

Publishing Best Practices Webinar Series:

BEING TRANSPARENT: PRINCIPLES OF TRANSPARENCY IN SCHOLARLY PUBLISHING

Presented by the Local Capacity Development Crosscutting Theme

3 November 2023

Feed the Future Innovation Lab for Livestock Systems

Presented in collaboration with the University of Florida Libraries



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Outline

Transparency in scholarly publishing

- **Publication ethics**
 - Authorship contributions
 - Competing interests
 - Statement on data sharing
- **Reporting standards for study type**
 - Complete reporting of research findings

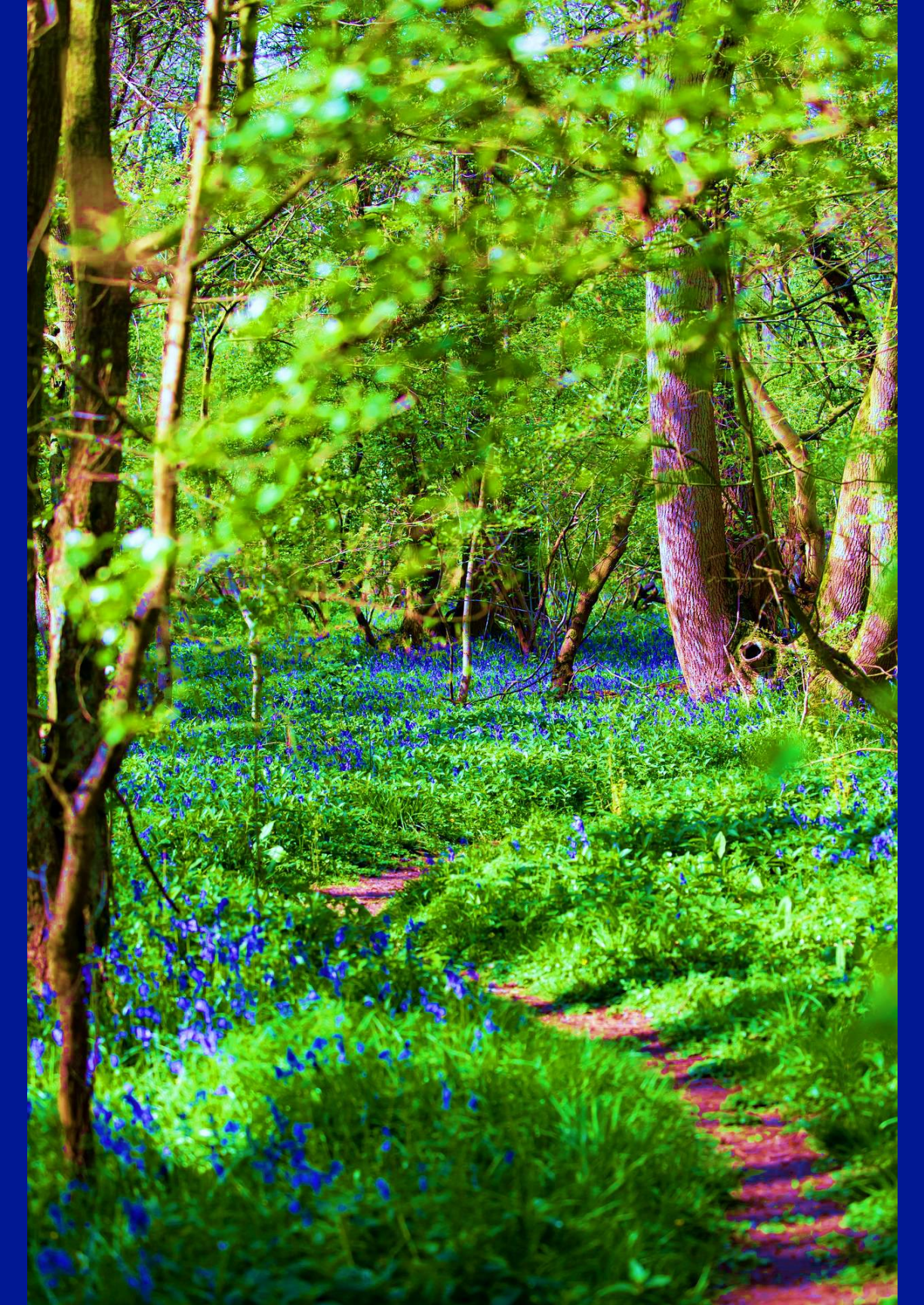


Image by [Kev](#) from [Pixabay](#)

