



# Laws, Regulations, Policies and Guidelines Governing the Care and Use of Laboratory Animals

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## Abstract

A mature and uniform interlinking legal system of regulation, policies and guidelines across countries is necessary for proper care and use of laboratory animals in experimentation. Initially, there was a vast disparity in animal welfare legislations and regulations across the globe. But now, most of the countries have incorporated the internationally accepted standards for animal care and welfare and are working towards accomplishing global harmonization. Many non-profit international organizations such as the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC International) perform a key role in establishing as well as promoting best standards for animal care throughout the world through voluntary assessment and accreditation programmes. This chapter highlights the important regulations, laws, policies and guidelines on care and use of experimental animals.

## Keywords

Regulations · Animal welfare · 3Rs · Occupational hazards and laboratory animals

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## 2.1 Introduction

Laboratory animals are used in research and testing all over the world. The global research communities acknowledge the ethical concerns of modern societies in the use of animals in experiments. To ensure the humane care and use of laboratory animals, most of the countries have evolved their own regulatory framework. Almost every country has made exemplary progress in laws, regulations and guidelines that ultimately supported the regular improvements in the welfare of research animals as well as the quality of science [1]. However, there are still a few nations that do not have legal framework for animals in research and need to rise to meet the international harmonization [2]. This chapter seeks to discuss the laws, regulations and guidelines governing laboratory animal welfare across the globe. Apart from this, this chapter also attempts to cover the guidelines related to safety and occupational hazard, 3Rs and ethics for reliable and authentic knowledge in scientific writings related to laboratory animal research publications.

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## 2.2 Laws, Regulations and Guidelines for Laboratory Animal Welfare

The use of laboratory animals in experimentations has fostered a diverse range of attitudes since the nineteenth century. The first law relating to animal protection and protection of experimental animals (Cruelty to Animals Act) was published in 1822 and 1876 by the United Kingdom [3, 4]. Thereafter, other countries have also made laws for the care and protection of animals used for experimental purposes. In the North American region, the United States enacted the Animal Welfare Act (AWA) and the Health Research Extension Act (1985). The AWA was revised in July 2020 and named as Animal Welfare Act and Regulations “Blue Book” (July 2020). In Canada, the Canadian Council on Animal Care (CCAC) plays a central role in setting and sustaining standards for the ethical use and care of animals in research [5]. In Latin America, Brazil has laws and regulations relating to research animal care and use. The rest of Latin American countries are yet to form any legal framework in this area [6].

In Europe, the European Directive (Directive 2010/63/EU) was amended in 2010 to harmonize the standards for animal care, animal housing, training, project reviews and authorization across all member countries [7]. Japan, China and Korea have enacted the regulations, laws and guidelines in 1983, 1973 and 1991, respectively, for the care and use of laboratory animals. The incorporation of the principles of the 3Rs is common to these countries [8]. Singapore, Thailand, Indonesia and Malaysia known as other Pacific Rim countries have varied levels of regulatory frameworks. Singapore has a strong research environment and has published the “Guidelines on the Care and Use of Animals for Scientific Purposes”, in 2004 by the National Advisory Committee for Laboratory Animal Research (NACLAR 2004) encompassing the responsibility of animal care staff, scientist and institutions when researching animals based on concepts of the 3Rs.

In India, the Prevention of Cruelty to Animals Act was enacted in 1960. Subsequently, the Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA) was formed to ensure the humane care of animals before, during and after the experiment on animals based on five founding principles including 3Rs [9]. In Australia, the protective legislation for animals varies from state to state. However, all the states follow the Australian Code of Practices for the Care and Use of Animals for Scientific Purposes enacted in 1969 and last amended in 2013 including the principles of the 3Rs [10]. Most of the African and Middle Eastern countries still have not framed the legislation nor established regulatory oversight, policies or guidelines except for some exceptions [11]. The details of key acts, regulations and guidelines on laboratory animal welfare are provided in Table 2.1.

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### **2.3 Guidelines on Safety and Occupational Hazards in Laboratory Animals**

The occupational safety and health considerations of the personnel involved in the care and use of laboratory animals is the legal and ethical obligation of the facility provider/management of the organizations. To provide appropriate measures for safety and health of the personnel involved, a successful management plan is to be employed that identifies the hazards and eliminates or minimizes the risk of injury or illness to employees and staff members and damage to equipment, property and environment. The details of various guidelines related to safety and occupational hazards in lab animals are provided in Table 2.2.

