

The RSPCA and the 3Rs

The scientific animal welfare organisation as a catalyst for change.



Elliot Lilley



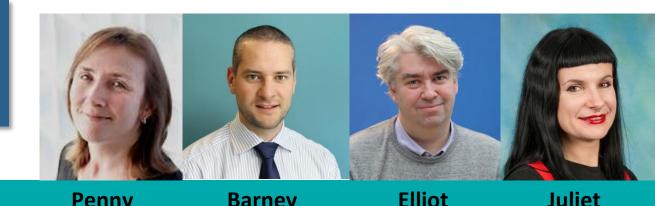
Research Animals Department

- Principal goal = replacement of animals with humane alternatives
- ROBUST ETHICAL REVIEW OF ANIMAL USE

Penny

- Challenging necessity and justification
- EFFECTIVE IMPLEMENTATION OF THE THREE RS

RAD part of **RSPCA Science Group** CAD FAD WLD Science driven policy



Barney



Research Animals Department

Our approach

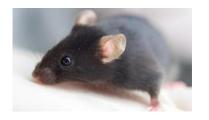
- Long history of working with the scientific community
 - Researchers, regulators, animal care staff
- Challenge from 'within'
 - Ethical review, actual severity reporting, training
 & competency
- Highlighting problems and finding practical solutions





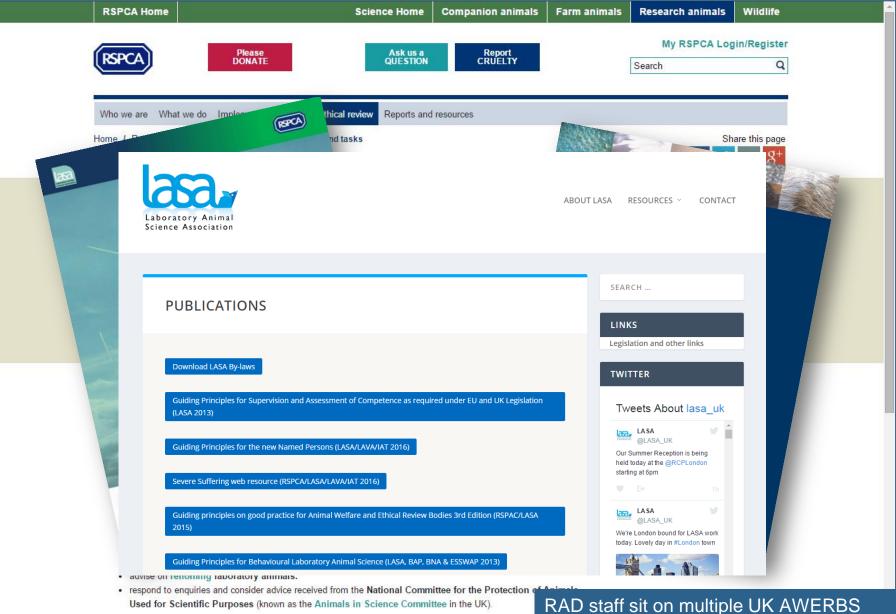
- Challenging the use of animals ethically and scientifically
- Ensuring effective, well enforced regulation of animal experiments
- Raising standards internationally
- Promoting debate which is open and honest
- Promoting animal welfare in tertiary education
- Reducing the use and suffering of lab animals





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RAD staff sit on multiple UK AWERBS including Pharmaceutical companies, Universities, Medical Research Charities and CROs

Events for members of AWERBs

AWERB Lay Members' Forum

Since 1999, the RSPCA has been organising a regular meeting for lay and other members of Animal Welfare and Ethical Review Bodies (AWERBs). The meetings provide a forum for people to come together and share experiences of their work. Presentations on some of the many important issues that AWERBs cover are combined with opportunities for group discussion. You can read about many of the previous events below. Ideas for topics to consider at the Forum are always welcome.



2014

The most recent Forum was held in December. Topics included: assessing harms and benefits; experimental design and translatability; fish welfare; retrospective review; update from the European Commission. Abstract booklet (2014) (PDF 1.64MB)).

