The implications of the wildlife trade on the movement of avian influenza and other infectious diseases

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The global trade in wildlife provides disease transmission mechanisms that not only cause human disease outbreaks but also threaten livestock, international trade, rural livelihoods, native wildlife populations, and the health of ecosystems.

Wild birds in the pet or exotic bird trade have been documented and/or have the potential to carry with them parasites, bacteria and viruses which could may or may not be pathogenic in their normal host but pose increasing threats when introduced to new geographic locations and new host species. Highly pathogenic strains of both avian influenza and VV Newcastle's Disease have been found in internationally traded non-domestic birds, as well as more common pathogens such as Chlamydia, Salmonella spp., pox and herpes viruses, and mycobacteria.

The global movement of animals for the pet trade is estimated at some 350 million live animals, worth approximately USD 20 billion per year. Approximately one quarter of this trade is thought to be illegal, hence not inspected or tested. Outbreaks resulting from wildlife trade have caused hundreds of billions of dollars of economic damage globally.

Rather than attempting to eradicate pathogens or the wild species that may harbour them, a practical approach would include decreasing the contact rate among species, including humans, at the interface created by the wildlife trade. Since wildlife marketing functions as a system of scale-free networks with major hubs, these points provide control opportunities to maximize the effects of regulatory efforts. Focusing efforts at markets to regulate, reduce, or in some cases, eliminate the trade in wildlife could provide a cost-effective approach to decrease the risks for disease for humans, domestic animals, wildlife, and ecosystems.

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