

How did the COVID-19 pandemic affect antibiotic consumption within humanitarian emergencies? Results from five humanitarian contexts

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BACKGROUND

- Antimicrobial Resistance (AMR) represents an urgent threat to global health security.
- Both high- and low-income countries reported increased antibiotic consumption among COVID-19 patients during the first months of the pandemic.
- To date, however, no studies have examined changes in antibiotic consumption during the COVID-19 pandemic within humanitarian emergency contexts.

METHOD

- Data was collected by Médecins Sans Frontières (MSF) for the years 2018-2021 across humanitarian emergencies in:
 - ❑ Afghanistan (Lashkar Gah)
 - ❑ Bangladesh (Kutupalong)
 - ❑ DR Congo (Baraka and Mweso)
 - ❑ South Sudan (Bentiu)
- Inpatient and outpatient antibiotic consumption was calculated as Daily Defined Dose (DDD) per 1000 inhabitants per day, as per the World Health Organisation's (WHO) Collaborating Centre for Drug Statistics Methodology.
- Interrupted time series (ITS) analysis, using an autoregressive integrated moving average (ARIMA) model was used to analyse retrospective monthly antibiotic consumption.
- The impact of COVID-19 pandemic was evaluated as total antibiotic consumption and according to WHO Access, Watch, Reserve (AWaRe) group classifications within each humanitarian setting.

RESULTS

- There was no impact of COVID-19 pandemic on total antibiotic consumption for South Sudan (Bentiu) and Bangladesh (Kutupalong) settings.
- There was no impact of COVID-19 pandemic on total antibiotic consumption for DR Congo (Baraka) despite an initial 0.27% (estimate=.274, p-value=0.006) increase in March 2020 driven by Access group antibiotics.
- Total antibiotic consumption in DR Congo (Mweso) and Afghanistan (Lashkar Gah) declined by 0.74% (estimate = .744, p=0.003) and 0.26% (estimate = -0.26, p < 0.001), respectively with the COVID-19 pandemic.

Table 1. Changes in total antibiotic consumption (DDD per 1000 inhabitants per day) across five humanitarian settings

Humanitarian settings	March 2020		April-August 2020		From March 2020 to December 2021	
	estimate	p	estimate	p	estimate	p
Afghanistan(Lashkar Gah)	.156	0.141	-.036	0.011	-.259	<0.001
Bangladesh (Kutupalong)	.448	0.323	-.807	0.342	-7.535	0.167
DR Congo (Baraka)*	.274	0.006	.009	0.649	.096	0.512
DR Congo (Mweso)	-.453	0.201	-.094	0.043	-.744	0.003
South Sudan (Bentiu)	.060	0.929	-.037	0.765	.086	0.925

*The setting had only antibiotic consumption data until April 2021

DISCUSSION/CONCLUSION

- Overall, the results of this study suggest limited or no impact of COVID-19 pandemic on total antibiotic consumption for enrolled humanitarian settings.
- Further studies are required to investigate what may have contributed to these results.