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### **2.4 Guidelines on Alternatives to Animals in Research and Testing**

The concept of 3Rs (Replacement, Reduction and Refinement) given by William Russell and Rex Burch (1959) have revolutionized the thinking on modern laboratory animal science research and quality of animal studies. The principles and techniques of 3Rs are broadly adopted by various national and international organizations across the world. Several 3Rs centres and institutes are continuously working for developing as well as confirmation of alternative methods to replace animal experimentations. The various guidelines on alternatives to research and testing on animals are detailed in the chapter “Alternatives to Animals Experiments in Research and Testing” of this book.

**Table 2.1** Details of key acts, regulations and guidelines on laboratory animal welfare

S. no.	Acts, regulations and guidelines	Country/region	Important points	References/useful links
1.	The Animal Welfare Act and regulations. Revised in 2020 and named as Animal Welfare Act and Regulations “Blue Book”	United States	Only federal law in the United States that provides the minimum standards and regulates the animal breeding and selling for use in biomedical research and as pets. The facilities should have an Institutional Animal Care and Use Committee (IACUC) to oversee their animal research	<a href="https://www.nal.usda.gov/awic/animalwelfare-act">https://www.nal.usda.gov/awic/animalwelfare-act</a>
2.	Public Health Policy on Humane Care and Use of Laboratory Animals (PHS Policy), based on the Health Research Extension Act, 1985	United States	Protects all vertebrate animals and applies to research facilities receiving US Public Health Service (PHS) funds. It also includes the US Government Principles, the <i>Guide</i> , and the AVMA Guidelines	<a href="https://olaw.nih.gov/policies-laws/hrea-1985.htm">https://olaw.nih.gov/policies-laws/hrea-1985.htm</a>
3.	Directive 2010/63/EU (Revision of 1986 Directive 86/609/EEC)	European Union	Provides minimum standards for animal housing and care Implementation of 3Rs in laboratory animals	[7]
4.	Animals Scientific Procedures Act 1986 (ASPA) and amended in 2013	United Kingdom	The protected animals have been regulated in the scientific procedure or other experiments. This is to protect them from pain, distress and suffering. The Act requires a three-tiered licencing system: personal licence, project licence and certificate of designation	<a href="https://www.legislation.gov.uk/ukdsi/2012/9780111530313">https://www.legislation.gov.uk/ukdsi/2012/9780111530313</a>
5.	National Research Council (NRC) Guide for the Care and Use of Laboratory Animals (NRC 1997). Revised in 2011	Multinational	It provides the recommendation on use and care of animals in different programmes, institutional responsibilities, animal house management, veterinary care and physical plant. The animal use and care projects and programmes are accredited on these primary standards across the world	[12, 13]

6.	Guide for the Care and Use of Agricultural Animals in Research and Teaching (2010)	Multinational	It provides species-specific guidance regarding handling, transportation, environmental enrichment, etc. it is one of the standards adopted for the AAALAC accreditation process	[14]
7.	Prevention of Cruelty to Animals Act, 1960, and Breeding of and Experiments on Animals (Control and Supervision) Rules of 1998, 2001 and 2006	India	Committee for Control and Supervision of Experiments on Animals (CPCSEA) ensures that animals are not subjected to unnecessary pain or suffering before, during or after the performance of experiments on them	<a href="http://cpcsea.nic.in">cpcsea.nic.in</a>
8.	Drugs and Cosmetics Act 1940 and rules thereunder 1945 (amended in 2019)	India	It specifies the environmental conditions of the animal facility where the animals undergo tests based on requirements of the Prevention of Cruelty to Animals Act, 1960	<a href="http://vbch.dnh.nic.in/pdf/Rules%20and%20regulations%20of%20Drug%20and%20Cosmetics%20act.pdf">http://vbch.dnh.nic.in/pdf/Rules%20and%20regulations%20of%20Drug%20and%20Cosmetics%20act.pdf</a>
9.	Animals Protection Act 71 (1962) and Guidelines on Ethics for Medical Research: Use of Animals in Research and Training (South African Medical Research Council, 2004)	South Africa	No specific provisions to the use of animals in research in this act. It specifically refers to the 3Rs. The medical research has published Guidelines on Ethics for Medical Research: Use of Animals in Research and Training	<a href="https://www.animallaw.info/sites/default/files/AnimalsProtectionAct71-62.pdf">https://www.animallaw.info/sites/default/files/AnimalsProtectionAct71-62.pdf</a>
10.	Guidelines for the Ethical Review of Laboratory Animal Welfare (GB/T35892-2018)	China	It covers the ethical review and animal welfare management in the production, transportation and use of laboratory animals and quality management thereof	[15]
11.	Act on Humane Treatment and Management of Animals and various guidelines (1973), amended in 2012	Japan	It emphasizes on 3Rs for animal experimentation. There is self-regulation within each animal facility to encourage flexible animal research with administrative guidance and voluntary guidelines	[1]
12.	Animal Protection Act (APA) and the Laboratory Animal Act (LAA)	Korea	Both laws include the 3Rs and require for the establishment of Institutional Animal Care and Use Committees	[1]

