Screening of Salmonella in Swedish otters (Lutra lutra)

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This bacteriology screening study from 2007 to 2014 found Salmonella bacteria in three of 126 necropsied otters, two with Salmonella diarizonae, and one with Salmonella enterica, serovar Typhimurium.

Introduction
Salmonella bacteria are uncommon in farmed animals in Sweden, compared to the amount of cases found in production animals within Europe in general. A Swedish specific legislation regulates the controlling and eradication of Salmonella in production animals on farms in which Salmonella is detected.

Spillover of Salmonella bacteria to or from wildlife is possible, and a general screening for Salmonella is done on wildlife submitted for necropsy within the national wildlife disease surveillance program at the National Veterinary Institute (SVA).

Results
The 126 otters originated from all but one of the 21 counties in Sweden. Three otters were found to carry Salmonella bacteria in the small intestine. All three were diagnosed in 2014, but came from three different areas in two counties.

Two otters carried Salmonella enterica subspecies diarizonae, but not the serovar which has been found in sheep in Sweden. The third otter carried Salmonella enterica enterica serovar Typhimurium, which is most commonly found in wild passerine birds and rodents. All three otters were killed by traffic and there was no apparent inflammation in the gastrointestinal tract.

Discussion
This screening study shows that wild otters in Sweden only very occasionally are carriers of Salmonella bacteria. The presence of Salmonella in otters was not shown to be accompanied by disease or lesions.

Regarding the possible origin of the Salmonella found in otters, the serovars are not typically found in domestic or production animals. A screening study of Salmonella in prey species in the vicinity of the sites where positive dead otters were found, would probably be needed to establish possible pathways for the spread or spillover between species.

Conclusions
Salmonella in Swedish otters:
- is rarely found
- probably originates from prey species or the environment
- does not seem to be a disease problem for the otter population

Methods and material
All otters submitted for necropsy at SVA from 2007 to 2014 and a smaller number of samples from otters studied at the Museum of Natural History, in all 126 otters, were sampled from the small intestine for Salmonella screening by selective bacteriology culture.