

**SPEAKERS:**



**Mr Jason GALE**  
Senior Editor  
Bloomberg News  
Australia



**Dr Kinzang DUKPA**  
Regional Project Coordinator  
World Organisation for Animal Health  
Tokyo, Japan



**Dr Danny de VRIES**  
Associate Professor  
Anthropology of Health  
University of Amsterdam



**Ms Riko KIMOTO**  
Project Manager  
Asia Europe Foundation (ASEF)

**MODERATOR:**



# COVID-19 as analogy for antimicrobial resistance

Dr. Danny H. de Vries, Amsterdam Institute for Global Health & Development,  
University of Amsterdam Dpt of Anthropology  
[d.h.devries@uva.nl](mailto:d.h.devries@uva.nl), November 4, 2020

# Is COVID-19 and analogy for the impact of AMR?

An analogy is a comparison between one thing and another, typically for the purpose of explanation or clarification

1. What is the connection between COVID-19 and AMR?
2. To what extent are the two analogues?

# 1. What is the connection between COVID-19 and AMR?

# Direct relationship

- Experimentation with antibiotics as alternative therapies for COVID-19 (e.g. teicoplanin);
- Treatment of secondary infections, e.g. bacterial pneumonia;
- Postponements other treatments. E.g. Interruption tuberculosis treatment leads to MDR-TB.

# Direct relationship

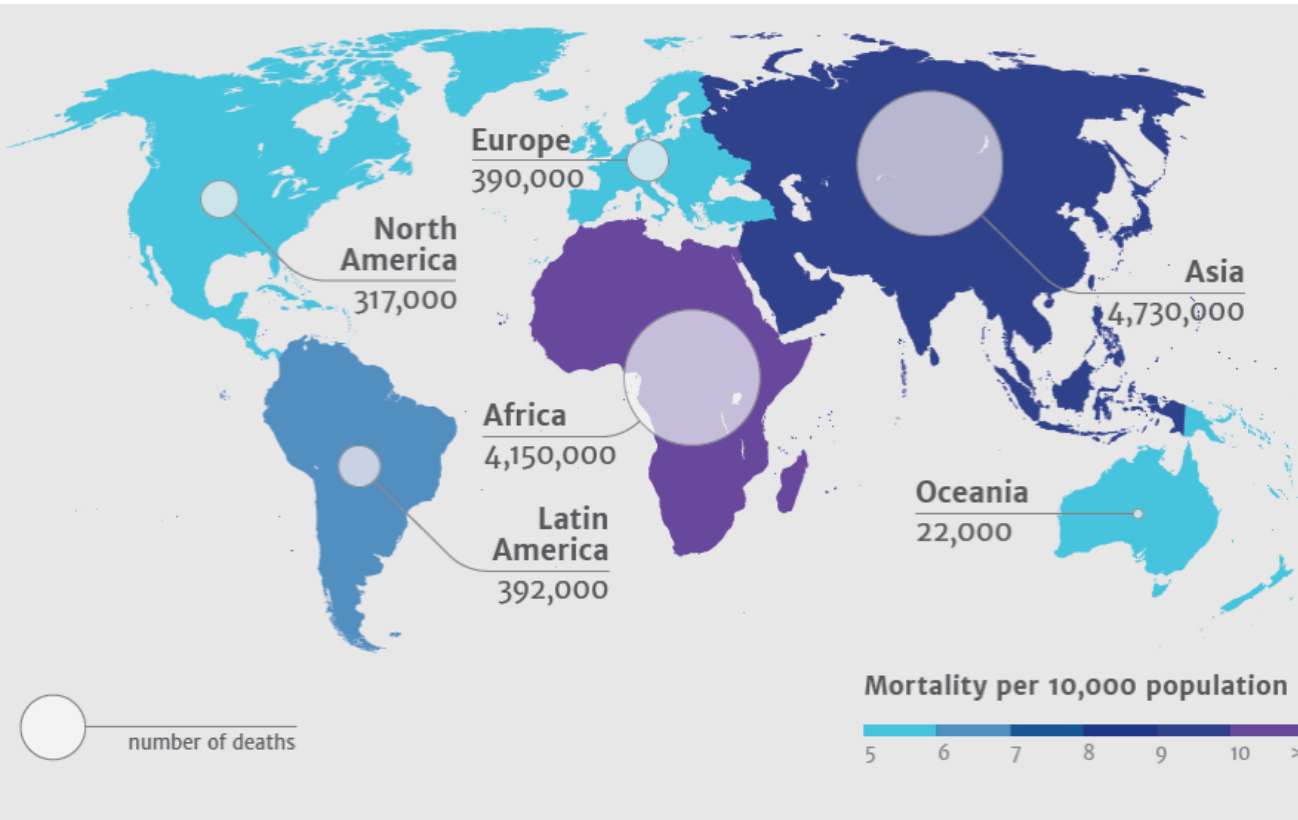
“Unfortunately, although it is still too early to gauge its full impact, the new SARS-CoV-2 virus appears to be exacerbating the problem of antibiotic resistance” - Clara Ballesté y Jordi Vila, coordinator and director, respectively, of the [ISGlobal Antimicrobial Resistance Initiative](#).

