An introduction to the Australian Wildlife Health Network

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Background

The aim of the Australian Wildlife Health Network is to promote and facilitate collaborative links in the investigation and management of wildlife health in support of human and animal health, biodiversity and trade. Its vision is for a nationally integrated wildlife health system for Australia.

The network is hosted by Taronga Zoo and New South Wales Agriculture (Elizabeth Macarthur Agricultural Institute, PMB 8, Camden, NSW 2570, Australia). It was launched in August 2002 and is funded from a grant from the Wildlife Exotic Disease Preparedness Program (Agriculture, Fisheries and Forestry – Australia).[1]

The network's core business is wildlife disease surveillance.[2] It manages a database of wildlife disease surveillance information and an interactive website. It has 280 members from around the country and overseas. Members come from all walks of life.

Introduction

The Australian Wildlife Health Network has been operational for almost a year. The strategic plan presents the strategic goals and objectives of the Network (Table 1). Emphasis of the first year of operation has been in developing structures necessary for efficient running of the Network and in the key theme areas of surveillance and investigation, research and promotion. Future emphasis will be on targeted surveillance, emergency disease preparedness and response (EAD), and education and training. There follows a brief summary of progress to date in each of these key theme areas. Future priorities are also presented.

[1] The Wildlife Exotic Disease Preparedness Program (WEDPP) is a joint Commonwealth-State/ Territory program that commenced in 1984-85. WEDPP's mission is to improve Australia's emergency animal disease preparedness by supporting the Australian Veterinary Emergency Plan (AUSVETPLAN) through the development of strategies and techniques to monitor, prevent, control and eradicate emergency diseases in wildlife and feral animals that threaten Australia's livestock industries.

[2] Determining which diseases are found in Australian wildlife and monitoring them.

Progress to date

Surveillance and investigation
i. General surveillance

A system of State/ Territory co-ordinators has been put in place to capture and report wildlife disease events and information (Table 2). Two co-ordinators have been chosen for each State or Territory: a "primary" contact, preferably from a Regional Veterinary Laboratory (to capture "main-stream" diagnostic information), and an "assistant" (to capture "non-mainstream data).[3] Co-ordinators report quarterly by teleconference, or on an "as needs" basis: a model based on that used by the Communicable Diseases Network of Australia.[4] Data submission is by standard *pro forma*. Information is moderated and entered on a purpose built draft database (below). Reports are generated quarterly for Animal Health Surveillance, the National Animal Health Information System (the NAHIS) and the Network, and yearly for the Office International des Epizooties (OIE).[5]

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[3] State and Territory veterinary services have legislative responsibility under the Australian Constitution for animal health services within their respective borders. State services administer relevant acts and regulations involved with livestock identification and movement, disease surveillance, diagnosis, reporting and control of notifiable diseases, chemical residues and other programs. This requires the maintenance of close links with livestock producers, private veterinarians and others associated with the livestock industries. An animal health administrative unit headed by the State/ Territory Chief Veterinary Officer carries out these tasks.

[4] The Communicable Disease Network Australia (CDNA) was established in 1989 as the Communicable Diseases Control Network, as a joint initiative of the National Health and Medical Research Council and Australian Health Ministers' Advisory Council. Its brief was to oversee: the co-ordination of national communicable disease surveillance; the response to communicable disease outbreaks of national importance; and field training of communicable disease epidemiologists.

[5] Animal Health Surveillance is the quarterly newsletter of Australia's national animal health information system (the NAHIS). The NAHIS aggregates summary data and provides information from a number of sources about Australia's animal health status. Its aim is to provide timely and accurate summary information on Australia's animal health status. The Office International des Epizooties (OIE: World Animal Health Organisation) is an intergovernmental organisation made up of 162 member countries. Each Member Country undertakes to report the animal diseases that it detects on its territory. The OIE then disseminates the information to other countries, which can take the necessary preventive action. This information also includes diseases transmissible to humans. Information is sent out immediately or periodically depending on the seriousness of the disease. It is somewhat analogous to the WHO.

