



National Institute for Public Health  
and the Environment  
*Ministry of Health, Welfare and Sport*



# Signalling and risk assessment of emerging zoonoses

a One Health approach  
in the Netherlands

Diseases that are naturally transmitted from animals to humans are called zoonoses. Outbreaks or events involving new or re-emerging zoonoses also occur in the Netherlands. The major outbreak of Q fever among humans that occurred in 2007 marked a turning point in how the Dutch Government responds to emerging zoonotic diseases.

It is important to signal, assess and control zoonoses, especially since new zoonotic diseases will continue to emerge. An appropriate response to emerging zoonoses requires close cooperation between medical and veterinary professionals. Accordingly, a systematic One Health approach was developed and officially instituted for the purpose of sharing, assessing and responding to signals of new and re-emerging zoonotic infections in which veterinary and medical professionals work together.

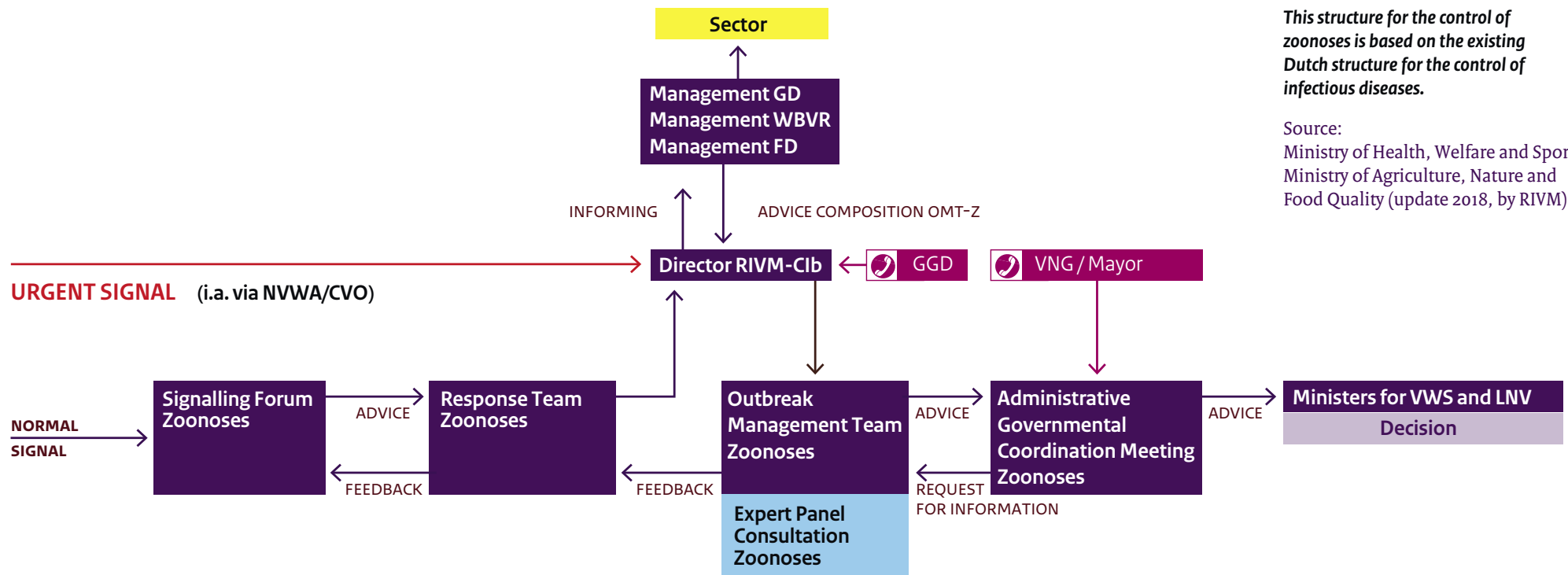
In 2011, this integrated human-veterinary risk analysis structure was formally adopted by the Dutch Ministry of Health, Welfare and Sport and the Ministry of Agriculture, Nature and Food Quality as the national Zoonoses Structure. The Zoonoses Structure consists of several steps (see Figure). Crucially, both medical and veterinary experts are involved at every step. An important platform in this structure is the Signalling Forum for Zoonoses (SOZ), which conducts the initial assessment of signals.

## Signalling Forum for Zoonoses

The aim of the SOZ is to signal and assess zoonotic infections in humans and animals that may pose a public health threat. These signals are shared and assessed in a monthly meeting with representatives from the human and veterinary health domains.

