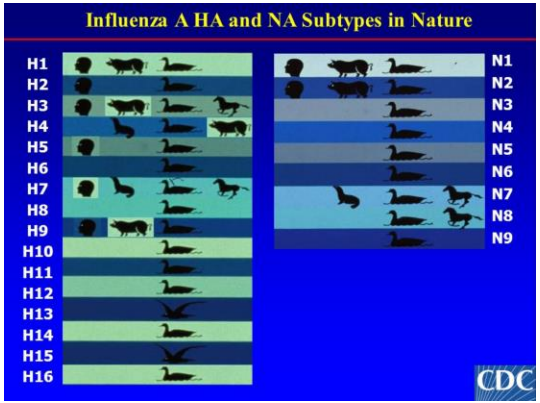
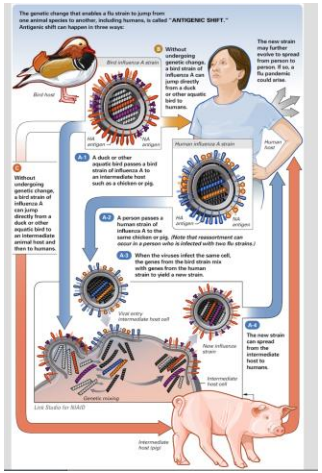
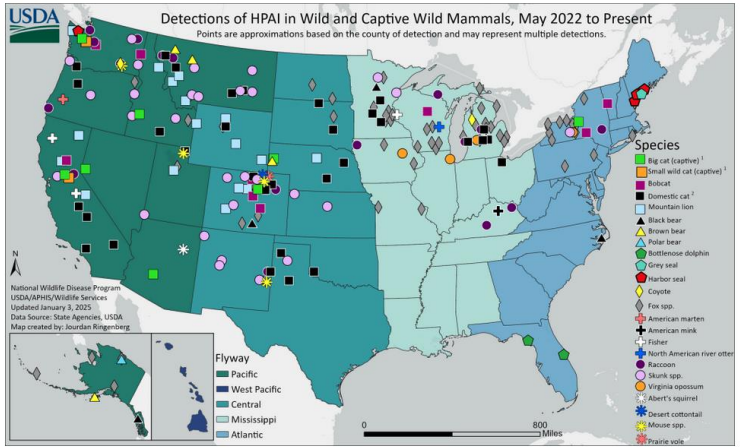
Influenza viruses-"bird flu"

- Origin-waterbirds (ducks and geese)
- Influenza's in general have always spilled over into many other species including us….(many different H and N combos infect many different species)





And…the new variety….**H5N1** (also known as HPAI) has also been found in many different wild birds as well as a bunch of wild mammals since it got to this country (see below)

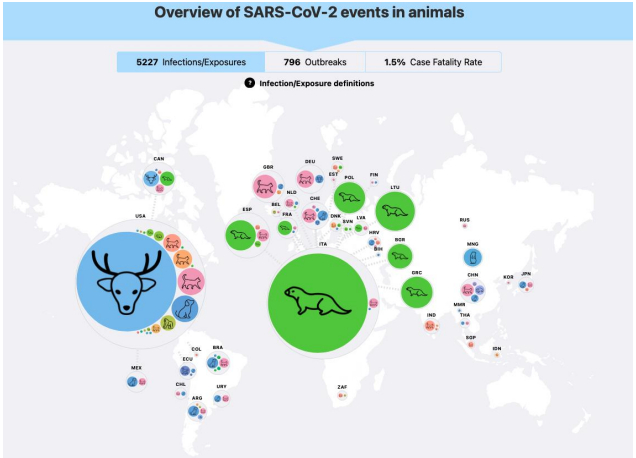


And cows all over the country, and some pigs. And some people (mostly in the form of eye infections). 1 death.