Six disease categories form the basis for general surveillance and include: 1) OIE list diseases; 2) bat viral diseases; 3) mass, or unusual mortality events; 4) Salmonella cases; 5) Arbovirus cases; 6) diseases State/ Territory co-ordinators think are interesting or unusual.[6],[7]

Two Agenda papers have been drafted, presented to, and ratified by Animal Health Committee and complement the Network's general surveillance strategy: 1) Proposed approach to wildlife disease surveillance by the Australian Wildlife Health Network and; 2) Submission of wildlife samples.[8] These papers ensure support for wildlife disease investigation by all Commonwealth State/ Territory Chief Veterinary Officers. A working group has been formed to develop a strategy for wildlife sample management to facilitate accurate and timely diagnosis of wildlife mortality events. This group is scheduled to report back to Animal Health Committee by September 2003.

ii. Targeted surveillance

A pre-proposal has been submitted to Australian Biosecurity CRC for funding for the project "A scoping study of the role of wildlife surveillance in the early detection of emerging disease threats".[9] The purpose of the study is to examine the role of wildlife disease surveillance in the early detection of infectious disease threats to livestock, human and biodiversity in Australia. The specific objectives are to:

1. Review the apparent (global) association between disease emergence and wildlife reservoirs of novel agents in the Australian context.
2. Identify effective, cost-efficient approaches to general and/or targeted wildlife surveillance.
3. Prioritize wildlife species or communities for surveillance based on risk assessment and consequence analyses.
4. Identify key diseases for targeted surveillance.

Pending funding, this project is scheduled to commence July 2003, and will run for 6 months. It will give direction for targeted surveillance. It will require the employment of a full time project officer and is being run in collaboration with Animal Health Australia, Agriculture, Fisheries and Forestry – Australia, and Queensland University. The project officer will be based at Queensland University.

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[6] Salmonella reports are linked into the National Enteric Pathogen Surveillance Scheme (NEPSS). The aim of NEPSS is to reduce the burden of human disease due to enteric pathogens, by collecting, analysing and disseminating data on diagnoses of enteric food and water borne infections of public health importance.

[7] Arbovirus monitoring links in with the National Arbovirus Monitoring Program (NAMP), managed by Animal Health Australia. NAMP is an integrated national program to monitor the distribution of economically important arboviruses (viruses borne by arthropods). Examples of arboviruses include West Nile Virus, Japanese encephalitis, Murray Valley encephalitis and Ross River Fever,

[8] Animal Health Committee (AHC) membership includes Commonwealth, State and Territory Chief Veterinary Officers (CVOs), a CSIRO representative, an Animal Health Australia representative and the CVO of New Zealand. AHC advise PISC (the Primary Industry Standing Committee, made up of the heads of the Commonwealth Department of AFFA, State and Territory departments of agriculture, CSIRO and the New Zealand government).

[9] The aim of the Australian Biosecurity CRC is to develop new capabilities to monitor, assess, predict and respond to emerging infectious disease threats which impact on national and regional biosecurity. The CRC's research programme focuses on developing new technology and knowledge platforms for disease detection and surveillance. Research outcomes will include devices to detect pathogens on-site and new platform technologies to enhance the speed, sensitivity and specificity of laboratory and on-site tests.

In principle support has also been given by Animal Health Australia and the North Australian Quarantine Strategy for value-adding targeted wildlife surveillance to Australia's current domestic animal targeted surveillance programs.[10]

The Network is also developing a list of the "ten least wanted wildlife diseases" of special significance to keep out of the country. This list is based on (but not exclusive to) those diseases identified as being: 1) potential hazards; 2) of quarantine concern; 3) of potential for harmful effects; 4) or in the case of Drafts, for detailed examination, by Biosecurity Australia[11] in its Import Risk Assessment documents (for example Pacheco's disease of birds, and rabies).

iii. Database

An initial model database is now undergoing trouble shooting, which may take several months. Conversion to a web-based format is scheduled for an October launch.[12] The database was initially based upon that used by the Australian Registry of Wildlife Health, however, this database is case orientated, not event orientated and the Network database has been rebuilt accordingly.[13] Though the back-end is different, the front-end is designed to be as similar as possible to the Registry database. Both Network and Registry databases will be linked and accessible through the website. (Epidemiological data will be provided through Network database, case reports through the Registry database.) The Network database is designed to be NAHIS friendly.

