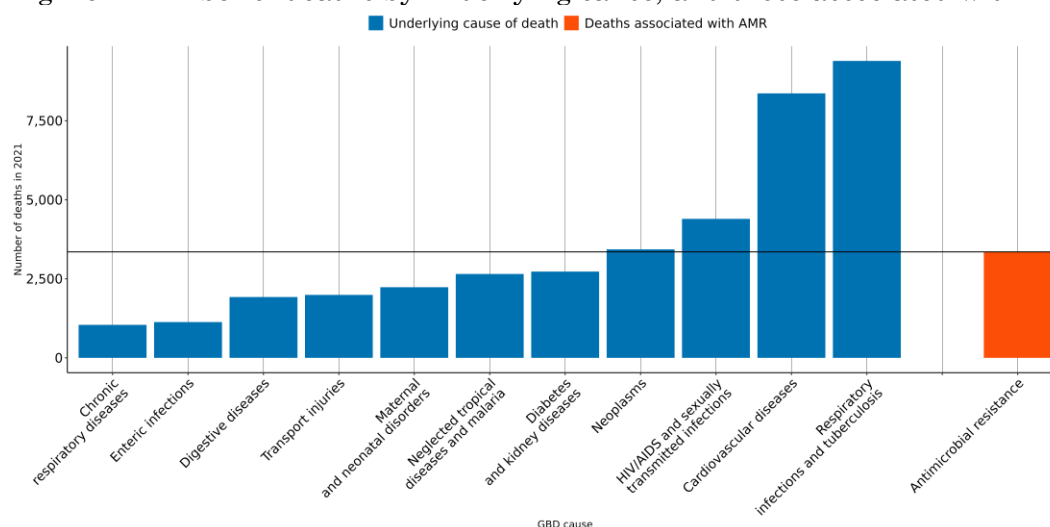


The burden of antimicrobial resistance (AMR) in Congo

Executive summary

- Antimicrobial Resistance (AMR) is a major global health threat, over **900 lives** have been lost each year since 1990 in Congo due to AMR.
- In 2021, there were an estimated **809 UI (599-1,020)** deaths attributable to AMR and **3,350 UI (2,540-4,170)** deaths associated with AMR in this location.
- The largest number of deaths associated with AMR in 2021 occurred among those aged **50 to 69** in the country.
- Among the most deadly pathogen-drug combinations in 2021 were *Staphylococcus aureus* resistant to methicillin, *Acinetobacter baumannii* resistant to carbapenems and *Streptococcus pneumoniae* resistant to carbapenems.

Figure 1 Number of deaths by underlying cause, and those associated with AMR in 2021



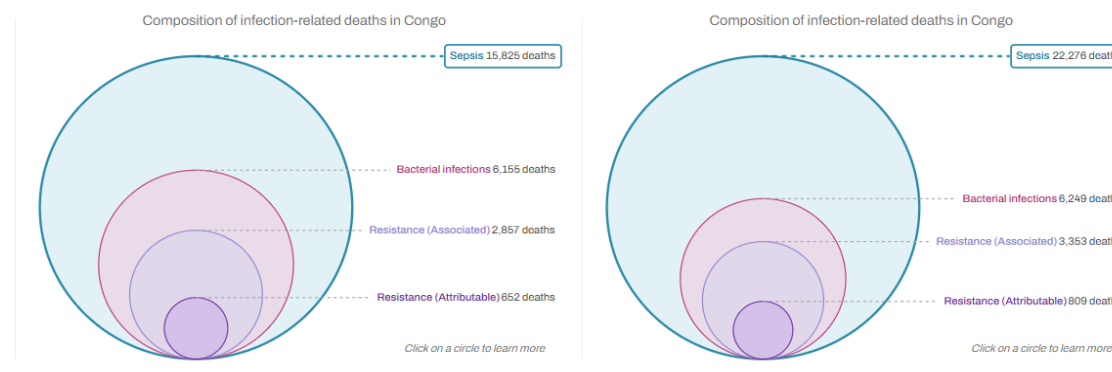
- In 2021, the number of deaths associated with AMR (orange bar in *figure 2*) were high compared to the most relevant underlying causes of death (depicted in blue) in the country. AMR associated deaths occur within multiple Global Burden of Disease (GBD) causes of death and AMR is not an underlying cause of death by itself.
- At the [2024 United Nations General Assembly high level meeting on antimicrobial resistance](#), country members agreed to aim for a **10% reduction** compared to 2019 baseline (**from 4.95 to 4.45 million**) in the global number of deaths associated with AMR by 2030. But [our forecast](#) indicates that in absence of concerted action, deaths associated with AMR could reach **5.5 million** (UI 4.8 - 6.2) if current trends continue. For Congo, a 10% reduction means to decrease the number of deaths associated with AMR to **3,160**, but currently the trend for this country could reach up to **4,170 UI [2,960-5,850]** AMR-associated deaths in 2030.