2013

The programme included a range of scientific, welfare and ethical topics and also covered issues relating to the implementation of the revised UK law. Abstract booklet (2013) (PDF 891KB)

2012

Topics included: transposition of Directive 2010/63/EU - with emphasis on issues of particular relevance to the ethical review process; how lay members would like to see the local ethical review process and the new national Animals in Science Committee develop in the future. Abstract booklet (2012) (PDF 861KB).

2011

The theme of 'Making difficult decisions'. Topics included: evaluating harms and benefits of new technologies; issues relating to humane endpoints and cumulative suffering; harms and benefits in behavioural pharmacology; and the challenge of ethical review in a global context. Abstract booklet (2011) (PDF 592KB)



Just held workshop on ethical review of animal use, great talks & discussion! Thank you @SEBiology for putting this on the agenda.

#SFB3Rs











AWERB-UK

Delivering an effective AWERB – Challenges and solutions A forum for UK AWERB members organised by RSPCA, LASA, LAVA and IAT Central London, Thursday, 12 May 2016

This meeting provided a forum for Animal Welfare and Ethical Review Body (AWERB) members to discuss how they have made progress with respect to achieving all of the AWERB's tasks, compare experiences, discuss relevant topics and identify any training needs. It was attended by 106 participants representing a range of AWERB members including animal technologists, project licence holders, Named Persons, lay and independent members.

The meeting agenda is set out below, with links to speakers' presentations and notes from the ten workshops that were held on the day. We hope that all of this content is useful for members of AWERBs, Animal Welfare Bodies and other ethics or animal care and use committees. We would also like to encourage others to use this agenda as a template for running similar meetings to help progress effective ethical review - please contact research.animals@rspca.org.uk if you would like further information about how the meeting was convened and run.

The organisers plan to hold further AWERB-UK meetings and to follow up on the various issues and conclusions raised by this first meeting; please use the above email address if you have any comments on these or would like to be kept informed about future initiatives.

Welcome and introduction - Penny Hawkins, RSPCA Click here for slides

Keynote presentation on the tasks of the AWERB - Will Reynolds, Head of Policy and Administration, Animals in Science Regulation Unit - Home Office Click here

Update on the Animals in Science Committee's work on AWERBs - John Landers. ASC Chair Click here

Five workshops on selected AWERB tasks					
Advise on the application of the 3Rs, and keep [staff] informed of relevant technical and scientific developments Click here	Follow the development and outcome (retrospective review) of projects; and assist with retrospective assessment Click here	Provide a forum for discussion and development of ethical advice <u>Click here</u>	Support named persons, and other staff dealing with animals, on animal welfare, ethical issues and provision of appropriate training Click here	Help to promote a 'culture of care' within the establishment and, as appropriate, in the wider community Click here	

Lunchtime 'materials exchange' session for sharing useful AWERB-related resources

Just held a really successful session on ethical review of animal use at #FELASA2016 - great turnout & discussions! #3Rs



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- Ensuring effective, well enforced regulation of animal experiments
- Raising standards internationally
- Promoting debate which is open and honest
- Promoting animal welfare in tertiary education
- Reducing the use and suffering of lab animals



- Ongoing meetings with senior Home Office (UK regulator/CA) officials
- Input into development of guidance on new UK law – commented on advisory notes
- Penny (until 2016), Barney (from 2016) member of the Animals in Science Committee (ASC) statutory advisory body
- Barney is member of Laboratory Animal Science Association council, Elliot is member of ETEs
- Members of various learned societies providing input on animal welfare issues



The regulator

BEING CHALLENGING



Office: 0300 123 0244/0288

Friday 24 April 2015

More effort needed to end 'severe' suffering of lab animals, urges RSPCA

80,000 lab animals experience severe pain, suffering or distress in the UK

Today (24 April) is World Day for Laboratory Animals and the RSPCA is calling for everyone involved in the regulation and use of animals in research to make ending 'severe' suffering a top priority - and do much more towards achieving it.



