

Species Gap: Are we better prepared for zoonotic threat than we were in 1999? Have the lessons of the West Nile virus been learned?

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The goal of biosurveillance for zoonotic threats is to push the epidemiologic curve to the far left and detect impending disease outbreaks in animals before they spill over into the human population. However, this assumes that all species are under surveillance and that the information is available to public health and national security officials. That is not the case. In both the USA and abroad, governments continue to ignore non-agricultural species that have historically provided early warning of impending human health crises (West Nile virus, plague, tularemia, monkeypox, H3N2 influenza). The majority of funding goes to the public health sector, then to agricultural agencies with little to none on wildlife. This continues in spite of the fact that the majority of recent emerging infectious diseases have originated in wildlife. Dogs, cats, zoo animals, and other urban animal sentinels also continue to be ignored. This is sheer folly.

The truth is that we have no way of knowing who or what might serve as sentinels from the next pandemic threat. In 1999, warning of the West Nile virus came from wild crows and zoo flamingos. A few years later, pet prairie dogs and Giant Gambian rats showed signs of monkeypox well in advance of an extensive human outbreak but went undetected due to an entrenched species bias that focuses solely on humans and agricultural species. We must adopt a species neutral approach to biosurveillance. Until this becomes a reality, we will continue to use people as the “index case” for pandemic threats.

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