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Table 2.1 (continued)

S. no.	Acts, regulations and guidelines	Country/region	Important points	References/useful links
13.	Australian Code for the Care and Use of Animals for Scientific Purposes (8th edition, 2013)	Australia	It promotes humane care and use of animals in scientific studies. Also guides the animal ethics committees, investigators and institutions for animal carers	[16]
14.	<a href="#">Animal Welfare Act 1999 Part 6</a>	New Zealand	Two guidelines of an act: Good Practice Guide for the use of animals in research, testing and teaching and guidelines for the welfare of livestock from which blood is harvested for commercial and research purposes	[17]
15.	NACLAR Guidelines (2004)	Singapore	The guidelines promote responsible and humane care and use of animals for scientific purposes and are based on the principles of the 3Rs	[9]
16.	Animals for Scientific Purposes Act 2015 and Ethical Principles and Guidelines for the Use of Animals for Scientific Purposes, NRC of Thailand (1999)	Thailand	Any procedure for scientific purpose on animals should be in synchronization with universal ethics and standard for animal welfare	[9]
17.	Law of the Republic of Indonesia No. 18, 2009 Law of the Republic of Indonesia No. 41, 2014 Government of Republic of Indonesia's Regulation No. 95, 2012	Indonesia	Nos. 18 and 41 are dedicated to the veterinary public health and animal welfare No. 95 describes principles for the ethical treatment of animals in research, handling, transportation, housing, husbandry and care, use, humane treatment, euthanasia, etc.	[9]
18.	Malaysian Animal Welfare Act, 2015	Malaysia	Legislates care and use of experimental animals. It is applicable to all fields of science in Malaysia	[9]
19.	AAALAC International	Multinational	It guides on voluntary accreditation of animal care and use programmes across the world	<a href="http://www.aaalac.org">www.aaalac.org</a>

20.	Canadian Council on Animal Care (CCAC)	Canada	It sets standards, guidelines and policies on animal use in science. It assesses the institutions and ensures the use and humane care. Also, formation of animal care committee	[18] <a href="https://www.ccac.ca/en/about-the-ccac/">https://www.ccac.ca/en/about-the-ccac/</a>
21.	World Organisation for Animal Health (OIE) animal welfare standards, World Organisation for Animal Health	Multinational	Animals should only be used in conditions when no alternative method is available. The animal use should be ethically justified, and it should cause as little pain or distress as possible. The importance of 3Rs is emphasized	[17] <a href="https://www.oie.int/fileadmin/Home/eng/Health_standards/tahc/2018/en_chapitre_aw_research_education.htm">https://www.oie.int/fileadmin/Home/eng/Health_standards/tahc/2018/en_chapitre_aw_research_education.htm</a>
22.	Law 11,794/2008 Decree 6899/2009	Brazil	National Council for the Control of Animal Experimentation (CONCEA) requires institutions to establish an ethics committee on the use of animals for day-to-day enforcement of the law and regulations	[19]
23.	AVMA (American Veterinary Medical Association) Guidelines for the Euthanasia of Animals: 2020 Edition	United States	The guidelines mainly present the criteria for euthanasia, method and agent of euthanasia and also an emphasis on applying appropriate pre-euthanasia	<a href="https://www.avma.org/sites/default/files/2020-01/2020Euthanasia-Final-1-17-20.pdf">https://www.avma.org/sites/default/files/2020-01/2020Euthanasia-Final-1-17-20.pdf</a>
24.	ISO (International Organization for Standardization) 10,993-2	Multinational	It stipulates the minimum standards needed to assure the welfare of animals used in tests to evaluate the biocompatibility of materials used in medical devices. It also gives instructions for the refinement of the test method and replacement of animal tests by alternative scientifically valid methods	[20]
25.	OECD (Organisation for Economic Co-operation and Development) principles for GLP (Good Laboratory Practice) concerning the safety testing of any chemical substance	Multinational	Guidelines for the harmonization of safety chemical testing by reducing the number of animals or by the alternative testing system for the welfare of animal methods used in testing	<a href="http://www.oecd.org/env/ehs/testing/animalwelfare.htm">http://www.oecd.org/env/ehs/testing/animalwelfare.htm</a>