# Direct relationship

“The challenge of antibiotic resistance could become an enormous force of additional sickness and death across our health system as the toll of coronavirus pneumonia stretches critical care units beyond their capacity” – (Gerberding 2020) - **Former Centers for Disease Control and Prevention (CDC) director**

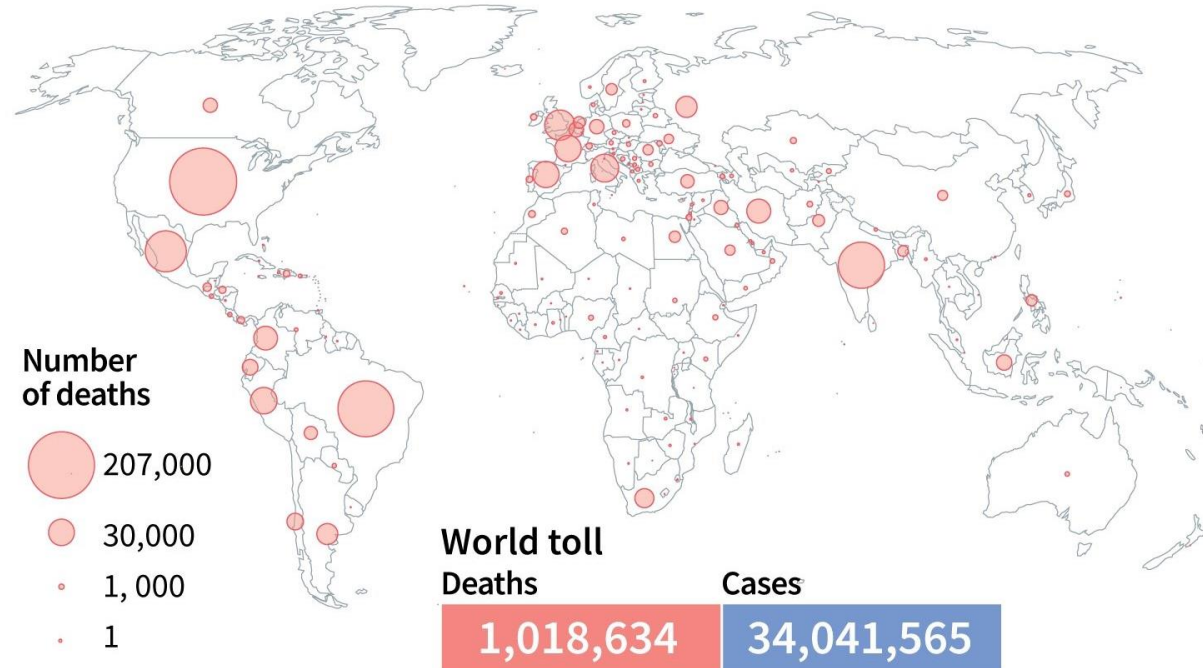
## 2. To what extent are the two analogues?

# Deaths



Deaths attributable to AMR per year by 2050.  
Source: [The Review on Antimicrobial Resistance](#)

As of October 1, 1100 GMT



Source: AFP count based on official tolls

Deaths attributable to COVID19 by October 1 2020  
Source: <https://www.dailysabah.com/world/europe/europe-steps-up-measures-against-sharp-covid-19-spike>



# Economic impact

- AMR:
  - Annual European economic damage at least EUR 1.5 billion in extra healthcare costs and productivity (ECDC 2009).
  - Annual global economic damage on par with the 2008 financial crisis (Jonas et al. 2017).
- COVID-19: Economic recovery time unknown. Global recession. Vaccine?

