

ONE HEALTH APPROACHES FOR IPC ACROSS HUMAN, ANIMAL AND ECOSYSTEM SECTORS

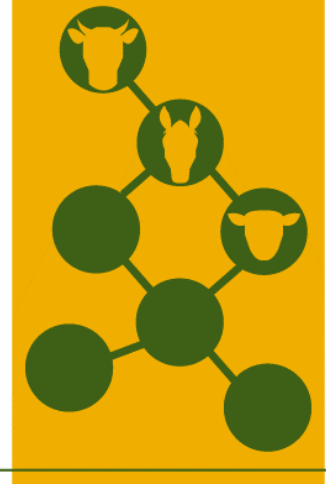
Dr Andrea Britton

One Health Consultant & One Health SIG Convenor

Public Health Association of Australia



Public Health Association
AUSTRALIA



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ULTIMATE EFFICACY CONSULTING PTY LTD

What is One Health?

Integrated, unifying approach to balance and optimize health and wellbeing across sectors

Recognises that the health of humans, animals, plants and shared environment are interdependent

Mobilises multiple sectors, disciplines and communities

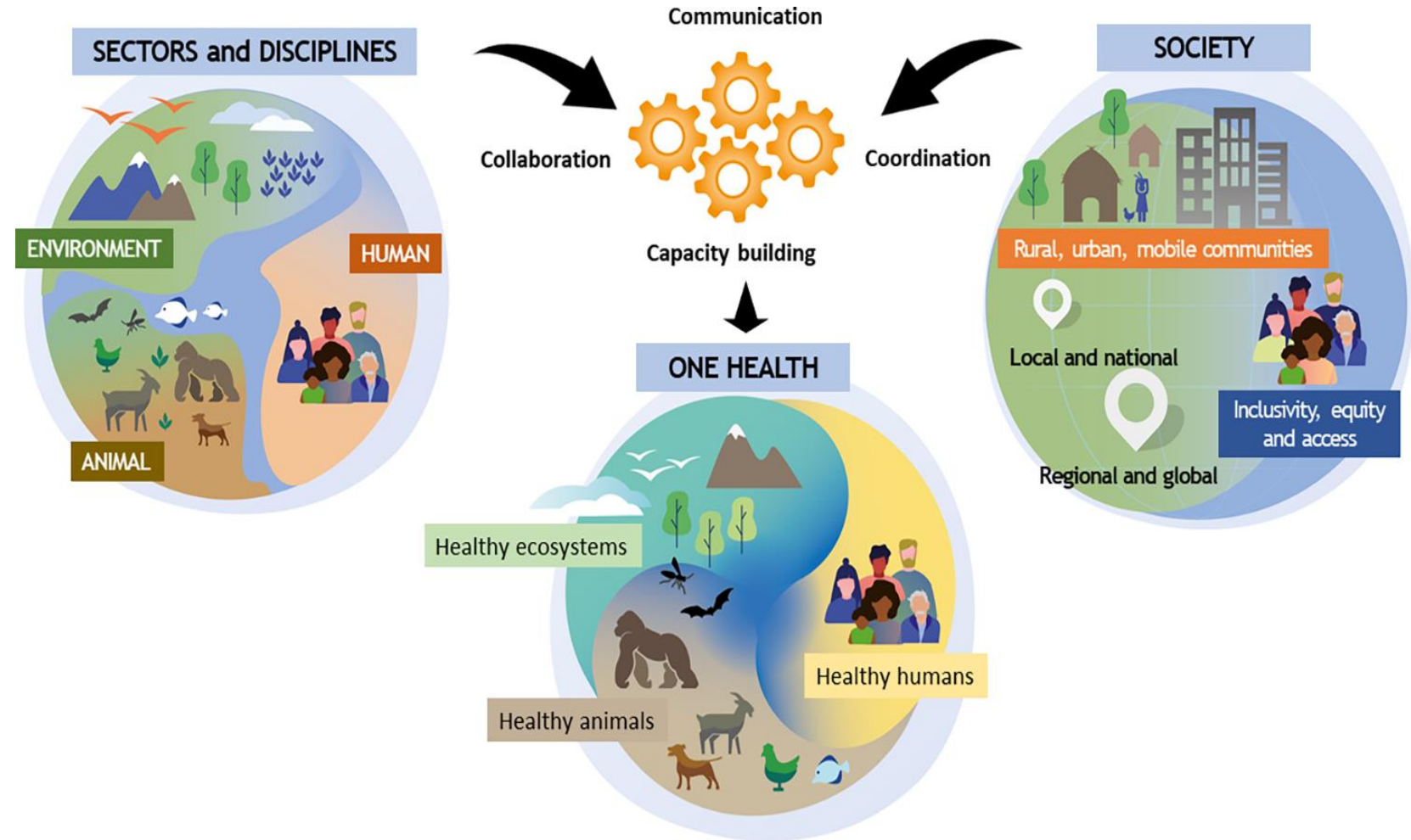
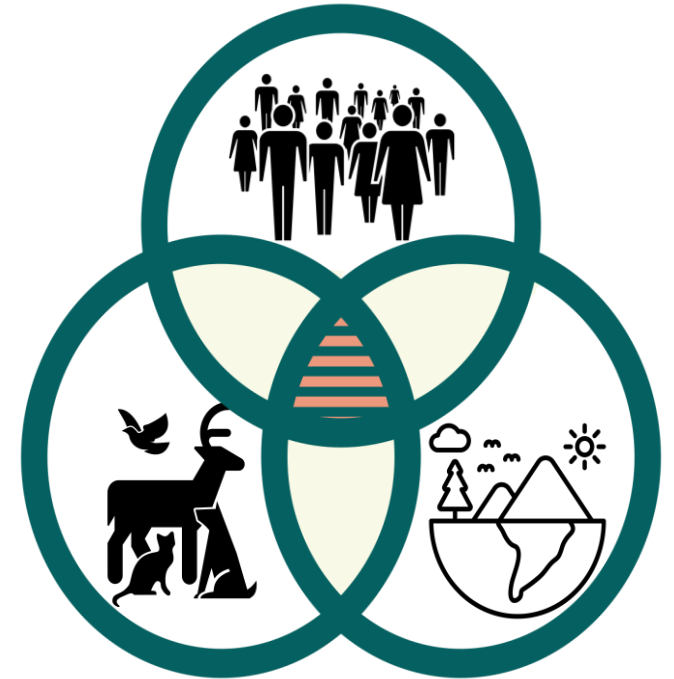
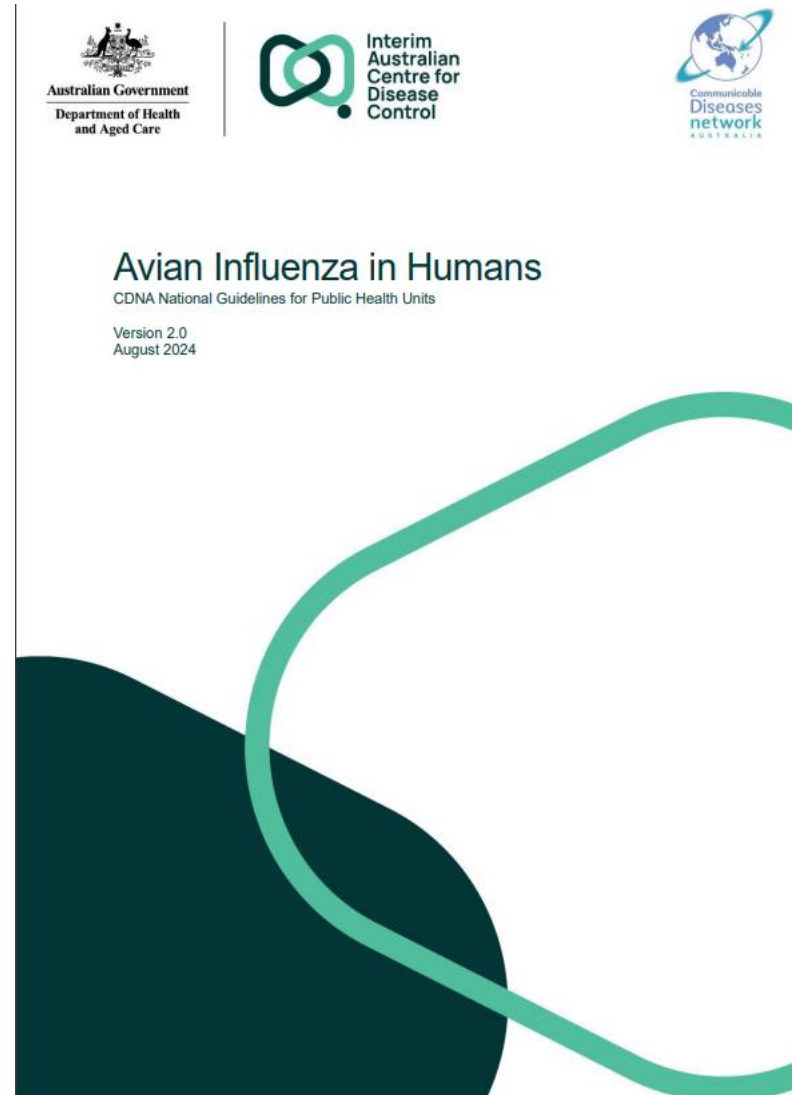