Coronaviruses

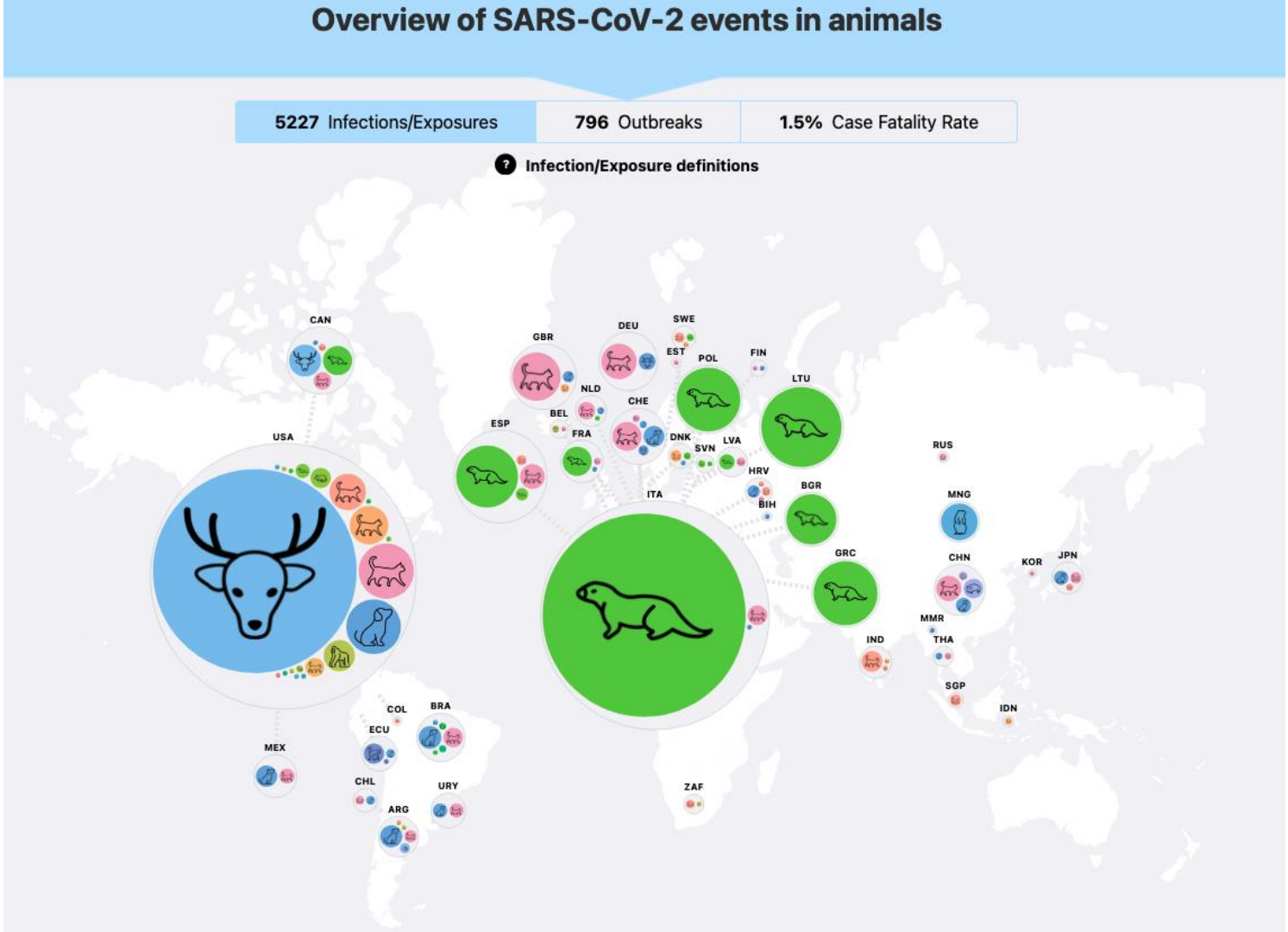
- Origin-bats (like Nipah)
- Just as the influenza viruses spill over into many other species including us, the coronaviruses have spilled over into many other species including us in the past….
- Note that it is adapted to mammals not birds

And…the most recent pandemic (caused by SARS CoV2) was human focused-transmitted human to human after originating in a raccoon dog that may have picked it up from one species of bat.



But we spread it into wildlife populations! And we spread it into domesticated species as well (cats, dogs, ferrets, hamsters)

https://vis.csh.ac.at/sars-ani/#infections



FYI where did the current outbreak come from??

Extensive epidemiological evidence supports wildlife trade at the Huanan market as the most likely conduit for the COVID-19 pandemic's origin.

Although the species identity of an intermediate host between the likely Rhinolophus spp. (horseshoe bat) reservoir of SARS-CoV-2-like coronaviruses and humans remains unknown, *our analysis informs this open question by determining the mammalian species present in the market with species and subspecies resolution. These results show that multiple plausible intermediate hosts of SARS-CoV-2 were present at the exact site within Wuhan to which COVID-19 was first epidemiologically linked. It is not possible to conclude which of these species may have been infected and/or introduced the virus to the market from these data alone. Nonetheless, our analysis provides a short and actionable list of species with genotypic details. Of the wildlife species detected in SARS-CoV-2-positive environmental samples, four have previously been implicated in bat coronavirus cross-species transmission through the animal trade: raccoon dogs, masked palm civets, hoary bamboo rats, and Malayan porcupines. 31,36*
Among the potential intermediate hosts present in the Huanan market, raccoon dogs are known to be susceptible to SARS-CoV-2, to shed high titers of virus, and to be able to transmit.52 The common raccoon dog was the most abundantly detected animal species in market wildlife stalls sampled on January 12th and in the wildlife stall with the most SARS-CoV-2-positive samples (Figure 3A; Table S2)

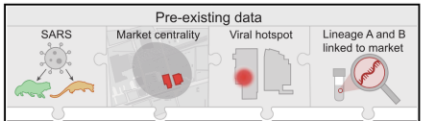
Cell *187*, 5468–5482, September 19, 2024

Cell

Article

Genetic tracing of market wildlife and viruses at the epicenter of the COVID-19 pandemic

Graphical abstract



Authors

Alexander Crits-Christoph, Joshua I. Levy, Jonathan E. Pekar, ..., Kristian G. Andersen, Michael Worobey, Florence Débarre

Correspondence