provisions while only 28% answered that they are familiar with the proposed legislation.



Addressing AMR starts with policymakers, because minus a substantial crisis the problem is smoldering. When it comes to the threat of superbugs, if there are financial implications, or healthcare organizations are in some way measured by compliance to legislative actions, that will get attention.”

CIO, University of Illinois Hospital and Health Sciences System

The PASTEUR Act: A Brief Explainer

What it is: The Pioneering Antimicrobial Subscriptions to End Up surging Resistance Act of 2023, which was re-introduced to Congress in April, addresses a number of executive concerns by authorizing the U.S. Health and Human Services department to appropriate \$6 billion toward antimicrobial drugs, and for HHS to work with the Centers for Disease Control and Prevention to combat AMR.⁶

Reason it’s needed: More than 3 million Americans contract a drug-resistant infection – and those infections result in nearly 50,000 deaths – every year.⁷

Why it matters: Developing a new antibiotic can take as long as 10-15 years and cost more than \$1 billion⁸ – and 95% of antimicrobials are developed by smaller companies, so the federal funding is not a handout to Big Pharma.⁹

Sepsis Alliance perspective: “The PASTEUR Act is a vital step toward curbing public health crises. This bill helps ensure that we can continue to effectively treat infections – and keep them from progressing out of control into life-threatening sepsis.” – Tom Heymann, President and CEO, Sepsis Alliance.

Who Should be Responsible for Managing AMR?

C-suite executives are concerned that AMR is not being adequately addressed



Given the widespread lack of education about appropriate antibiotic use and awareness regarding legislative possibilities, survey respondents said that C-suite executives of both healthcare provider organizations and pharmaceutical companies need to address AMR now.

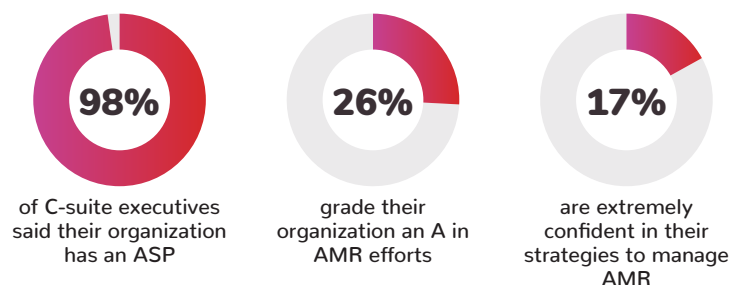
All the surveyed C-suite executives, in fact, agreed that healthcare as an industry plays a critical role in addressing antimicrobial resistance. Drilling down more, 84% of respondents indicated concern about the availability of appropriate drugs and 75% are concerned about the lack of interest in antibiotic development across the pharmaceutical industry.

As we outlined in the above sidebar, The PASTEUR Act: A Brief Explainer, if Congress passes the legislation and it is signed into law, that federal funding would incentivize more pharmaceutical companies to begin developing new antibiotics.

Among health system C-suite executives, 97% of respondents say that increasing availability of new antimicrobials would present opportunities for healthcare organizations. Without that drug development happening, however, 98% of respondents consider the current lack of new antibiotics a challenge.

The Current State of Antimicrobial Stewardship Programs

ASPs: Commonplace, not necessarily instilling confidence



The most common components of Antimicrobial Stewardship Programs (ASP) established by survey respondents are to analyze antibiotic use, develop institutional guidelines, conduct audits, and enhance prior authorization.

Nearly every C-suite executive participating in the survey indicated that their hospital or health system is currently operating an ASP. Yet, 15% of executives have limited confidence, and 68% are only somewhat confident in their ASP's ability to manage antimicrobial resistance.

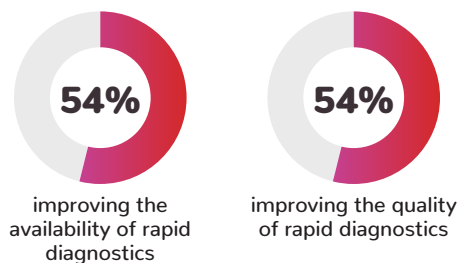
Challenges of Antibiotic Stewardship

Our survey found the following barriers to ASP programs:

- 44% Underutilization of ID physicians and pharmacists
- 44% Cost justification for new antibiotics
- 43% Pushback on their ASP recommendations
- 43% Staffing shortages
- 13% Buy-in from administration
- 1% Other

More and Better Rapid Diagnostics Needed Now

What would help your organization better address AMR?