Figure 1. OHHLEP One Health Definition visual

Interim Australian CDC – One Health

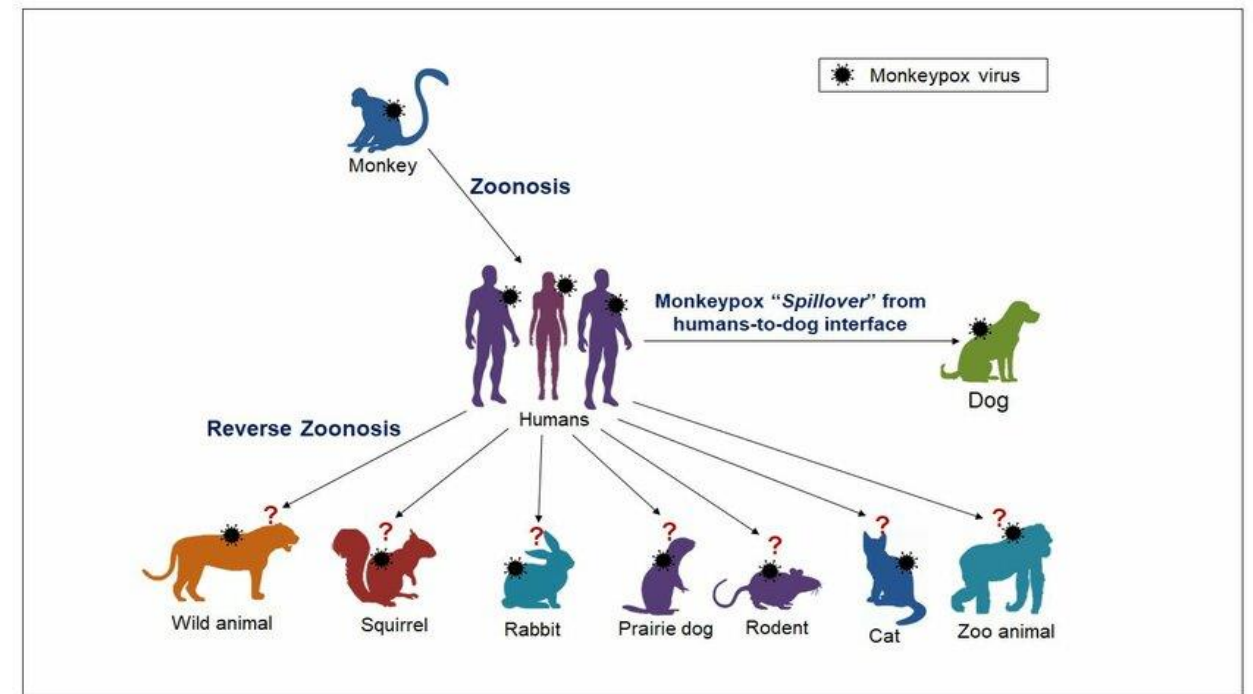
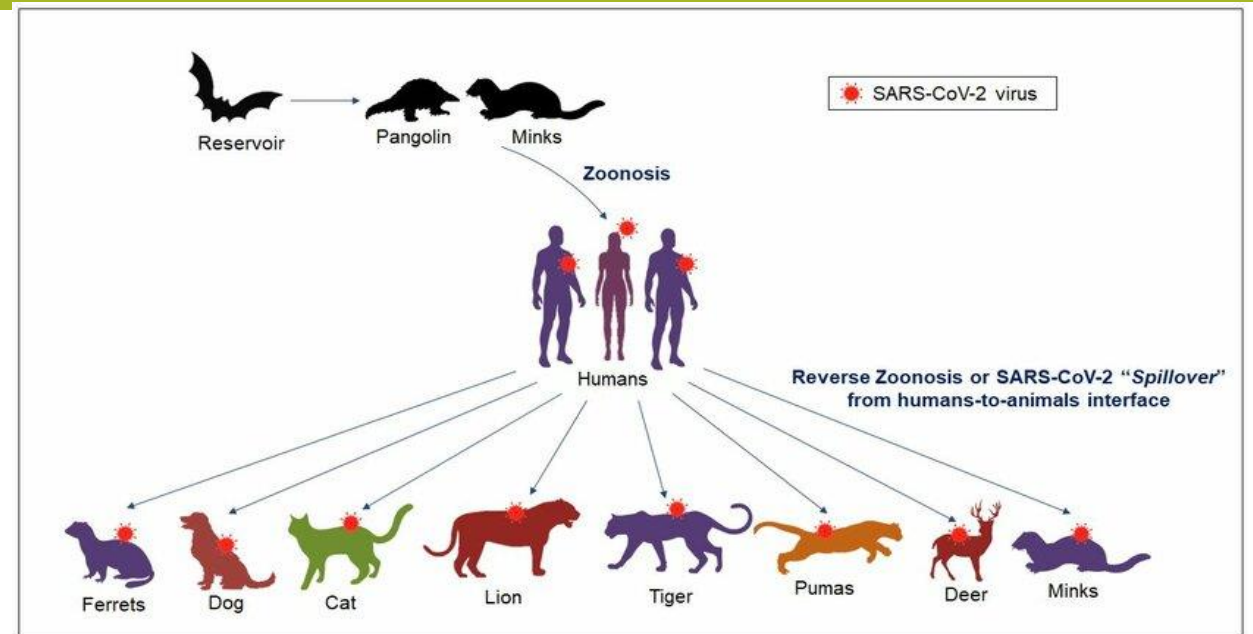
- Building capacity in One Health and health security
- Improving the national public health surveillance system
- Preparing for public health emergencies with multi-jurisdictional training
- One Health unit established to support national coordination of One Health for prevention, preparedness and response of communicable diseases
- Poultry workers guidelines for avian influenza, HPAI Action Plan, and HPAI Taskforce member
- \$100 million funding for HPAI H5N1 preparedness



