



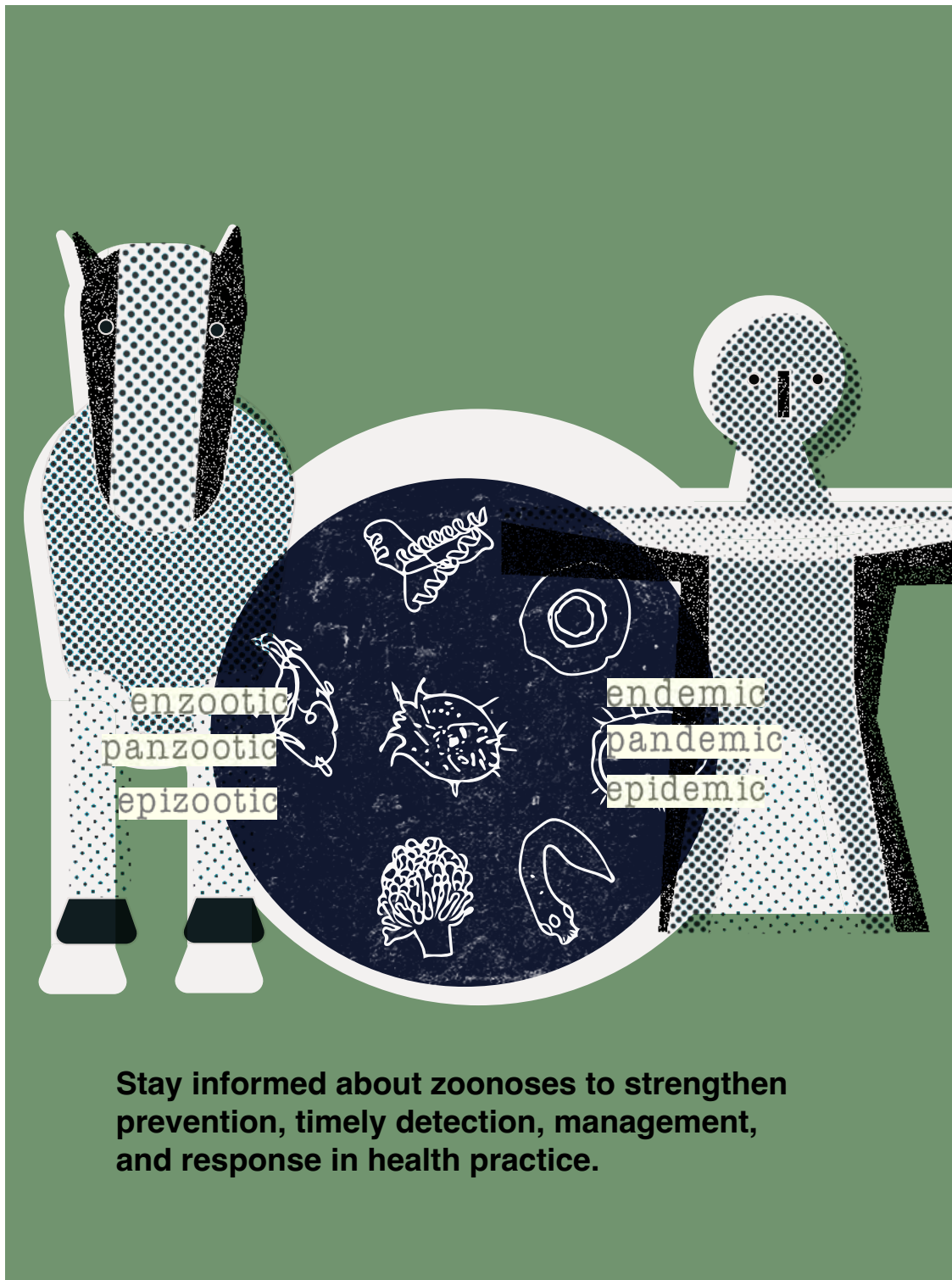
Zoonoses

Zoonotic Infectious Diseases (ZIDs)

Diseases that spread between animals and humans, with causal agents being pathogenic microorganisms such as viruses, bacteria, fungi, or parasites.

Zoonoses Health Impacts

Zoonotic spillovers, the transmission of a pathogen from one species to another, are driven by complex interactions among hosts, microorganisms, and the environment.^{42 43}



Stay informed about zoonoses to strengthen prevention, timely detection, management, and response in health practice.

The frequency of spillovers of zoonotic diseases is increasing and not expected to decline, in part due to unsustainable human activities, projected growth in human and animal populations, environmental changes, and ongoing biodiversity loss.^{44 45}

Once a pathogen crosses the species barrier between animals and humans, infection can result in isolated cases that go no further (dead-end host) or in spread among hosts, such as humans through human-to-human transmission or via a vector, sometimes resulting in spread to other animals or back to the original hosts. For the latter to occur, social, biological, and environmental conditions must be favourable both within the host and across the wider population.⁴⁶

Zoonoses Emergence and Re-emergence

The emergence of zoonoses tends to follow a phased pattern: after a pathogen spills over from a reservoir to a new host, such as humans, it may cause small-scale outbreaks before eventually adapting to enable sustained host-to-host (ex., human-to-human) transmission.⁴⁷

Emerging and/or re-emerging zoonoses are those identified as occurring in new geographic areas, or new populations, increasing in incidence, diseases that may be reappearing after a long period of time without events, exhibiting novel genetic characteristics, or infecting humans or a new animal species for the first time.⁴⁸

The amplification of an outbreak can lead to an epidemic or pandemic. A rising incidence of disease is often a key indicator for early recognition.⁴⁹

Health Outcomes

For an infectious disease to continue to spread among a new host population, such as humans, certain conditions must be in place: the pathogen must possess sufficient infectivity to enable transmission, sufficient virulence for increases in disease incidence to be detectable, and the host population must have sufficient susceptibility to allow ongoing transmission and amplification of the organism.⁵⁰

The extent and severity of an epidemic are determined by complex interactions between the infectious agent, the host, and the environment.⁵¹

Pandemics arise when pathogens, including zoonoses, become established in humans and spread internationally, across multiple countries and continents, often affecting a large number of people.⁵²

In some cases, zoonoses transition into an endemic state, where they persist within human and/or animal populations and pose a continuous risk of future epidemic resurgence.⁵³