# One Health ****in action to end rabies deaths by 2030****

Video description and transcript

28 September 2023

## Introduction

This is the accessible text transcript of an Australian biosecurity webinar on rabies entitled ***One Health in action to end rabies deaths by 2030***

## Transcript

Webinar: **One health in action for zero rabies death by 2030.**

Hosted by the Department of Agriculture, Fisheries and Forestry.

Hello, yes, I'm Deanna Emms and I will be facilitating today's forum.

Thank you for taking the time out of your busy schedules to join us. I wish to acknowledge the traditional custodians of the land we are meeting on and recognise any other First Nations’ people or families with connections to the lands of the ACT and region.

I wish to acknowledge and respect their continuing culture and contributions they make to the life of this city and the region.

I extend that recognition to the traditional custodians of all other lands on which our staff and participants are gathered today and to all Aboriginal and Torres Strait Islander peoples attending today's webinar.

I would like to remind people we are recording this webinar and it will be available to view on our website later.

Today's webinar will focus on the zoonotic disease rabies, a particularly cruel disease that claims about 59,000 lives a year. Louis Pasteur invented a vaccine for rabies in 1885 but the disease still persists in 150 countries.

Australia is free of rabies but the likelihood of an incursion is growing.

This webinar brings together leading rabies experts who will share with you the work the department and partner agencies are doing to help eliminate dog-mediated rabies by 2030.

This is a timely discussion for today as it is World Rabies Day, a global health observance which started in 2007 to raise awareness about the world’s deadliest infectious disease and bring together partners to enhance prevention and control efforts worldwide.

To start today’s session, we are going to hear from Dr Beth Cookson the acting Australian Chief Veterinary Officer.

Beth will explain what rabies is, provide an overview on the status of the disease globally, explain why a One Health approach is required now more than ever and touch upon DAFFs tightening of its import conditions on companion animals in response to our recent rabies review.

We will then hear from Dr Andrea Britton, Principal Veterinary Officer with the One Health and Pandemic Prevention team.

Andrea has worked for the World Organisation Animal Health and Vets Beyond Borders in countries where rabies is currently endemic and will provide you a glimpse into her work in rabies impacted areas.

Our other presenter is Doctor Melanie Bannister Tyrrell. Melanie is an epidemiologist who works for the Nossal Institute for Global Health at the University of Melbourne. Melanie will round our webinar off and speak about the regional collaboration for rabies elimination in the Association of Southeast Asian Nations (ASEAN).

Melanie’s work was commissioned by the World Organisation for Animal Health Sub-Regional Representation to Southeast Asia and conducted in close coordination with the ASEAN Secretariat, and Ministries of Health and Agriculture in the ten ASEAN Member States.

Following Melanie, we then look forward to answering your questions as part of the Q&A session.

The Q&A is your chance to pick the brains of our panelists. To make the most of the expertise on hand, please ensure you enter your questions into the Q&A box throughout the session. If possible, please direct your question to the desired panelist for answering.

We will also be sharing a short poll at the end of today’s session, we invite you to participate in to inform future webinars.

Beth, I will now hand over to you to please kick us off for today.

**Beth COOKSON**: Hello and good morning everyone. Thank you for joining.

I acknowledge Aboriginal and Torres Strait Islander peoples as the first inhabitants of this country. I pay my respects to Traditional Custodians and Elders, past and present, of the land on which we stand today.

Today is World Rabies Day. The event is recognised every year on the 28th of September. It is coordinated by the Global Alliance for Rabies Control and endorsed by partner organisations.

It is a global event aiming to unite people, organisations, and stakeholders across all sectors against rabies, with the main message that together we can eliminate the disease.

This year, the theme is : Rabies - All for 1, One Health for all, and focuses on the key, cross-sector elements of rabies prevention seen on the logo banner.

I'm going to start with just a short overview of the global dog rabies situation.

The COVID-19 pandemic has set back the global strategy to eliminate dog-mediated rabies. The countries in red, show where dog rabies is endemic. This means the rabies virus continues to circulate within the dog population and is maintaining the reservoir of infection.

Unfortunately, the disease incidence has increased in many countries and re-emerged in others. In May this year we saw continued spread of the rabies virus in Indonesia, with its first known occurrence in West Timor, and sadly the deaths of 7 people have been reported.

Australia is free of dog rabies virus but it is only 300 km north of our borders, so we must remain vigilant and support the region.