Data entry is being staged, due primarily for the need for moderation. Once bugs are ironed out it is hoped that multiple user entry and access will occur with data available in close-to-real time.

iv. Website

Development is continuing on the Network website and the launch is planned for October. The website will act as a portal for data access and entry, and will be the public "face" of the Network.

v. Investigation

The Network has been involved with numerous wildlife mortality events, or suspected emergency animal disease events this financial year (n = 26). Amongst other parameters, event, diagnosis, investigation, time to investigation, diagnosis, and follow-up are recorded. The percentage of events investigated is surprisingly high (>70%), however the percentage of diagnoses is lower, and time to diagnosis in some cases protracted, with a low follow-up rate.[14] These areas are being addressed as part of emergency animal disease preparedness and response and education and training programs.

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[10] Animal Health Australia is the peaked body charged with ensuring that Australia's system of animal health services maintains acceptable standards. The North Australian Quarantine Strategy (NAQS) which monitors animals for target list diseases, both onshore and offshore in Northern Australia.

[11] Biosecurity Australia is a department of Agriculture, Fisheries and Forestry – Australia, and is responsible for developing and reviewing Australia's quarantine program and for conducting technical export market negotiations.

[12] Launch will be at the Network AGM to be held at the ANZ lecture theatre, Taronga Zoo, October 30th.

[13] Managed by Karrie Rose and based at the VQC at Taronga Zoo.

[14] These data being prepared for publication, but available on request.

Research
Network and stakeholders have been canvassed to provide priority wildlife research questions. Thirty submissions have been received, categorised and placed within a "customer needs" framework by: i) ascertaining who has the problem/ who is the customer; ii) ascertaining the customers short, medium and long term goals, and political needs; iii) defining priorities for research according to customer needs; iv) short listing research priorities using these categories as must be done, should be done, and could be done.

This list is to be presented to the Research working group for consideration next quarter.[15]

Communication and marketing
i. General
A communications strategy has been developed. The initial focus has been on product development (information and access i.e. co-ordinators, database, website). A draft prospectus and mail lists have been distributed to the Network Management Committee for comment prior to the first fund raising mail-out scheduled for next quarter.[16]

Market penetration and product placement through the Protect Australian Livestock campaign has been confirmed with Animal Health Australia.[17] However, a decision has been made to hold off on joining this campaign until the Network approach to disease event investigation and sample handling has been ratified with Animal Health Committee.

ii. Presentations, publications and media stories
Submissions (2), abstracts (2), conference papers (1), presentations (9), grey publications (3), media stories/ interviews (12), poster presentations (2), workshops (1). Peer reviewed publications facilitated (2), case reports (1) (one submitted, two in prep.)

iii. Quarterly newsletter
Distribution of the first Network quarterly magazine "Wildlife Health in Australia" is planned for October 2003.

Education and emergency animal disease preparedness and education and training
Education and emergency animal disease preparedness and education and training are scheduled for the next phase of operation and have been of lesser priority than surveillance, research and promotion. In principle support has been given for use of the GenWED emergency disease incursion modelling software (Vertebrate Pest Unit, NSW Agriculture, Orange) for "bench-top" incursion management exercises.[18] In principle support has also been given by Animal Health Australia and their EAD education provider for examination of wildlife emergency disease training

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[15] For each of the five theme areas of the Network's strategic plan (Table 1), there is a sub-plan and working group dedicated to implementing that plan. For example there is a research working group, which addresses research-related issues; a surveillance working group, which addresses surveillance-associated issues.
[16] The Network is managed under corporate governance. A management committee (made up of a management group and advisory committee) sets strategic direction. An operations committee manages the day to day operations of the Network.
[17] A major part of Australia's exotic disease preparedness program aims to improve awareness and understanding of exotic disease issues. The component concerned with maintaining livestock producer's awareness is delivered through an awareness campaign referred to as the "Protect Australian Livestock Campaign", administered through Animal Health Australia.
[18] "Disease outbreaks."

and potential incorporation in domestic animal EAD training. The Wild Animal Management Manual of AUSVETPLAN[19] (WAMM) has been reviewed by the Network EAD working group and is now know as the Wild Animal Response Strategy (WARS).

