Global Expert Elicitation for Attribution of Burden of Disease to Foodborne Transmission and to Specific Foods

Terms of Reference

Reference Number: SATF_001

Purpose

To conduct a global source attribution study to estimate the proportions of the burden of disease by food-associated hazards that is attributable to main transmission routes and to specific foods using a structured expert elicitation method.

Background

The WHO Foodborne Disease Burden Epidemiology Reference Group (FERG[1]) advises WHO on how to update previously published WHO estimates of the burden of foodborne diseases[2]. Through discussions led by the Source Attribution Task Force (SATF) under the FERG, WHO was advised of the need for updated estimates of the proportion of the burden of diseases caused by specific pathogenic hazards that are attributable to food and other broad main transmission routes, and attribution of foodborne diseases to specific food exposures. The *Expert Elicitation* (EE) method is the only approach that is able to deliver the first set of estimates (attribution to foodborne transmission) and provides consistent estimates of the second (Pires, 2013). This project will update the estimates of the EE conducted previously to support estimating the global estimates of the burden of foodborne diseases (Hald et al., 2016; Hoffmann et al., 2017), adopting the same methodology (Cooke's Classical Model) to ensure comparability of estimates.

Objectives and specific tasks

The objective of this work is to collect data to estimate the proportion of the burden of disease by different pathogens globally and regionally that are attributable to foodborne transmission, and to specific foods (e.g., beef, produce). To achieve this objective, a structured expert elicitation (SEJ) will be conducted based on the approach agreed with the FERG.

Tasks will be performed by the contractors under the guidance of the FERG, particularly SATF. The selection of hazards to be included in the EE will be defined in coordination with the Enteric Disease Task Force (EDTF), Chemicals and Toxins Task Force (CTTF) and Parasitic Diseases Task Force (PDTF). The estimation process, as well as the generation and transfer of model outputs will be defined in coordination with the Computational Task Force (CTF).

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[1] https://www.who.int/groups/foodborne-disease-burden-epidemiology-reference-group-(ferg)
[2] https://www.who.int/publications/i/item/9789241565165

Scope of work

Activity 1. Preparation and development of material (September 2022-October 2023)
- Activity 1.1. Develop protocol and provide background materials for the EE process (September 2022-January 2023)
- Activity 1.2. Define elicitation variables (calibration questions and target questions) and formulate questions to collect data from experts (with support from SATF) (October 2022-April 2023)
- Activity 1.3. Develop and administer the elicitation document and tools. This activity will be led by the contractor, and will be supported by the SATF. (May 2023- October 2023)

Activity 2. Implementation (November 2023- July 2024)
- Activity 2.1. Support SATF and WHO in identifying and recruiting elicitors (Summer 2023)
- Activity 2.2. Support SATF and WHO in identifying and recruiting experts (Spring Summer 2023)
- Activity 2.3. Train elicitors of the SEJ. This activity will be led by the contractor, and will be supported by the SATF. (1-30 November 2023)
- Activity 2.4. Perform a pilot exercise (with the support of the SATF) and revise documents as needed (1 December 2023 – 31st January 2024)
- Activity 2.53. Conduct an expert training session. This activity will be led by the contractor, and will be supported by the SATF. (February 2024)
- Activity 2.6. Combine expert assessments (March-July 2024) and provide attribution results, including attendant uncertainty

Activity 3. Data analysis and reporting (March –July 2024)
- Activity 3.1. Perform discrepancy and robustness analysis (March-July 2024)
- Activity 3.2. Provide results for documentation by the SATF (March-July 2024)

Overall timeline (indicative)

Start date: 1st September 2022   **End date:** July 2024

Deliverables and timeline for delivery

Completion of final analysis and feedback report to WHO and FERG. The contractors will deliver a final dataset and report documenting results, to be further analysed and interpreted by the SATF and CTF. This work will be presented to the WHO and FERG for review, and subject to its review process, prior to finalization of reports and publication(s). It is expected that this review will result in a manuscript for publication in at least one peer review journal. Contractors are to lead the writing process, in close coordination with the SATF. The publication process will be governed by the existing publication policy, and authorship is subject to the recommendations for defining the role of authors and contributors published by the International Committee of Medical Journal Editors (ICMJE).

Interim deliverables
1. Protocol for SEJ (January 2023)
2. Draft elicitation document (April 2023)
3. Final elicitation document (October 2023)

Milestones
1. Training of elicitors (November 2023)
2. Interim meetings with SATF and CTF

Final deliverables:

1. Complete final analysis (in a form of a report) to be delivered at the end of the contract period (July 2024)
2. Final complete/raw dataset and R scripts to be delivered at the end of the contract period (May 2024)
3. Report documenting results in a format of word document, to be delivered at the end of the contract period (July 2024)
4. External journal publication (including authors from the SATF) as the outcome of the above outputs (2025)

Qualifications, experience, skills and languages

a. Experience

General experience in statistics and/or mathematics and ample experience in conducting and analyzing studies using Cooke's classical model is required. Ample experience in programming languages such as R or Python.

b. Languages and level required

Strong communication skills in English, especially in scientific written communication

Other requirements

The SEJ study team will be selected from the submitted expressions of interest and based on the members' qualifications and skills (see specifications below). The team should be composed of at least two persons. Geographical and gender diversity is encouraged. The team members will participate in their individual capacity rather than as a representative of their employer. Each member will also need to complete the standard WHO Declaration of Interest form, which will be assessed for conflict of interests. The team leader may be asked to further elaborate the expression of interest in a virtual video meeting with the WHO Secretariat and the SATF. The final candidates will be selected through a competitive process in accordance with WHO's policies and procedures.

References

Hald T, Aspinall W, Devleesschauwer B, et al. World Health Organization Estimates of the Relative Contributions of Food to the Burden of Disease Due to Selected Foodborne Hazards: A Structured Expert Elicitation. PLoS One 2016;11(1):1–35; doi: 10.1371/journal.pone.0145839.

Hoffmann S, Devleesschauwer B, Aspinall W, et al. Attribution of Global Foodborne Disease to Specific Foods: Findings from a World Health Organization Structured Expert Elicitation. Sant'Ana A de S. ed. PLoS One 2017;12(9):e0183641; doi: 10.1371/journal.pone.0183641.

Pires SM. Assessing the Applicability of Currently Available Methods for Attributing Foodborne Disease to Sources, Including Food and Food Commodities. Foodborne Pathog Dis 2013;10(3):206–13; doi: 10.1089/fpd.2012.1134.

HOW TO APPLY FOR A CALL FOR EXPRESSIONS OF INTEREST

To complete the application the team leader must provide responses to questions explicitly detailed in the application portal linked below. **It is important to have all information prepared prior to applying online, as it is not possible to return to the portal to modify your submission:**

APPLY HERE:
https://extranet.who.int/dataformv3/index.php/998268?lang=en

Required information:
1) Reference number (found in the Terms of Reference)
2) Contact information from the main focal point only (i.e. Lead Investigator)
3) Cover letter/statement of motivation, including a maximum of 600 words detailing why your team are submitting this Expression of Interest, and why you believe your team is the most suitable to undertake this work. **It is recommended to prepare this in a separate Word document so you can copy and paste text into the application.**
4) Proposed fee for undertaking the work (in USD)
5) Ideal start date and completion dates to undertake the work
6) ONE document (ideally in PDF format) that includes every Curriculum Vitae (CV) of the proposed research team.
7) ONE document (ideally in PDF format) that includes a brief biography of each research team member (max 150 words per person).

Applications close at 17:00 (CET) on 30 September 2022

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