COPE – Transparency in Scholarly Publishing

PRINCIPLES OF TRANSPARENCY & Best Practice in Scholarly Publishing

C O P E

Committee on Publication Ethics (COPE), the Directory of Open Access Journals (DOAJ), the Open Access Scholarly Publishers Association (OASPA), and the World Association of Medical Editors (WAME) are scholarly organizations. All have seen increases in the number, and range in quality, of membership applications. Our organizations have collaborated to identify Principles of Transparency & Best Practice for Scholarly Publications. These principles form the basis of the criteria by which suitability for membership is assessed by COPE, DOAJ and OASPA, and part of the criteria on which membership applications are evaluated by WAME.

WCRIF

World Conferences on Research Integrity Foundation (WCRIF)

- **Promotes research integrity through world conferences**
- **Integrity refers to principles and standards meant to ensure trustworthiness and validity of research**
- **Researcher behaviors that impact research integrity**
 - **Research misconduct**
 - Fabrication (making up data)
 - Falsification (changing or omitting data; manipulating equipment, materials)
 - Plagiarism (using others' words, ideas, processes, results without attribution)
 - **Detrimental research practices**
 - E.g., Inappropriate assignment of authorship, incomplete reporting
 - **Responsible research practices**
 - E.g., honest reporting, transparency about competing interests

Singapore Statement 2010

Unified guidelines and codes of conduct designed to foster greater integrity in research worldwide

- **Product of the 2nd World Conference on Research Integrity**
- 340 individuals from 91 countries
- **Responsibilities related to transparency**
 - Research findings
 - Authorship
 - Publication acknowledgment
 - Conflict of interest

Singapore Statement 2010 – Authorship

Take responsibility for contributions to publications and acknowledge those who made significant contributions

- **All those (and only those) meeting authorship criteria should be listed as co-authors**
- **Those making significant contributions, but not meeting authorship criteria, should be acknowledged**

6. Authorship: Researchers should take responsibility for their contributions to all publications, funding applications, reports and other representations of their research. Lists of authors should include all those and only those who meet applicable authorship criteria.

7. Publication Acknowledgement: Researchers should acknowledge in publications the names and roles of those who made significant contributions to the research, including writers, funders, sponsors, and others, but do not meet authorship criteria.

COPE Transparency and Best Practice – Authorship

PUBLICATION ETHICS



A journal should have policies on publishing ethics. These should be clearly visible on its website, and should refer to:

- journal policies on authorship and contributorship
- how the journal will handle complaints and appeals
- journal policies on conflicts of interest/competing interests
- journal policies on data sharing and reproducibility
- journal's policy on ethical oversight
- journal's policy on intellectual property
- journal's options for post-publication discussions and corrections.

Ex: *Journal of Dairy Science* policy on authorship / contributorship

Authorship

The *Journal of Dairy Science* follows guidelines on authorship and contribution from the International Committee of Medical Journal Editors (<http://www.icmje.org/>). As such, the journal recommends that authorship be based on the following 4 criteria:

1. Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
2. Drafting the work or revising it critically for important intellectual content; AND
3. Final approval of the version to be published; AND
4. Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

To satisfy the requirement for authorship, each contributor must meet all 4 criteria above. Contributors meeting fewer than the 4 criteria listed here should be listed in the Acknowledgments section of an article.

Authors are encouraged to have an ORCID identifier (<https://orcid.org/>) for disambiguation of the publication record and to link their ORCID to their ScholarOne Manuscripts account.

