



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

Outbreaks of (emerging) zoonoses in the Netherlands have occurred in the past. The avian influenza outbreak in 2003 caused conjunctivitis amongst cullers. In 2004, emergence of livestock-associated MRSA started in pigs, and in 2007, a large outbreak of Q fever among humans took place. A continuous effort of medical and veterinary professionals is required to control endemic zoonotic diseases, and at the same time be ready to signal and deal with emerging zoonoses. The aforementioned zoonotic outbreaks emphasized the need for a **systematic One Health approach of sharing and assessing signals of (emerging) zoonotic infections between veterinary and medical professionals**, particularly in a densely populated country such as the Netherlands with its intensive agriculture and farming.

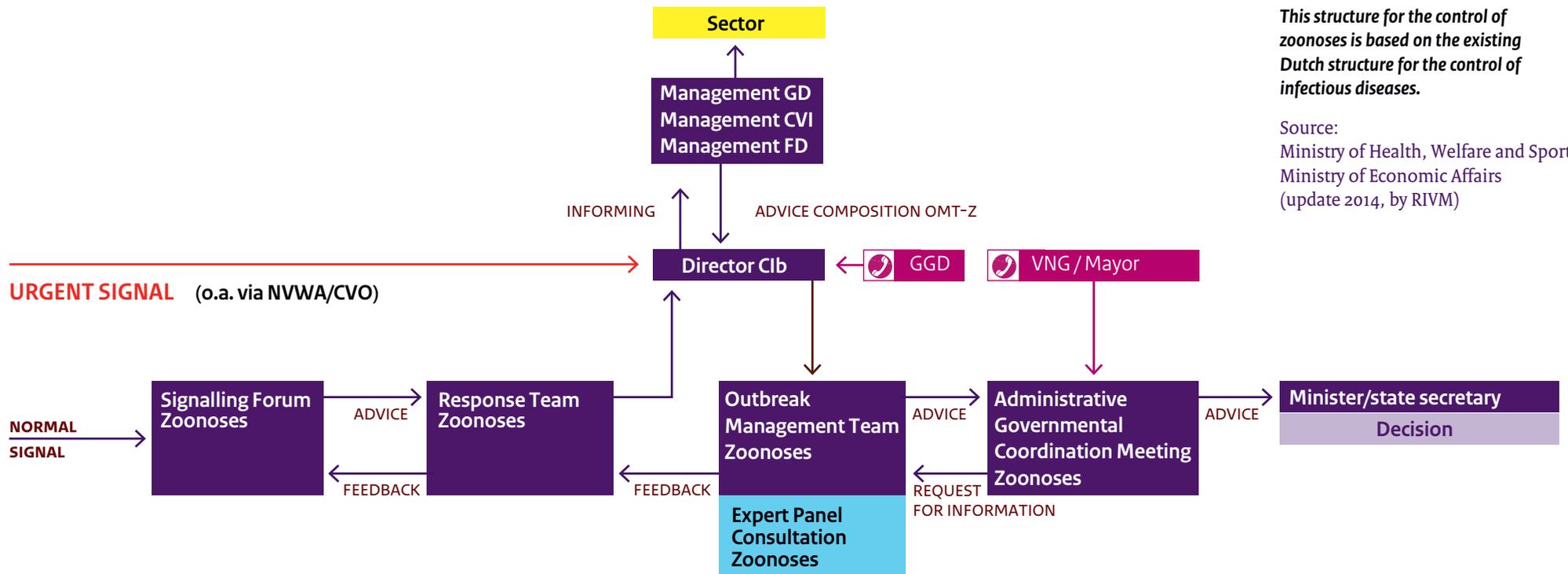
In 2011, a national **Zoonoses Structure**, an integrated human-veterinary risk analysis structure was formally installed by the Ministry of Health, Welfare and Sport, and the Ministry of Economic Affairs. An important platform in this structure is the **Signalling Forum Zoonoses (SOZ)** which conducts the first assessment of signals.

## Signalling Forum Zoonoses (SOZ)

The aim of the SOZ is to signal and assess (potentially) zoonotic infections in humans and animals. Collected signals are discussed and assessed in a monthly meeting with representatives from the human and veterinary health domains. In the event of a (potentially) urgent threat, ad hoc meetings are organized. If an assessment identifies a public health threat, the chair of the Response Team Zoonoses (see Figure) is informed, and, based on a risk assessment, subsequent steps within the zoonoses structure will be considered. In order to keep professionals of both the veterinary and medical field updated, a monthly review of relevant signals is sent to professionals via e-mail. Important signals will actively be forwarded to veterinary (vetinf@ct) and/or public health (inf@ct) professionals.

## The Zoonoses Structure: from signalling to decision-making

The SOZ is part of an **integrated human-veterinary risk analysis structure**. The aim of this zoonoses structure is to signal, assess and control (potentially) emerging zoonotic infections that may pose a risk to animal and/or human health in an integrated human-veterinary approach. The zoonoses structure consists of several steps (see Figure). What is important is that experts from both human and veterinary health are involved at each step.



**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 Economic Affairs  
(update 2014, 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 organizations 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.

Clb	Centre for Infectious Disease Control Netherlands of the RIVM
CVI	Central Veterinary Institute, Wageningen UR
CVO	Chief Veterinary Officer
FD	Faculty of Veterinary Medicine, Utrecht University
GD	Animal Health Service Deventer
GGD	Municipal Health Service
NVWA	Netherlands Food and Consumer Product Safety Authority
RIVM	The National Institute for Public Health and the Environment
VNG	Association of Dutch Municipalities

## Examples

Please find below three examples of signals that, after assessment in the SOZ, meet the criteria set for reporting to the chair of the RT-Z. After reporting, follow-up in the zoonoses structure can lead to different kind of actions.

### **Outbreak of an endemic zoonosis which exceeds normal size or gravity**



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

### **Outbreak of a zoonosis with a lack in options for treatment or prevention**



*Low pathogenic avian influenza can cause human disease. Outbreaks of LPAI with newly identified strains, such as LPAI HgN2, were reason to adjust the guidelines for human disease control. Now, monitoring of disease signs in people after various types of LPAI outbreaks is included in the guidelines.*

### **Emerging zoonotic agent of which the impact on public health is still unknown**



*The first presumed human case of indigenous tularemia in the Netherlands since 1953 occurred in 2011, and several appeared since. Infected hares have been found throughout the Netherlands. Direct contact with infected hares or, presumably, insect bites caused human infections. This signal led to the institution of a working group that is actively cooperating on risk assessment, surveillance and control measures of tularemia in the Netherlands.*

## Members of the SOZ:

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



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