AMR in Congo

Key takeaways

- Antimicrobial Resistance (AMR) is a major global health threat, over *a million lives* have been lost each year since 1990.
- Globally, 4.71 (95% Uncertainty Interval (UI) 4.2-5.2) million deaths were associated with bacterial drug-resistant infections in 2021.
- And 1.14 (UI 1 - 1.3) million deaths were attributable to bacterial drug-resistant infection in the same year.
- *39 (UI 33 - 46) million deaths* directly attributable to bacterial AMR are projected to occur between 2025-2050 unless concerted action is taken. This equates to three deaths every minute.

Figure 2 Comparing 30 years of infection related deaths, and those associated with and attributable to AMR in Congo between 1990 and 2019.



- To look at these and more visualization interactively visit [Measuring Infectious Causes and Resistance Outcomes for Burden Estimation \(MICROBE\)](#)
- In **Congo** in 2021, there were an estimated **809 UI (599-1,020)** deaths attributable to AMR and **3,350 UI (2,540-4,170)** deaths associated with AMR. Here “*attributable deaths*” are considered to be those that would have been prevented had the drug-resistant bacteria causing the infections not been drug-resistant. “*Associated deaths*” are considered to be those that would not have occurred had the infections been prevented entirely.
- Across 204 countries, **Congo has the 26th highest** age-standardized mortality rate associated with AMR in 2021.
- *Table 1* shows the bacteria which caused most deaths in 2021 (↑ indicates an increasing estimated annual rate between 1990-2021, ↓ indicates a decreasing annual trend), and *table 2* shows the pathogen-drug combinations which caused most deaths in 2021.

Table 1. Bacteria which cause most deaths in 2021 (Number of deaths in parenthesis)

Burden rank	Overall susceptible and resistant			Associated			Attributable		
	Mycobacterium tuberculosis 1,920 UI (1,170-2,660)	↓		Streptococcus pneumoniae 651 UI (496-806)	↓		Streptococcus pneumoniae 146 UI (100-192)	↓	
	Streptococcus pneumoniae 729 UI (567-891)	↓		Klebsiella pneumoniae 562 UI (440-684)	↑		Acinetobacter baumannii 130 UI (103-156)	↑	
	Klebsiella pneumoniae 652 UI (518-787)	↑		Staphylococcus aureus 434 UI (316-552)	↑		Klebsiella pneumoniae 124 UI (93-155)	↑	
	Staphylococcus aureus 515 UI (409-621)	↑		Escherichia coli 407 UI (302-512)	↑		Staphylococcus aureus 120 UI (84-155)	↑	
	Pseudomonas aeruginosa 479 UI (382-576)	↑		Acinetobacter baumannii 331 UI (256-407)	↑		Escherichia coli 84 UI (56-112)	↑	
	Escherichia coli 451 UI (350-552)	↑		Pseudomonas aeruginosa 300 UI (220-380)	↑		Pseudomonas aeruginosa 75 UI (50-100)	↑	
	Acinetobacter baumannii 377 UI (297-457)	↑		Serratia spp. 86 UI (67-106)	↓		Mycobacterium tuberculosis 25 UI (0-84)	↑	
	Group B Streptococcus 150 UI (114-186)	↑		Mycobacterium tuberculosis 85 UI (15-251)	↑		Serratia spp. 25 UI (19-30)	↓	
	Serratia spp. 119 UI (93-145)	↑		Enterobacter spp. 78 UI (60-95)	↑		Enterobacter spp. 19 UI (14-23)	↑	
	Haemophilus influenzae 110 UI (86-134)	↓		Group B Streptococcus 69 UI (49-89)	↑		Enterococcus faecalis 10 UI (6-13)	↑	

Annualized rate of change (1990-2021) <-3% -3% to -1.5% -1.5% to 0% 0% to 1.5% 1.5% to 3% 3% to 5% >5.0%

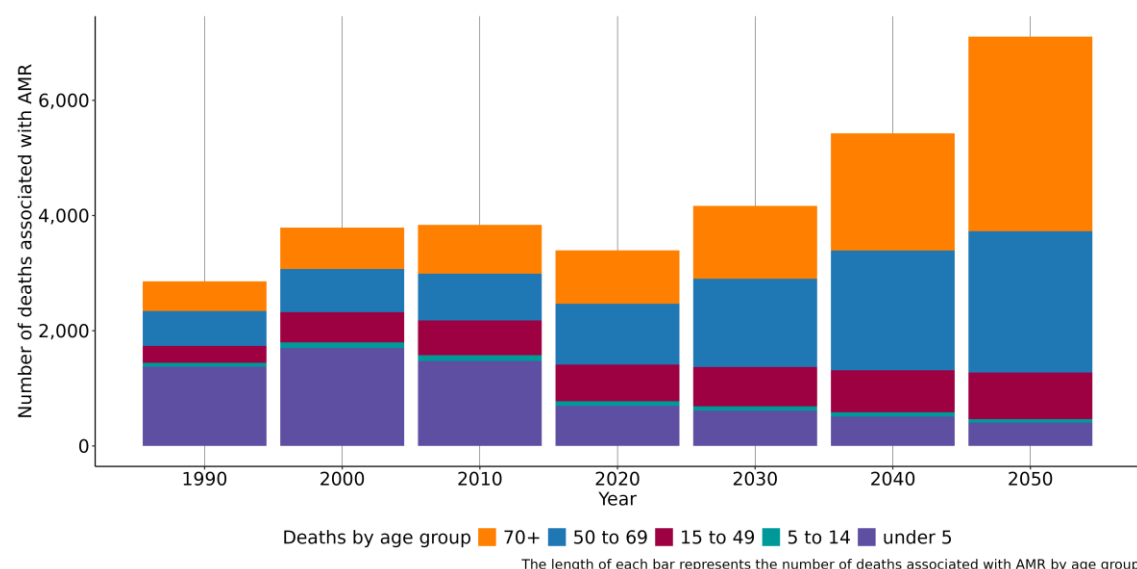
Table 2. Combinations which cause most deaths in 2021 (Number of deaths in parenthesis)

