Ebola in Gorillas – How Vaccinations may Reduce Mortality Rates

About Gorillas:
• Native to Sub-Saharan Africa
• Critically Endangered
• Shares 98% of their DNA with humans
• Herbivores – eat fruit, shoots, roots, and tree bark
• Sleep in nests they build on the ground or in trees
• 40% of gorilla infants die within the first 3 years of life
• It is estimated that female gorillas give birth once every 5 years
• They are a keystone species - transport large seeds and pollen throughout the forest, enhancing overall biodiversity

What is Ebola?
• The Ebola virus is a highly infectious and often fatal disease
• Symptoms include fever, internal bleeding, headache, muscle pain, weakness, fatigue, vomiting, diarrhoea, abdominal pain, & seizures
• First discovered in 1976 at the Ebola River in the Democratic Republic of Congo

Ebola in Gorillas
• 1/3 of gorilla populations have been killed by the virus since the 1990's
• Can have as many as 5,000 casualties in a single outbreak
• 95% mortality rate whereas humans have a 50% mortality rate
• Quick transmission via bodily fluids as gorillas are highly social animals – can also be transferred through shared food sources, or from other animals
• Corpses remain infected for days
• Gorilla carcasses have been found to have multiple strains of Ebola within their system
• At risk of human transfer through poaching, bush meat, tourism, illegal wildlife trade, & deforestation
• If gorillas are protected, then humans will be too

Previous Ebola Vaccination Trials
• Immunization was given to 10 chimpanzee test subjects with 100% effectiveness and no negative health complications
• Trial was stopped early when a ban on use of chimpanzees in biomedical research began
• As chimpanzees and gorillas are so closely related, it is assumed that if the vaccine works on chimpanzees, then it would also work on gorillas

Rabies Vaccine:
Rabies was eradicated throughout western and central Europe through vaccinated bait traps for foxes

How the vaccine works:
• Insert a protein from the Ebola virus into an already existing rabies vaccine
• Put the vaccine into gorilla’s food source

Potential Problems:
• Keeping the vaccination cool in the tropical heat – will deteriorate
• The need for booster shots – the vaccine only lasts for 3 months
• Gorillas are notoriously picky eaters – may not take the bait
• Ensuring all gorillas within a group get the vaccination

Why do it?
Vaccinating gorillas against Ebola won’t only protect them, but may also protect humans from another epidemic

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