



Antibiotics and the Innovation Gap

A fact sheet on why stronger incentives are needed to sustain antibiotic innovation and combat antimicrobial resistance.



Understanding Antimicrobial Resistance (AMR)

Antibiotics enabled modern medicine, adding decades to life expectancy. But more than a century after their discovery, the economic conditions needed to sustain innovation have deteriorated. Antimicrobial resistance (AMR) occurs when bacteria adapt and become harder to kill over time, rendering standard treatments less effective or completely ineffective. Infections that are routinely treated today can become significantly more difficult to manage as resistance develops.

1 in 6 infections

worldwide are resistant to antibiotics.



35,000

Americans die from resistant infections every year.



2.8 million resistant infections occur in the U.S. annually.

The Thinning Antibiotic Pipeline

The current situation presents a dual crisis of [rising resistance and lagging antibiotic innovation](#). The rate of infectious deaths will likely increase without changes to the economic ecosystem around antibiotics. The WHO has warned that [the current antibacterial R&D pipeline is insufficient](#) to counter the growing threat of resistance.

82%

of all antibiotic approvals occurred before the year 2000.

Investment in new development has lagged significantly.

Why Aren't We Developing New Antibiotics?

Given the evolution of resistant bacteria, antibiotics are intentionally prescribed as sparingly as possible in hospital settings, a practice designed to preserve their effectiveness. However, this limits the financial return available to developers.

Case Study - Acaogen and Zemdri

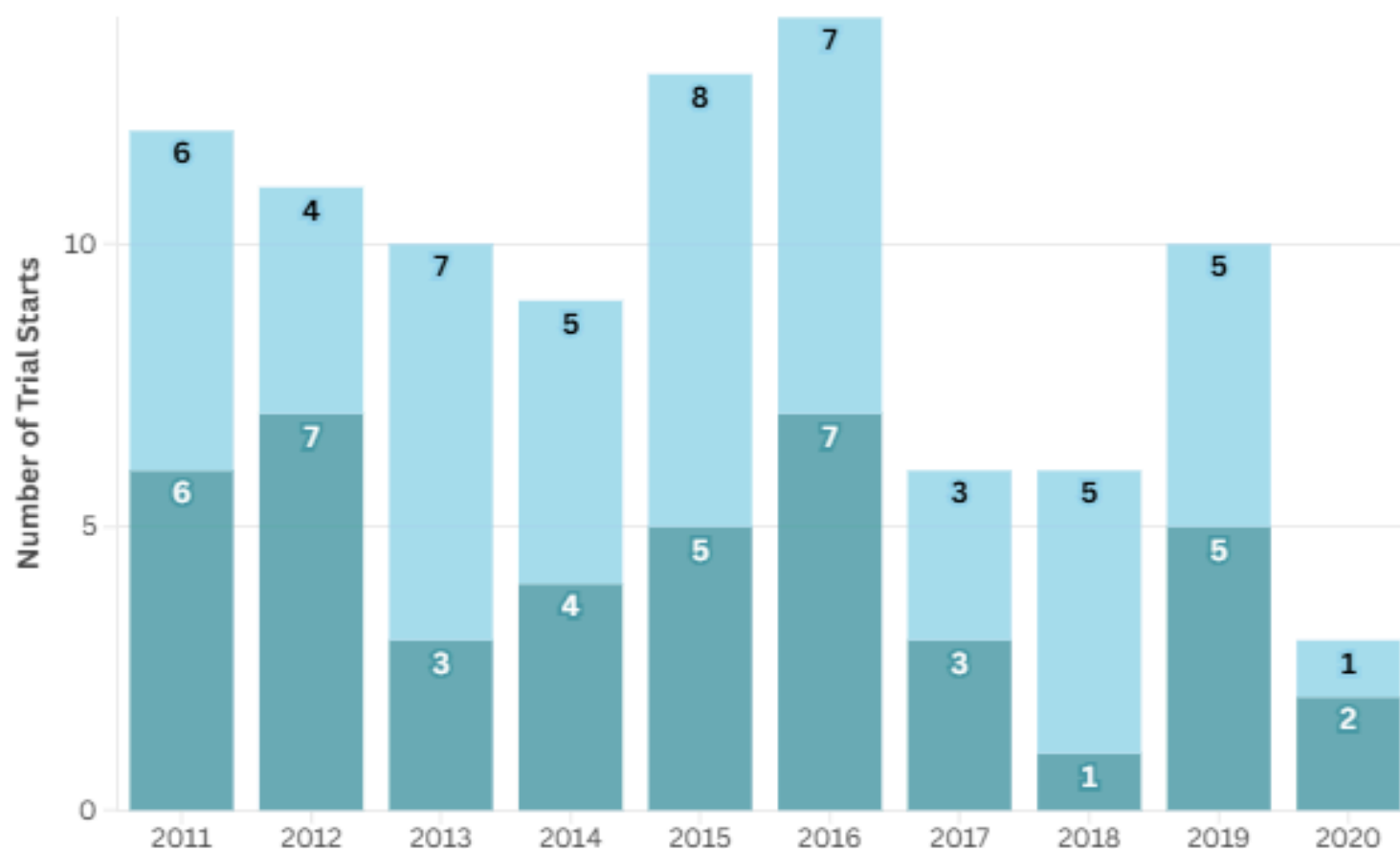
In 2018, a new antibiotic called Zemdri received FDA approval after 15 years of development and \$770 million in investment. In its first year on the market, it generated \$800,000 in sales. The company went bankrupt within a year.

Structural market forces drove its collapse.

Of 13 antibiotic-focused biotech firms that went public between 2012 and 2025, only two continue to develop antimicrobials today.

2011–2020 Clinical Trial Starts for Antibacterial Drug Intervention Trials

■ NCEs w/ novel targets ■ NCEs w/ non-novel targets



Between 2011 and 2020, antibiotic research attracted **\$1.6 billion** in venture funding, while cancer research received **17 times** as much over the same period.

A total of **92 clinical trials for antibacterials** were initiated from **2011 to 2020**. In comparison, **1,170 oncology trials** started in **2018 alone**.

Two Structural Barriers

Stewardship programs

Stewardship programs are standard across U.S. hospitals, requiring specialist review before prescribing newer antibiotics and reserving them for only the most resistant infections. Research shows this limits the commercial uptake of newer antibiotics, meaning innovators cannot generate sufficient revenue to justify developing new medicines.

Hospital reimbursement structure

Under the current reimbursement system, hospitals receive a fixed payment per patient stay regardless of which drugs they use. Every dollar spent on a newer, more expensive antibiotic directly reduces the hospital's margin. Existing partial fixes have not resolved this; hospitals still lose money when prescribing newer antibiotics.

Together, these two factors have made antibiotic innovation commercially untenable. Small and mid-sized biotech companies account for 75% of antibiotic development, and with existing economics, the market cannot support even a small number of players. Three areas have been identified where change could help address these economic barriers.

Three Core Levers for Change

Reimbursement reform

— proposals to reimburse novel antibiotics separately from the current fixed hospital payment system, addressing the financial barrier hospitals face when adopting newer drugs.

Subscription payments

— a model that would pay developers a fixed annual fee for maintaining a ready supply of effective antibiotics, independent of how often those drugs are prescribed.

Innovation incentives —

expanding mechanisms such as Priority Review Vouchers to attract private capital needed to rebuild the antibiotic pipeline.

For full analysis and research findings, read Chapter 13 of [Innovation is the Best Medicine](#). Additional source material: WHO Global Antibiotic Resistance Surveillance Report 2025