The regulator

BEING COLLABORATIVE







Working to reduce the use of animals in scientific research





Title/lead organisation(s)	Actions (underway or proposed)	Measures of success and key milestones	Timelines		
1.5 Refinement of models (RSPCA with HO)	Work to refine the most severe models to avoid or reduce animal suffering. Models to be considered include: - Experimental Autoimmune Encephalomyelitis (EAE); - Seizures; - Rheumatoid arthritis; and - Sepsis.	Reports on each of the selected topics prepared and published. Recommendations promulgated.	i) EAE report published late 2012. ii) Seizures report published 2013. iii) Rhematoid arthritis report to be published early 2014. iv) Sepsis models report to be published Spring 2014. v) Inspectors report active implementation by licence applicants.		





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- Represent the EU animal welfare sector in EC Expert Working Groups set up to establish important guidance for how all 28 Member States implement the new EU Directive (ongoing).
- Delivered +15 major training events for government officials, members of animal ethics committees, scientists and animal care staff in countries such as Bulgaria, Croatia, China and Taiwan.
- Produced translated versions of key information for reducing the impact of experiments, and on improving animal welfare.











实验动物福利操作技术规范网站

Procedures With Care

给药物术

无菌技术

苏文版

您是第3210位访客

搜索

欢迎来到实验动物福利操作技术规范网站。本网站提供一系列的技术资料供研究人员学习实验动物研究中常用的最佳操作技术方法。主要涉及使用最多的实验动物小鼠和大鼠。未来本网站还会增加其他有关小鼠和大鼠的操作技术和其他实验动物的技术资料。

本网站中的技术资料是由英国纽卡斯尔大学(NewcastleU niversity)编写,同时动物技术研究所(the Institute of Ani mal Technology)和英国实验动物3R研究中心(NC3R)提供支持。

本网站视频可以下载,但要遵从"使用条款"中的规定,不得用于商业用途。如果视频不能正常播放,请加载Flash插件。网页中的视频链接不能下载时,请点击"英文对照",去对应的英文网站下载。请您把对本网站的意见和建议反馈给我们(infor@cnilas.org),以便于我们改进工作。













■ 给药技术



本网站包括一系列技术指南供研究人员学习实验动物给药技术。

啮齿类外科无菌技术



这是一份全面的帮助研究人员使用最佳操作方法开展实验或 齿类动物的手术无菌技术的指南。







- Challenging the use of animals ethically and scientifically
- Ensuring effective, well enforced regulation of animal experiments
- Raising standards internationally
- Promoting debate which is open and honest
- Reducing the use and suffering of lab animals
- Promoting animal welfare in tertiary education



- Input into UK Concordat on Openness on Animal Research – over 50 organisations have signed up
- RSPCA concerns relating to underplaying harms to animals and overstating benefits
- We provided impartial expert advice for a series of 4 public dialogue events









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- Approach Doctoral & Graduate Schools to ascertain current provision
- Engage with Institutions to embed animal welfare, ethics & 3Rs in graduate programmes
- Develop & disseminate teaching materials
- Measure outcomes





Describe your project in 3 sentences What are the benefits to society? What are the harms to the animals?

Pilot course: Animal Research: Critical, Challenging & Creative Thinking

Ethical dilemma case studies: What would you do?

12 hours

2 days

25 students

1st yr PhD

Group evaluation of two recent papers in animal research - do they adhere to publication guidelines? Are there ethical concerns?

1. Animal use, 3Rs, alternatives, spectrum of opinion & ethics, openness & transparency, public opinion & engagement

> 3The importance of experimental design & how to avoid common pitfalls. Refinement & reduction in practice

Research integrity, challenges facing science community, quality of published research & ethical dilemmas

animal welfare, importance of identifying & minimising harms; welfare indicators & welfare assessment in practice.



octoral Skills Development Prog

Welfare assessment pub quiz with prizes!



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Joint Working Group On Refinement

Joint Working Group on Refinement



The UK Joint Working Group on Refinement (JWGR) is an initiative established by four organisations: the British Veterinary Association - Animal Welfare Foundation, the Fund for the Replacement of Animals in Medical Experiments, the RSPCA and the Universities Federation for Animal Welfare. The RSPCA co-ordinates the Group and provides the secretariat.

