

The ongoing crises in China illustrate that the assessment of epidemics in isolation is no longer sufficient

The need to understand the current public health emergency due to COVID-19 and its context is well noted in Novel coronavirus 2019 (3 February). However, the interplay of simultaneous COVID-19, African swine fever, and avian influenza emergencies on global health and industries is constantly evolving and difficult to predict, and therefore warrants further scrutiny.

Despite the unprecedented efforts to limit the current spread of COVID-19 by national governments and international stakeholders, the situation remains uncertain and critical, calling for a long-term cooperative effort on a global scale.

The COVID-19 outbreak in China was preceded by an animal health emergency and economic crisis caused by African swine fever. African swine fever is responsible for estimated losses of 55% of China's pigs, which is equivalent to 25% of the world's pigs by the close of 2019 (Rabobank, 2019; van der Zee, Bibi, & agencies, 2019), creating an impact on China's swine industry that reverberates through the world's swine industries by extension (Levitt, 2020; Ma, 2019).

To add a further dimension to an already complex global health situation, endemic avian influenza has recently resurged in China, including zoonotic H5N1 and H7N9 serotypes (Mendell & Cheng, 2020; OIE; Perrett, 2020). While the current public health impact due to zoonotic avian influenza is not comparable with that due to COVID-19, the impact on the agriculture industry is considerable, as China is again one of the world's largest poultry producers. Continuous presence of the virus in the wild bird population poses a constant threat of spillover into not only China's poultry industry but also into poultry industries globally.

While the economic impact due to the restrictions on trade and human and animal movements caused by these emergencies is evident, there are other aspects to this triad worth noting. As a consequence of the African swine fever epidemic, pig producers in China are shifting to the production of alternative proteins, namely poultry (Buholzer, De Nardi, Schuppers, & Sperling, 2020). If biosecurity measures are not adapted accordingly, producers are at increased risk of avian influenza circulation, especially in backyard farms that are more vulnerable to disease incursion and more difficult for authorities to reach. An enzootic disease could be exchanged for a zoonotic disease with pandemic potential, with higher capability to spread faster globally and that is harder to control (Buholzer et al., 2020).

The human quarantine due to the COVID-19 epidemic could thwart current efforts to control African swine fever, avian influenza

and other animal diseases where regular interactions with farmers and the enhancement of biosecurity measures are fundamental. Furthermore, closure of businesses means reduced trade in live animals and animal products (Porcino, 2020), exacerbating the challenge of meeting China's pork deficit under already difficult circumstances (Rabobank, 2019).

The upside is that restricted movement of pigs and pork products throughout China might slow the spread of African swine fever. Although some provinces in Viet Nam and China have had no new cases over several weeks (FAO EMPRES, 2020), only time will tell how the control of African swine fever in the region will fare in the face of COVID-19.

Although avian influenza is endemic in Asia, it is currently spreading widely into Europe. Outbreaks of H5N1 and H5N8 avian influenza viruses have been reported in the central eastern part of Europe since the beginning of January (ECDC, 2020). One emerging risk factor for the spread of virus is climate change, which could alter not only bird migration, but also influence the avian influenza virus transmission cycle through the prolonged persistence of the virus in the environment (Gilbert, Slingenbergh, & Xiao, 2008; Zhang et al., 2014).

The extent to which people and animals are interconnected in today's globalized world implies that the assessment of emergency outbreaks in isolation is no longer sufficient. The diversion of attention, efforts and resources to control one emergency may result in the recrudescence of other diseases, especially in regions with limited resources. Further investigation into the impacts of co-existing transboundary diseases on the global health of people, animals and economy in a transdisciplinary approach is needed. Only then can the implications of this dynamic problem be understood and viable solutions be found.

Dialogue and coordination across the sectors are crucial in order to assist all relevant stakeholders in navigating this dynamic global disease landscape. The need for a health network of global scope for the rapid and open exchange of information has been identified (Bremner, Langreth, & Paton, 2020; CIRAD, 2020) but needs to be strengthened in order to address ongoing and future epidemics under competing resources. This One Health approach has the potential to not only save human and animal lives, but also to safeguard the global economy.

KEYWORDS





African swine fever, avian influenza, coronavirus, COVID-19, economics, One Health, trade, zoonosis

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

ETHICAL APPROVAL

The authors confirm that the ethical policies of the journal, as noted on the journal's author guidelines page, have been adhered to. No ethical approval was required as this is a review article with no original research data.

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