Zoonosis and Reverse-Zoonosis

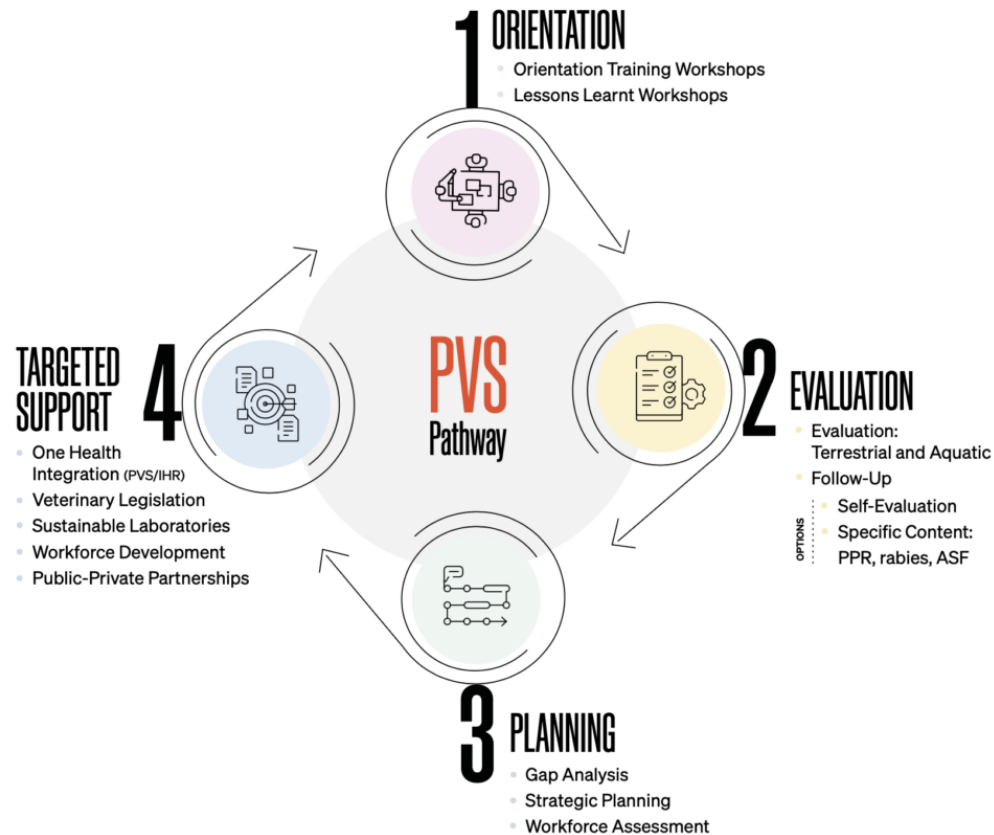
- Prevention of zoonotic infections spillover into humans and zoonoanthroposis requires One Health approach including IPC and biosecurity measures.
- IPC and biosecurity training for all people working with animals especially wildlife workers with increasing risk of avian influenza (H5N1 subtype).
- Need assessment of wildlife trade value chains and markets.

Ranjit Sah et al September 2022
[International Journal of Surgery](#)
DOI:[10.1016/j.ijssu.2022.106949](https://doi.org/10.1016/j.ijssu.2022.106949)



JEE- International Health Regulations and Performance of Veterinary Services

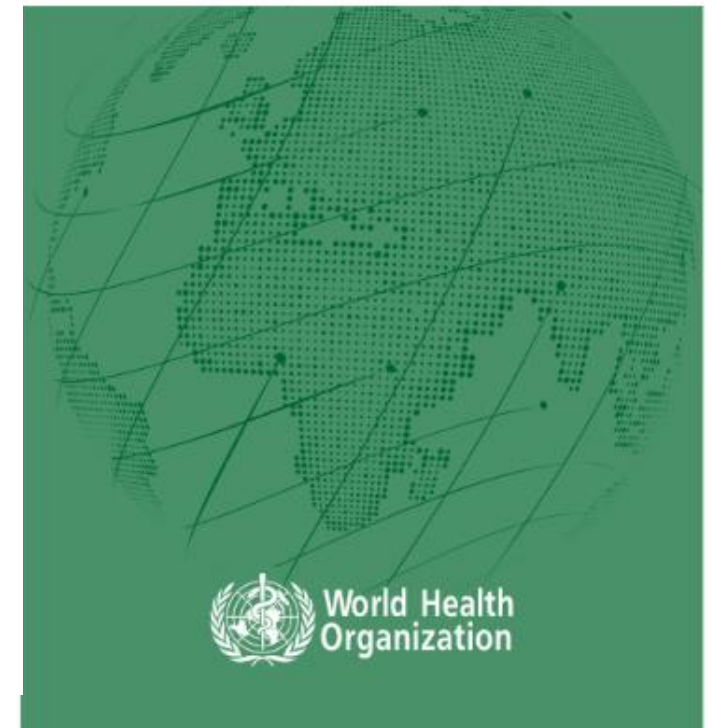
- Purpose and scope of IHR are to prevent, control and respond to risks of international disease spread
- PVS evaluation assess veterinary services against criteria based on World Organisation for Animal Health standards
- Stronger and more resilient overall health systems for improved pandemic preparedness