Burden Rank	Associated			Attributable		
	Klebsiella pneumoniae TMP-SMX 514 UI (398-630)	↑		Staphylococcus aureus Methicillin 75 UI (47-102)	↑	
	Streptococcus pneumoniae Macrolides 504 UI (370-639)	↑		Streptococcus pneumoniae Carbapenems 58 UI (31-86)	↑	
	Streptococcus pneumoniae Beta-Lactam/Lactamase Inhib. 499 UI (345-652)	↓		Acinetobacter baumannii Carbapenems 58 UI (39-77)	↑	
	Streptococcus pneumoniae TMP-SMX 487 UI (328-647)	↓		Streptococcus pneumoniae Beta-Lactam/Lactamase Inhib. 41 UI (24-59)	↓	
	Klebsiella pneumoniae Aminoglycosides 473 UI (365-582)	↑		Acinetobacter baumannii Fluoroquinolones 38 UI (30-46)	↑	
	Klebsiella pneumoniae Fluoroquinolones 452 UI (337-567)	↑		Klebsiella pneumoniae Fluoroquinolones 33 UI (21-46)	↑	
	Klebsiella pneumoniae Beta-Lactam/Lactamase Inhib. 396 UI (271-521)	↑		Klebsiella pneumoniae Aminoglycosides 33 UI (23-43)	↑	
	Escherichia coli Aminopenicillin 386 UI (248-523)	↑		Pseudomonas aeruginosa Carbapenems 28 UI (15-40)	↑	
	Staphylococcus aureus Methicillin 342 UI (216-469)	↑		Mycobacterium tuberculosis MDR excluding XDR 24 UI (0-83)	↑	
	Escherichia coli TMP-SMX 317 UI (234-399)	↑		Staphylococcus aureus TMP-SMX 24 UI (14-34)	↑	

Annualized rate of change (1990-2021) <-3% -3% to -1.5% -1.5% to 0% 0% to 1.5% 1.5% to 3% 3% to 5% >5.0%

- Independently of antimicrobial resistance, the infectious syndromes accounting for the most deaths in 2021 were as follows (estimated thousands of deaths in parenthesis) lower respiratory infection (excl. COVID) (2,660 UI (2,070-3,260)), bloodstream infections (2,480 UI (1,930-3,030)), tuberculosis (1,920 UI (1,170-2,660)), diarrhea (1,060 UI (352-1,760)) and meningitis (380 UI (270-489)).

Figure 3. Number of deaths associated with AMR by age group between 1990-2020 and 2050 projection



- In Congo, people aged under 5 experienced the largest number of deaths associated with AMR in 1990 but this changed by 2021 as the largest number of deaths occurred among the 50 to 69. This indicates that prevention of infections among the under 5 has contributed to the reduction in the number of AMR associated deaths. In 2021, the number of deaths associated with AMR among the 50 to 69 was 1,080 UI (783-1,370), whereas the mortality rate per 100,000 was 950 UI (775-1,120).

Data sources for Congo

In total, 520 million individual records or isolates covering 19,513 study-location-years were used as input data to our estimation process. The subset of input data for this country is shown below.

Table 3. Data inputs for Congo by source type

Source type	Years	Sample size	Sample size units
Antibiotic use	1990-2021	2,265	Study-year datapoints
Literature studies	2010-2021	224	Cases/isolates/susceptibility tests

More information

About GRAM:

The purpose of the Global Research on AntiMicrobial resistance (GRAM) project is to **generate accurate and timely estimates of the magnitude and trends in antimicrobial resistance (AMR) burden** across the world, which can be used to inform treatment guidelines and agendas for decision-making and research, detect emerging problems and monitor trends to inform global strategies, as well as facilitate the assessment of interventions over time.

GRAM is the flagship project of the University of Oxford–IHME Strategic Partnership. GRAM was launched with support from the United Kingdom Department of Health and Social Care's Fleming Fund, and the Wellcome Trust.

All resources:

For all resources on AMR analysis at IHME, visit <https://www.healthdata.org/antimicrobial-resistance>.

To look at these and more visualization interactively visit [Measuring Infectious Causes and Resistance Outcomes for Burden Estimation \(MICROBE\)](#).

Data sources:

To download the list of data input sources by country, and AMR results by region, visit the [Global Health Data Exchange \(GHDx\)](#).

Contact us:

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