



Plat4m-2Bt-psittacosis: an integrated human-veterinary approach

Hendrik-Jan Roest¹, Annelies Kroneman², Yvonne Pannekoek³, Edou Heddema⁴, Fimme van der Wal¹, Jeanet van der Goot¹, Teun Fabri⁵, Marloes Heijne¹, Sjeng Lumeij⁶, Thomas Hagens¹, Daan Notermans², Jeroen van de Bovenkamp⁷, Wim van der Hoek², Lenny Hogerwerf², Frederika Dijkstra², Annelies Nieuwenhuizen², Margreet te Wierik^{2,8}, Mauro de Rosa⁹, Daisy Vanrompay¹⁰, Joke van der Giessen^{1,2}

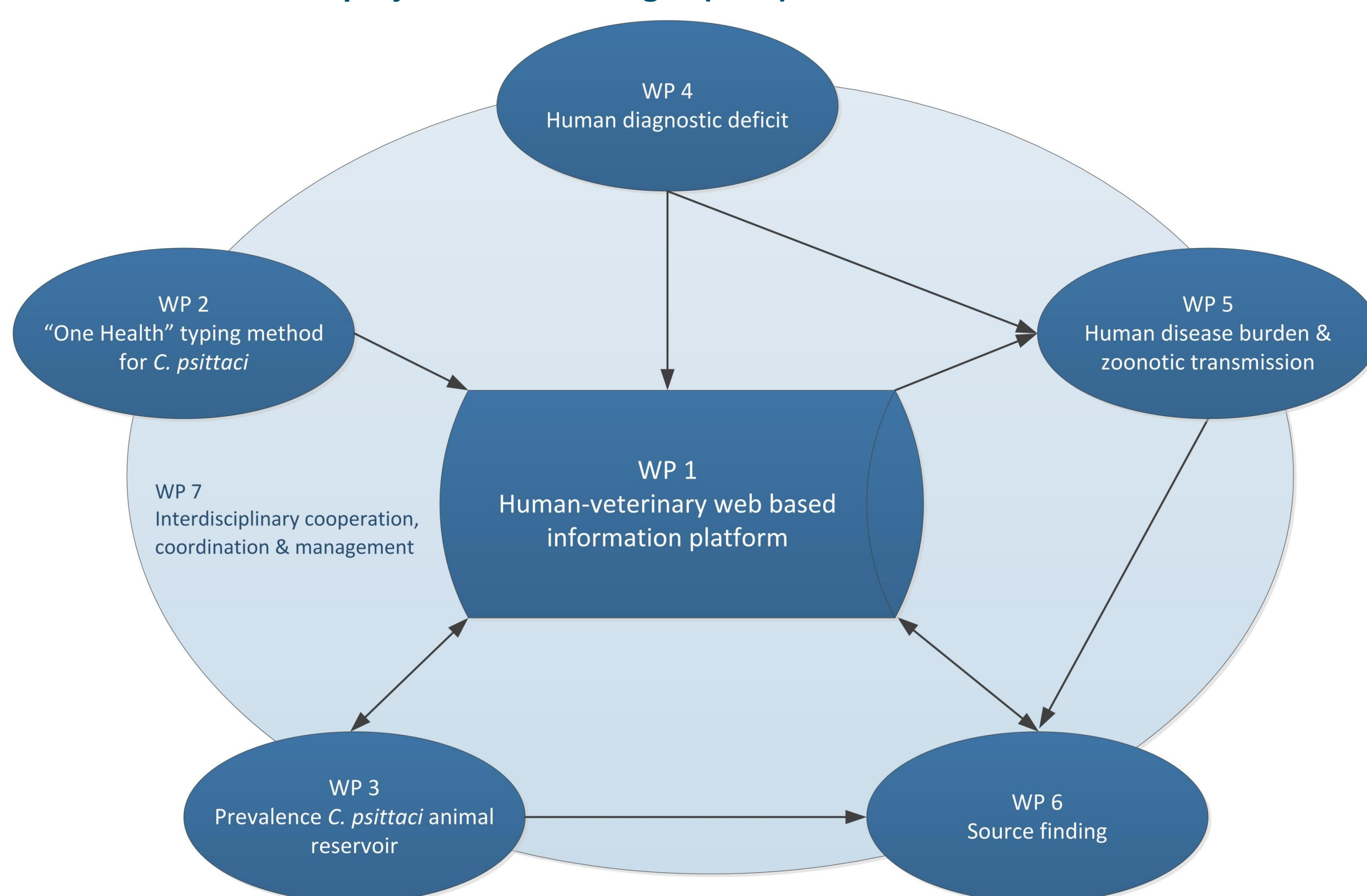
Background

A timely and coordinated response to zoonoses requires a systematic exchange of data between public and veterinary health. Source finding and assessment of transmission risks to humans both require a matching of pathogens of humans to their potential animal sources. Psittacosis, a notifiable disease for humans and animals, is most likely to be underreported in humans. In addition the relative contribution of different bird species to human disease is unknown and this is particularly important for Dutch poultry. This sector represents about 100 million birds and internationally high prevalences of *C. psittaci* are reported in the literature. Although many lessons have been learned from two recent zoonotic outbreaks in the Netherlands (Avian Influenza and Q fever), a platform to exchange laboratory results and additional data between the public and veterinary health domains is still lacking.

Aim

The overall aim of the project is to reduce the disease burden of psittacosis. In this multidisciplinary project, we will develop an integrated human-veterinary data exchange platform (Work package (WP) 1) that includes a 'one health' typing tool (WP2) for *Chlamydia psittaci* to use in the human and veterinary domains. We will determine the presence and prevalence of *C. psittaci* in animal populations, including poultry, pet birds and free-living birds (WP3). We will reduce the diagnostic deficit of psittacosis in humans by implementing a harmonised respiratory diagnostic PCR method in medical microbiological laboratories (MMLs) (WP4). Moreover, we will determine the disease burden in humans, map psittacosis incidence and genotypes in animals and humans, and identify the main animal reservoirs for zoonotic transmission (WP5). Finally, we will evaluate the utility of the web-based platform using reported human and animal cases and implement the platform for source finding by public and veterinary health professionals (WP6). WP7 is about coordination and implementing sustainable interdisciplinary cooperation. Knowledge transfer is key and therefore workshops are organised and the project website is publicly available. The relation between the different WPs is presented in the figure below.

Overview of the project Work Packages (WPs) and the relation between the WPs



Conclusions

Interdisciplinary cooperation between local and national infectious disease experts will be realised through molecular biologists, diagnosticians and infectious disease control professionals from the domains of public and veterinary health working together in this project. Successful implementation of the *platform to beat psittacosis* will provide a proof of principle to control other notifiable and emerging zoonoses in the future.



Methods

A 'one health' web-based framework that facilitates the exchange of epidemiological, clinical and molecular data from both human and animal cases of psittacosis will be constructed, evaluated and implemented to improve source finding by infectious disease control professionals. Moreover in depth knowledge about human and veterinary psittacosis will be gathered. The project will run for 4 years (October 2014- September 2018).



The project participants at the start up meeting in October 2014

For additional information visit:

<http://www.wageningenur.nl/nl/show/Plat4m2BtPsittacose.htm>

Partners and affiliations



Acknowledgements

This project is granted by ZonMw, the Netherlands organisation for Health Research and Development under number 522001002