Development of forecasts and quality control charts for Campylobacter spp. cases in Lower Saxony, Germany using the One Health Approach

Monday, 9 October 2023 16:00 (15 minutes)

With 60,000 – 70,000 reported cases/year (Robert Koch Institute), Campylobacterisis is the most common notifiable bacterial disease in Germany. Poultry meat is considered the main source, but raw milk, raw meat, contaminated drinking water or contact with pets can also be a source of infections.

The aim of this study is to develop quality control charts as a benchmarking system using forecasts to detect deviations in the number of human Campylobacter spp. infections in Lower Saxony. The second aim is to assess whether integrating veterinary data regarding the One Health approach is possible.

Routine data from 2017 to 2020 provided by the Public Health Agency of Lower Saxony (human notified cases) and the Lower Saxony State Office for Consumer Protection and Food Safety (laboratory data of food samples) are analysed. Laboratory data include results from meat and meat products and milk and milk products. Models of the ARIMA family are used for forecasting. For quality control charts, the 95%-confidence interval of the forecast is used as the control limit.

Results show a better model for Campylobacter spp. cases without the One Health approach. In general, the forecast using the One Health approach estimates higher case counts compared to the forecast without it and the observed cases. The quality control charts show only a slight deviation of cases from the forecast in 2020, indicating an unexpected change in case counts.

Keywords

One Health, Campylobacter, Forecast, ARIMA, Secondary Data

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Professional Status of the Speaker

Graduate Student

Junior Scientist Status

No, I am not a Junior Scientist.

Primary author: KIRSE, Alina

Co-authors: Dr SCHNEPF, Anne (Department of Biometry, Epidemiology and Information Processing, University for Veterinary Medicine, Hannover, Germany); Dr HILLE, Katja (Department of Infectious Disease Epidemiology, Public Health Agency of Lower Saxony, Germany); VAN MARK, Gesine (Task Force Consumer Protection, Lower Saxony State Office for Consumer Protection and Food Safety, Germany); REMM, Karen (Lower Saxony State Office for Consumer Protection and Food Safety, Germany); SCHARLACH, Martina (Department of Infectious Disease Epidemiology, Public Health Agency of Lower Saxony, Germany); NORDHOFF, Katja (Lower Saxony State Office for Consumer Protection and Food Safety, Germany); Dr DREESMANN, Johannes (Department of Infectious Disease Epidemiology, Public Health Agency of Lower Saxony, Germany); Prof. HAUNHORST, Eberhard (Lower Saxony State Office for Consumer Protection and Food Safety, Germany); Dr FEIL, Fabian (Department of Infectious Disease Epidemiology, Public Health Agency of Lower Saxony, Germany); Prof. KREIENBROCK,

Lothar (Department of Biometry, Epidemiology and Information Processing, University for Veterinary Medicine, Hannover, Germany)

Presenter: KIRSE, Alina

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