The JWGR organises working groups with experts from industry, academia and animal welfare to prepare reports on a variety of specific topics. They set out recommendations for good practice and define practical ways of reducing suffering associated with husbandry and procedures.

These reports are usually published in the UK journal Laboratory Animals. Examples include:



Joint Working Group On Refinement 1993-2011

Working Party Report

 \mathbf{F}

- A guide to defining and implementing protocols for the welfare assessment of laboratory animals: eleventh report of the
- R BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement*
 - P Hawkins (Editor)¹, D B Morton (Chair)², O Burman³, N Dennison⁴, P Honess⁵, M Jennings¹, S Lane⁶, V Middleton⁷, J V Roughan⁸, S Wells⁹ and K Westwood¹⁰

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Contents lists available at ScienceDirect

Biologicals

urnal homepage: www.elsevier.com/locate/biologicals



Working Group Report

AW Jc Application of the Three Rs to challenge assays used in vaccine testing: Tenth report of the BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement*

Maggy Jennings ^{a,*}, David B. Morton ^b, Emmanuelle Charton ^c, Jane Cooper ^a, Coenraad Hendriksen ^d, Stella Martin ^e, Michael C. Pearce ^f, Scott Price ^g, Keith Redhead ^e, Nick Reed ^h, Hugh Simmons ^h, Stephen Spencer ^e, Hilary Willingale ⁱ

elor, P. F. Brain, A. Dick, H. Elliott, R. J. Francis, urst, D. B. Morton*, A. G. Peters, R. Raymond, vin & C. West

Refinements in husbandry, care and common procedures for non-human primates

Ninth report of the BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement M Jennings and M J Prescott (Joint Editors)

lures for the administration of

RVA AWF/FRAME/RSPCA/UFAW Joint Working Group

Refining dog husbandry and care

Eighth report of the BVAAWF/FRAME/RSPCA/UFAW Joint Working Group on Refinement

Members of the Joint Working Group on Refinement

Vorking Group on Refinement: D. B. Morton ; (Secretary), A. Buckwell, R. Ewbank, C. Godfrey, mes, C. Page, I. Sharman, R. Verschoyle, L. Westall



AGGREGATION OF MARGINAL GAINS?



- Single large change
 - Boardman bike
 - Robo-athlete
 - Add a motor!

- Series of small changes
 - Better front forks
 - More aerodynamic wheels
 - More aerodynamic helmets
 - Heat pads to warm muscles between races
 - Better suit design
 - Better physiotherapy
 - Psychological support



AGGREGATION OF MARGINAL GAINS?

- Single large change
 - Replace all procedures with alternatives
 - Choose not to perform the experiment



- Series of small changes
 - Improve housing and care
 - Improve welfare assessment
 - Implementation of humane endpoints
 - Rigorous ethical review
 - Better experimental design



Suffering reduced, can be applied broadly



Goal: to end severe suffering



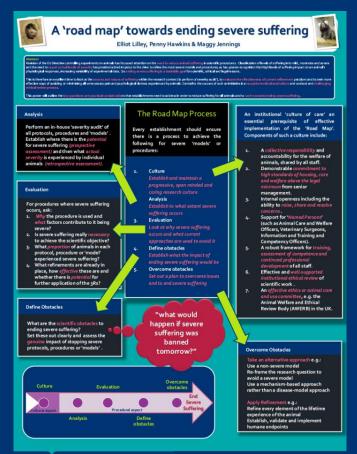
- Convincing the scientific community that ending severe suffering is both desirable and achievable
- Multiple work streams
 - Producing guidance to promote and facilitate ending severe suffering
 - Challenging necessity and justification
 - Forming expert working groups to refine procedures and models

Challenge people to think differently!



