

IN ASSOCIATION WITH

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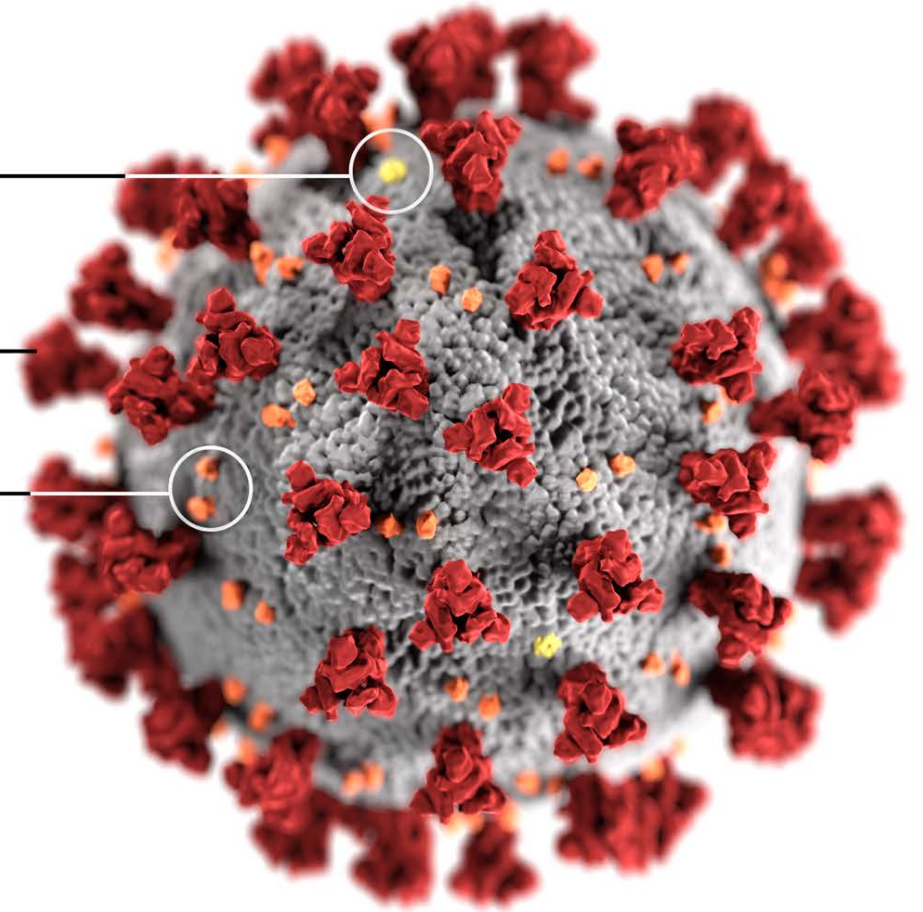
National Institute for Communicable Diseases