There have been many approaches to the Network from various State/ Territory wildlife carer groups seeking collaboration in developing standard operating procedures and minimal standards for wildlife carers. This is currently being managed by the Network Education working group. The Network has recommended that any training also needs to incorporate EAD awareness training.

Future priorities

Future priorities for the Network are in targeted surveillance, emergency disease preparedness and response, education and training, and progressing research and disease investigation and funding.

Acknowledgements

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[19] AUSVETPLAN is Australia's emergency animal disease management plan (The Australian Veterinary Emergency Plan). AUSVETPLAN provides a comprehensive package of agreed documentation that sets out the roles, responsibilities, coordination arrangements, financial arrangements, policies and procedures that will be followed by all agencies in any exotic animal disease response.

Australian Wildlife Health Network
Strategic Plan 2002-2005

Founding principles

The founding principles of the AWHN guide the development, operation and management of the network. The founding principles are for an organisation that:

- has a major focus on human and animal health issues associated with free-ranging populations of wild animals;
- is based on scientific endeavour and scientific objectivity;
- encourages multi-organisational collaboration amongst federal, state, local government and non-government agencies;
- is based on complementarity rather than redundancy or competition with current organisations, researchers, conservationists;
- is non-regulatory;
- is financially responsible and efficient;
- encourages, seeks and secures funds from stakeholders, funding agencies and sponsors;

Vision

A nationally integrated wildlife health system for Australia.

Mission

To promote and facilitate collaborative links across Australia in the investigation and management of wildlife health in support of human and animal health, biodiversity and trade.

The Charter of the Australian Wildlife Health Network

- To improve ecological, economic and social benefits to Australia by limiting the deleterious impact of wildlife disease on primary industries, natural ecosystems and human health.
- To provide value to stakeholders by delivering ecologically beneficial information, products and services, which will enhance their management and provide a superior return on capital invested.

About this plan

This strategic plan 2002 – 2005 is intended to be the key guiding document for the Australian Wildlife Health Network to the end of the current funding period. The Network was established in 2002 following a national workshop in 1999 and an Australia-wide feasibility study in 2000, which concluded that the establishment of a National Wildlife Health Network was vital to coordinate preparedness and response to wildlife and feral disease issues, surveillance and diagnostic information across Australia. It is complemented by:

- A business plan approved by the management group;
- A work plan for the co-ordinator of the network.
- An annual operating plan.

These plans will be available from the Network's website.

Table 1. Themes, strategic goals, strategic objectives and outputs of the Australian Wildlife Health Network.

THEMES	STRATEGIC GOALS	STRATEGIC OBJECTIVES	OUTPUTS
Surveillance and investigation	Improved, effective and efficient wildlife disease surveillance and investigation in Australia that also satisfy international reporting requirements.	• Develop a State/ Territory coordination system for wildlife disease surveillance and reporting, which can also facilitate and monitor field investigations of disease incidents. • Provide and operate a national database of wildlife health information, which includes historical disease incident reports. • Identify wildlife health surveillance needs and priorities and facilitate funding and action. • Provide and operate an interactive Website, which can be used for reporting and accessing Australian wildlife health information. • Facilitate funding and action.	Written reports to: OIE NAHIS Commonwealth/ State Departments of Agriculture Donors/ stakeholders Network/ internet sites Similar overseas networks Resources/ funding to achieve objectives
Emergency disease preparedness and response	Improved, effective and efficient emergency wildlife disease preparedness and response in Australia.	• Enhance and promote a series of regional and national wildlife health emergency preparedness and response strategies, which are integrated with current strategies and operational procedures or manuals (e.g. those contained in AUSVETPLAN and others developed by AHA, AFFA, local and State governments). • Facilitate funding and action.	Clear response protocols Awareness of, and training in requirements Participation of key stakeholder groups Resources/ funding to achieve objectives
Research	Improved knowledge of priority questions of diseases and infections of wildlife as identified by stakeholders.	• Identify wildlife health research needs and priorities, which are integrated with current strategies and operating procedures or manuals (as above) and facilitate funding and action.. • Ensure that research is reported upon and disseminated, with an emphasis on scientific integrity and peer review. • Facilitate funding and action.	• Funding for research • Identification of opportunities • Documentation of data • Peer reviewed publications • Provision of information to policy makers and funding agencies • Resources and funding to achieve objectives

THEMES	STRATEGIC GOALS	STRATEGIC OBJECTIVES	OUTPUTS
Education and training	Improved awareness and understanding of the importance of wildlife health and best management practice as it relates to human health, biodiversity, animal health, agro-economy and trade.	• Improve education and training in wildlife health. • Increase the capacity and opportunities for Australia by training postgraduate and graduate students in wildlife health and ecology relevant to human health, biodiversity, animal health, agro-economy and trade. • Provide information about wildlife health to the community. • Provide protocols for translocation/ relocation of wildlife, which are understood and implemented by those involved with these activities. • Facilitate funding and action.	Increased awareness of the role of wildlife health A well trained network An enlarged network A sustained network Resources/ funding to achieve objectives
Promotion/ marketing	• An aware, informed community that recognizes the importance of wildlife health to human health, biodiversity, animal health and trade. • Recognition and commitment of resources to enhance wildlife health in Australia.	• Secure resources to achieve the objectives listed above. • Enhance communication within and amongst stakeholders. • Promote research/ priority projects to funding agencies/ bodies. • Develop and implement a marketing and promotional plan, which includes promotional material, branding and position statements. • Facilitate funding and action.	• Knowledge of product (what it is, what it does) and how to use it • A product that is of benefit to Australia • Be identified as peak body for wildlife health in Australia • Timely, efficient and appropriate transmission of information • Resources/ funding to achieve network objectives.

Driving performance

To monitor the performance of the Australian Wildlife Health Network to achieve its goals, six key performance indicators have been selected and targets established for each. These are:

Table 2. Key performance indicators and targets established to monitor the performance of the Australian Wildlife Health Network.

INDICATOR	TARGET
Surveillance and disease investigation index	• Accurate, concise quarterly reports on disease occurrence from States to stakeholders. • Yearly reporting to the international community (OIE).
Emergency disease preparedness and response index	A minimum of one desktop emergency disease preparedness and response training course per year.
Research index	• A minimum of three research projects facilitated per year. • Facilitation of a minimum of one peer reviewed publication per project facilitated. • Paper presentation at a minimum of one conference per year. • Poster presentation at a minimum of one conference per year. • Run, or assist with running a minimum of one conference, or conference session, biannually.
Education and training index	A minimum of one training course in wildlife health per State or Territory per year.
Promotion and marketing index	• A minimum of 300K secured per year to year 2010. • 10% annual growth on funds secured in year 1 of the project. • A minimum of 20 people per State or Territory contributing to the network with strategic international links. • 50 notices of communication including print and electronic media stories involving the Network, 1000 external web hits on the Network's website and presentations by Network personnel.
Major milestone review	Accomplish major milestones review after 18 months of operation at which strategy for future funding should be tabled.

Table 2. State/ Territory Co-ordinators

Australian Wildlife Health Network

State or Territory	Co-ordinators	Notes	Address	Contact details
ACT	**Murray Evans**	Senior Wildlife Ecologist	Environment ACT PO Box 144, Lyneham, ACT 2602	murray.evans@act.gov.au W: 02 6207 2118 Fax: 02 6207 2122
	Alternate Will Andrew		ACT Veterinary Services PO Box 144 Lyneham ACT 2602	Will.andrew@act.gov.au W: 02 6207 2357 Fax: 02 6207 2361 M: 0419 239 073
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