

The RSPCA focus on severe suffering project

PENNY HAWKINS

Research Animal Department, RSPCA, Wilberforce Way, Southwater, West Sussex RH13 9RS

Correspondence: penny.hawkins@rspca.org.uk

Summary

The RSPCA Research Animals Department has an ongoing project that focuses on reducing and avoiding 'severe' suffering which has been well supported by the Institute of Animal Technology (IAT). This short article describes two current initiatives; an online information resource and a 'Road map' pack designed to help establishments act on severe suffering at a local level.

The web-based resource, '*Focus on severe suffering*', is endorsed by the IAT, Laboratory Animal Science Association (LASA) and the Laboratory Animal Veterinary Association (LAVA). It sets out the factors that can contribute towards making a procedure severe, explains how these can be addressed and links to other websites and resources for further information and practical guidance. The '*Road map*' pack is linked to Animal Welfare and Ethical Review Body (AWERB) tasks and comprises short presentations with notes and workshop materials that can be used to help establishments audit their procedures and focus on refining any that can cause severe suffering.

Keywords

Severe suffering, ethics, refinement, practical guidance

Introduction

All levels of severity in animal research and testing are a concern to the RSPCA and the scientific community alike but severe suffering is obviously the greatest concern of all and is a top priority for us. Tackling severe suffering has been a theme throughout the RSPCA's work for some years, particularly since our project on pain assessment¹ (which progressed into our work on welfare assessment)² began in the late 1990s and the severe suffering project has been ongoing since 2012.

Ensuring that we are working effectively on the issue has required a great deal of research, liaison and collaboration with individuals working in science, the Home Office and bodies such as the IAT, LASA and

LAVA. The RSPCA is extremely grateful for the support we have received from all of these people and organisations which has enabled us to produce resources that will help to reduce and avoid severe suffering, as well as getting the issue on the agenda at scientific meetings in the UK and overseas.

Background to the severe resources

In addressing severe suffering, we are advocating parallel approaches that are essentially a very focussed application of the 3Rs. Ideally, procedures involving severe suffering would be replaced or avoided altogether – the RSPCA's principal goal. Wherever this is not currently possible, it is clearly essential to reduce the numbers of animals experiencing severe suffering and to refine procedures so that suffering is no longer severe or at least less severe. Finding innovative and practical ways to refine severe procedures is the main emphasis of the project, as refinement is a key area of expertise for the RSPCA and is an immediately achievable 'R'.

To identify the best way to work on the issue, we needed information on the actual severity of procedures – the level and nature of harms caused to animals. Although this is now published in the annual Home Office Statistics³ (Figure 1, Table 1) and this information is very welcome with respect to

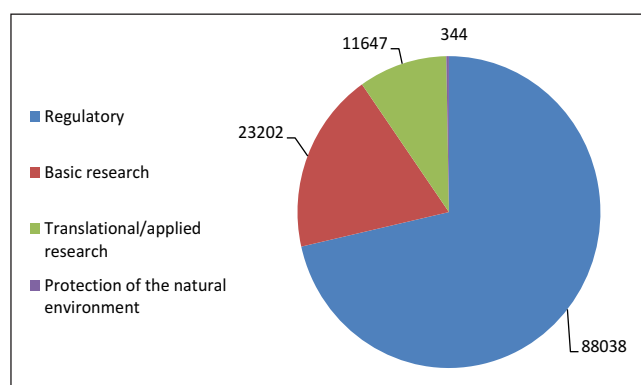


Figure 1. Procedures reported as 'severe' actual severity by purpose in Great Britain for 2015.

transparency about animal use, it is at quite a basic level and more detail is necessary on the types of ‘models’, tests and procedures that have the potential to cause severe suffering.

Purpose	Number of procedures
Batch potency testing	144,957
Immune system	4,389
LD50 and LC50	3,952
Multisystemic research	2,918
Human infectious disorders	2,869
Oncology	2,060
Cardiovascular blood and lymphatic system	1,928
Nervous system	1,804
Other type of toxicity or safety test	1,230
Human cancer	920

Table 1. Top ten purposes of severe experimental procedures involving mice in Great Britain, 2015.

Source: Home Office Statistics, Table 3.2.³ Mice are currently the most likely species to experience severe suffering; a total of 101,494 experimental procedures on mice were reported as ‘severe’ actual severity for 2015.

Thanks to the high level of constructive liaison that we have with the scientific community and the regulator and a great deal of literature searching, we have been able to produce a list of procedures that are especially likely to cause severe suffering, which has enabled us to identify procedures and models that require more specific guidance and to formulate a more generic approach to addressing the issue.

Two work streams

The RSPCA’s work to produce guidance on refining specific procedures or ‘models’ that may cause severe suffering involves setting up Expert Working Groups to consider the necessity and justification for animal use, identify potential harms throughout the animals’ lives and recommend ways of alleviating these based on the scientific literature and current good practice. Group members include animal technologists, vets, scientists from industry and academia and a Home Office Inspector.

These Expert Working Groups are a natural follow-on from the BVA/AVMA/FRAME/RSPCA/UFAW* Joint Working Group on Refinement (JWGR), which had a similar approach and membership and produced its first report on blood sampling back in 1993. Throughout the 23 years of the JWGR and more recently with the Expert Working Groups, animal technologists and the IAT have provided strong support, input and advice, helping us to provide practical guidance that has had real impact.