A One Health approach is being used to operationalise the rabies elimination response bringing together human, animal and environment agencies to enable an integrated and unifying coordinated response.

This approach is not new but has developed importance since avian influenza outbreaks in 2003. One Health approach enables sustainability and balancing to optimize the health of people, animals and ecosystems.

A local, tailored approach with local solutions is necessary to sustainably eliminate dog-mediated rabies – helping to reach Sustainable Development Goals.

So I’m going to talk a little bit about the global strategy which is what we're here to celebrate today and the global strategy to eliminate dog-mediated rabies deaths in humans by 2030.

The global strategy to eliminate rabies is known as ‘Zero by 30’. The objective is to work together to eliminate dog-mediated rabies deaths in humans by 2030.

As dog-mediated rabies is the primary cause of 99% of human rabies deaths, the focus is on three main courses of action, increasing awareness, vaccinating dogs to prevent the disease at its source and administering life-saving treatment after people have been bitten.

The global strategy aims to reach this goal by leveraging existing tools and knowledge in a coordinated way to empower, engage and enable countries to save human lives from this preventable disease.

The global strategic plan puts countries at the centre with renewed international support to act.

And I'll talk a bit more later in the presentation about how Australia is supporting regionally to act

to prevent rabies deaths in humans.

The World Organisation for Animal Health (WOAH) has developed evidence-based global standards and diagnostic manuals for rabies virus and dog population control. Now countries can have their national rabies control strategies assessed and endorsed by the WOAH.

The World Health Organisation (WHO) also have a technical report series on rabies which details the science, diagnosis, surveillance, management, control, and prevention of rabies in humans and animals.

Australia considers these global standards when setting policy and conducts our own risk assessments.

So what is Australia doing to keep its people and animals safe?

I’m going to first talk about regulated pathways, and then will cover unregulated pathways in northern Australia and our work to support neighbouring countries to control and prevent rabies as part of our work to strengthen regional biosecurity.

For Australia, a major risk of rabies introduction is through the importation of live animals.

The department regulates the live animal import process for dogs that enter the country by making sure that animals meet strict import requirements. The most common way dogs come into Australia from overseas is through legal importation from approved countriesand checks completed at the point of entry to ensure compliance.

There has been a large increase in imports, and dog and cat trade since 2013 which has been taken into consideration in our import policy which was most recently updated in March this year. The new policy addresses identity fraud associated with this trade - like fraudulent laboratory reports, vaccination records, replaced microchips.

A minimum post-entry quarantine period of 30 daysreduces the likelihood that an animal from a rabies affected country whose identity isn’t verified, is infected with rabies. The longest this could be expected to take is 180 daysbut would typically be a much shorter period.

The minimum is still10 daysfor those complying with approved country and identity verification processes.

The Northern Australia Quarantine Strategy, or NAQS, is our biosecurity surveillance program operating in northern Australia. Northern Australia is particularly vulnerable because of its proximity to Indonesia which is rabies affected. Timor-Leste and Papua New Guinea remain free from rabies.

NAQS focuses on identifying and monitoring illegal or natural pest and disease entry pathways into Australia from our north.

NAQS manages rabies risk through the ‘Quarantine Top Watch’ public awareness campaign which encourages the public to monitor and report exotic pests and diseases and to comply with border movement requirements, animal health surveillance in remote and rural communities, which have poor access to human and veterinary health services compared to urban centres, and through engagement with a range of stakeholders, including those working regularly with dogs, like local government animal health workers.

As part of its education program, NAQS has also produced a rabies risk pathways awareness animated video for use in health clinics and schools in northern Australia, targeted to school-aged children.

Australia has invested in rabies prevention and preparedness research. The University of Sydney researchers have undertaken studies in First Nations communities in the north to estimate dog contact rates using GPS collar tracking units.

This GPS data was recorded from 10 community dogs in northern Queensland – found that most dogs have a compact home range, but some dogs range 10 hectares or more. This information can be used for disease modelling and estimating the potential spread of rabies should it enter Northern coastal communities.

The spread of canine rabies in Indonesia and Malaysia and potential risk pathways to PNG and Australia has been also assessed through risk assessment workshops.

The Australian AUSVETPLAN is our veterinary emergency plan which provides a nationally agreed response strategy for an incident or suspected incident of lyssavirus infection. This is an important tool to ensure we are prepared to respond to a rabies incursion and is used to guide decision making. The plan is written and reviewed by a cross-sectoral and multi- disciplinary group of technical experts.

