

Investigations of the interactions of zoonotic pathogens in humans and animals SHIP-NEXT Module One Health

Authors: Birgit Schauer, Susan Mouchantat, Julia Rüdebusch, Karsten Becker, Matthias Nauck, Pavlo Maksimov, Martin Eiden, Martin Groschup, Frank Ulrich Weiss, Carsten Oliver Schmidt, Franz Conraths, Henry Völzke

Introduction

As part of the population-based project Study of Health in Pomerania (SHIP) a third cohort (NEXT) is established in 2021. Within the NEXT module "One Health", animal contacts (dog (D), cat (C), poultry/pigeons (P)) of the 4000 randomly selected participants (20-79 years) will be investigated and risk factors for zoonotic transmission as well as husbandry and environmental conditions examined.

The aim is to gain a better understanding of the complex interactions between humans-pets-livestock-environment as well as risk factors for the zoonotic transmission in the private household in order to generate a stronger awareness for the private interaction with pets and livestock.

Methods



Based on existing data, 38% of the sample are expected to keep at least one of the targeted species

Data collection includes:

- Questionnaires
- Interviews
- Inspection of outdoor areas
- Veterinary examinations

Veterinary examinations:

- Check up
- Faecal samples (D, C)
- Blood and swab samples (nasal: D, C; rectal/cloacal and oropharyngeal: all)
- Pathogen testing: among others *Echinococcus spp.* and *cestodes*: D, C; *Toxoplasma gondii*: C, *Campylobacter spp.*: D, C, P; *Hepatitis E virus*: D, C; *Tick-borne encephalitis virus*: D, C, P

- Awareness, information needs, human behaviour and influencing factors are also investigated via participatory approaches
- Risks for household members (young, old, pregnant, immune suppressed) will be assessed and recommendations for human-animal interactions in the private household derived
- For further investigations all biomaterial are stored in a biobank

Discussion

The examinations and sample collections in humans and their animal contacts will contribute to a better understanding of the complex interactions between humans pets livestock environment. Furthermore, participants from households with and without animal contacts can be compared.

With support from



Project manager



FRIEDRICH-LOEFFLER-INSTITUT



Bundesforschungsinstitut für Tiergesundheit
Federal Research Institute for Animal Health



by decision of the
German Bundestag

This work was financially supported by the German Federal Ministry of Food and Agriculture (BMEL) based on a decision of the Parliament of the Federal Republic of Germany, granted by the Federal Office for Agriculture and Food (BLE; grant number 28N203201).