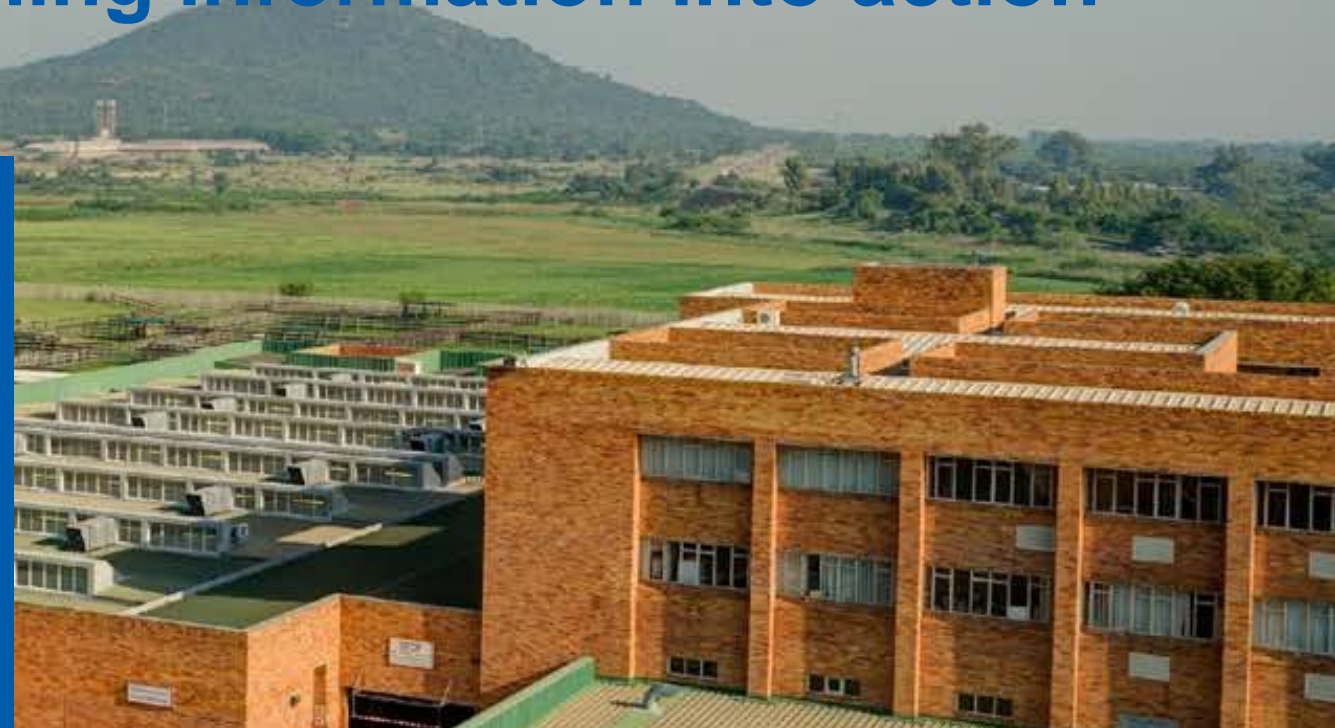


# From data to impact – Four imperatives for turning information into action

## The health imperative Karen H. Keddy

2025/06/03



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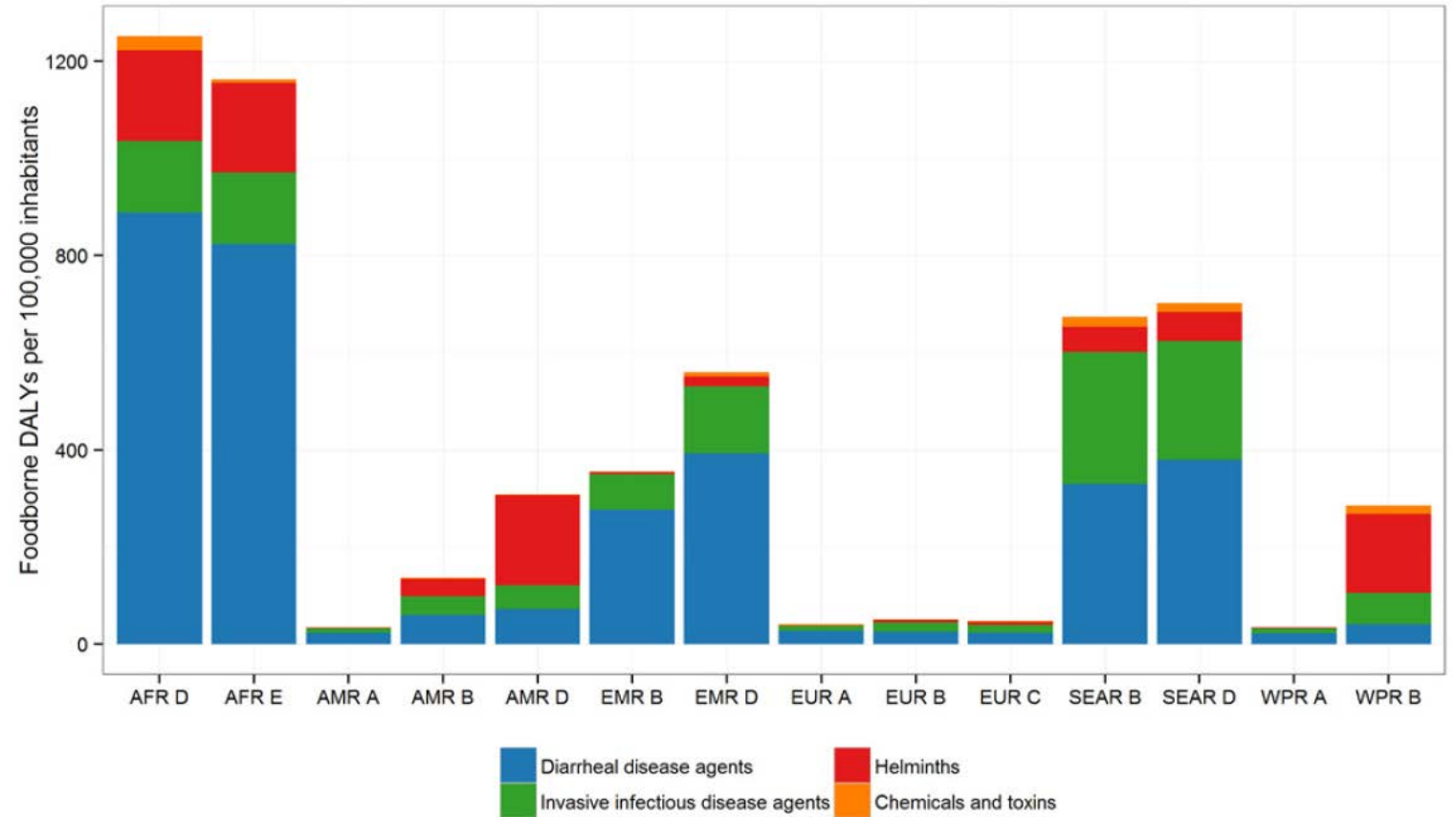
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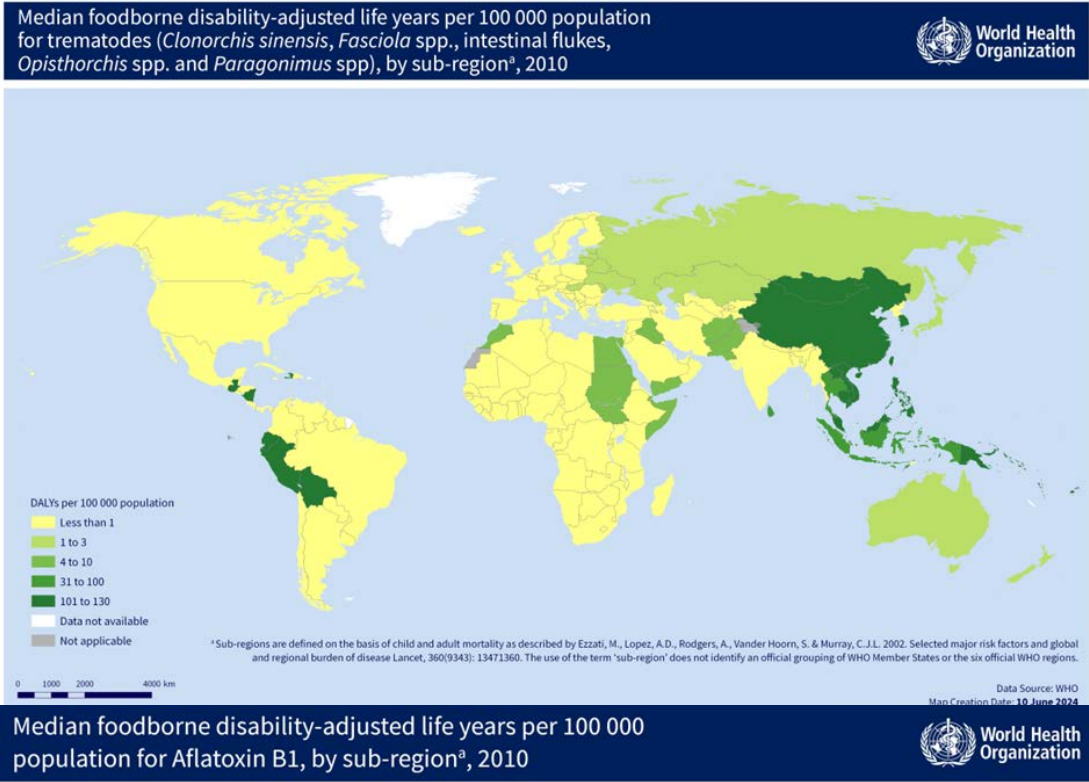
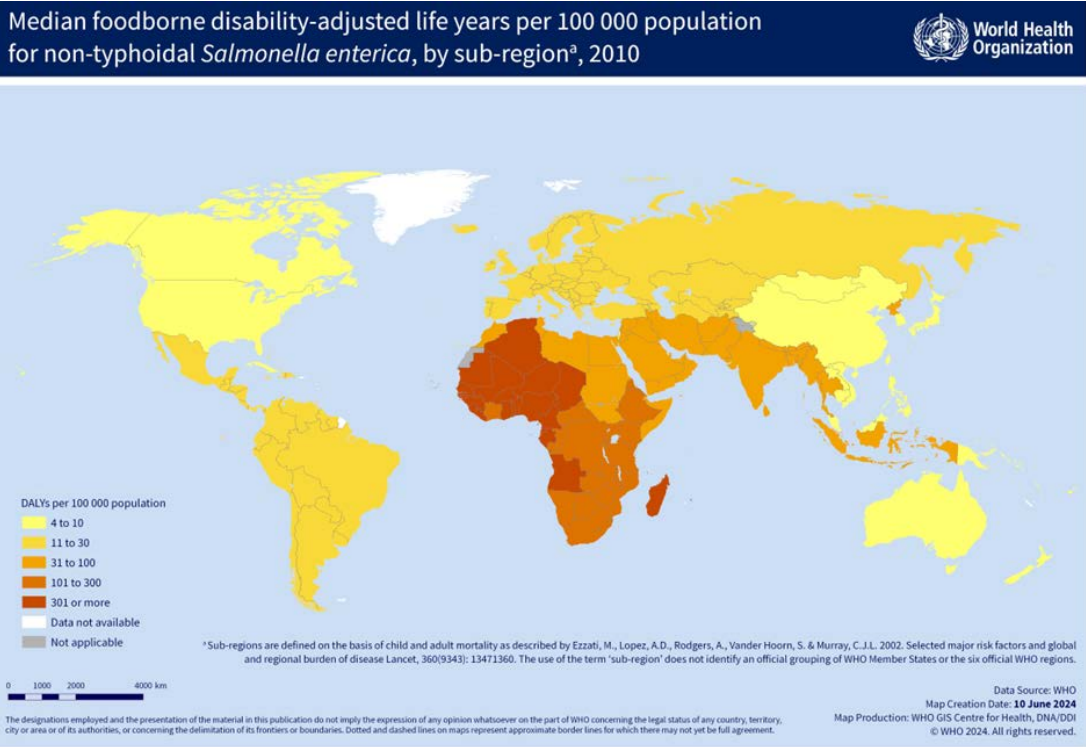
# Foodborne Burden of Disease - 2010