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**Table 2.1** (continued)

S. no.	Acts, regulations and guidelines	Country/ region	Important points	References/useful links
26.	Federation of European Laboratory Animal Science Associations (FELASA)	Multinational	Publish the guidelines, recommendations and reports on all aspects of laboratory animal science (LAS) in Europe and beyond	<a href="http://www.felasa.eu/">http://www.felasa.eu/</a>
27.	American Association for Laboratory Animal Science (AALAS)	Multinational	It is the association of professionals that promotes rational laboratory use and animal care for the betterment of the people and animals	<a href="https://www.aalas.org/">https://www.aalas.org/</a>



**Table 2.2** The details of various guidelines related to safety and occupational hazards in lab animals and workers

S. no.	Area of risks	Guidelines	Important points	References/useful links
1.	Occupational Health & Safety (OH&S) risks	Occupational Health and Safety Assessment Series (OHSAS 18001)  North Dakota State University (NDSU) Guidelines for Occupational Health & Safety (1997; latest rev. 2015)	Internationally recognized system for overseeing the organization's activities and processes to reduce or eliminate Occupational Health & Safety (OH&S) risks to employees  To address the health and safety of researchers involved in the use of animals	<a href="https://www.certificationeurope.com/certification/ohsas-18001occupational-health-and-safety-management/">https://www.certificationeurope.com/certification/ohsas-18001occupational-health-and-safety-management/</a>  <a href="https://www.ndsu.edu/fileadmin/policesafety/docs/OccupationalSafetyandEnvironmentalHealth.pdf">https://www.ndsu.edu/fileadmin/policesafety/docs/OccupationalSafetyandEnvironmentalHealth.pdf</a>
2.	Biosafety	Design and management of research facilities. In Laboratory Animal Medicine  Biosafety in Microbiological and Biomedical Laboratories  NRC (National Research Council). 2011a. Guide for the Care and Use of Laboratory Animals  Canadian Biosafety Standard (CBS)	Design to create an efficient barrier control programme  Biosafety level in the animal facility  Guide on animal care and operational practices to meet applicable regulations and standards  Guidelines related to design construction and operation of facilities used for handling of pathogens or toxins or stored therein	[21]  [22]  [23]  <a href="http://canadianbiosafetystandards.collaboration.gc.ca/cbs-ncb/index-eng.php">http://canadianbiosafetystandards.collaboration.gc.ca/cbs-ncb/index-eng.php</a>
3.	Hazard communication and signage	Laboratory Biosafety Manual  Globally harmonized chemical hazard warning symbols (Global Harmonization System (GHS))	Categorized the pathogens in risk groups (RGs) from 1 to 4 by the World Health Organization (WHO)  Inform the workers about the appropriate use of chemicals in animal facilities	<a href="https://www.who.int/csr/resources/publications/biosafety/WHO_CDS_CSR_LYO_2004_11/en/">https://www.who.int/csr/resources/publications/biosafety/WHO_CDS_CSR_LYO_2004_11/en/</a>  <a href="https://www.osha.gov/dsg/hazcom/ghsguideoct05.pdf">https://www.osha.gov/dsg/hazcom/ghsguideoct05.pdf</a>

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Table 2.2 (continued)