We've also invested in rabies prevention and preparedness via research with the University of Sydney researchers including studies that have been undertaken in First Nations communities in the north to estimate dog contact rates using GPS collar tracking units.

We also don't just manage biosecurity risks like rabies at the border. We have been collaborating with our neighbouring countries to improve biosecurity outcomes. This is mutually beneficial as the improved management and preparedness for rabies in our neighbouring countries also reduces the threat of rabies to Australia, for example Australia has donated 400,000 doses of dog rabies vaccination this year to support Indonesia's rabies control program.

The focus efforts have been in Bali, where rabies has been endemic since 2008, and also to support Indonesia's emergency response to the spread of rabies to West Timor.

The department works closely with partner countries and other Australian government organisations like the Department of Foreign Affairs and Trade through their Centre for Health, Security and the Australian Indonesia Health Security Partnership as well as the CSIRO Australian Centre for Disease Preparedness to deliver regional Animal health program.

The donation of dog rabies vaccines is also a sign of a partnership with the World Organization for Animal Health

While I'm talking about it, it maintains the vaccine bank and having a safe supply of quality vaccines it is really important, and these vaccines were sourced from that vaccine bank and play a critical role in regional coordination, which is really important for infectious diseases.

And we're also supporting Timor Leste and Papua New Guinea with rabies prevention and preparedness activities.

Our next speakers will share with us their experiences in implementing national and Asia-Pacific One Health actions to end dog-mediated rabies by 2030.

I’ll leave you now with some key messages that I hope you take from today’s webinar.

A One Health approach for rabies prevention, control and elimination involves many sectors and individuals in communities working together to save human and animal lives.

We need to strengthen health systems, including both human health and veterinary services, to enable integrated surveillance and timely diagnosis and risk assessment of bite wounds.

Education is critical, especially of children around bite prevention, the importance of post-exposure prophylaxis after being bitten, and to ensure that all dogs are vaccinated annually against rabies.

Thank you.

**Facilitator**: Thank you, Beth. That was such a great overview of the disease and how we're tackling it and why the One health approach is so necessary. And I loved your takeaways at the end.

That was really helpful. We will now hear from Doctor Andrea Britton relaying her stories of One Health and One Health for dog-mediated rabies elimination.

**Andrea BRITTON**. Thanks. Thanks, Dee. And I'm can you see that slide, OK.

**IT Tech:** We are not seeing your slide at the moment. Andrea, just give us one moment, OK. Yeah, we go all good. Yes, Andrea, that's coming through. It's coming through. OK. Thank you very much.

**Andrea BRITTON:** Good morning, everybody. I acknowledge the traditional owners of country throughout Australia, for me the Dja Dja Wurrung people and recognise their continuing connection to land, waters and culture. I pay my respects to traditional owners, their cultures and elders past and present. And recognise the importance of indigenous ways of knowing when considering OH.

The stories I am sharing apply to operationalizing OH to dog rabies elimination are from my personal field experiences. Given we are all epidemiologists now following the COVID pandemic, I will remind you about the transmission pathway of the rabies viruses within the Lyssavirus family.

This diagram shows the canine rabies virus continues to be maintained with the dog reservoir and spillover over into humans and other animals and is responsible for 99% of human rabies deaths, therefore, if we eliminate canine rabies, we eliminate most human deaths globally.

This 9-year-old boy in this slide, who back in 1885 was the first patient to be treated with human rabies vaccines – 14 repeat doses into his abdomen were given. So for 138 years we have had the vaccination tool to eliminate dog rabies but have not succeeded.

Rabies is considered a model disease for the operationalizing the One Health approach, which as Beth described, is the collaboration between different sectors and disciplines to enable the connection between humans, animals, and the environment, for integrated health solutions and interventions.

So therefore, if we eliminate dog-mediated rabies, we will eliminate this cause of most of the disease in humans and also in dogs.

So this vaccination tool has not been able to succeed in eliminating dog rabies. Rabies is considered a model disease for operationalising One Health approach which Beth described and is the collaboration between different sectors and disciplines that enables this connection between humans, animals and the environment.

For this integrated health solutions aligning the global strategy to eliminate dog-mediated rabies by 2030 aligns with the 17 Sustainable Development Goals so the goal is much, much bigger.

So this report provides some information about insights about why we haven't eliminated dog rabies.

Rabies is a neglected tropical disease predominately of rural, vulnerable communities, with 40% of deaths in children.