Division of National Health Laboratory Services

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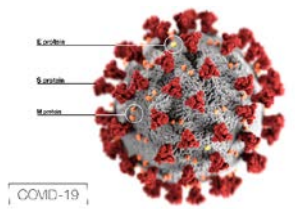
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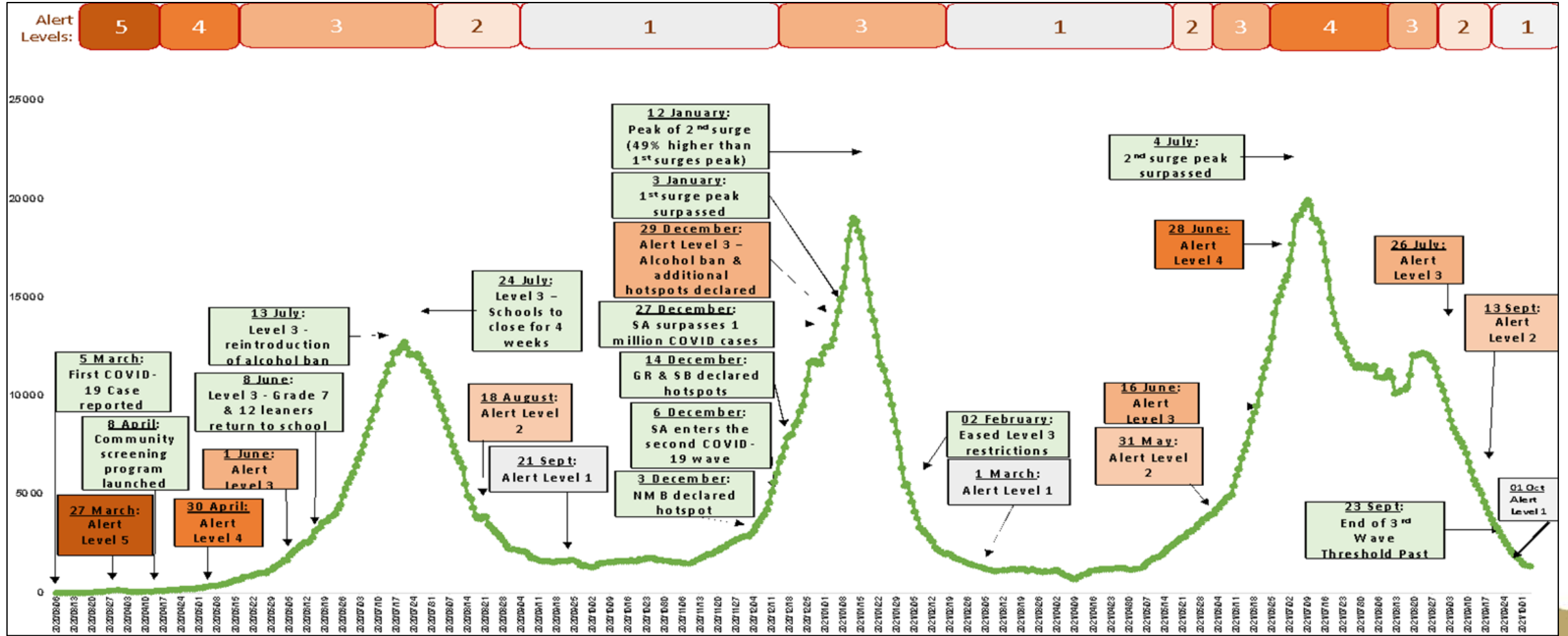
COVID-19

Image courtesy of CDC

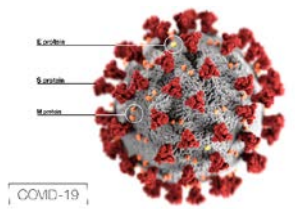
One Health Approaches to COVID-19 in South Africa