- Thirty-one FB hazards
- 600 million illnesses and 420,000 deaths
- 33 million Disability Adjusted Life Years (DALYs)
- Comparable with HIV/AIDS, malaria, or tuberculosis





# Regional burden differences



Map production: WHO GIS centre for health

# Global considerations

- Long term consequences & sequelae:
  - *Campylobacter* (Guillain-Barré);
  - STEC (HUS & chronic renal failure);
  - *Opisthorchis viverrini* (cholangiocarcinoma);
  - aflatoxin (HCC);
  - cadmium (chronic renal disease)
- 40% of burden: children < 5 years
  - Maternal exposure (*Listeria*; *Toxoplasma*; methyl mercury)
  - Acquired disease (*Campylobacter*: 48 million illnesses; ETEC: 38 million illnesses; Norovirus: 35 million illnesses; *Giardia*: 19 million illnesses) Kirk et al, 2015



# Focus on the children < 5 years

## Chronic and recurrent diarrhoea



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# Children <5 years

- >75% of the burden: *Fasciola* spp., *Giardia* spp., dioxins, and intestinal flukes occurred among children under five.
- Deaths: EPEC (22,000); ETEC (14,000); Campylobacter (14,000); niNTS (12,500)



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Havelaar et al, 2015; Kirk et al 2015

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# Consequences children < 5 years

- Dehydration and electrolyte imbalance: seizures, kidney failure, death.
- Malnutrition and impaired nutrient absorption: nutritional deficiencies, increased susceptibility to further diarrhoeal episodes..
- Stunted growth: low height-for-age; delayed cognitive development, reduced educational achievement, increased risk of chronic diseases in adulthood.
- Environmental enteropathy: chronic intestinal inflammation and impaired nutrient absorption, contributing to growth faltering.
- Increased mortality risk: 2010 ~ 91,000 deaths attributed to diarrhoea due to foodborne agents. Kirk et al, 2015

# Effect of long-term burdens

Chronic and recurrent diarrhoea may be associated with nutritional deficiencies.

The cycle of poverty, inadequate education, delinquency and failure to progress thus continues.....



Early childhood diarrhoea affects early education/ cognitive function.

Nutritional deficiencies are associated with delinquency in tweens and teens.



***Thank you and  
questions...***



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