This two-year-old child died after contracting rabies from a dog bite in Kwazulu Natal in South Africa. The neighbours did clean the wound but did not take the child to the local health clinic as they didn't know this was required or perhaps they didn't have access to the clinic or couldn't afford treatment. Within two days the child developed symptoms, but by then, it was too late to treat the disease, a disease that is 100 per cent preventable.

I had the opportunity to work with the World Organization for Animal Health as a rabies program officer in the Southern Africa region.

The National Rabies Control Program in Namibia is progressing well and Namibia is on course to be the first country in Africa to eliminate dog-mediated rabies.

The Himba people (in this slide) of northern Namibia are nomadic. Human health services for vaccinating children and for childhood diseases are often conducted remotely in conjunction with dog rabies vaccination. These children are intense learning about rabies from veterinary services and this little girl is reading information about how to protect yourself and have your dog vaccinated. The Namibia children are the custodians of the dogs and vaccination campaigns are timed to occur during school holidays to enable the children to bring their dogs to the central point vaccination sites. If a person is bitten, they often need to wait confirmation from the lab down in the capital city that the dog that bit them is positive for rabies before treatment is commenced due to limited supply of vaccines. Prevention of being bitten and vaccination of dogs is key, especially in children.

My next story takes us to Sikkim in the Himalayas of India. I went there to run the government program and the long term collaboration with Australian NGO - Vets Beyond Borders - as past board director of Vets Beyond Borders.

I had the opportunity to understand how champions for rabies elimination like Doctor Thinlay and his team with sustainable support from Vets Beyond Borders can successfully eliminate dog-mediated rabies using a One Health approach and they have done this.

In most states of India, there are free roaming dogs. In Sikkim, under the law, if your dog bites a person, then you're responsible for that person's treatment. Communities across the globe have different relationships with dogs. Many people have dogs for protection or security and they don't have fenced in yards like we do.

This is why local solutions and community participation to the control and elimination of rabies is critical.

This photo of children at school in Sikkim shows a veterinary student member of Vets Beyond Borders, educating the children through drama about dog behaviour and how not to get bitten.

In 2017, I was able to support the Sarawak SPCA and Sarawak veterinary services in Malaysia during the first months of the rabies outbreak through community engagement.

People brought their dogs and some cats to central point locations for rabies vaccination. Many of these villages had fatal rabies cases and didn't understand this terrible disease at the start, so clear communication messages in several languages across different media was put in place.

The Sarawak government at district and state levels, continues to collaborate across sectors and last year hosted the first rabies in Borneo conference to increase cross border collaboration and coordination.

Given the need for a regional approach, understanding the social, cultural context and religious beliefs influences how rabies perceptions and dog keeping practices. In this slide we have a house where several families live and dogs roam freely. Changing human behaviour for rabies control and liberation requires social scientists and anthropologists on the team, as through their understanding this enables actions that motivate behavioural change and plan feasible delivery services.

Many communities have been managing rabies by selective removal of suspect dogs for a long time we need to work with communities for local solutions.

The Association of Country Women of the World and GARC established a partnership following the passing of a resolution to support the global mission to end rabies by 2030.

At this resolution, and as a keynote speaker at their global conference in 2019, it is a moment I will remember always, as who better to get the job done than 10 million women globally. As the African proverb states, if you want to go fast, go alone and if you want to go far, go together.

Collaboration on rabies investigation responses across human and animal sector is One Health in action. This is called integrated bite case management. Joint contact tracing can lead to identifying additional cases in Malaysia, the Malaysian One Health University Network has produced this One Health manual.

We hope the new Australian CDC will develop these types of One Health strategies. We must remember that dogs are our best friends and it is not their fault that this virus is maintained within the population.

This photo shows the dog behaviourist, whom I've had worked with in southern Africa, who was in Timor Leste providing training, and supported by the Australian Government. GARC have excellent rabies education online resources that I highly recommend and the photo of the dog being vaccinated is from Australian government regional project in Bali.

So the COVID pandemic has had significant direct and indirect effects on disease control programs. They’ve disrupted vaccine supply and prevented dog bite cases being treated.

And we've also had other animal disease outbreaks in the region like African Swine Fever and foot and mouth disease and avian influenza, that have just disrupted rabies elimination programs.

Thus we’re seeing an increase in rabies cases and unfortunately in Latin America, there's been a re-emergence of rabies. So if you're travelling overseas, please look check the smart Traveller advice. Only earlier this year, New Zealand had their first rabies death of an overseas traveller. And Queensland this year has experienced over 222 exposure to rabies in returned overseas travellers.