Image from

https://publicationethics.org/files/COPE_Principles_of_Transparency_Poster_0.pdf retrieved 2023-08-22

Image from <https://www.journalofdairyscience.org/pb-assets/Health%20Advance/journals/jods/JODS-Instruct-for-Contributors-2023-Policies-1675367345593.pdf> retrieved 2023-10-28

COPE Transparency and Best Practice – Authorship

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- journal's policy on ethical oversight
- journal's policy on intellectual property
- journal's options for post-publication discussions and corrections.

Example: *Livestock Science* policy on authorship / contributorship

Author contributions

For transparency, we require corresponding authors to provide co-author contributions to the manuscript using the relevant CRediT roles. The CRediT taxonomy includes 14 different roles describing each contributor's specific contribution to the scholarly output. The roles are: Conceptualization; Data curation; Formal analysis; Funding acquisition; Investigation; Methodology; Project administration; Resources; Software; Supervision; Validation; Visualization; Roles/Writing - original draft; and Writing - review & editing. Note that not all roles may apply to every manuscript, and authors may have contributed through multiple roles. [More details and an example.](#)

Image from <https://www.elsevier.com/journals/livestock-science/1871-1413/guide-for-authors> retrieved 2023-09-23

Singapore Statement 2010 – Competing interests

Provide disclosure of all potential conflicts of interest

- **Financial and other forms of support that could compromise trustworthiness**

9. Conflict of Interest: Researchers should disclose financial and other conflicts of interest that could compromise the trustworthiness of their work in research proposals, publications and public communications as well as in all review activities.

Image from <https://www.wcrif.org/downloads/main-website/singapore-statements/224-singapore-statement-lettersize/file> retrieved 2023-08-09

COPE Transparency – Competing interests

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- journal's policy on ethical oversight
- journal's policy on intellectual property
- journal's options for post-publication discussions and corrections.

Example: *Journal of Dairy Science* policy on conflicts of interest

Acknowledgment of Funding and Conflicts of Interest

Authors must acknowledge all sources of funding for the research in the Acknowledgments section of the paper. Names and locations of funders should be provided; grant names or numbers may be included. Authors will be asked to declare potential conflicts of interest during the submission process and should describe any such conflicts in the Acknowledgments section of the manuscript. If no conflicts are declared, the following statement will be added to the article: “The authors have not stated any conflicts of interest.”

Image from

https://publicationethics.org/files/COPE_Principles_of_Transparency_Poster_0.pdf retrieved 2023-08-22

Image from <https://www.journalofdairyscience.org/pb-assets/Health%20Advance/journals/jods/JODS-Instruct-for-Contributors-2023-Policies-1675367345593.pdf> retrieved 2023-10-28

COPE Transparency – Competing interests

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- journal's policy on intellectual property
- journal's options for post-publication discussions and corrections.

Example: *Livestock Science* policy on competing interests

Declaration of interest

All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential competing interests include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors must disclose any interests in two places: 1. A summary declaration of interest statement in the title page file (if double anonymized) or the manuscript file (if single anonymized). If there are no interests to declare then please state this: 'Declarations of interest: none'. 2. Detailed disclosures as part of a separate Declaration of Interest form, which forms part of the journal's official records. It is important for potential interests to be declared in both places and that the information matches. [More information](#) ↗ .

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Image from <https://www.elsevier.com/journals/livestock-science/1871-1413/guide-for-authors> retrieved 2023-09-23

Disclosure of competing interests

Things that need to be disclosed

- **Financial or non-financial support for the reported work**
- **Financial interest or professional relationship not directly related to this manuscript but to the subject matter**
 - E.g., consulting fees, ownership of stock, speaking fees, travel reimbursement, advisory positions, employment, grants/funding
 - Within the last 3 years
- **Relevant intellectual property**
 - E.g., copyrights or patents pending, issued, or licensed to the author and relevant to the work
- **Anything else you or your co-authors think might warrant disclosure**
 - E.g., editorial position with journal to which you are submitting

