

TABLE OF CONTENTS

Animal Welfare in a Pandemic What Does COVID-19 Tell us for the Future?

The Coronavirus Disease 2019 (COVID-19) Pandemic.

Introduction.

COVID-19 pandemic and the virus that caused it.

The origin of the SARS-CoV-2.

Effects SARS-CoV-2 on the human population.

Why it is important to incorporate animals into discussion; One Health One Welfare One Medicine.

Conclusions.

Can the Susceptibility of Animals to SARS-CoV-2 be Predicted?

Introduction.

A quick crash-course in molecular biology.

Can molecular biology help? Which animals are predicted to be infected? What data is missing?

How can analysis using *in silico* techniques be improved to aid in future prediction?

Conclusions.

Animals Which Were Infected in the Real World.

Introduction.

Which animals were infected.

What was not known.

How risk, uncertainty and ambiguity were handled.

How can transmission of the virus in animals be better tracked and real time evidence made publicly and globally available?

Non mammals and COVID-19.

Conclusions.

Animal Vaccines.

Introduction.

Vaccines developed in animals.

Should animals be vaccinated when human populations are not?

Use of laboratory animal models.

Vaccines of the future, will this transform their use in animals?

Conclusions.

Animal Conservation and the Pandemic.

Introduction.

The impact of the pandemic on animal conservation and zoos, wildlife parks and aquaria.

The impact on animals in the wild.

Conclusions.

The Indirect Effects of COVID-19 on Animals.

Introduction.

Human perception of animals as transmitters.

Euthanasia/culling programmes which took place around the world.

Animal behaviour, moving into populated areas (analogies to Chernobyl exclusion zone).

PPE being abandoned and the issues it causes.

Massive use of cleaning/disinfectant materials, etc. and impact on the environments.

The effect on companion animals, including dogs, cats and rodents.

Conclusions.

Animals, Pandemics and the Future.

Introduction.

Long-COVID – what we know: a concern for animals?

What can be learnt from COVID-19 for the next epidemic/pandemic?

Sources of future viruses and their transmission, the role of animals.

How to mitigate effects on conservation and use of PPE.

Ethic considerations when contemplating SARS-CoV-2 and animals.

One World/One Health/One Medicine.

Plants and ecosystems.

Conclusions.

Final thoughts.