INTERNATIONAL HEALTH REGULATIONS (2005)

JOINT EXTERNAL EVALUATION TOOL

THIRD EDITION



What is IPC across One Health systems?

- Any **practice** to prevent and/or stop the occurrence of disease-causing microorganisms in human and animal clinical, preventive health and community settings.
- **Risk management system** with identification of hazards and assessment and control of risks.
- WHO defines IPC practical, **evidence-based approach** preventing patient and health workers from harm by avoiding infections.
- Requires action at **all levels of health systems** – policy makers, facility managers, workers, industry and mammals access health systems.
- What about IPC action across food systems? Expand to IPC practices in abattoirs, butcher and other food processing industries.



What is Infection Prevention and Control in Animal Health?

- IPC measures can assist in reducing the potential for organisms to develop resistance to antimicrobials with measures implemented in veterinary clinics, during surgery and other procedures and on farms (AMR.gov.au).
- FAO biosecurity toolkit defines overarching goal of biosecurity is to prevent, control and/or manage risks to life and health in One Health sectors (fig 1).
- Biosecurity includes all measure to prevent the introduction of pathogens and reduce spread of pathogens.
- World Organisation for Animal Health has standards, codes and manuals for terrestrial and aquatic animals with section 4 chapters on “Disease Prevention and Control”.

IPC and biosecurity must be undertaken together

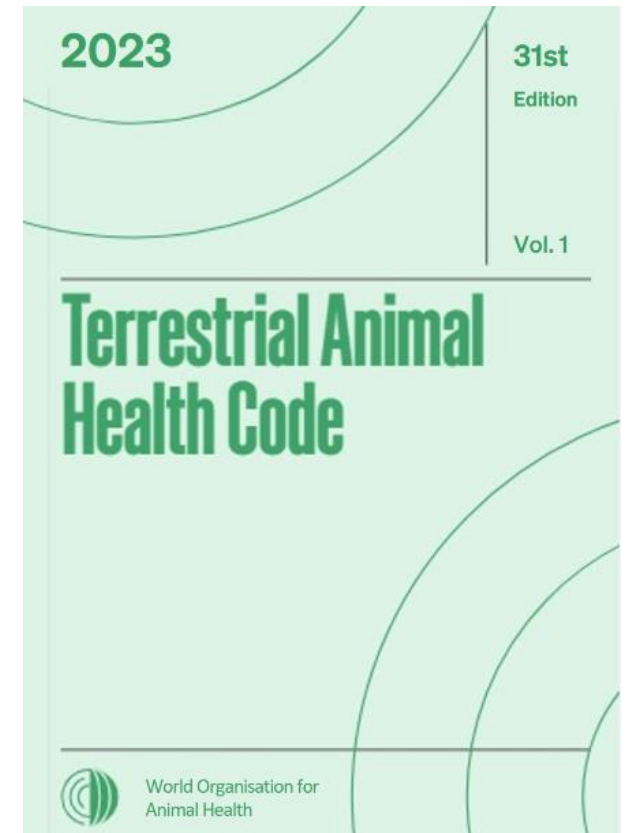


Figure 1.1. Sector goals of biosecurity

Human life and health
(including food safety)



Animal life and health
(including fish)



Plant life and health
(including forests)

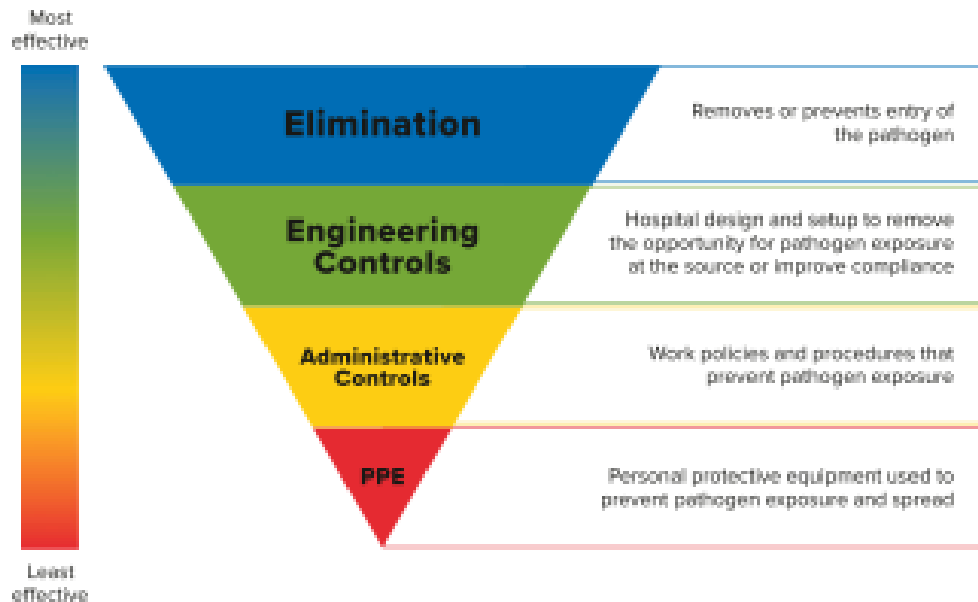


Environmental protection



One Health - Biosecurity and IPC

- Inverted pyramid of hierarchy of control methods for effective IPC (CDC NIOSH).
- Need a combination of control measures
- Need to introduce social sciences to better understand relationship between animals and humans



List of IPC and Biosecurity measures for veterinarians (amr.com.au)