Competing interests – Resources

Elsevier guidance

Guide to Declaration of Competing Interests*

Action	What is it?	Is it unethical?	What should you do?
An undisclosed relationship that may pose a competing interest.	Neglecting to disclose a relationship with a person or organization that could affect one's objectivity, or Inappropriately influence one's actions.	Yes. Some relationships do not necessarily present a conflict. Participants in the peer-review and publication process must disclose relationships that could be viewed as potential competing interests. ²	<ul style="list-style-type: none"> When submitting a paper, state explicitly whether potential competing interests do or do not exist. Indicate this in the manuscript for single-blind journals or in the title page for double-blind journals. Investigators must disclose potential competing interests to study participants and should state in the manuscript whether they have done so. Reviewers must also disclose any competing interests that could bias their opinions of the manuscript.²
An undisclosed funding source that may pose a competing interest.	Neglecting to disclose the role of the study sponsor(s), if any, in study design; in the collection, analysis, and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication.	Yes. Undeclared financial conflicts may seriously undermine the credibility of the journal, the authors, and the science itself. ²	<ul style="list-style-type: none"> When submitting a paper, a declaration (with the heading 'Role of the funding source') should be made in a separate section of the text and placed before the References. Describe the role of the study sponsor(s), if any, in study design; in the collection, analysis, and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication. Editors may request that authors of a study funded by an agency with a proprietary or financial interest in the outcome sign a statement, such as 'I had full access to all of the data in this study and I take complete responsibility for the integrity of the data and the accuracy of the data analysis.'³

*When in doubt, always consult with your professor, advisor, or someone in a position of authority who can guide you to the right course of action.

Competing interests – Resources

ICMJE guidance regarding information to include

- **Disclosure of relationships and activities that could potentially bias the work**
- **For each author**
- **Source(s) of support**
 - **Grants, drugs, equipment, and other support that facilitated conduct of the work or the writing of the manuscript**
 - **Include sponsor names and roles in study design; data collection, analysis, and interpretation; any restrictions placed on submission of report for publication**
 - **Authors' access to study data**
- **Template**
- **ICMJE Disclosure Form**

Singapore Statement 2010 – Data sharing

Make research findings available

- **Share data and findings openly**

5. Research Findings: Researchers should share data and findings openly and promptly, as soon as they have had an opportunity to establish priority and ownership claims.

COPE Transparency – Data sharing

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- journal's policy on intellectual property
- journal's options for post-publication discussions and corrections.

Example: *Journal of Dairy Science* policy on data sharing

Journal of Dairy Science • <https://www.journalofdairyscience.org/> **Brief Instructions for Authors**

Journal scope	<i>Journal of Dairy Science</i> ® (JDS) is the leading general dairy research journal in the world. JDS readers represent education, industry, and government agencies in more than 70 countries with interests in biochemistry, breeding, economics, engineering, environment, food science, genetics, microbiology, nutrition, pathology, physiology, processing, public health, and more. In January 2022, JDS became a gold open access journal.
Manuscript preparation	Refer to <i>Journal of Dairy Science</i> Instructions for Authors: Style and Format for detailed instructions on style and form, statistics, nomenclature, abbreviation usage, and table and figure preparation.
Format (research articles)	Abstract; Introduction; Materials and Methods; Results; Discussion (or combined Results and Discussion; Conclusions (optional); References; Acknowledgments/Notes (funding, acknowledgments, conflict of interest).
File uploads	Manuscript and reporting checklist (required); graphical abstract and highlights (optional). Submit here: https://mc.manuscriptcentral.com/jds
Data supplements	Supplemental data files should be submitted to a third-party host and linked by URL in the manuscript.
Policies	Refer to the Instructions for Authors: Policies for additional information on authorship, animal care, human subjects research, plagiarism, acknowledgment of funding, conflicts of interest, and other policy matters.