S. no.	Area of risks	Guidelines	Important points	References/useful links
4.	Personal protective equipment (PPE)	NIOSH (National Institute for Occupational Safety and Health) respirator selection logic  National Institutes of Health (NIH), Animal Research Advisory Committee, Guidelines for personnel protection in animal facilities, 2016  Occupational Safety and Health  CROSSTEX MaskEnomics filtration guide	Devices such as respirators used to protect workers from harmful dust, insufficient oxygen environments, fogs, smokes, mists, particulates, gases, vapours and sprays  Protective clothing requirements and zoonotic diseases in laboratory nonhuman primates  Guidelines for staff working in nonhuman primate facilities. PPEs suggested on risk assessment  PPEs suggestion in the animal facility  Guidelines for the selection and use of face masks for mucous protection	<a href="http://www.cdc.gov/miosh/docs/2005-100/pdfs/2005-100.pdf">http://www.cdc.gov/miosh/docs/2005-100/pdfs/2005-100.pdf</a>  <a href="https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/ppe.pdf">https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/ppe.pdf</a>  <a href="https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/ppe.pdf">https://oacu.oir.nih.gov/sites/default/files/uploads/arac-guidelines/ppe.pdf</a>  [13]  <a href="http://www.crosstex.com/home.asp">http://www.crosstex.com/home.asp</a>
5.	Hearing protection	Occupational Safety and Health Administration (OSHA), the United States, Department of Labour  OSHA Respirator Medical Evaluation Questionnaire (Mandatory)	Control measures for occupational noise like engineering controls, administrative controls or PPEs  Initial evaluation of employees for allergies to animals related to prior employment	<a href="https://www.osha.gov/SLTC/noisehearingconservation/">https://www.osha.gov/SLTC/noisehearingconservation/</a>  <a href="https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=9783">https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&amp;p_id=9783</a>
7.	Immunization of workers	Biomedical Waste Management Rule (BMWM) 2016  Centers for Disease Control and Prevention (CDC)	Recommended for tetanus and hepatitis B vaccine for the workers involved in biomedical waste  Information on rabies virus serology for the workers having high occupational risk and exposure to rabies	<a href="https://dhr.gov.in/sites/default/files/Biomedical_Waste_Management_Rules_2016.pdf">https://dhr.gov.in/sites/default/files/Biomedical_Waste_Management_Rules_2016.pdf</a>  <a href="http://www.cdc.gov/rabies/specific_groups/doctors/serology.html">http://www.cdc.gov/rabies/specific_groups/doctors/serology.html</a>

		Reference serum revisited	Storing a worker's serum for possible future reference	[24]
8.	Routine periodic medical evaluations	Laboratory animal allergy (LAA)	Information on testing of the workers for evidence of an allergy to animal proteins	[25, 26]
9.	Animal-related occupational injuries and illnesses	Occupational Safety and Health (OSH)	Animal handling occupational illnesses and injuries. Measures to minimize the risk of disease and other occupational hazards	[27]
10.	Zoonosis	Centers for Disease Control and Prevention and published papers	Tuberculosis, rubella and herpes B virus	[28, 29, 30] <a href="http://www.cdc.gov/tb/publications/factsheets/statistics/TBTrends.htm">http://www.cdc.gov/tb/publications/factsheets/statistics/TBTrends.htm</a> <a href="https://www.cdc.gov/herpesvirus/index.html">https://www.cdc.gov/herpesvirus/index.html</a>

## 2.5 Education Training and Regulatory Guidelines on Laboratory Animals

Everyone involved in animal experimentation and care must be adequately trained before working with lab animals. The training programme should be like that it can accommodate a range of educational qualifications frequently encountered in research institutions. Before 1985, training programmes for veterinarians and animal technicians were available in Europe and the United States. Two laws on the care and use of animals were made by the US Congress [31]. According to these laws, all animal research funded by PHS (Public Health Service) should comply with the PHS Policy on Humane Care and Use of Laboratory Animals [32]. All persons having responsibilities for the use of animals must have adequate qualification and training including researchers and members of Institutional Animal Care and Use Committees (IACUCs).

Europe adopted the Directive 86/609/EEC in 1986 for the Protection of Animals Used for Experimental and Other Scientific Purposes (EU Directive) [33]. The Council of Europe (CoE) in the same year accepted the Convention for the Protection of Vertebrate Animals Used for Experimental and Other Scientific Procedures [34, 35]. Both these directives have provisions on the competence of persons involved in animal experimentation. Several other countries including Canada and New Zealand have developed guidelines on the competence of personnel. The training course should include subjects such as animal husbandry, gnotobiology, experimental techniques, anaesthesia and ethical features. The European Science Foundation (ESF), an organization from 30 European countries, stated that courses on laboratory animals should also include information on animal alternatives, welfare and ethics [36]. In countries like Denmark, Sweden, Finland, the Netherlands, France, Belgium and the United Kingdom, a training course has been made mandatory by law. In other countries like Germany, Spain, Portugal and Italy, training courses are not mandatory as per law, but they conduct the training.