Road map

RESOURCES





research.animals@rspca.org.uk Research Animals Department, Science Group, RSPCA, Wilberforce Way, Southwater, West Sussex, RH11 9RS ATLA 42, 267-272, 2014 267

Comment

A 'Road Map' Toward Ending Severe Suffering of Animals Used in Research and Testing

Elliot Lilley, Penny Hawkins and Maggy Jennings

Ending severe suffering is a desirable goal for both ethical and scientific reasons. The RSPCA has pledged to work toward the end of such suffering for laboratory animals, and in this article we outline a practical approach that establishments can follow to achieve this aim

Introduction

The introduction of EU Directive 2010/63/EU¹ controlling experiments on animals, and the associated updating of the UK Animals (Scientific Procedures) Act 1986 (ASPA).² have focused attention on the need to reduce animal suffering in scintific procedures. Classification of levels of suffering into mild, moderate and severe, and the need to report actual levels of severity, have provided added impetus to the drive to refine the most severe models and procedures, and have resulted in greater recognition that high levels of suffering impact on an animal's physiological responses, increasing the variability of experimental data. So, ending severe suffering is a desirable goal for scientific reasons, as well as ethical and legal ones.

There are currently no data on the proportion of the approximately four million procedures carried out on animals in 2013 in the UK that caused severe suffering - or indeed, for any previous year. This will change from 2014, because the EU Directive and the ASPA will require research establishments to assess and report the actual level of suffering experienced by individual animals undergoing regulated procedures. This is good news for three reasons. Firstly, it will give the public a clear indication of the levels of suffering that laboratory animals experience, which will be an important step toward open and honest reporting of animal use in research. Secondly, it will give establishments an opportunity to evaluate how successful their refinement programmes are in reducing suffering, and highlight areas where more work is needed. Finally, these new data will allow regulators, welfare organisations and research funding bodies to focus resources on areas of research where suffering is the most severe and/or refinement is lacking, and to track progress of Three Rs-related programmes targeted at reducing suffering.

Clearly, the responsibility to end severe suffering falls on the whole scientific community, who need to accept this as a worthwhile goal and commit to achieving it. There needs to be a coordinated effort from researchers, industry and academia, regulatory authorities, funding bodies and scientific journals. But animal welfare organisations also have a key role, and even before revision of the ASPA, the RSPCA had pledged to work toward ending severe suffering. Since 2011, the Society has been developing a programme of work with the scientific community, aimed at producing innovative, challenging and feasible approaches to the achievement of this goal. This article focuses on the role of research establishments, and outlines some practical steps that can be taken to create a 'road map' to end severe suffering.

Stages on the Road

There are two complementary aspects to the 'road map' approach (Figure 1):

- The cultural aspect developing an environment that will support and encourage positive attitudes toward change; and
- The procedural aspect developing the activities and initiatives that will end severe suffering.

The cultural aspect — establishing the

Fundamental to ending severe suffering is the belief that this is both desirable and possible —



Website RESOURCES



Focus on severe suffering

My RSPCA Login/Register

Search C

Who we are What we do Implementing the 3Rs Ethical review Reports and resources

Home / Research animals / Focus on severe suffering



Focus on severe suffering

Welcome to the RSPCA/LASA/LAVA/IAT Severe Suffering web resource.









Focus on severe suffering

Scientists V

Animal technologists V
and veterinarians

AWERB members V

Resources V

These web pages provide information and resources that will help you to avoid severe suffering. All of the material can be used by anyone involved with the use of animals in research, but you may wish to follow one of the three different routes for (1) researchers, (2) animal technologists or veterinarians and (3) members of ethics or animal care and use committees, such as Animal Welfare and Ethical Review Bodies (AWERBs) in the UK and Animal Welfare Bodies (AWBs) in the rest of the European Union.

The RSPCA is a scientific animal welfare organisation that works to progress the 3Rs and encourage effective ethical review of research and testing using animals. We have partnered with LASA, LAVA and IAT to create this resource as part of our ongoing work with respect to animal use, which has a special focus on severe suffering. With a positive approach and good communication, much can be done to reduce suffering – and animal welfare and science will both benefit.