So in conclusion, through my stories, I hope you have a better understanding about how One Health is being approached in several countries to meet this zero by 2030 goal of eliminating dog-mediated rabies. It does take a global village to raise a child and together we can achieve this zero deaths by 2030.

Thank you very much.

**Facilitator**: Thank you, Andrea. And there were some wonderful photos in that presentation. I really appreciated them. Just to reminder to all of our participants to please put your questions in the Q&A box and direct them to the presenter you would like them the questions.

Now next presentation is by Doctor Melanie Bannister Tyrrell who will discuss how the One Health approach has developed and is being operationalised at the community, national and regionally in ASEAN region. Thank you, Melanie for your input to today's webinar and it is greatly appreciated and we look forward to hearing from you now.

**Melanie BANNISTER TYRELL :** Thanks very much. I'd like to start by acknowledging the Wildrick people as the traditional owners of the greater Fremantle where I'm joining from today. I pay my respects to their elders, past, present and emerging. I would like to recognize the unique place and enduring cultural practices of traditional owners in caring for country across the continent and acknowledge the importance Indigenous knowledge at the University of Melbourne where I work as an academic in communities around Australia.

So to round out the presentations for the webinar today, I'd like to give an update on progress towards revising the ASEAN rabies elimination strategy and especially talk about the role of regional collaboration to support rabies elimination.

The rabies virus is endemic in human and animal populations in several Asian countries, namely Cambodia, Indonesia, Lao, Malaysia, Myanmar, the Philippines, Thailand and Vietnam. In the regions Brunei Darussalam and Singapore are free of human and animal rabies, but both countries conduct preparedness activities to prepare for, detect, and respond to any rabies incursions.

So throughout the ASEAN region there are many success stories and examples of innovation and effective leadership that are enabling progress towards more effective rabies control and rabies elimination and maintaining rabies-free areas within countries as well as rabies-free countries overall.

Countries are at different stages in their path towards achieving rabies elimination but we find that rabies challenges are broadly similar across ASEAN.

So it's shared borders and frequent formal and informal movements of people and their companion animals between countries via land and sea roots, rabies infected animals can be transferred between countries and ASEAN this shared risk environment drives the importance of adopting a regional as well as national approach to rabies eliminations.

As we've heard in the previous presentations, competing priorities do constrain attention for a budget for rabies elimination. In particular, the effects of human and animal health emergencies such as COVID and African swine fever.

In the past few years, set against this there is increasing availability of tools and resources for rabies elimination that have been developed within the region as well as from global partners.

And there's growing momentum for One Health in ASEAN including the ASEAN Leaders Declaration on One Health initiative adopted on the 10th of May this year, this declaration recognizes the devastating impacts of the COVID pandemic ,as well as other emerging and reemerging infectious diseases, especially zoonoses and antimicrobial resistance, and the need to strengthen health systems to be resilient and responsive to all health threats. Rabies control and elimination could potentially be a model initiative today under this declaration.

Just some background about the ASEAN rabies elimination strategy or ARES. In April 2008, ASEAN launched a call for action towards the elimination of rabies in ASEAN Member States and the plus three countries. The development of the first ASEAN rabies elimination strategy commenced in 2013 and was endorsed in 2014. The original ARES is set the aspirational goal of eliminating rabies in ASEAN member states by 2020.

Unfortunately, the goal of eliminating rabies by the state wasn't achieved, and it has been noted that the incidence of human rabies did not substantially change and dog vaccination coverage did not substantially increase during the first few years of its implementation in most areas and since 2020, the COVID pandemic has had major implications for rabies control efforts in ASEAN.

So at this point in time, there's a renewed push to update and revise the ASEAN rabies elimination strategy identifying areas for improvement and as well as highlighting progress to date in particular. And there's a need to update the areas in line with international and regional developments and innovations.

So the key priorities for the revision of the rabies elimination strategy include to align with the zero by thirty goal to end human deaths due to dog-mediated rabies by recent innovations for rabies control and elimination and these innovations include, you know, vaccine technologies radius surveillance strategies, developments in laboratory diagnostics as well as other new tools and operational research measures.

Sadly, the revision aims to emphasize the importance of the one health approach across sectors and t all levels of government.

It's also very important to emphasize the importance of empowering communities to reduce rabies risks and participate in rabies elimination programs. And finally, the revision aims to introduce recommendations for natural and national and regional resource mobilization to support implementation of rabies elimination programs.