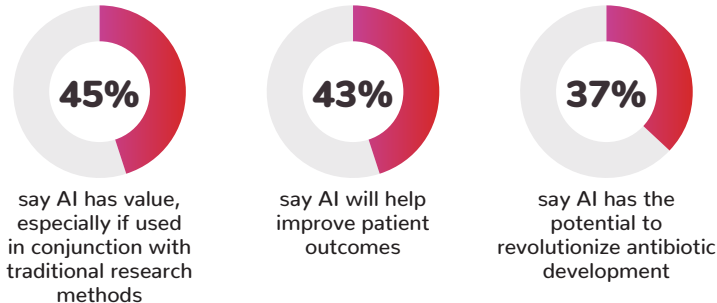
While rapid diagnostics certainly proved to be effective during the COVID-19 pandemic, and many have been developed, tested, and approved¹⁰, few are being implemented for frontline care, meaning healthcare C-suite executives have significant opportunities to transition the diagnostic process into provider care settings.

Today, 45% of surveyed C-suite executives said that limited diagnostic tools create challenges. More than half, in fact, indicated that improving both the quality and the availability of rapid diagnostics would enable their organizations, and the industry at large, to manage AMR more effectively.

“There is a value equation to antimicrobial resistance, and I think there really is a lot of opportunity to make sure that you’re doing the right care for the patient at the right time and not causing them problems down the road,” said a C-suite executive interviewed for this report. “Rapid diagnostics can really speed up care and improve outcomes. Rapid diagnostic testing can be very beneficial.”

Promising, Not Proven: AI in Antibiotic Development and Patient Care

Where C-suite executives think AI could help alleviate the AMR problem



With C-suite executives recognizing the need for new antibiotics being hindered by the current lack of financial incentives pharmaceutical companies have to develop new antibiotics, many are looking toward the potential of artificial intelligence in drug development.

Some even suggest that AI could revolutionize certain aspects of antibiotic development and patient care. But our research also uncovered discrepancies in that optimism based on annual net patient revenue. For example, 56% of C-suite executives at \$1-\$4 billion health systems believe AI has the potential to revolutionize antibiotic development, versus 31% of C-suite leaders at organizations under \$500 million.

When it comes to improving patient outcomes more broadly, 59% of C-suite executives at health systems between \$1 billion and \$4 billion said AI has the potential to enable better care, but only 35% of respondents representing organizations under \$500 million agreed.

In the \$1 billion to \$4 billion range, only 7% of respondents say they have not yet formed an opinion about AI — compared to 28% of leaders at hospitals with less than \$500 million.

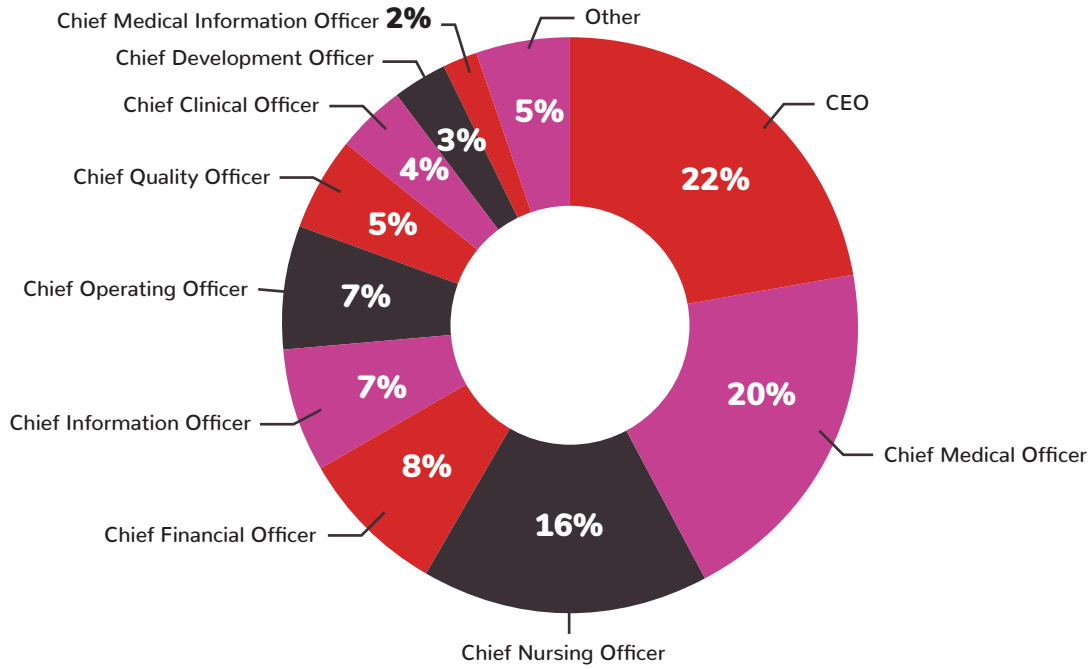
Regardless of annual revenue, however, 16% of surveyed C-suite executives say they will consider using AI as long as it's approved by the U.S. Food and Drug Administration, 13% say they are skeptical about the effectiveness and safety of AI in antibiotic development, and 12% said the industry is moving too quickly.

