

Antimicrobial Resistance Threats

U.S. Burden Estimates, 2023

The table below provides the burden estimates featured in CDC's AR Threats Report, including associated statistical uncertainty. In the United States each year, the bacteria and fungi included in the AR Threats Report result in **9.7 million infections** (95% CI*: 8.2 million–11.7 million) and **50,800 deaths** (95% CI*: 39,400–65,100).

Pathogen	Number of Infections/ Cases (95% CI*)	Number of Deaths (95% CI*)	Costs (95% CI*)
<i>Candida auris</i> (<i>C. auris</i>)**	4,523***	Not available	Not available
Carbapenem- resistant <i>Acinetobacter</i>	9,497 (7,675–11,396)	817 (581–1,078)	\$355,333,835 (\$216,608,821– \$511,011,799)
Carbapenem- resistant Enterobacterales (CRE)	14,878 (12,390–17,389)	1,252 (903–1,627)	\$174,114,082 (\$106,734,267– \$246,983,815)
Clindamycin- resistant group B <i>Streptococcus</i> (GBS)	312,424 (205,082–437,759)	817 (640–990)	Not available
<i>Clostridioides</i> <i>difficile</i> (<i>C. diff</i>)	412,504 (358,643–466,365)	11,339 (0–25,283)	\$6,417,126,375 (\$4,186,782,605– \$8,647,470,145)
Drug-resistant <i>Campylobacter</i>	1,788,078 (900,077–3,264,072)	274 (29–725)	Not available
Drug-resistant <i>Candida</i>	33,596 (25,649–42,394)	1,681 (1,282–2,124)	Not available
Drug-resistant group A <i>Streptococcus</i> (GAS)	2,004,538 (1,538,913–2,593,929)	1,013 (830–1,220)	Not available
Drug-resistant <i>Mycobacterium</i> <i>tuberculosis</i> ***	1,030****	75****	Long-term TB treatment regimen costs: \$153,000 per MDR Case \$612,000 per XDR Case
Drug-resistant <i>Neisseria</i> <i>gonorrhoeae</i>	787,000 (616,000–1,075,000)	Not available	\$214,508,000 (\$87,351,000– \$535,592,000)

Drug-resistant <i>Neisseria meningitidis</i>	Penicillin-resistant: 61 (54–66) Ciprofloxacin-resistant: 35 (29–40)	Penicillin-resistant: 2 (1–4) Ciprofloxacin-resistant: 1 (0–2)	Not available
Drug-resistant nontyphoidal <i>Salmonella</i>	519,639 (308,230–826,150)	137 (34–335)	Not available
Drug-resistant <i>Salmonella</i> Typhi	7,056 (1,352–17,923)	8 (0–112)	Not available
Drug-resistant <i>Shigella</i>	678,609 (214,675–1,423,660)	96 (0–492)	Not available
Drug-resistant <i>Streptococcus pneumoniae</i>	2,596,008 (2,047,234–3,175,260)	3,734 (3,188–4,328)	Not available
Extended-spectrum cephalosporin-resistant Enterobacterales (ESC-RE)**	293,299 (274,502–312,080)	13,886 (10,149–17,753)	\$2,292,970,041 (\$1,703,134,016–\$2,897,990,549)
Methicillin-resistant <i>Staphylococcus aureus</i> (MRSA)	220,997 (206,401–235,537)	7,499 (6,315–8,723)	\$1,558,497,915 (\$1,347,889,069–\$1,771,023,932)
Multidrug-resistant <i>Pseudomonas aeruginosa</i>	18,939 (16,873–21,000)	1,588 (1,204–1,994)	\$537,774,142 (\$419,105,927–\$665,084,213)
Vancomycin-resistant <i>Enterococcus</i> (VRE)	65,204 (59,844–70,733)	6,536 (5,186–7,916)	\$724,941,298 (\$564,208,442–\$890,458,251)

* CI = confidence interval/credible interval (range of values likely to include the true value)

** To avoid double counting, when estimates were combined, CRE infections and deaths were removed from ESC-RE infections and deaths. *C. auris* infection estimates were not included in the combined estimate because hospitalized, drug-resistant *C. auris* is included in drug-resistant *Candida* estimates.

*** No CI available as value reflects national case counts for *C. auris* and TB, not estimates or models

**** For drug-resistant *Mycobacterium tuberculosis*, 1,030 represents people with drug-resistant TB disease in 2023. TB mortality data include cases diagnosed after death and deaths among patients undergoing TB treatment; there is a two-year reporting lag to include TB treatment outcomes. Therefore, the number of deaths reflects data from 2021.

Acronyms used: MDR TB = multidrug-resistant TB disease, XDR TB = extensively drug-resistant TB disease.



For more information on the pathogens in the Antimicrobial Resistance Threats Report, visit: <https://arthreats.cdc.gov>