According to the US Animal Welfare Act, 1996, institutions are responsible of providing training in areas like the proper use of anaesthetics, tranquilizers and analgesics, humane methods of animal maintenance and experimentation and the availability and use of methods that limit the use of animals or minimize animal distress [37, 38]. Despite the guidelines published on Care and Use of Laboratory Animals by the National Research Council of Education and Training [39], the training courses of many institutions have major differences. The International Council for Laboratory Animal Science (ICLAS) has considered harmonizing training courses. In this regard, a subcommittee of the Working Group on Harmonization examines general principles for training that have been formed. FELASA Accreditation is recognized as the premier accreditation and was introduced in 2003 and is recognized as the premier accreditation scheme in Europe for laboratory animal science (LAS) courses [40]. This scheme necessitates the development of quality training programmes on laboratory animals in Europe and internationally.

FELASA encourages professional competence of all personnel working with animals and the implementation of 3Rs. A Certificate Course on Laboratory Animal

Science (CCLAS) that started in India in 2013 promotes judicious and scientific handling and management of laboratory animals. A MoU was signed between TANUVAS (Tamil Nadu Veterinary and Animal Sciences University), CPCSEA (Committee for the Purpose of Control and Supervision of Experiments on Animals), NIAW (National Institute of Animal Welfare) and Laboratory Animal Scientists' Association (India) (LASA India) to start this course in India. This course aims to bridge the quality standards prescribed by the FELASA for personnel involved in animal experimentation in India. Based on the success of this course, FELASA has accredited this course for rodents and fish species. Outside Europe, this is the only course accredited and audited by experts from FELASA. The objective of this programme is to guide the judicious use of laboratory animals to achieve scientific results in animal experimentation.

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## 2.6 Guidelines on Publications Related Work on Animals

Clear and accurate reporting of data is very important for the reproducibility of results. To address this issue, ARRIVE (Animal Research: Reporting In Vivo Experiments) guidelines were framed in 2010. These guidelines instruct the authors and journals to report minimum necessary information for in vivo experiments. But still, the impact of these guidelines in reporting has been limited. Many in vivo researchers are not aware of reporting the information as per ARRIVE guidelines. The revised ARRIVE provides information about 21 items. It covers best practices of conduct of animal studies for improving standards of the experimental process and publication. The ARRIVE guidelines apply to all studies involving live animals. These are also to be used by funding institutions and ethical review boards to ensure best practices and reporting in animal research.

The ARRIVE guidelines prescribe the “Essential 10” for minimum reporting requirements. The initial focus is to instruct authors, journal staff, editors and reviewers on “10 critical information”. Once the “Essential 10” is regularly reported in publications, the information on other items may be added until reaching all 21 items. The ARRIVE Essential 10 are study design, sample size, inclusion and exclusion criteria, randomization, blinding, outcome measures, statistical methods, experimental animals, experimental procedures and results. As per revised ARRIVE guidelines, the recommended items to be described are abstract, background, objectives, ethical statement, housing and husbandry, animal care and monitoring, interpretation, generalization, protocol registration, data access and declaration of interests. It is the responsibility of authors to fulfil the requirements of guidelines and regulations related to the use of animals. They must have approval for the study from the relevant ethics committee and provide the institution details where the research was approved. The protocol licence numbers should also be indicated [41].

## 2.7 Conclusion

The harmonization in laboratory animal welfare and use programmes has been made largely due to the globalization of science. A group of few countries yet have not adopted the guidelines, regulations and policies directing the care and use of laboratory animals. Further, there are still many pressing issues with the long-standing legal regimes as established by countries like the European Union, the United States and Australia. Therefore, additional efforts have to be required to form international organizations to set up harmonized global laboratory animal laws, policies and regulations. This chapter can be a catalyst for further improvement and implementation of legislations, policies and guidelines in the sphere of laboratory animal use and care as aspired globally for quality science.

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