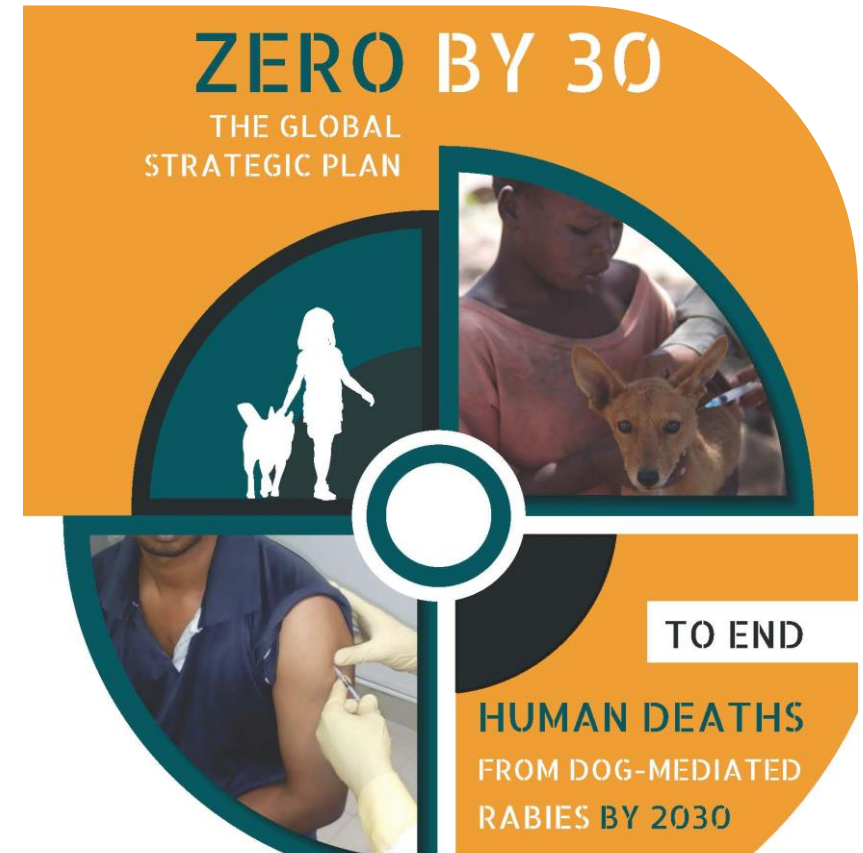
- good hand hygiene
- use personal protective equipment (PPE) when needed
- refer to the Australian Veterinary Association's [resources and videos on Veterinary personal biosecurity](#)
- use environmental cleaning methods
- disinfect equipment
- implement good animal husbandry practices to help prevent disease
- keep animal vaccinations up to date to avoid the need for antibiotics
- use aseptic techniques during surgical and non-surgical procedures
- segregate animals to avoid spread of infection in waiting rooms, clinics and on farms
- maintain high standards of hygiene in waiting and consulting rooms, cages and pens
- use farm biosecurity planning resources to identify major biosecurity risks, manage these risks, and reduce the need to use antibiotics. Available resources include:
 - the [BIOCHECK biosecurity plan](#)
 - the [farm biosecurity plan](#).

Zero by 30- Global strategy to end dog-mediated human rabies by 2030

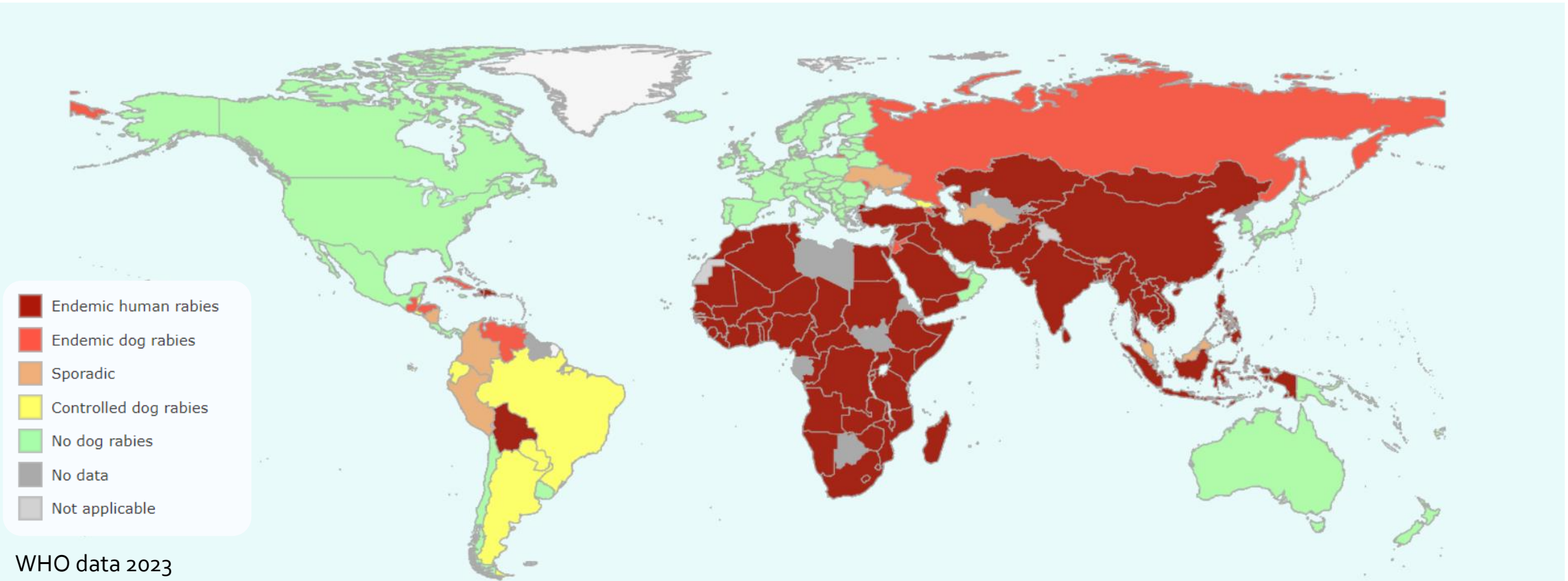


Children in Namibia bringing dogs for rabies vaccination

- A call for action through the Zero by 30: the global strategic plan to end human deaths from dog-mediated rabies by 2030
- Five pillars of rabies elimination include:
Socio-cultural, Technical, Organisational, Political and Resources
- ASEAN Rabies Elimination Strategy
- United Against Rabies collaboration



Global map of human and dog rabies country status

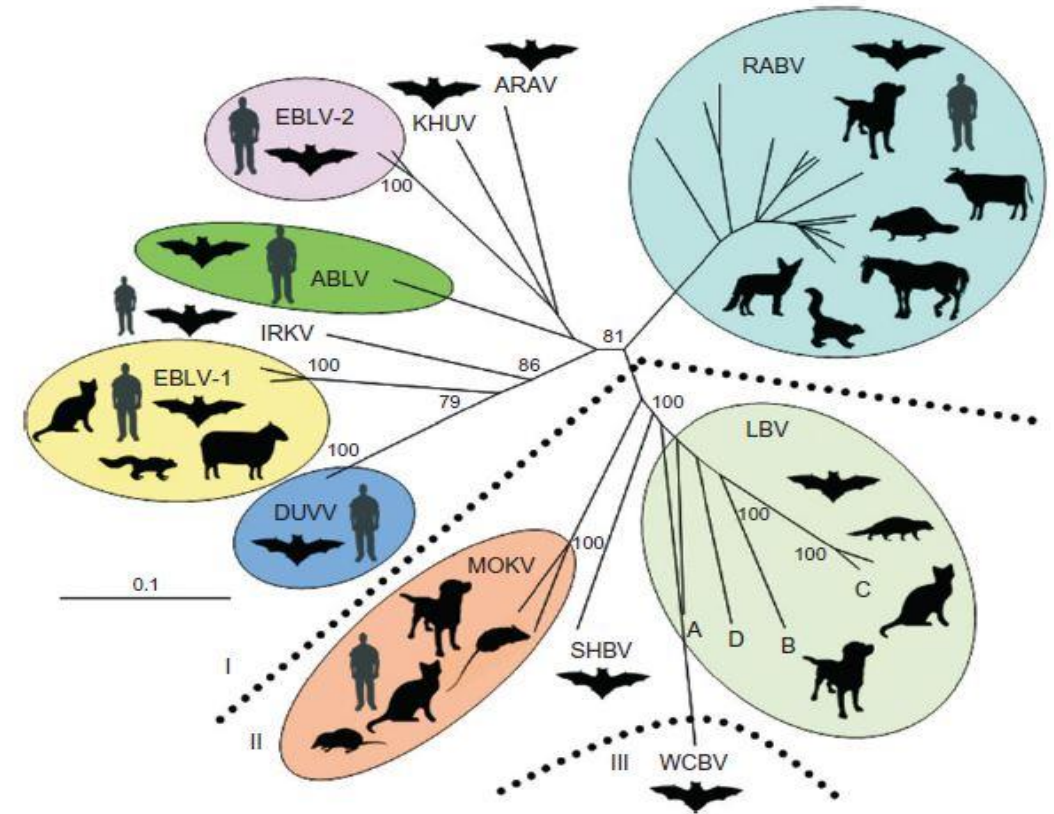


Two thirds of the global burden of human rabies occurs in India and African continent

The green countries that have eliminated dog rabies include– western Europe, Canada, USA, Japan and few Latin American countries

Integrated approaches to tackle rabies

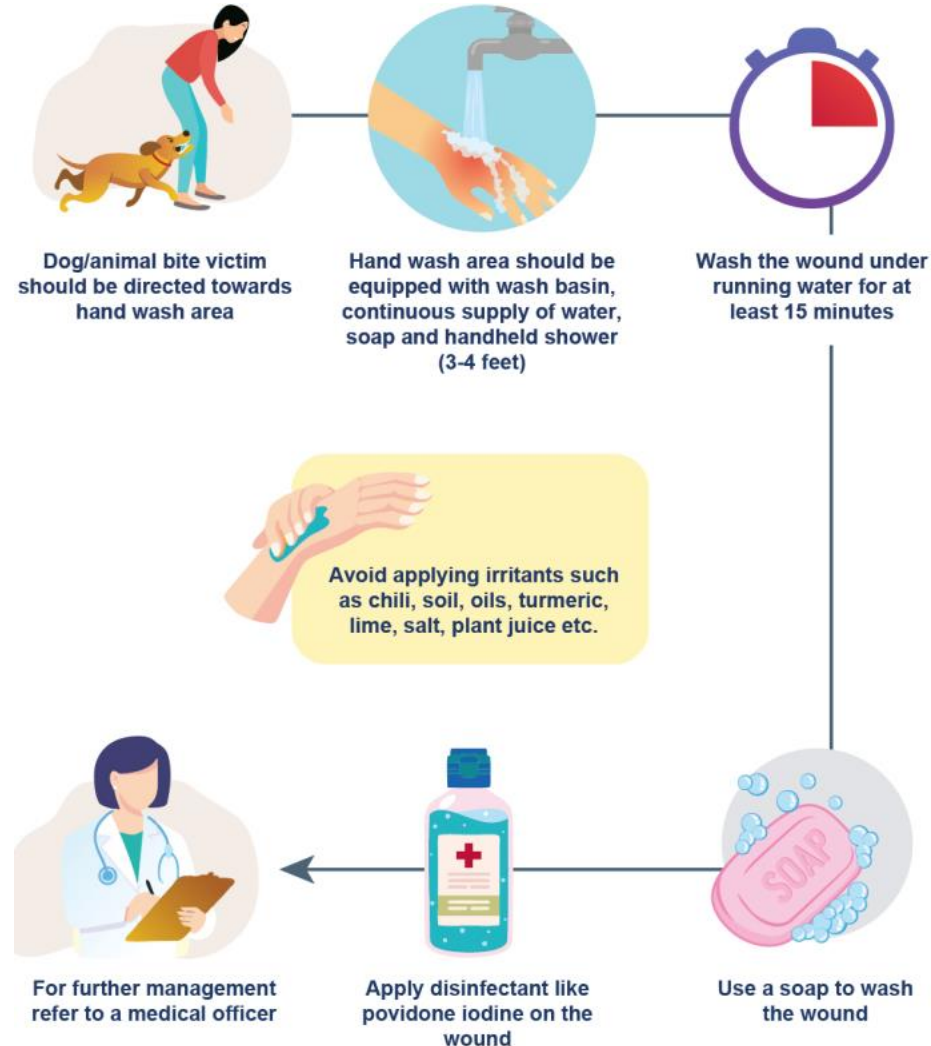
- One Health approach essential for dog mediated and other rabies control and elimination
- Vaccines for rabies since 1885
- Siloed structure of governments, research and funding
- Europe and North America's eliminated canine rabies in 1970's – animal registration and mass dog vaccination
- Lack of laboratory capacity for rabies diagnosis and limited exchange of information between sectors – perceived need for separation of human and animal lab facilities



Banyard, A.C. et al. (2011) Bats and lyssaviruses. *Advances in virus research* 79, 239-89.

