Estimating the burden of foodborne diseases: a practical handbook for countries

Slide set 3 of 3 belonging to the handbook

Module 3
Overview of all steps

1. Introduction
2. Burden of foodborne disease studies
3. Planning a burden of foodborne disease study
4. Data preparation
5. Estimating incidence, mortality and DALYs
6. Estimating foodborne DALYs (source attribution)
7. Interpreting national burden of foodborne disease results
8. Knowledge translation and risk communication
9. Final considerations
Overview of module 3

1. Introduction
2. Burden of foodborne disease studies
3. Planning a burden of foodborne disease study
4. Data preparation
5. Estimating incidence, mortality and DALYs
6. Estimating foodborne DALYs (source attribution)
7. Interpreting national burden of foodborne disease results
8. Knowledge translation and risk communication
9. Final considerations
Interpreting national burden of disease results
Interpreting national burden of disease results

Important points to consider, to allow for correct interpretation, comparison between diseases and populations, and for prioritization:

• Present results for:
  • all diseases for all metrics, e.g. incidence, mortality, DALYs, YLL and YLD
  • all population groups considered, e.g. age groups, male and female, geographical regions, and risk group
  • both overall and foodborne burden of disease, as pathogen ranking may differ

• Address uncertainties, quantitatively or qualitatively

• It may be useful to draw comparisons with the burden of non-foodborne diseases in the same population. Consider differences in burden of disease approaches applied and discuss the impact on the results.
## Interpreting national burden of disease results

Example presentation of results (Denmark, 2017)

<table>
<thead>
<tr>
<th>Pathogen</th>
<th>Reported cases</th>
<th>Estimated cases</th>
<th>Estimated deaths</th>
<th>YLD</th>
<th>YLL</th>
<th>DALY</th>
<th>DALYs per 100 000 population</th>
<th>Proportion foodborne (%)</th>
<th>Foodborne DALYs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Campylobacter</td>
<td>4231</td>
<td>58 141 (49 617–71 781)</td>
<td>56 (969–1060)</td>
<td>1013</td>
<td>696</td>
<td>1709 (1665–1755)</td>
<td>29.7 (29.0–30.5)</td>
<td>76</td>
<td>1299</td>
</tr>
<tr>
<td>Norovirus</td>
<td>-</td>
<td>185 060 (156 506–212 627)</td>
<td>25.9 (106.3–153.4)</td>
<td>128.6</td>
<td>356.3</td>
<td>485 (398–573.1)</td>
<td>8.6 (7.0–10.1)</td>
<td>18</td>
<td>86</td>
</tr>
<tr>
<td>Listeriosis</td>
<td>58</td>
<td>58</td>
<td>12 (11.4–16.9)</td>
<td>14.2</td>
<td>186.4</td>
<td>196 (193.5–198.5)</td>
<td>3.4 (3.4–3.5)</td>
<td>100</td>
<td>196</td>
</tr>
<tr>
<td>Congenital toxoplasmosis</td>
<td>-</td>
<td>10 (8–12)</td>
<td>1 (1–2)</td>
<td>53 (32–77)</td>
<td>112 (81–153)</td>
<td>165 (126–222)</td>
<td>-</td>
<td>61</td>
<td>100</td>
</tr>
</tbody>
</table>
Knowledge translation and risk communication
Knowledge translation and risk communication

- Presentation and communication of results is essential
- Consider target audiences, e.g.
  - Policy-makers
  - Food business operators
  - Media
  - Community, general public, consumers
  - Scientific community
- Consider the purpose of the message
- Decide on dissemination strategy early
9 Final Considerations
Final considerations (1)

• Burden of foodborne disease estimates are essential to inform food safety policy and help establish priorities for interventions to reduce the burden

• National studies are critical to:
  • fill data gaps identified in global and regional efforts
  • focus efforts on the national context
  • deliver estimates that are as accurate as possible and build on local data

• They can flag needs and data gaps, and promote cooperation and communication among stakeholders
Final considerations (2)

- Countries are encouraged to start estimating National Foodborne BoD to the extent that expertise and resources allow
  - this could mean starting at a basic level, and working towards improvement and expansion
- Identified data gaps and needs may promote further development of surveillance programmes and encourage further investments

- Study execution should be done by a team of technical and scientific staff
  - early inclusion of stakeholders and decision-makers will support knowledge translation and science-based policies
- In the longer term, information on burden of foodborne disease should be a fundamental component of a systematic approach to food safety. Such an approach can improve both public health and trade.
Thank you

Multisectoral Actions in Food Systems
Department of Nutrition and Food Safety
Email: fbd-burden@who.int

Further learning
Steps 1-4: Module 1
Steps 5-6: Module 2
Steps 7-9: Current

WHO/HEP/NFS/AFS/2021.4 – © WHO 2021. Some rights reserved. This work is available under the CC BY-NC-SA 3.0 IGO licence