So this is a visual representation of the draft revised ASEAN rabies elimination strategy.

There are a few things to highlight, but to start with, you can see that rabies activities are organized into four pillars, socio cultural, technical, organizational and one health and policy and legislative. This is the stop rabies framework that was adopted in the first hours. If we take a closer look at the goals and outcomes, you'll see that firstly there is a clear and concise overall goal for the ASEAN rabies elimination strategy, zero dog-mediated human deaths in ASEAN by 2030.

Secondly, the strategy incorporates a phased approach to reflect the different situations and circumstances of ASEAN Member States and Charter a path that each country can follow according to its own needs.

Thirdly, it articulates four critical outcomes to help attain the overall goal. Communities are empowered to reduce rabies risks. Dog rabies is controlled and post exposure prophylaxis and other treatments are widely available.

The One Health approach is implemented to eliminate rabies and that resources are available to enable rabies elimination.

If we look a bit more closely to couple of the pillars and here I've picked out the sociocultural and technical pillars, you'll see that there's a real emphasis on community empowerment, and this came up several times during consultations across the Southeast Asian region.

We've seen some great examples of community initiatives such as the rabies alert teams or Tisira in Bali, which are formed at village level and includes village heads, village midwives, local military and police religious leaders and other community leaders too.

Tisira was established last year with the support of the Ministry of Agriculture and In Indonesia and in areas with Tisira teams in place, dog vaccination coverage has increased the 70% or higher, which is quite remarkable.

And given that the programmer only started last year and that just shows the really key role of community empowerment strategies to achieving those key pillars of the technical response around rabies vaccination.

And this also applies for things like rabies surveillance and other kind of technical activities.

This webinar has emphasized the importance of a One Health approach implemented at local, national and regional levels to control and eliminate rabies, and that's reflected in the inclusion of an organization of the One Health pillar, however, to achieve this resources are needed to address challenges and scale up rabies control programs to the level required to achieve elimination, so the resources required of course include funding, as well as increasing the capacity of the animal and public health, health, workforce and community volunteers to manage and control rabies.

But it also requires sustained attention and advocacy, amid many other pressing issues, including human and animal health emergencies. So it has been agreed in principle to establish an ASEAN Rabies Coordination group to support national rabies elimination programs in leverage growing momentum for one, health initiatives in the region.

The proposed coordination group may also increase opportunities for knowledge sharing and learning from experiences of other countries, which may be key to enabling rapid uptake and implementation of innovations in rabies control, and elimination AS20.

So in terms of next steps, the draft strategy was presented and discussed at a consultation meeting in Bali in May this year. At present, the final draft strategy is under consideration by the Ministries of Health and Agriculture in ASEAN Member States.

Work is commencing to form the ASEAN rabies coordination group that I described and after the revised ours is endorsed, the next step will be to develop the implementation plans at regional and national level for the revised ours.

So I just like to acknowledge the support and contributions of the rabies focal points in ASEAN. Our Member States, the ASEAN secretariat, the World Organization for Animal Health, sub regional representation for Southeast Asia, the World Health Organization particularly the Southeast Asia Regional Office and other international partners who have all contributed to the development of this revised plan.

And this photo is a picture from a rabies dog vaccination point on the beach in Legion, which is part of the Tisira project in Bali that I mentioned earlier.

Thank you very much for attending today.

**Facilitator**: Thank you, Melanie. We greatly appreciated your input today and it was a fascinating presentation. And thank you to the World Organization for Animal Health sub regional representation to southeast Asia and the Asia and the Secretariat Ministers for help and agriculture in the 10 ASEAN Member states.

What a great line up of speakers we have had today. And some really great insight into the varied programs of work on rabies.

Now it is the time for our Q&A, but firstly, big thank you to Beth, Andrea and Melanie.

If you have any questions, please make sure you submit them in the chat. If we do not get to your question today there will be information on the final slide giving further references for links and we will make sure to send them out post webinar as well.

 It's just a reminder that if you are a media representative it would it that all media inquiries must be sent via DAFF media team and that you can send media inquiries to media@daff.gov.au.

 So I think we are going to jump to our first question now. Here we go. So Melanie we'll jump back to you.

**Question**: Our government implementing recommended methods for rabies control or is there still use of reactive short sighted strategies such as dog culling?

**Answer:** Thanks for the question. And maybe just to first acknowledge that I guess across the region and there are different practices in place and different ways of approaching rate is controlled in different circumstances, so for example, the measures that are put in place during a rabies outbreak may be different to measures that are put in place during rabies preparedness measures in general, I can say that there is.

