

Session 10

Theatre 1

Measuring association between location of human cases in a food borne outbreak and distribution of food products to identify potential sources of infection

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In 2006, Norway experienced an outbreak of hemolytic uremic syndrome caused by enterohemorrhagic *Escherichia coli* O103. A total of 17 patients from 16 households were identified from January to March. The outbreak investigation was complicated and it took 4 weeks from the alert was raised until cured sausage was identified as the source of the outbreak. The aim of this study was to develop a tool that analyze information on patient distribution and distribution of food products to give a quantitative measure for rating the food products according to their probability of being the source of the outbreak. The study used data from the HUS outbreak in 2006. A tool for calculating measures of association between the distribution of human cases in a food borne outbreak and the distribution pattern of food products being potential sources of the outbreak was developed. The tool uses the geographical location and time of the human cases and information on when and where the food products were delivered to retail shops as input data. All analysis was performed with municipality as the unit of concern. Two measures for association were applied, the first were based on Pearson's correlation, the second on the amount of product delivered to municipalities associated with HUS-cases. Thereafter an index value based on both measures was calculated. The model ranked the source product among the 5% most probable products. This type of analyses is useful in order to focus the outbreak investigation on the most probable products, and exclude products that are unlikely to be the source based on time and geographical distribution. Further work should be done in this area to refine the model and test on other outbreaks