

Encouraging Implementation of the Three Rs in Canada

The Canadian Council on Animal Care (CCAC) is the national body responsible for ensuring the ethical use of animals in science. The foundation of the CCAC is its policy statement on: the ethics of animal investigation, where the ethics of animal use is defined, including adherence to the principles of the Three Rs. The CCAC has been encouraging the implementation of the Three Rs in Canada since 1989 when this policy statement was published.

Until 2008, the CCAC's encouragement of the Three Rs was limited to: discussions during assessments of institutional animal care and use programs; inclusion of refinements in CCAC guidelines documents; and a requirement for animal users to undergo training in the Three Rs.

It is unusual for a national "oversight" body to also be the National Centre for the Three Rs; however, the CCAC's primary funders, in their 2008 review of the CCAC, requested that the CCAC do more to encourage implementation of each of the Three Rs.

Primarily, we have used the development of a website (Three Rs Microsite), to provide resources for investigators, animal care committees and veterinarians (our stakeholders), as well as the general public. This Microsite is connected to the CCAC website, but is also independent, using different colours to make a distinction between elements on the website and those on the Microsite. This is important because of the concern that institutions would be required to implement best practices posted on the Microsite. As part of its assessment of institutions, the CCAC issues recommendations to improve animal care and use programs, based on CCAC guidelines, maintained on the CCAC website. The materials on the Microsite are not enforced through assessments, but are there to provide encouragement.

Internationally, there are many excellent Three Rs websites. However we found that the information available is overwhelming for our stakeholders, and not always suitable for implementation in Canada. The CCAC Three Rs Microsite is "curated", with a brief explanatory text and references to offer what we consider to be the most suitable information. In addition, we have developed our own unique resources, which are aimed at Canadian investigators and animal care committees.

At the outset, we carried out a survey of the awareness of Canadian investigators regarding implementation of the Three Rs. This provided us with direction and established a benchmark for our work. The survey found that of the 414 investigators who participated, most felt that the goal of replacement was not achievable; they were concerned that reduction of animal use would compromise quality of the data and were also concerned that re-use of animals could compromise experimental outcomes. There was strong support for refinement and for pilot studies to support animal welfare improvements and to inform experimental design, although investigators were concerned about the use of analgesics in case it interfered with experimental endpoints. Investigators were also willing to accept assistance to implement the Three Rs as long as it was offered at the right time and by experts.

We have built on the findings of this survey to improve the implementation of the Three Rs. On the Three Rs Microsite we have included a Three Rs Search Guide, to assist investigators in carrying out a search for Three Rs methods at the time that they are writing their grant and/or animal use protocol. We developed an alternative methods table, which provides information about Three Rs methods for testing chemicals and or drugs for regulatory purposes. We have also developed best practices for animal sharing, which should assist in re-use of animals and sharing of animal tissues.

From 2006-2013 we were able to offer CCAC research fellowships in animal policy development. We used the research fellows to carry out research to support the implementation of the Three Rs, in particular in the areas of genetically-engineered animals, shellfish toxin testing, pain mitigation and vaccine testing.

Our role as Canada's National Centre for the Three Rs was affirmed by hosting the Eighth World Congress on Alternatives and Animal Use in the Life Sciences, and supporting the implementation of the Montreal Declaration to encourage synthesis of evidence. We have worked in this area since WC8, as we believe that improving the quality of animal-based research will also minimize animal use.

As the national oversight body, the CCAC is also responsible for collation of national statistics on animal use. Study of this data enables us to identify some of the more invasive uses of animals, and to consider how we might encourage implementation of the Three Rs. Most of the work we have done to date has shown the importance of communication in implementing Three Rs strategies. In the years to come, we plan to build on this in bringing investigators, veterinarians and others together to identify best practices, particularly where the use of animals involves pain and distress.