Rabies – A Test Case for One Health

- Globally communities most affected are marginalized and poor
- IPC recommendations
- Prevention of dog/animal bites and scratches
- Animal vaccination
- Washing of wounds and seek medical advice and treatment
- Pre-exposure prophylaxis of high-risk professions



Correctly categorizing animal exposures

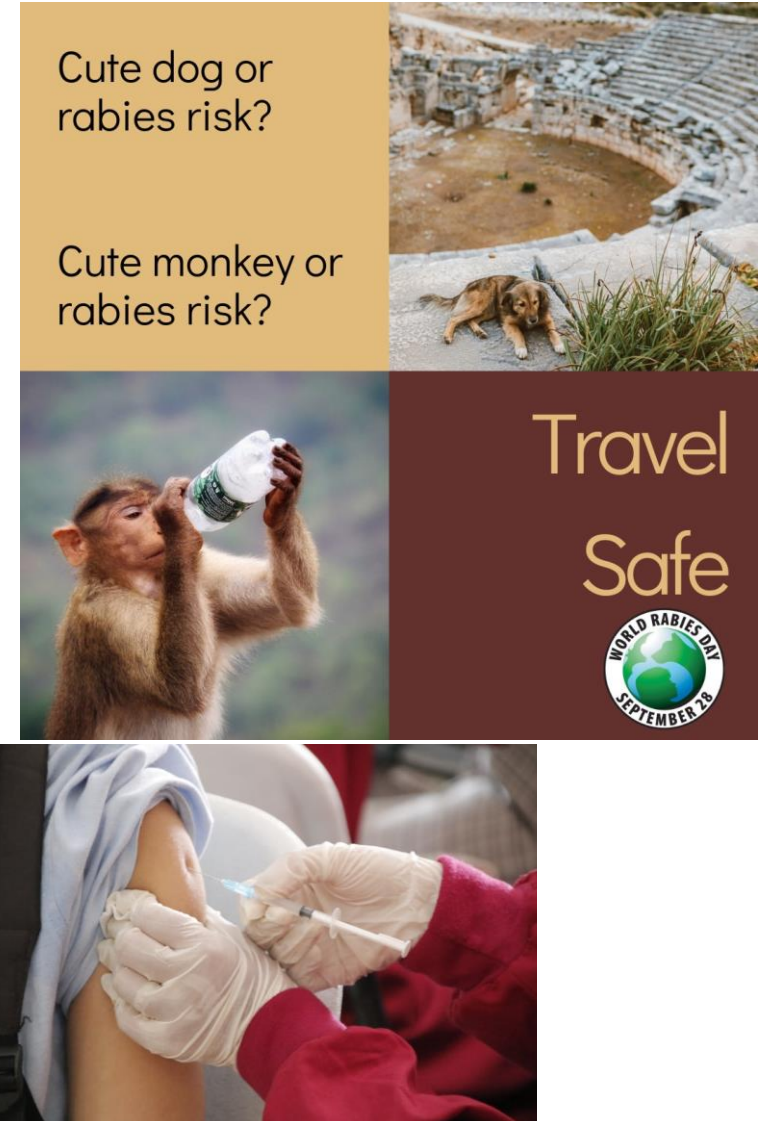


Category	Description	
I	<p>Touching or feeding animals</p>	<p>Licks on unbroken skin (no scratches or abrasions)</p>
II	<p>Nibbling (soft bite) of skin (skin bruised but NOT bleeding)</p>	<p>Minor scratches or abrasions WITHOUT bleeding</p>
III	<p>Any wound that bleeds after exposure (regardless of amount of blood)</p>	<p>Any time saliva comes into contact with mucous membranes or broken skin (open wounds)</p>
<p>All bat exposures (regardless of the severity of the wound)</p>		

Icons sourced from Flaticon: <https://www.flaticon.com>

International Travel Rabies Risk

- New Zealand's first rabies death, overseas traveler dies in Auckland March 2023
- Check the [Smartraveller.gov.au](https://www.smartraveller.gov.au) site
- Exercise high degree of caution – over 150 endemic countries
- **Know what to do if bitten or scratched**
- Australia is experiencing a high number of potential exposures to rabies in returned overseas travelers and treatment with Post-Exposure Prophylaxis



Case for One Health and prevention of MRSA

- Community acquired *Staphylococcus aureus* infections are a public health concern.
- In 2008 it was difficult to access funding to test animals in community-acquired household study in south-eastern AUS.
- In 2023 publication a significant risk factor for colonization or transmission of methicillin-resistant staph aureus (MRSA) is human-pet contact.
- Preventing spread between humans to animals and vice versa requires education on IPC across all sectors, industry and animal value chains.

Epidemiol. Infect. (2014), **142**, 501–511. © Cambridge University Press 2013
doi:10.1017/S0950268813001581

Community-onset *Staphylococcus aureus* infections presenting to general practices in South-eastern Australia

C. M. BENNETT^{1,2*}, G. W. COOMBS^{3,4}, G. M. WOOD^{5,6}, B. P. HOWDEN^{1,5},
L. E. A. JOHNSON¹, D. WHITE¹ AND P. D. R. JOHNSON^{1,5}






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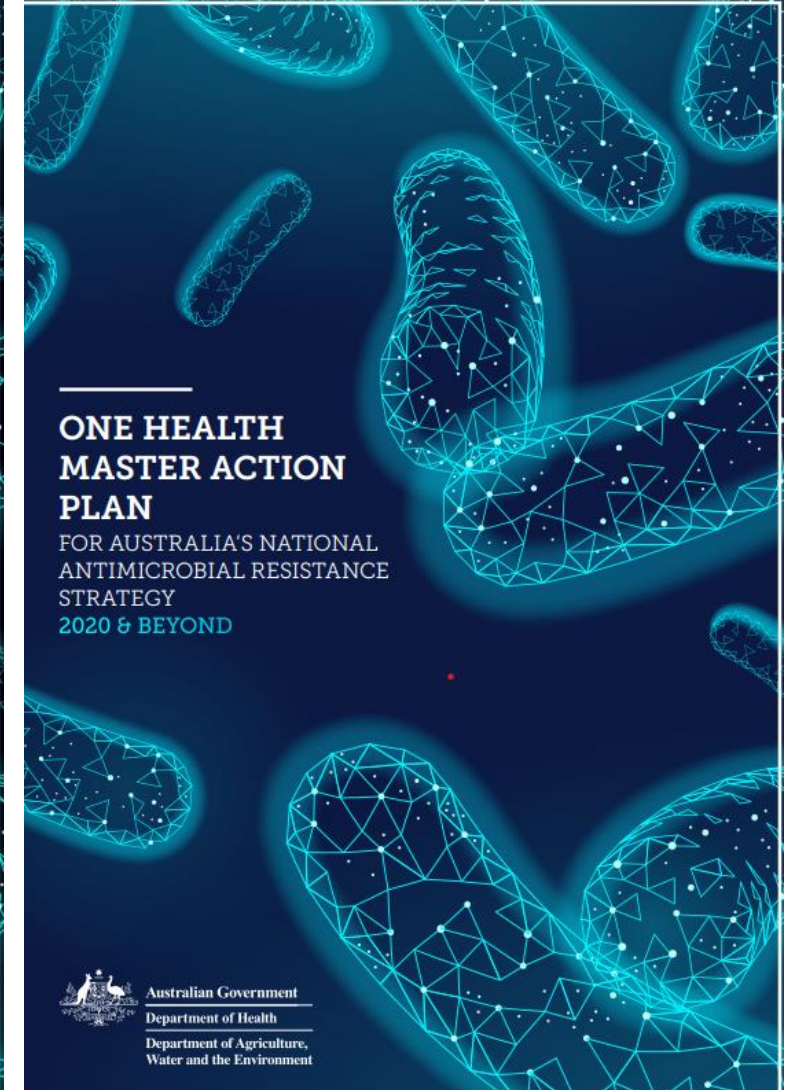
REVIEW ARTICLE

