Risk of Campylobacter from chicken in Denmark 2013-17

Petersen, Channie Kahl; Borck Høg, Birgitte; Gantzhorn, Mette Rørbæk; Nauta, Maarten; Ellis-Iversen, Johanne

Publication date:
2020

Document Version
Publisher's PDF, also known as Version of record

Link back to DTU Orbit

Citation (APA):

General rights
Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.
Risk of *Campylobacter* from chicken in Denmark 2013-17

Channie Kahl Petersen, Birgitte Borck Høg, Mette Rørbaek Gantzhorn, Maarten Nauta and Johanne Ellis-Iversen

Affiliation:
a) National Food Institute, Technical University of Denmark  
b) The Danish Veterinary and Food Administration

Background

*Campylobacter* is the most common cause of foodborne bacterial illness in Denmark, with a human incidence between 67-82 per 100,000 inhabitants (Figure 1).

Around 1/3 of domestically acquired cases are attributable to the consumption of chicken meat.

One Health surveillance and control approaches are necessary to protect public health.

Methods

An average of 952 legskin samples were collected annually from conventionally produced chicken in Denmark.

Chicken legs were selected at random from two major slaughterhouses. The skin was analysed using a semi-quantitative method providing an estimate of concentration (cfu/g) of *Campylobacter* on each legskin (NMKL 119, 3. Ed., 2007).

The risk to public health was calculated using a risk assessment model combining the measured concentration and prevalence with a consumer phase model [1], and a dose-response model [2,3].

Results

Slaughterhouse A:

- The prevalence of *Campylobacter* decreased from 20% (95%CI: 16.2-23.8) in 2013 to 12.4% (95%CI: 9.3-15.2) in 2017 (Figure 2).

Slaughterhouse B:

- The prevalence of *Campylobacter* decreased from 30.8% (95%CI: 26.4-35.0) in 2013 to 18.7% (95%CI: 15.0-22.1) in 2017 (Figure 2).

For both slaughterhouses a small but non-significant decrease in average concentration was observed over the period (Figure 3).

In 2017, the cumulative relative risk was 0.80 and 0.40 for the two slaughterhouses respectively, giving an overall relative risk of 0.57, thus continuing the decline from previous years (Figure 4).

Conclusions

Between 2013 and 2017, the relative risk of *Campylobacter* has decreased, overall as well as separately in both slaughterhouses. The decline in public health risk was caused by a marked decrease in prevalence combined with only a smaller decrease in the concentration of *Campylobacter* in chicken.

Continued monitoring of the relative risk enables a One Health effort to protect public health from *Campylobacter* contaminated chicken and facilitates real-time control in slaughterhouses.

References:

