

Senate Community Affairs Committee

ANSWERS TO ESTIMATES QUESTIONS ON NOTICE

HEALTH PORTFOLIO

Supplementary Budget Estimates 2015 - 16, 21 October 2015

Ref No: SQ15- 000699

OUTCOME: Outcome 1 - Population Health

Topic: Cats and Dogs Used in NHMRC Funded Research

Type of Question: Written Question on Notice

Senator: Rhiannon, Lee

Question:

Following up on questions I asked during Estimates hearings, how many NHMRC grants have been made in the last five years that involve using dogs or using cats in animal experiments? For each species that the tests were carried out on please supply the following information:

- a) Who/what body was the grant given to?
- b) What was the purpose of the grant and of the research?
- c) What was the dollar value of the grant?
- d) What sort of procedures did the research involve for each of the funded projects?
- e) How many animals were/are being used in each of the projects?
- f) Is the NHMRC aware of where these animals came from? Where?
- g) What happened or is happening to the dogs and cats at the conclusion of these experiments?
- h) Is there any attempt to rehome these animals, or any contact with animal welfare organisations to rehome these animals?

Answer:

- a) NHMRC grants are awarded to accredited NHMRC Administering Institutions which must comply with the *Australian code for the care and use of animals for scientific purposes* 8th ed. 2013, as a condition of funding. All research involving animals must be approved by an institutional Animal Ethics Committee before it can commence.

The NHMRC awarded 15 grants that proposed using cats and/or dogs in animal experiments, since 2010.

Answers to b) and c) are included at Table 1.

Table 1: Details of Grants proposing to use cats and/or dogs in medical research since 2010

SUMMARY OF PROPOSAL (based on applicant's media summary)	BUDGET TOTAL	YEAR GRANT COMMENCED	YEAR GRANT FINISH	ANIMAL TYPE
Cochlear implants were originally used only in cases of profound deafness, but are now being used in patients who have some residual hearing at low frequencies. The researchers' goal is to better understand how the electrical information from the cochlear implant and the acoustic information provided by the residual hearing are combined in the brain to produce unified perception of the auditory environment.	\$560,267	2011	2014	Cats
Disorders affecting skeletal muscle and the heart can have life threatening effects and lead to impaired mobility and sudden cardiac death. This project will uncover the mechanisms of disorders which lead to skeletal muscle fatigue, chemotherapy induced toxicity in the heart and heart failure. Understanding these mechanisms may lead to successful gene therapy treatment and to the design of a new range of drug therapies to treat these devastating disorders.	\$415,139	2011	2015	Dogs
Dementia is the pre-eminent medical challenge of our times as it affects 34 million individuals and will quadruple by 2050. This research therefore aims to develop new preventative and therapeutic strategies for dementia. Seven different studies are proposed, ranging from new stem-cell treatments for testing in rodents, to human clinical trials looking at the preventative effects of physical and mental exercise. These are linked by a central idea of boosting the brain's neuroplasticity.	\$426,080	2011	2014	Dogs

<p>Human echinococcosis is a chronic debilitating disease with a death rate that can exceed 90%. In China it is a major public health issue where recent environmental changes are likely to increase transmission rates, thus increasing the disease burden. This project will assess the impact of these environmental changes on the transmission of this disease over space and time, it will predict where new cases will arise, and determine the best methods for sustainable control and then elimination.</p>	\$654,549	2011	2015	Dogs
<p>Helminth parasites take an enormous toll on human health, especially in developing countries. Half a billion people suffer debilitating, sometimes fatal illness as a result of these infections. These facts are all the more disturbing when one considers the prospect of nematode parasites developing resistance to the small armamentarium of drugs available for treatment. This proposal will look to further understand the biology of these parasites in order to better comprehend what genes would make for practical drug or vaccine targets.</p>	\$316,336	2011	2014	Dogs
<p>Health-promoting behaviours - such as physical activity - that are maintained from childhood to adulthood have a positive effect on health status. This research will examine aspects of the built environment associated with child behaviour, health and development and use these findings to formulate recommendations to key stakeholders for the design of user-friendly, active-living environments for children and interventions targeting adults.</p>	\$308,765	2012	2016	Dogs

<p>Cancer cells have a high iron requirement for DNA synthesis and many clinical trials have shown that iron chelators are effective anti-cancer drugs. Their potential to act as anti-tumour agents has been confirmed by the entrance of the iron chelator, Triapine, into widespread NCI clinical trials. This grant will perform toxicological studies to enable clinical trials of the most potent and selective anti-cancer agent to commence.</p>	\$584,907	2012	2014	Dogs
<p>Cysticercosis and hydatid disease are caused by infections with the larval stages of tapeworm parasites. They are life-threatening zoonotic diseases, transmitted to humans from animals and are most common in people living in poor countries. This project aims to develop practical vaccines to assist with the prevention of these diseases in humans. The researchers will vaccinate the parasites' natural animal hosts and break the parasite life-cycles, thereby indirectly and inexpensively preventing the diseases being passed to humans.</p>	\$567,868	2013	2016	Dogs
<p>The aim of this study is to investigate innovative techniques for steering current to enhance existing, and assist in the development of new, neurostimulation strategies.</p>	\$542,744	2014	2016	Cats
<p>This project aims to improve the resolution of bionic eyes and thus improve quality of living for the blind through novel electrical stimulation methods. Present commercial implants are inadequate in the amount of resolution they provide to conduct complex tasks such as independent navigation, reading and facial recognition. The proposed experiments using the new stimulation methods will inform a new generation of devices capable of high resolution without increasing the number of physical electrodes.</p>	\$369,726	2014	2016	Cats

<p>Hearing loss is a common sensory deficit and can get progressively worse over time, eventually requiring a cochlear implant. This project will examine the effectiveness of a new technique that uses nanoengineered particles to provide long term and controlled delivery of drugs in order to prevent progressive hearing loss and protect residual hearing following cochlear implantation. This project will develop the next generation of nanotechnology to enhance drug delivery in pathological ears.</p>	\$477,106	2014	2016	Cats
<p>Blackouts may result from seizures or heart problems, and incorrect diagnosis exposes patients to risk and limits activities. Diagnosis is difficult because these events are infrequent. Implantable monitors are useful in diagnosing cardiac abnormalities, but prolonged seizure monitoring has not been feasible. This system will use a minimally invasive implant inserted under the scalp enabling distinction of epileptic from non-epileptic causes. The implant also has the capability to improve patient safety through remote monitoring.</p>	\$864,992	2014	2016	Cats & Dogs
<p>Cochlear implantation in both ears is increasingly common and while there are benefits, performance falls short of expectations, likely due to the degradation of the long-term deaf brain's sensitivity to small timing differences of sounds reaching each of the two ears. By confirming the hypothesis that experience with high-fidelity timing information will improve performance, this study will drive the technical innovations required to maximise the benefits and investment of bilateral implants.</p>	\$948,975	2015	2018	Cats

<p>The neglected tropical diseases (NTDs) are of major public health importance. Parasitic worms are the most common infecting almost a third of the world's population. Multi-component integrated intervention strategies will be required for sustainable control and elimination of NTDs in the Asia-Pacific. This Australian Centre for Population Health Research on NTDs will undertake research into their epidemiology, control and elimination.</p>	<p>\$419,180</p>	<p>2015</p>	<p>2018</p>	<p>Dogs</p>
<p>The project aims to improve cochlear implant performance via integrated gene therapy. A neurotrophin gene cassette will be delivered to cells adjacent to the electrode array using electrical pulses. This drives regeneration of the auditory nerve fibres and considerably improves cochlear implant performance. This study will optimize the therapeutic gene construct and cochlear implant –based gene delivery controller, and undertake an initial clinical trial to evaluate safety and efficacy.</p>	<p>\$782,347</p>	<p>2015</p>	<p>2017</p>	<p>Cats</p>

- d) NHMRC does not collect this information for its funded research. NHMRC has processes to ensure that any successful NHMRC grant application for research involving animals is scientifically valid, has been subject to ethical review and is conducted in accordance with the *Australian code for the care and use of animals for scientific purposes* (the Code).

All applications for NHMRC funding are subject to rigorous peer review of their scientific merit and must be approved by an institutional Animal Ethics Committee (AEC) prior to the research commencing.

In all cases, the applicant must justify the use of the animals to the Animal Ethics Committee. At all stages, including during the planning, ethical review and conduct of a project, consideration must be given to the 3Rs -Replacement of animals with other methods; Reduction of the number of animals used; and Refinement of techniques used in order to reduce the adverse impact on animals. Researchers must strive to ensure that the use of animals in research continues to be relevant and useful to humans and that alternatives to the use of animals are adopted wherever possible.

- e) NHMRC is not responsible for the collection of national animal use statistics and does not collect the final number of animals used in research projects. State and territory governments are responsible for animal welfare. All state and territory governments collect annual statistics on animal use. However regulatory requirements and data requirements vary across states and territories.
- f) Any research involving animals must be approved by an institutional AEC before it begins. The day-to-day operation of AECs is the responsibility of individual research institutions such as universities. The source of the animals used in research projects is considered by the AEC at the institution undertaking the research. NHMRC does not collect this information.

Compliance with the NHMRC's policy and guidelines, including the *Australian Code for the care and use of animals for scientific purposes* (8th ed. 2013) (the Code) is a condition for research funding allocation. Chapter 2.5 of the Code outlines responsibilities of animal carers, which includes sourcing and supply facilities.

NHMRC's *Guidelines on the Care of Dogs Used for Scientific Purposes* (2009) provides guidance on the selection and acquisition of dogs used for scientific purposes. It states that most dogs used for scientific purposes in Australia are purpose-bred but some pound-sourced dogs are still used and are suitable for some research and teaching objectives.

NHMRC's *Guidelines on the Care of Cats Used for Scientific Purposes* (2009) state that most cats used for scientific purposes in Australia are purpose-bred.

- g) The planned fate of animals at the conclusion of any particular project is considered in the application to the AEC at the institution undertaking the research. NHMRC does not collect this information.

The Code includes a chapter on provisions for animals at the conclusion of their use (Chapter 3.4). Provisions must be made promptly and in accordance with the AEC approval.

Provisions may include: (i) rehousing (rehoming) (see Clauses 3.4.2–3.4.3) (ii) return to normal husbandry conditions or natural habitat (see Clauses 3.4.4–3.4.5) (iii) humane killing (see Clauses 3.3.45–3.3.46) (iv) reuse (see Clauses 1.22, 1.24 and 2.3.15) (v) tissue sharing (see Clauses 1.26, 2.4.24 and 2.5.10).

- h) While rehoming is an option for all animals, as outlined in the Code, specific *Guidelines on the Care of Dogs Used for Scientific Purposes (2009)* and *Guidelines on the Care of Cats Used for Scientific Purposes (2009)* do not endorse the adoption and rehoming of dogs or cats used for scientific purposes as general good practice. However, the guidelines note that some institutions may wish to have adoption as an option and advise that policies and protocols must be developed to support this option.