This is the first version of this resource and we will be adding much more. The content has been reviewed by a diverse panel of individuals from industry, academia, regulatory authorities, learned societies and organisations. The authors of this material are indebted to these reviewers for their contributions. Please visit regularly and send us your feedback at research.animals@rspca.org.uk

Why focus on severe suffering?: Scientists



Specific information for research staff on the need to reduce severe suffering. >>

Why focus on severe suffering: Animal technologists and vets



Specific information for animal technologists and vets on the need to reduce severe suffering. >>

Why focus on severe suffering?: AWERB members



Specific information for members of AWERBs or AWBs on the need to reduce severe suffering. >>

Road Map

RESOURCES





Road Mar Resource

FOCUS ON SEVERE

PART 2: PROSPEC

Road Map
Resource P

Resource P

FOCUS ON SEVERES

PART 1: INTRODUC
PROSPECTIVE REI
PROSPECTIVE REI

2nd edition. Marcii -



Progress towards ending severe suffering working together to achieve positive change

Elliot Lilley, Barney Reed & Penny Hawkins

All laboratory animal suffering is a concern, but the RSPCA believes that ending severe suffering should be a top priority. There are a number of reasons to do this: (i) the ethical benefit of reducing suffering, (ii) the legal requirement to minimise suffering set out in Directive 2020/63 EU and (iii) the scientific benefits – good science goes hand in hand with good weffare.

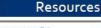
We have initiated a number of parallel activities including:

 A Road Map' towards ending severe suffering, outlining the generic key questions and practical considerations that establishments can address to reduce suffering for all animals and work towards ending severe suffering.

 A comprehensive web resource for the research community, providing guidance and resources to help end severe suffering.
 A series of "Expert Working Groups" of scientists, vets, animal technologists, animal welfare experts and representatives from the UK regulatory authority. We have produced four reports on reducing suffering in epilepsy, multiple scienosis, sepsis and rheumatoid arthritis research. A report on spinal cord injury is in progress.

Road Map







Working towards ending severe suffering

Three work streams:

- 1. The 'Road Map'
- Developing online resources
- 3. Expert Working Groups

Expert Working Groups



Individuals Researchers, Animal

technologists, Veterinarians, 'Named persons' Working with....

You?

If you think you may be able to help us to tackle severe suffering, get in touch. Organisations UK Home Office, LASA IAT, LAVA



research.animals@rspca.org.uk @RSPCA_LabAnimal Research Animals Department, Science Group, RSPCA, Wilberforce Way, Southwater, West Sussex, RH13 9RS



Institute of Animal Techno











WORKING WITH THE SCIENTIFIC COMMUNITY

- RSPCA chaired and convened groups
 - Researchers (academic, industry & CRO)
 - Animal technologists
 - Veterinarians
 - Regulator (UK Home Office ASRU)
- Establish why severe suffering occurs and set out practical solutions



EWG publications

RESOURCES



Journal of Pharmacological and Toxicological Methods 67 (2013) 9-15

Contents lists available at SciVerse ScienceDirect



Journal of Pharmacological and Toxicological Methods

journal homepage: www.elsevier.com/locate/jpharmtox



Appraisal of state-of-the-art

Reducing suffering in animal models and procedures involving seizures, convulsions and epilepsy

Sarah Wolfensohn ^a, Penny Hawkins ^b, Elliot Lilley ^{b,*}, Daniel Anthony ^c, Charles Chambers ^d, Sarah Lane ^e, Martin Lawton ^f, Sally Robinson ^g, Hanna-Maria Voipio ^h, Gavin Woodhall ⁱ

Journal of Pharmacological and Toxicological Methods 67 (2013) 169-176



Contents lists available at SciVerse ScienceDirect

Iournal of Pharmacological and Toxicological Methods



journal homepage: www.elsevier.com/locate/jpharmtox

Appraisal of state-of-the-art

Reducing suffering in experimental autoimmune encephalomyelitis (EAE)

Sarah Wolfensohn ^a, Penny Hawkins ^b, Elliot Lilley ^{b,*}, Daniel Anthony ^c, Charles Chambers ^d, Sarah Lane ^e, Martin Lawton ^f, Hanna-Marja Vojpio ^g, Gavin Woodhall ^h

SHOCK, Vol. 43, No. 4, pp. 304-316, 2015

REFINEMENT OF ANIMAL MODELS OF SEPSIS AND SEPTIC SHOCK

Elliot Lilley,* Rachel Armstrong,† Nicole Clark,* Peter Gray, § Penny Hawkins,* Karen Mason, § Noelia López-Salesansky, Anne-Katrien Stark, Simon K. Jackson,** Christoph Thiemermann,† and Manasi Nandi

