GLOBAL BURDEN OF ZOONOSES
TOWARDS SUSTAINED IMPACT

“Data for Policy Making: Insights from GBADs and FVE’s Research and Policy Impact”
GBADS/DECIDE webinar • 19/02/2024

Brecht.Devleesschauwer@Sciensano.be
Service Health Information
Department of Epidemiology and Public Health
Global burden of zoonoses
GBADs & Human health

[Diagram with nodes and arrows indicating relationships between climate change, land use changes, emerging infectious diseases, natural disasters, productivity losses, reduced health, and human health impacts.]

- Climate Change
- Land Use Changes
- Emerging Infectious Diseases
- Natural Disasters

- Animal affected with Cause X
  - Productivity loss (agriculture, forestry)
  - Productivity loss (health)
  - Productivity loss (livestock)
  - Reduced Wealth
  - Poor Quality Food

- Infected Human with Pathogen X
  - Differential diagnosis
  - Wealth impacts on health
  - Malnutrition impacts on health
  - Other nutritional impacts

- AARR
- Increased Labour
- Direct
- Unsafe food
- Vector borne Disease
- Environmental Contamination

- Reduced Wealth
- Reduced Food

Note: The diagram shows a complex network of interactions between various factors affecting human and animal health.
The global burden of neglected zoonotic diseases: Current state of evidence

Corlotta Di Bari a, b, c, D. Norman Venkateswaran a, d, Christina Fastil a, b, Sarah Gabriel e, Delia Grace e, f, Arie H. Hovelacque g, I. Ben Huntington a, h, I. Grace T. Patterson a, Jonathan Rushton a, b, Niko Speybreek k, Paul Torgerson a, i, David M. Pigott a, d, Brecht Devleesschauwer a, b, c
GBADs • Global burden of anthrax

Incidences per 100k
- [0.05, 0.25] [0.3, 0.35]
- [0.05, 0.1] [0.2, 0.25] Not applicable
- [0.1, 0.15] [0.25, 0.3]

Preliminary estimates
Foodborne Disease Burden Epidemiology Reference Group

WHO ESTIMATES OF THE GLOBAL BURDEN OF FOODBORNE DISEASES

FOODBORNE DISEASES ARE PREVENTABLE. EVERYONE HAS A ROLE TO PLAY.

For more information: www.who.int/foodsafety
#SafeFood

The burden of foodborne diseases is substantial

Every year foodborne diseases cause:

almost

in 10
people to fall ill

33 million
healthy life years lost

Foodborne diseases can be deadly, especially in children <5

420,000
deads

Children account for

1/3
of deaths from foodborne diseases
All hazards: 600M illnesses; 420k deaths; 33M DALYs
Diarrheal hazards: 550M illnesses; 230k deaths; 18M DALYs
FERG • Key findings

Foodborne Disability-Adjusted Life Years

- Trichinella spp.
- STEC
- Giardia spp.
- Echinococcus granulosis
- Fasciola spp.
- Brucella spp.
- Entamoeba histolytica
- Cryptosporidium spp.
- Clostridioides difficile
- Yersinia spp.
- Enterococcus faecalis
- Campylobacter spp.
- Salmonella Typhi
- E. coli
- Norovirus
- Taenia solium
- Salmonella Enteritidis
- non-typhoidal S. enterica
THEORY OF CHANGE

Global Burden of Zoonoses
Recognizing the need for global and regional estimates of FBDs to guide public health policy, in 2006 the World Health Organization (WHO) launched the ‘Initiative to Estimate the Global Burden of Foodborne Diseases’ [4]. The primary goal of this initiative is to enable policy makers and other stakeholders to set appropriate, evidence-based priorities in the area of food safety.
FERG • Theory of Change

Inputs
• Expertise in epidemiology
• Access to data
• Collaboration with int’l partners and countries

Activities
• Data analysis
• Capacity building
• Information dissemination
• Advocacy

Outputs
• Comprehensive data on foodborne diseases
• Strengthened international collaboration
**FERG • Theory of Change**

**Enhanced understanding of foodborne disease burden**
- Greater awareness among policymakers and the public about food safety
- Improved capacity among countries to collect and analyze foodborne disease data

**Increased adoption of evidence-based food safety policies and regulations**
- Increased international collaboration and harmonization of food safety standards
- Enhanced food safety practices globally

**Significant reduction in the global burden of foodborne diseases**
.. leading to improved public health, reduced healthcare costs, and safer food systems worldwide
Impact pathways require increased availability

How to increase availability of estimates?

✓ Generate estimates at country level .. and make it relevant
✓ Generate regular updates .. and remain relevant
✓ Create attractive data visualisation tools
✓ Share estimates as open data
✓ Be transparent about methods
✓ Actively disseminate results .. and go from global to national
Logic Model for using FERG estimates or conducting BoD studies

**Inputs**
- **Countries**
  - Surveillance & Outbreak Data
  - Data from Studies
  - Organizational Support
  - Training of Personnel
- **WHO**
  - Secretariat
  - Regional Advisors
  - Web Portal
  - Funding
  - Regional Meetings
- **FERG Estimates**
  - FERG report
  - FERG papers
  - Country-specific data/estimates
- **Country Support Task Force**
  - BoD Manual
  - Trainings
  - Toolbox
  - Guidance Documents
  - Subject Matter Experts

**Activities**
- **Phase 1: Using FERG estimates**
  - Become familiar with FERG estimates
  - Understand FERG methodology
  - Use country-specific FERG estimates*
  - Conduct situation analysis
  - Identify priority hazards
  - Estimate illness, hospitalizations, deaths
  - Estimate DALYS
  - BoD data informs food control programs

**Outputs**
- Increased awareness of FERG estimates
- Improved understanding of FERG methodology
- Improved understanding of data requirements for BoD studies
- Understanding of country-specific risk rankings
- Improved understanding of country-specific data gaps
- Understanding the landscape of national and international partners/stakeholders
- Hazards identified
- Hazards prioritized by stakeholders
- Data on priority hazards collected
- Data gaps identified and addressed
- Country-specific estimates produced
- Risk assessments and cost-benefit analyses done
- Stakeholders engaged
- Data used for decision making

**Outcomes**
- **SHORT-TERM**
  - Better data for country-specific risk ranking of foodborne hazards
  - Better data for WHO FERG Estimates
  - Improved WHO burden of disease estimates
- **LONG-TERM**
  - Evidence-based food control systems
  - Reduction in foodborne disease morbidity and mortality

**Abbreviations:** BoD Burden of Disease; CSTF Country Support Task Force, FERG Foodborne Disease Burden Epidemiology Reference Group, GFN Global Foodborne Infections Network, SME Subject Matter Expert, WHO World Health Organization

*Country-specific estimates can be supplied on request to the national food safety representative by Department of Nutrition and Food Safety (NFS), WHO, Geneva.
Towards a sustained impact

- Global burden initiatives establish global evidence bases
- Global burden initiatives strengthen international collaboration
- Improved methodological frameworks lead to increased availability
- Translation into national level can lead to sustained impact