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Letter to the Editor

Adverse health events after natural disasters and the 'One Health' approach: Animals as vectors for human disease

Highlights

- There is a need for multisector collaboration for the control of zoonosis.
- Such risks should be managed at the human-animal-environment interface.
- 'One Health' defines interaction between human and animal medicine.
- 'One Health' has a role in policy making and resource distribution.
- The 'One Health' concept has yet to be fully implemented.

Under the theme of zoonosis, whist reviewing some of your articles on the matter including Ali et al. [1], we discuss the 'One Health' concept.

The interactions between human and animal health have been evidenced for thousands of years but only recently the idea of bringing them together has started to gather momentum, with endorsement from both medical and veterinary organisations. This letter highlights the need for multisector collaboration for the control of zoonosis i.e. the 'One Health' (OH) approach.

The recent natural disaster in Indonesia is a prominent example of integrated human health and vector-borne transmission. As part of relief and rescue operations, Indonesian authorities were commissioning helicopters to effected areas with the purpose of dropping disinfectant to combat disease spread via animal vectors [2], including Malaria and Dengue fever.

This illustrates the need to manage public health risks at the human-animal-environment interface.

The idea of an integrated approach to human and animal health has ancient origins. In 1900 BC, ancient Egyptians were thought to have had awareness of vector-borne disease through their use of mosquito netting [3].

OH is interaction between human and animal medicine, encouraging healthcare workers and policy makers co-operating for the benefit of domestic, wild animal and human health within the global environment [4].

Collaboration between the British Medical Association and the British Veterinary Association, with similar ventures between their American counterparts, have paved the way for the World Health Organisation (WHO) and its international partners, including the World Organisation for Animal Health (OIE), to publish targets for a joint approach to managing zoonoses [5]:

1. Developing cross-platform alliance on the human-animal-environment interface at relevant regional, national and international levels.
2. Developing capacity and promoting the creation of tools and mechanisms for zoonoses management and aiding their implementation across the globe.
3. Supporting strategies, policies and developing programmes for prevention, risk reduction and outbreak management.

The measures by the Indonesia government, see above, are an example of a strategy to prevent the spread of infection exemplifying a need to identify risks to potential survivors, livestock and crops within the area to determine the best way to anticipate and combat vector-borne disease spread.

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As planet urbanisation continues, the separating lines between human and animal life habitats continue to diminish. There needs to be more recognition of the consequences of this on human and animal health at the human-animal-environment interface. There is a recognised and increasing role for professional groups including infectious disease, pathology, human and animal health experts to investigate such issues.

Such a body of representatives, formed from international collaborative partnerships, should be significantly involved in policy making and resource distribution centres to be effective in their role.

The Food and Agriculture Organization of the United Nations, the WHO and the OIE have agreed, in May of this year, to sign a memorandum of understanding (MoU) strengthening their relationship, focussing on:

> *"Improving inter-agency collaboration in foresight analysis, risk assessment, preparedness building and joint responses to emerging, remerging and neglected infectious diseases at the animal-human-ecosystems interface* [5]"

The 'One Health' concept has yet to be fully implemented in practice although practical examples such as the MoU are a step in the right direction.

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References

[1] Ali S, Khan AW, Taylor-Robinson AW, Adnan M, Malik S, Gul S. The unprecedented magnitude of the 2017 dengue outbreak in Sri Lanka provides lessons for future mosquito-borne infection control and prevention. Inf Dis Health 2018;23(2):114—20.
[2] Helicopters drop disinfectant on quake-ravaged indonesia to prevent disease - national | globalnews.ca. 2018. https://globalnews.ca/news/4566967/disinfectant-indonesia-disease/. [Accessed 20 October 2018].
[3] Kitchen LW, Lawrence KL, Coleman RE. The role of the United States military in the development of vector control products, including insect repellents, insecticides, and bed nets. J Vector Ecol 2009;34(1):50—61. https://doi.org/10.1111/j.1948-7134.2009.00007.x. https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1948-7134.2009.00007.x. [Accessed 20 October 2018].
[4] WHO. One health. 2017. https://www.who.int/features/qa/one-health/en/. [Accessed 20 October 2018].
[5] WHO. International partnership to address human-animal-environment health risks gets a boost. 2018. https://www.who.int/zoonoses/Tripartite-partnership/en/. [Accessed 20 October 2018].

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