*Research Animals Department, RSPCA, Southwater; † Huntington Life Sciences, Huntington; † University College London, London; § Animals in Science Regulation Unit, Home Office, London; † Royal Veterinary College, London; † The Babraham Institute, Cambridge; **Centre for Biomedical Research, Plymouth University Peninsula Schools of Medicine and Dentistry, Plymouth; †† The William Harvey Research Institute, Queen Mary University of London, London; and †† Institute of Pharmaceutical Science, Kings College London, London, United Kingdom

Received 2 Sep 2014; first review completed 16 Oct 2014; accepted in final form 9 Dec 2014

Inflammopharmacol (2015) 23:131–150 DOI 10.1007/s10787-015-0241-4

Inflammopharmacology

REVIEW



Applying refinement to the use of mice and rats in rheumatoid arthritis research

Penny Hawkins 1 $_{\odot}$ · Rachel Armstrong 2 · Tania Boden 3 · Paul Garside 4 · Katherine Knight 5 · Elliot Lilley 1 · Michael Seed 6 · Michael Wilkinson 7 · Richard O. Williams 8

UK HO using sepsis report for first thematic review of sepsis research in the UK



Expert working groups

Future groups

Spinal cord injury

Pancreatitis

Tamoxifen

Bone marrow irradiation

Death as an endpoint



RSPCA/UFAW Rodent Welfare Group

Working to improve the welfare of laboratory rode --is extremely important because the vast majority of animals used in research and testing are mice and Farm animals in research rats.

The RSPCA/UFAW Rodent Welfare Group provides forum for scientists, animal technologists and veterinarians to exchange ideas on implementing the within rodent care and use

A key aim of the Group is to encourage people to take account of the whole lifetime experience of laboratory been reviewed and refined

Annual meetings

The Group holds annual meetings with presentations interactive sessions, which often address specific themes. Previous topics have included rat welfare, wil rodent care, rodent welfare assessment and welfare issues associated with Individually Ventilated Cages (IVCs).

Reports of past meetings

The research animals department also produces the meeting reports (see below), which are available to the using and caring for rodents worldwide.

Significant numbers of agricultural animals are used in experiments, for example in the research and development of vaccines against diseases such as bovine tuberculosis. They are also used in human medical and veterinary research, and in studies aiming to improve their productivity or to better understand their behaviour and welfare.

A workshop on the care and use of agricultural animals in research, held by the Norwegian Consensus Platform on Alternatives (Norecopa) in 2012, recommended that there should be more discussion forums and meetings on the 3Rs for all those involved in the care and use of these species.

The RSPCA and APHA* (formerly AHVLA) have taken this forward by holding two meetings on the Welfare of Agricultural Animals in Research, in June 2013 and September 2014.

Sharing ideas on welfare and the 3Rs





Meeting topics have included presentations on emotions in farm animals, clicker training for pigs, achieving good welfare standards for animals in vaccine research. reducing suffering in avian influenza research, replacing farm animals in education, and assessing and alleviating suffering. The meetings also included poster sessions and plenty of opportunities to make new contacts and to share ideas about welfare and the 3Rs

Both meetings were attended by over 80 delegates. including animal technologists, researchers, veterinarians and students, from a wide range of establishments within

the UK and overseas. Reports of both meetings, including action points, have been published in the journal Animal Technology and Welfare (and are freely available for download below).

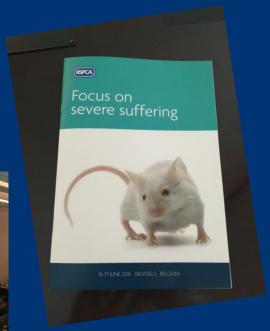


International meeting

Focus on severe suffering







150 delegates from 24 countries



Summary

CHANGE REQUIRES A VARIETY OF APPROACHES



- A spectrum of animal welfare activity is important
- Liaison with the scientific community and being 'challenging from within' is a critical part of the spectrum
- Animal welfare organisations play an important role in securing change for animals
- We've achieved a lot BUT there is still much to do......



Thank you