So far, we have produced four reports on refining procedures involving the Experimental Autoimmune Encephalomyelitis (EAE) mouse model,⁴ seizures, convulsions and epilepsy,⁵ sepsis⁶ and rheumatoid arthritis.⁷ A fifth Expert Working Group is currently working on spinal cord injury. Although the RSPCA and other bodies such as LASA and the NC3Rs are also addressing these specific procedures, this is a long term collective project so the RSPCA has created more generic guidance in the form of our ‘Focus on severe suffering’ web pages.

The web pages

The web-based resource, ‘Focus on Severe Suffering’ (rspca.org.uk/severesuffering) was developed with and is endorsed by the IAT, LASA and LAVA (Figure 2). The aim is to help relevant staff and committees or groups within establishments to address severe suffering locally. It became obvious to us at an early stage that different audiences required different information, so we defined three target groups; animal technologists and Named Veterinary Surgeons (NVs), researchers and Animal Welfare and Ethical Review Body (AWERB) members. Each of these has a separate ‘pathway’ to follow within the web pages which includes the most

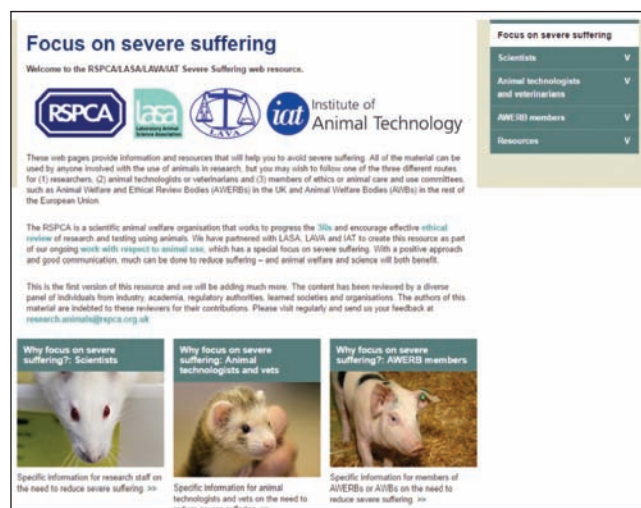


Figure 2. The RSPCA Focus on severe suffering web pages.

* British Veterinary Association Animal Welfare Foundation, Fund for the Replacement of Animals in Medical Experiments, Universities Federation for Animal Welfare

appropriate materials to help them fulfil their roles in tackling severe suffering, although any visitor can access each of the pathways.

For each one, the page begins by considering what makes a procedure 'severe', breaking this down into three main causes:

- some procedures or 'models' are more likely to be severe
- a combination of factors can increase the level of suffering to severe; i.e. the cumulative severity effect or mortality may involve severe suffering

We have set out the factors that can contribute towards making a procedure severe, explaining how these can be addressed and linking to other websites and resources for further information and practical guidance. Further content focuses strongly on welfare assessment, applying refinements and humane endpoints, as these are all fundamental to avoiding and reducing severe suffering. Each of these key areas is addressed from a different angle for animal technologists/NVs, scientists and AWERB members.

For example, information relating to refinement is presented from a different aspect within each of the three pathways. The route for animal technologists and NVs focuses on useful information sources, the importance of evaluating refinement to ensure that it is improving welfare and the value of the AWERB as a forum for identifying and discussing refinements and their evaluation throughout the project and at mid- or end-term reviews. For scientists, the pages begin with a definition of refinement and explain the legal requirement to implement this, before setting out the sources of information. It also acknowledges the importance of ensuring that refinement is compatible with the science and highlights how useful advice can be from both the Named Information Officer (NIO) and the AWERB when seeking to avoid or reduce severe suffering. The refinement pages for AWERB members also begin with a definition, moving on to list which of the AWERB's tasks are relevant to addressing severe suffering and include the essential role of the NIO.

The pathways for welfare assessment and humane endpoints take a similar approach, in which we have aimed to present both information and approaches in such a way that they will be meaningful and relevant to the different target audiences.

The road map

One of the resources that can be downloaded from the web pages is a *Road map resource pack*, which is intended for use by internal bodies such as the AWERB, a 3Rs Group or other animal care and use or ethics committees, although it has also proved useful as a training aid and for use by individual scientists.

The 'Road map' is a series of practical steps that will enable establishments to identify ways to reduce, avoid and ultimately end severe suffering, which we developed following consultation with a number of research establishments. This approach is strongly linked to relevant AWERB tasks and uses current guidance from both the Home Office and the European Commission. We have taken this approach because we wanted to help ensure that current guidelines and requirements were effectively implemented and applied, without adding additional tasks.

A key principle of the Road map is an 'audit' of procedures to establish how well current refinement practices are working and to identify any areas where further refinement can be applied. In order for this to be achieved it is essential that researchers work with their animal technologists and named persons developing a team approach to the alleviation of suffering. For further information, please see the 'resources' box within the severe suffering web pages (rspca.org.uk/severesuffering).

Conclusion

We hope that you find the severe suffering resources useful and we would also like to encourage you to bring the resources to the attention of your establishments, for example by making the AWERB or named persons aware of them. Although they address severe suffering, much of the content will help with refinement in general.

The RSPCA regards the *Focus on severe suffering* pages and the *Road map* resource very much as works in progress, which will need regular updates to ensure that they are user-friendly, current and feasible. We plan to update the pages quarterly and would especially welcome any feedback that you may have, to help us develop and improve them – please email research.animals@rspca.org.uk

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