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Climate variability and campylobacter infection: an international study

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Abstract:

Campylobacter is among the most important agents of enteritis in developed countries. We have described the potential environmental determinants of the seasonal pattern of infection with campylobacter in Europe, Canada, Australia and New Zealand. Specifically, we investigated the role of climate variability on laboratory- confirmed cases of campylobacter infection from 15 populations. Regression analysis was used to quantify the associations between timing of seasonal peaks in infection in space and time. The short-term association between weekly weather and cases was also investigated using Poisson regression adapted for time series data. All countries in our study showed a distinct seasonality in campylobacter transmission, with many, but not all, populations showing a peak in spring. Countries with milder winters have peaks of infection earlier in the year. The timing of the peak of infection is weakly associated with high temperatures 3 months previously. Weekly variation in campylobacter infection in one region of the UK appeared to be little affected by short-term changes in weather patterns. The geographical variation in the timing of the seasonal peak suggests that climate may be a contributing factor to campylobacter transmission. The main driver of seasonality of campylobacter remains elusive and underscores the need to identify the major serotypes and routes of transmission for this disease.