COVID-19 in South Africa: Overview of Case Trend with Events

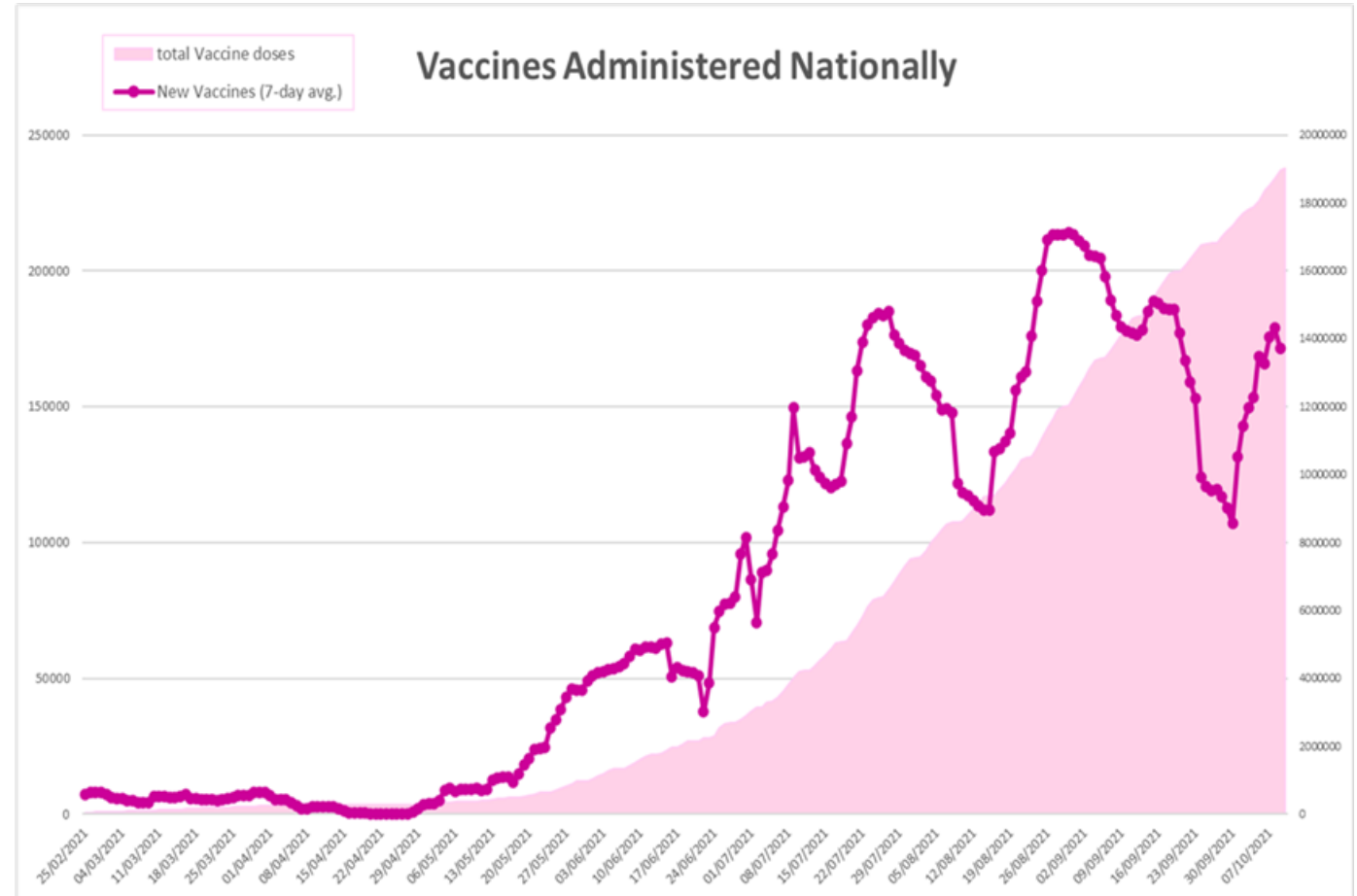


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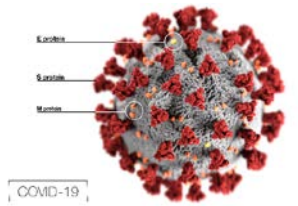


COVID-19 Trends: Vaccination Trends as at 11 October 2021

- As of the 11th October 2021, **25,3% (10 059 118)** of the total adult population 18 years and older have been fully vaccinated (received one dose of J&J or 2 doses of Pfizer).
- Western Cape** has the highest proportion of the adult population (18 years and older) fully vaccinated at **29,7%**; followed by **Limpopo** at 29,5%; **Eastern Cape** at 29,4%; and **Free State** at 29,1%.
- Mpumalanga** has the lowest proportion of the adult population fully vaccinated at 21,0%; followed by **Gauteng** at 21,4% and **Kwazulu-Natal** at 22,8%.



