Attribution of global foodborne disease to specific foods: Findings from a World Health Organization structured expert elicitation - DTU Orbit (31/12/2018)

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Background Recently the World Health Organization, Foodborne Disease Burden Epidemiology Reference Group (FERG) estimated that 31 foodborne diseases (FBDs) resulted in over 600 million illnesses and 420,000 deaths worldwide in 2010. Knowing the relative role importance of different foods as exposure routes for key hazards is critical to preventing illness. This study reports the findings of a structured expert elicitation providing globally comparable food source attribution estimates for 11 major FBDs in each of 14 world subregions. Methods and findings We used Cooke’s Classical Model to elicit and aggregate judgments of 73 international experts. Judgments were elicited from each expert individually and aggregated using both equal and performance weights. Performance weighted results are reported as they increased the informativeness of estimates, while retaining accuracy. We report measures of central tendency and uncertainty bounds on food source attribution estimate. For some pathogens we see relatively consistent food source attribution estimates across subregions of the world; for others there is substantial regional variation. For example, for non-typhoidal salmonellosis, pork was of minor importance compared to eggs and poultry meat in the American and African subregions, whereas in the European and Western Pacific subregions the importance of these three food sources were quite similar. Our regional results broadly agree with estimates from earlier European and North American food source attribution research. As in prior food source attribution research, we find relatively wide uncertainty bounds around our median estimates. Conclusions We present the first worldwide estimates of the proportion of specific foodborne diseases attributable to specific food exposure routes. While we find substantial uncertainty around central tendency estimates, we believe these estimates provide the best currently available basis on which to link FBDs and specific foods in many parts of the world, providing guidance for policy actions to control FBDs.

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