In the event that a threat is identified that may potentially be urgent, additional meetings are scheduled as needed on an ad hoc basis. Once a public health threat has been identified, the head of the RIVM Centre for Infectious Disease Control is notified. Subsequent steps within the Zoonoses Structure are considered, wherever possible based on a risk assessment.

Veterinary and medical health professionals are updated monthly in an e-mail outlining relevant signals.



This structure for the control of zoonoses is based on the existing Dutch structure for the control of infectious diseases.

Source:  
 Ministry of Health, Welfare and Sport  
 Ministry of Agriculture, Nature and Food Quality (update 2018, by RIVM)

- *Signalling Forum Zoonoses (SOZ)*: Signalling and first assessment of (potentially) zoonotic infections
- *Response Team Zoonoses (RT-Z)*: response including upscaling. Full assessment of signal and advice on strategy to control spreading, possible interventions, diagnostics and treatment, communication.
- *Outbreak Management Team Zoonoses (OMT-Z)*: formed in case of an outbreak for which guidelines on outbreak control do not exist, or do not cover the specific outbreak situation. Experts assess the signal in depth and advise the AGCM-Z about the risk and appropriate control measures.
- *Administrative Governmental Coordination Meeting Zoonoses (AGCM-Z)*: administrative organisations involved in the control of the outbreak judge advised measurements of the OMT-Z on governmental feasibility and desirability. Conclusively, decision-making on control measures takes place at the governmental level.
- *Expert Panel Consultation Zoonoses (EPC-Z)*: an expert consultation can be organised in less urgent cases, which extensively inventorises existing evidence and knowledge gaps. Recommendations are made about control strategy as well as on research strategy in order to obtain the relevant knowledge for risk assessment and/or control measures.

CVO	Chief Veterinary Officer
FD	Faculty of Veterinary Medicine, Utrecht University
GD	GD Animal Health, Deventer
GGD	Municipal Public Health Service
LNV	Ministry of Agriculture, Nature and Food Quality
NVWA	Netherlands Food and Consumer Product Safety Authority
RIVM-Cib	RIVM Centre for Infectious Disease Control
VNG	Association of Dutch Municipalities
VWS	Ministry of Health Welfare and Sport
WBVR	Wageningen Bioveterinary Research

## Examples

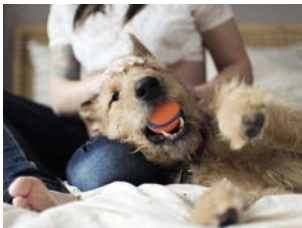
There are three categories of signals that meet the criteria for reporting a potential public health threat to the RIVM Centre for Infectious Disease Control. Once a threat has been reported, follow-up in the Zoonoses Structure may lead to various responses.

### **Outbreak of an endemic zoonosis that exceeds normal scope or severity**



*Q fever* was considered an endemic occupational zoonotic disease until a major outbreak occurred. SOZ aims to identify outbreaks of such an endemic zoonosis at an early stage by combining veterinary and human health information.

### **Outbreak of a zoonosis without sufficient options for treatment or prevention**



The first cases of *Brucella canis* were identified in dogs in 2016, all originating from countries in south-eastern Europe. Controlling **brucellosis** in dogs is also important to prevent human infection. The lack of previous cases in the Netherlands means that the legal framework for controlling the disease in dogs needs to be concretised.

### **Emerging zoonotic agent with an unknown impact on public health**



**Tick-borne encephalitis** is an inflammation of the brain caused by the TBE virus. Until recently, the virus only occurred abroad, but the virus was found in deer ticks in the Netherlands in the spring of 2016. There are several known cases of people having been infected by the virus in the Netherlands. Currently, the spread of the TBE virus and the risk of infection are being investigated.

## Members of the SOZ:

- GD Animal Health, Deventer
- Wageningen Bioveterinary Research, Lelystad
- Faculty of Veterinary Medicine, Utrecht University, Utrecht
- Netherlands Food and Consumer Product Safety Authority (NVWA), Utrecht
- Municipal Public Health Service (GGD)
- Dutch Wildlife Health Centre (DWHC), Utrecht
- National Institute of Public Health and the Environment (RIVM), Bilthoven



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Published by:

**National Institute for Public Health  
and the Environment, RIVM**

PO box 1  
3720 BA Bilthoven  
The Netherlands  
[www.rivm.nl/en](http://www.rivm.nl/en)

Februari 2019

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