It's a topic of active discussion and some countries continue to make some use culling strategies, whereas other countries are moving away from this or have never implemented those kinds of approaches. I'm reluctant to sort of refer to those as in line with the kind of information in the question is being reactive or in other ways in appropriate just to recognize that the role of dog population management and in particular culling, is contentious. And it's something that requires I guess further work at sort of local and national and regional level to come to a consensus about the best way forward. Thanks.

**Facilitator:** Thanks Melanie. That was a fantastic answer and really good to note that what is seen as reactive in one area may not be in another.

This one is open to anyone who would like to answer so Melanie, Andrea or Beth?

**Question:** Thank you for the insightful presentation and for raising awareness about the need for action on preventable rabies deaths. How Australia can improve one health surveillance, including formalising One Health laboratory collaboration, what sort of structure within the CDC do you think would work?

**Andrea:** Hi I can jump in there. A very good question and topical at the moment with the design and function of the CDC currently being developed so yes, I think One Health surveillance. I’m DAFF has a One Health surveillance initiative currently with their partnership with Wildlife Health Australia.

And that’s a program I partnership that has just to led to the regional collaborating the collaborating Centre for Wildlife Health Risk Management is which is very important and that will have one health surveillance with within that collaboration and wildlife health.

Australia is already undertaking One Health surveillance. So I think it will be very important for the structure and design of the new Australian CDC for prevention of outbreaks and future pandemics to have at this One Health surveillance and lab collaboration. And we saw that last year in the Japanese encephalitis outbreak and we’ve had good examples of that happening already in Australia. Thanks. I hope that answers this question.

**Facilitator**: Thank you, Andrea, very comprehensive response there. We will have a question for Beth now. Beth, what would a response look like if a case of rabies was reported in Australia and what would be the role of the federal government?

**Beth**: Thanks. See, as I mentioned in my presentation, Australia puts a lot of effort into our preparedness for emergency animal disease incursions. So we do have the response strategy for Lisa viruses, which outlines how we would respond if rabies was detected in Australia. And fair to say that there’s a raft of different activities that would be implemented. We would also stand up their consultative committee on emergency animal disease which is chaired by the Australian Chief Veterinary officer and has representatives from all of the state and territory chief bets and of course as we’ve talking about one health and we would also need to engage very closely with human health colleagues and environmental sector, including groups like Wildlife Health Australia, to make sure that we’ve brought together all of the relevant experts to help with decision making. Just quickly, some of the activities that you would expect to see would be Tracing and surveillance to determine the source of the extensive infection. We would be undertaking epidemiological assessments to understand the range of responses that would need to be undertaken and to inform decision making, we’d have movement controls would have broad community education and awareness and we would also be looking at things like vaccination and how we would do post exposure vaccination and monitoring. So a whole bunch of activities would be activated very quickly. And the beauty of the response strategy is that you know, a lot of this stuff is already thought through and we’re and we’ve can activate those quickly.

**Facilitator**: Thank you very much, Beth, and good to hear that we have something in place. Not surprising but very good to hear. OK, once again another question to be open floor. How can rabies be managed in wild dog populations?

**Beth**: I’m happy to start. I see Andrea is just about jumping too, but I mean, I’m happy to start and then maybe Andrea can share some of her personal experience in working in right rabies control strategy. So probably just leading on from my last response we have also got a wild animal response strategy that does provide some, you know guidance around how responses might be mounted. And I and I think it’s also important to recognise that in Australia we’ve got a range of different types of populations of dogs that we’d need to be thinking about. So wild dogs would be one part of the population. We’ve also got areas particularly in remote communities where we’ve got free roaming dog populations. And then also where you know, I guess in other communities where dogs are more contained. So our response would need to consider, you know, all of those possible populations and have really well targeted and risk-based approaches to management of rabies in each of those different types of populations.

**Facilitator:** Thank you. Andrea, would you like to have a go at this question as well?

**Andrea**: Beth certainly answered it very well, you know depends on the population and the location and whether you can catch the dog. And that’s the you know to vaccinated and what also is being trialled overseas for these dogs that are difficult to catch or is oral rabies vaccines so that’s being trailed in different countries at the moment for those dogs that we can’t catch like firstly we want to give the injectable vaccines, but if we can’t catch them, then we’re trailing as the second line of attack is oral rabies vaccines for these wild dogs, which is being used widely in wildlife in the US and in Europe. Thanks.