High-income (30 countries)	Upper middle-income (13 countries)	Lower middle-income (6 countries)
18%	24%	22%

Average loss in % in the Index of Industrial Production (IIP) across countries. April 2020 vs December 2019. Source: UNIDO elaboration based on [our Statistic Data Portal](#).

# Confronting systemic fragility



COVID-19 has placed at the centre is “what it is about” when we do not have medicine to rescue us.

AMR similarly emphasizes a world where many of our antibiotics do not work anymore – basic tools of modern medicine suddenly need to be rethought

# Symbolism of biomedicine

Symbolism of biomedical technologies is all about hope and a way out of uncertainty of COVID19 through vaccine development.

Symbolism of biomedical technologies in AMR is about this being its own demise. Medicalisation of our society has brought antibiotic technologies deep into our market economy (e.g. meat production processes) accelerating AMR.

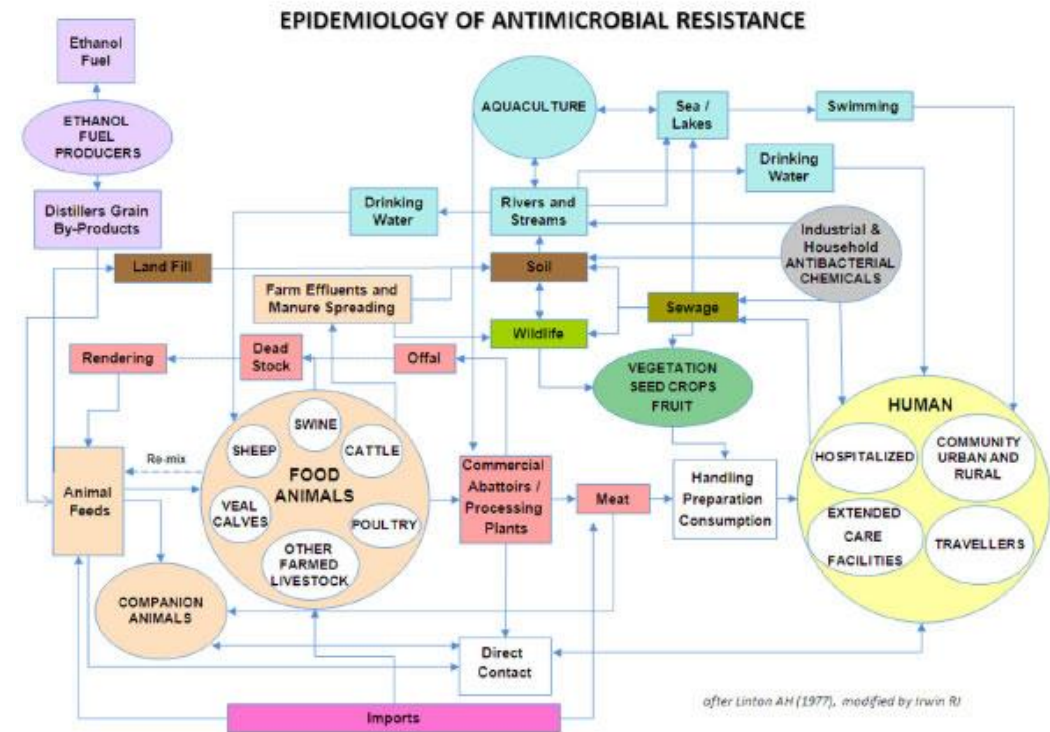


# Framing of causality

COVID19 and AMR both can be framed as external, random “natural” events

But both are the result of complex interactions between humans and their “natural” environment.

What is needed is **global education** on the causal complexity of both



# Conclusion

- COVID19 seems to be exacerbating the problem of AMR
- But COVID19 is also an entry for us to think about the true scale of AMR.
- As analogies, comparing them clarifies the magnitude of the AMR challenge:
  - AMR rivals COVID19 in terms of longer-term deaths and economic impact
  - AMR and COVID19 both confront us with the fragility of public health systems. They differ, however, in the role which biomedicine takes, which is more questionable when it comes to AMR
  - Both AMR and COVID19 are caused by the interaction between environment and society.
  - We need global education to help us reflect on the problem of AMR (e.g. sonar-global special-soc and operate-soc curricula).

Thank you!  
[d.h.devries@uva.nl](mailto:d.h.devries@uva.nl)



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