AI in Antibiotic Development

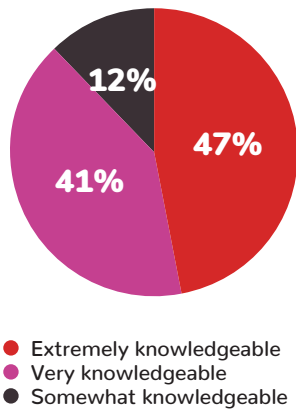
Scientists are leveraging AI to design new antibiotics. In May 2023, Massachusetts Institute of Technology and McMaster University researchers published the results of work using a machine learning algorithm to identify an antibiotic that kills a bacterium that can cause multiple drug-resistant infections.¹¹ The research has since been hailed as an example of AI's potential to accelerate the development of new antibiotics that fight drug-resistant bacteria by streamlining the number of experiments necessary for screening drugs for efficacy¹², potentially speeding the process from as long as 15 years down to 2 years.¹³ Developing new antibiotics quickly with AI is one thing, of course, traversing the so-called 'Valley of Death' to either have a pharmaceutical company license it or find investors presents another set of challenges.¹⁴

Research Demographics

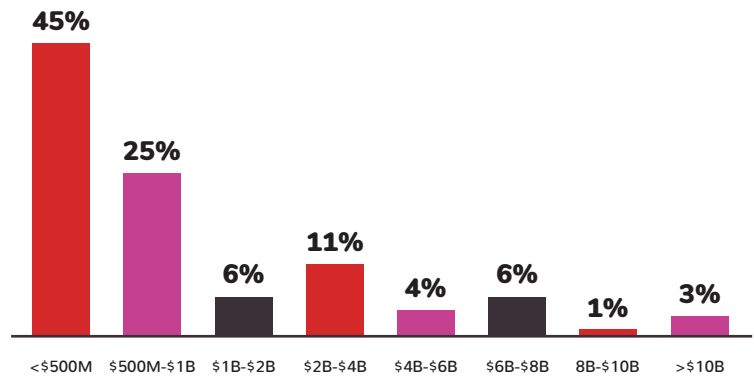
100% C-suite



Knowledgeable about AMR



Net patient revenue



A National Sepsis Action Plan is needed to guide work across government agencies and at multiple levels of government to counter sepsis, save lives, and reduce healthcare costs. Support this work.

LEARN MORE

Sources:

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3. [Power the AMR Revolution](#), Sepsis Alliance
4. [Antimicrobial Resistance Awareness and Strategies Among ID Physicians and Pharmacists](#), Sepsis Alliance
5. [Report signals increasing resistance to antibiotics and need for better data](#), World Health Organization
6. [S.1355 PASTEUR Act of 2023](#), Congress.gov
7. [COVID-19, U.S. Impact on Antimicrobial Resistance](#), The U.S. Centers for Disease Control and Prevention
8. [Why is it so hard to develop new antibiotics?](#) Wellcome
9. [Tracking the Global Pipeline of Antibiotics in Development, March 2021](#), The Pew Charitable Trusts
10. [How are rapid diagnostic tests for infectious diseases used in clinical practice: a global survey](#), International Society of Antimicrobial Chemotherapy
11. [Using AI, scientists find a drug that could combat drug-resistant infections](#), MIT News
12. [AI could quickly screen thousands of antibiotics to tackle superbugs](#), Scientific American
13. [Scientists use AI to find new antibiotics, but can they climb out of the 'valley of death' to the clinic?](#) Fierce BioTech
14. [Philanthropic endowments at universities can offer out of biotech's Valley of Death](#), STAT



About Sepsis Alliance

Sepsis Alliance, the first and leading sepsis organization in the U.S., seeks to save lives and reduce suffering by improving sepsis awareness and care. More than 1.7 million people are diagnosed with sepsis each year in the U.S. with more than 350,000 adults dying and over 50% of survivors experiencing post-sepsis syndrome and other lingering effects, including amputations. At Sepsis Alliance's founding in 2003, only 19% of U.S. adults were aware of the term "sepsis." After over ten years of educational efforts for the general public and healthcare professionals through Sepsis.org, Sepsis Alliance Clinical Community, Sepsis Alliance Institute, and Sepsis Alliance Voices, awareness is at 66%. Over 30,000 healthcare professionals across the country have attended sepsis webinars and courses to elevate their practice. Sepsis Alliance is the convener of Sepsis Innovation Collaborative, a multi-stakeholder public/private collaborative dedicated to innovations in sepsis diagnosis and management. Sepsis Alliance is a 501(c)3 nonprofit and a GuideStar Platinum Rated charity. For more information, please visit www.sepsis.org and connect with Sepsis Alliance on Facebook, Twitter, Instagram, and LinkedIn at @SepsisAlliance.



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