Revised Policy Brief

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THE ECONOMIC BURDEN OF ANTIMICROBIAL RESISTANCE ON THE HUMAN HEALTH SECTOR IN UGANDA

BACKGROUND (WHAT IS THE PROBLEM AT HAND)

The misuse of antibiotics is the main driver of the emergence of drug-resistant bacteria or antimicrobial resistance (AMR). AMR threatens the present and future benefits of antibiotics, imposing longer hospital stays, higher risks of complications and mortality, and additional costs on society, health systems, and families.

AMR is a public health concern in Uganda, attributed to misuse of antibiotics, inappropriate prescription, and non-compliance with clinical guidelines. In Uganda in 2019, there were 7,100 deaths attributable to AMR and 30,700 deaths associated with AMR. Uganda has the 40th highest age-standardized mortality rate per 100,000 population associated with AMR across 204 countries. Despite the growing concern about AMR, data on its economic burden remains limited, with none in Uganda.

METHODS (INVESTIGATING THE PROBLEM)

- Prevalence-based cost-of-illness study indicating the annual economic losses due to AMR at nine regional referral hospitals in Uganda
- Prevalence-based approach appropriate for swift action to design and implement policies targeting AMR prevention interventions
- Estimated health system costs, reduced hospital capacity, and productivity losses due to AMR-resistant and susceptible infections
- Primary outcomes were the total annual costs of AMR-related illness and cost per patient with AMR-resistant and susceptible infection

RESULTS (DEFINING THE PROBLEM)

Over half (54.3%/325/599) of inpatients had significant bacterial growth on culture. 88.3% (287/325) had AMR-resistant infections, and 11.7% (38/325) had susceptible infections.

Estimated Annual Societal Cost of AMR in the nine RRHs in Uganda (2024)

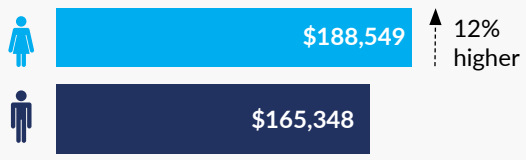
$25,152,120

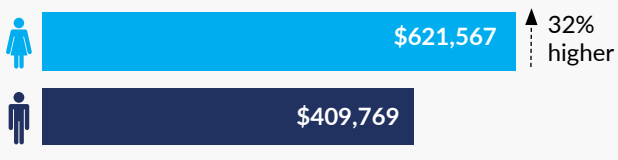
(UGX 90.7 Billion)

- Direct (Health system) costs: $23,527,860 (93%)
- Informal care costs: $1,223,6424 (5%)
- Lost productivity costs: $400,618 (2%)

Annual Societal Cost of AMR: Gender Comparison

The annual societal costs associated with AMR were higher among females than males, with informal care costs 12% higher ($188,549 vs. $165,348), and lost productivity costs 34% higher ($621,567 vs. $409,769)





Annual Per-Patient Cost of AMR

The annual per-patient cost of AMR was estimated at $77,391 from a societal perspective, $72,393 from a health system perspective, and $4,998 from a patient perspective.

CONCLUSION

- The societal cost of AMR is substantial and appears to be greatest in females compared to males.
- Direct health system costs and lost productivity costs due to AMR-related sickness and premature death were the primary contributors to the societal economic burden of AMR.

WHAT MIGHT THIS MEAN FOR POLICYMAKERS?

- Based on the annual budget allocated to the nine regional referral hospitals (RRHs), this amount represents 56% of their total budget for the 2023/2024 financial year. Contextually, the health system loses 56% of its annual budget allocation to RRHs because of AMR, which puts further unnecessary pressure on an underfunded and donor-dependent health system.
- Given Uganda's gross domestic product (GDP) of $54.8 billion in 2023/2024, the societal economic burden of AMR is equivalent to 0.04% of the country's GDP. This annual GDP loss may increase when additional regional, specialized, and national referral hospitals are considered.
- Personnel and sundries/ antibiotics contributed the most to direct (health system) costs, at 40% and 38%, respectively. The 40% spent on personnel per annum means that the staff-to-patient ratio would equally reduce if AMR is managed (mitigated). The 38% contribution of sundries/antibiotics means that reducing or stopping AMR could reduce the demand for costly antibiotics and related resource-intensive treatments in RRHs.
- Our findings revealed that females were disproportionately impacted by AMR, bearing 12% higher informal care costs and 34% higher lost productivity costs from illness and premature death caused by antibiotic-resistant infections compared to males. These findings highlight the importance of considering gender disparities when designing interventions to curb AMR.
- The societal cost of AMR is expected to rise significantly unless effective interventions to mitigate its spread are implemented. This aligns with the principle of large numbers, meaning that overall costs will rise accordingly as the number of patients with AMR-resistant infections increases—or as more regional and national hospitals are included.

For more information, scan:

Contact us:

Name	Email
Elly Nuwamanya	enuwamanya@idi.co.ug
Dathan Byonanebye	dbyonanebye@idi.co.ug
Hope Mackline	hmackline@idi.co.ug

Useful resources

1. The burden of antimicrobial resistance (AMR) in Uganda
2. Combating Antimicrobial Resistance and Protecting the Miracle of Modern Medicine
3. Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis
4. Drug-resistant infections : a threat to our economic future (Vol. 2 of 2) : final report (English)

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