Pet animals as reservoirs for spreading methicillin-resistant *Staphylococcus aureus* to human health

Aswin Rafif Khairullah¹ , Sri Agus Sudjarwo² , Mustofa Helmi Effendi³ , Sancaka Cashyer Ramandinianto⁴ ,
Maria Aega Gelolodo⁵ , Agus Widodo¹ , Katty Hendriana Priscilia Riwi¹ , Dyah Ayu Kurniawati⁶ 

Antimicrobial Resistance One Health Action Plan

- DAFF, DoHAC and DCCEEW co-lead implementation of Australia's One Health AMR strategy
- Strategy outlined in OH Master Action Plan which supports Australia's National AMR strategy
- National focus areas for each sector with AURA surveillance system for human health
- First official Australian cross-government One Health program approach
- Strengthen and assess the use of accreditation and/or quality assurance programs to better support the implementation of national biosecurity and/or IPC guidelines in the animal and human health sectors



AMR Vet Collective and IPC resources

- A new initiative designed to help Australian and New Zealand veterinarians to understand AMR and antimicrobial stewardship
- Find at www.amrvetcollective.com
- A number of global resources on IPC are included
- Cross sector and transdisciplinary collaborations needed for improved understanding of AMR elements transmission and mitigation strategies
- Need to include/engage the environment sector



Quadripartite One Health Joint Plan of Action



- Action framework and theory of change
- Six action tracks to apply the One Health approach

Action track 1: Enhancing One Health capacities to strengthen health systems

Action track 2: Reducing the risks from emerging and re-emerging zoonotic epidemics and pandemics

Action track 3: Controlling and eliminating zoonotic, neglected tropical and vector-borne diseases



Action track 6: Integrating the Environment into One Health

Action track 5: Curbing the silent pandemic of Antimicrobial Resistance (AMR)

Action track 4: Strengthening the assessment, management and communication of food safety risks

**ONE HEALTH
JOINT PLAN OF ACTION
(2022-2026)**

**WORKING TOGETHER FOR
THE HEALTH OF HUMANS, ANIMALS,
PLANTS AND THE ENVIRONMENT**

Key Messages

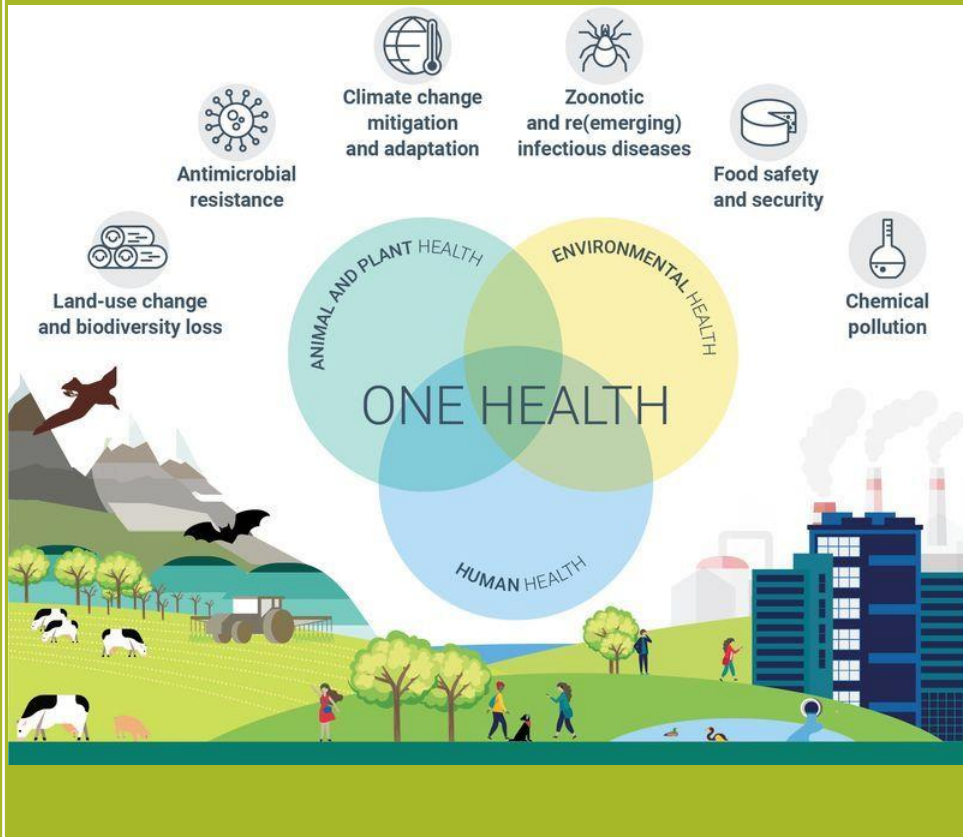
- One Health approaches for IPC and biosecurity solutions are needed for many complex public health challenges and global health security
- Need to connect and collaborate with other sectors and disciplines including social scientists to improve awareness/implementation of IPC practices
- Integration of IPC training and development of evidence-based practices that are context specific will support health system strengthening across all sectors



Photo provided APCAT

THANK YOU WELCOME QUESTIONS

Email andrea.britton21@gmail.com



Australasian College
for Infection Prevention and Control