**Facilitator**: Thank you, Andrea and Beth, that was a very concise comprehensive answer. I will give you a warning Melanie, that this question is coming your way. How much does a new incursion, for example into a new island, set back the target? And what is the key to preventing new incursions?

**Melanie**: Thanks and just to clarify, I assume the question is about the target for the 2030 elimination goal and so I don’t know if it’s possible to clarify, but I’ll work with that assumption.

I think in general rabies incursion as was alluded to earlier, as rabies has only been in Bali since 2008 but is now very widely established and it will take a very significant effort to eliminate rabies. And I think there needs to be a strong priority on maintaining rabies free areas within countries and we’ve actually seen a number of very interesting examples of how rabies free areas within countries are identified so that their status of being rabies free at sub national level is kind of confirmed and monitored over time, as well as looking to make sure that rabies preparedness measures are put in place in these rabies free areas. So I think historically a lot of the emphasis has of course been on rabies control, but in the shift towards rabies elimination, there’s increasing recognition that in a countries and local authorities need guidance and support to contact rabies preparedness activities to better prepare for and have early detection capabilities for any potential incursions. Because as for any infectious disease outbreak, when you can detect it earlier, it’s much easier to control and reestablish a local level. Thanks.

**Facilitator**: Thanks, Melanie. And Andrea, just back to you, a very interesting question: Could more or all dog vaccination programs bind with childhood vaccination programs like the ones in Africa that you described where kids bring their dogs in when they get the rabies vaccine?

**Andrea**: Thanks. Yes, an excellent question and I think that's a real example of where if you have that cross sector collaboration and coordination that you can have synergies and combine that the resources and gather and information sharing around disease. So I think yes it's certainly very possible and there are several countries where that is happening, where different vaccination, across the different sectors occurs. Even within in Australia I think there's some examples of that happening, but not to do with rabies but with other programs. So I think like relation to dog parasite control or working across sectors for those zoonotic diseases. And I think that’s what One Health is all about and enabling that to happen. Thanks.

**Facilitator**: Thanks, Andrea. I think we are getting to the end of our questions now. We may try to slot one or two more in. I will open to the floor once again. Does anyone want to answer this? What are the limitations of increasing the global supply of rabies vaccinations for dogs? If we don't get a taker, we'll start by directing to Andrea. So the question is what are the limitations for increasing the supply global?

**Andrea**: I think the World Organization for Animal Health vaccine bank is a great initiative and also the GAVI alliance for on the Human Health side for procurement of vaccines. And I think these initiatives are really, really important for getting the quality vaccines and getting enough of them manufactured and available and I think a big is that partnership approach in that regional approach and for four countries like Australia to be supporting these programs and enabling Bit better coverage and as sustainability of that because this is we need to keep it up and ensure that we do eliminate it because as we've seen with the COVID pandemic it can come back very quickly if we don't keep up that the campaigns and the support.

**Facilitator**: Thanks very much no problem and Andrea and I will keep you on the screen there. We have one final question for you today and then we will be going to our final slides. How does the one health approach to dog population management and vaccination incorporate different cultural and religious practises associated with these free roaming dogs and the goal of rabies elimination?

**Answer Andrea**: I think it's this very much local and ensuring that you're abiding by the countries UMUM aws and beliefs and I think it's very, very important that you understand culturally and their understanding of disease and their belief systems and when you're looking at programs because it’s not one size fits all and you have to really customize it and have that input and I think if you look at Sikkim, which is predominantly a Buddhist, and so they don’t believe in killing animals and so you need to work in with those beliefs and abide by them In your program and I think that that's very important.

**Facilitator**: Thank you very much, Andrea. And that was an amazing Q&A session there was some great questions and some very insightful responses from our presenters.

On the screen you will see a short poll that will pop up now we would really appreciate if you could participate by either scanning the QR code on the screen or use the mentimeter link provided in the chat to enter the voting code, whichever method is easiest for you today. Please note that there will be a final slide after this slide with some further links and information in if you are interested, we really hope you enjoyed today's webinar. We enjoyed give bringing it to you and please If there's any feedback you would like to provide us, please provide it in that poll and please look out for an email coming to you shortly with a link to the recorded webinar and with the useful links in that email as well.

Thank you very much for your time today and as I said. Please wait. Watch for the final slide, which is up now. Thank you everybody. And once again thank you to our amazing presenters. Thanks everyone.