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Circulating variants

- Delta continues to dominate in all provinces from specimens collected in September 2021
- Overall number of lineages detected has decreased following Delta dominance
- Mutated C.1.2 lineage has now been detected in all provinces of South Africa
- The frequency of C.1.2 at less than 4% of genomes from May through early September
- Lambda and Mu variants not detected yet in South Africa

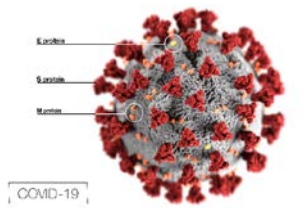


Testing

- At the onset of the outbreak the National Department of Health was short of testing capacity and requested the ARC-OVI (Veterinary institute) to assist with testing of human SARS-CoV-2 as part of a service level agreement with the National Health Laboratory Services (NHLS).
- The test method used by the laboratory for testing of samples is a commercial assay, the Allplex™ 2019-nCoV Assay that detects the three SARS-CoV-2 targets as well as a kit specific internal control.
- The experience gained from testing human samples capacitated the ARC-OVI as they were requested to test animal samples with known contact to positive human cases.



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The One Health Approach in SA

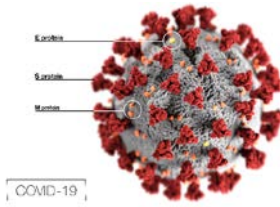
- The complexity of interactions along the interface requires strong & consistent collaboration among the sectors responsible for human health, animal health, & the environment.

One Health Forum

- Recognizing this fact, the Department of Health in South Africa facilitated the establishment of the One Health Forum in 2015, which include members from the ARC-OVR, NICD, DALRRD, DEFF, Universities and all provinces.
- The goal of the One Health Forum is to strengthen collaboration and coordination between public health, animal health and environmental sectors for prevention and control of zoonotic diseases, as well as to meet the IHR obligations.
- Steering Committee comprising of key members from the One Health Forum & serves to guide the activities of the Forum.
- Co-chaired by the **NICD** and the **Onderstepoort Veterinary Institute**; the **National Department of Health** serves as Secretariat.
- SA will soon finalize One Health Framework to guide the activities of stakeholders involved in One Health with shared responsibilities and benefits.

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Global expert view one role of animals in COVID-19 transmission and epidemiology



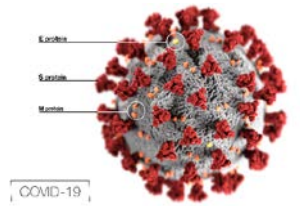
- Even though ferrets, hamsters, non-human primates, minks, deers, tree shrews, raccoon dogs, fruit bats, and rabbits have all been shown to be susceptible to SARS-CoV-2 infection through extensive studies only a very few species notably minks and deer have been significantly affected in their natural environment
- Others infected in a zoo setting are lions, tigers and the Asian small-clawed otter.
- Domestic animals (cats, dogs) can be but are not normally infected. Any such infections have been in cases where their human owners have been infected and passed on the infection
- There have been two occurrences of SARS-CoV-2 human-to-animal transmission events that have occurred in South Africa both in zoo animals ; 3 lions and 1 puma
 - ❖ The first case was in June 2021 when first, a 14-year-old lion tested positive followed by the other two
 - ❖ The second case was in August 2020 where a five-year-old female puma tested positive

In both instances the companion animal and the animal in the surrounding camps tested negative for SARS-CoV-2 potentially ruling out animal to animal transmission.

Research areas

1. Development of Novel Plant-Derived Preventative and Therapeutic Medicines for Covid-19 in South Africa
2. Medicinal Plant-based therapeutics
3. Impacts of COVID-19 on smallholder agricultural systems and food security
4. Active cross-sectional and longitudinal surveillance of SARS-CoV-2 in wildlife at the human-wildlife interface and the pathogenesis of SARS-CoV-2 in animal models

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Research Areas and Conclusion

Research areas

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Conclusion

Although several animal species have been infected with SARS-CoV-2 these infections are not a driver of the COVID-19 pandemic; the pandemic is driven by human to human transmission and not animals.

References:

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2. Zhu N, Zhang D, Wang W, Li X, Yang B, Song J, et al. A novel coronavirus from patients with pneumonia in China, 2019. N Engl J Med. 2020;382(8): 727–33. <https://doi.org/10.1056/nejmoa2001017>.
3. OIE World Organisation for Animal Health. <https://www.oie.int/en/scientificexpertise/specific-information-and-recommendations/questions-and-answers-on-2019novel-coronavirus/events-in-animals/>.