Data files can be linked

Image from

https://publicationethics.org/files/COPE_Principles_of_Transparency_Poster_0.pdf retrieved 2023-08-22

Image from <https://www.journalofdairyscience.org/pb-assets/Health%20Advance/journals/jods/JODS-ShortInst-2023-1675367345023.pdf> retrieved 2023-10-29

COPE Transparency – Data sharing

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- journal's policy on ethical oversight
- journal's policy on intellectual property
- journal's options for post-publication discussions and corrections.

Example: *Livestock Science* policy on data sharing

Livestock Science | Supports open access

Submit your article ↗

Articles & Issues ▾ About ▾ Publish ▾ Order journal ↗ Search in this journal

Guide for authors

Research data

This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings, which may also include software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Data statement

To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the [Data Statement page](#).

Encouraged to share data where appropriate and state availability of data
May be required by funder

Image from

[https://publicationethics.org/files/COPE Principles of Transparency Poster 0.pdf](https://publicationethics.org/files/COPE_Principles_of_Transparency_Poster_0.pdf) retrieved 2023-08-22

Image from <https://www.elsevier.com/journals/livestock-science/1871-1413/guide-for-authors> retrieved 2023-09-23

Data sharing – Funder policy

Example of NIH mandate

NIH SCIENTIFIC DATA SHARING

Search

NIH Staff | FAQ | [Contacts & Help](#)

DATA MANAGEMENT AND SHARING POLICY GENOMIC DATA SHARING POLICY OTHER SHARING POLICIES ACCESSING DATA ABOUT

Home > Data Management and Sharing Policy > About Data Management & Sharing Policies > Data Management & Sharing Policy Overview

Data Management & Sharing Policy Overview

Learn what is expected of investigators and institutions under the 2003 NIH Data Sharing Policy and the 2023 NIH Data Management & Sharing Policy.

Applications for Receipt Dates BEFORE Jan 25 2023 Applications for Receipt Dates ON/AFTER Jan 25 2023

NIH has issued the [Data Management and Sharing \(DMS\) policy](#) (effective January 25, 2023) to promote the sharing of scientific data. Sharing scientific data accelerates biomedical research discovery, in part, by enabling validation of research results, providing accessibility to high-value datasets, and promoting data reuse for future research studies. [Access the full text of the 2023 Final NIH Policy for Data Management & Sharing](#).

Under the DMS policy, NIH expects that investigators and institutions:

- Plan and budget for the managing and sharing of data
- Submit a DMS plan for review when applying for funding
- Comply with the approved DMS plan

Individual NIH Institutes, Centers, or Offices may have additional policies and expectations (see [NIH Institute and Center Data Sharing Policies](#)).

Policy link

Data sharing – Funder policy

Example of funder mandate

- **NIH policy effective Jan 25, 2023**

NIH Policy for Data Management and Sharing

Section I. Purpose

The National Institutes of Health (NIH) Policy for Data Management and Sharing (herein referred to as the DMS Policy) reinforces NIH's longstanding commitment to making the results and outputs of NIH-funded research available to the public through effective and efficient data management and data sharing practices. Data sharing enables researchers to rigorously test the validity of research findings,^[5] strengthen analyses through combined datasets, reuse hard-to-generate data, and explore new frontiers of discovery. In addition, NIH emphasizes the importance of good data management practices, which provide the foundation for effective data sharing and improve the reproducibility and reliability of research findings. NIH encourages data management and data sharing practices consistent with the **FAIR data principles**^[6]

Under the DMS Policy, NIH requires researchers to prospectively plan for how scientific data will be preserved and shared through submission of a Data Management and Sharing Plan (Plan).

Upon NIH approval of a Plan, NIH expects researchers and institutions to implement data management and sharing practices as described. The DMS Policy is intended to establish expectations for Data Management and Sharing Plans, which applicable NIH Institutes, Centers and Offices (ICO) may supplement as appropriate.

Data Management and Sharing Plan is required
Encourages FAIR data principles

Data Sharing – Resource

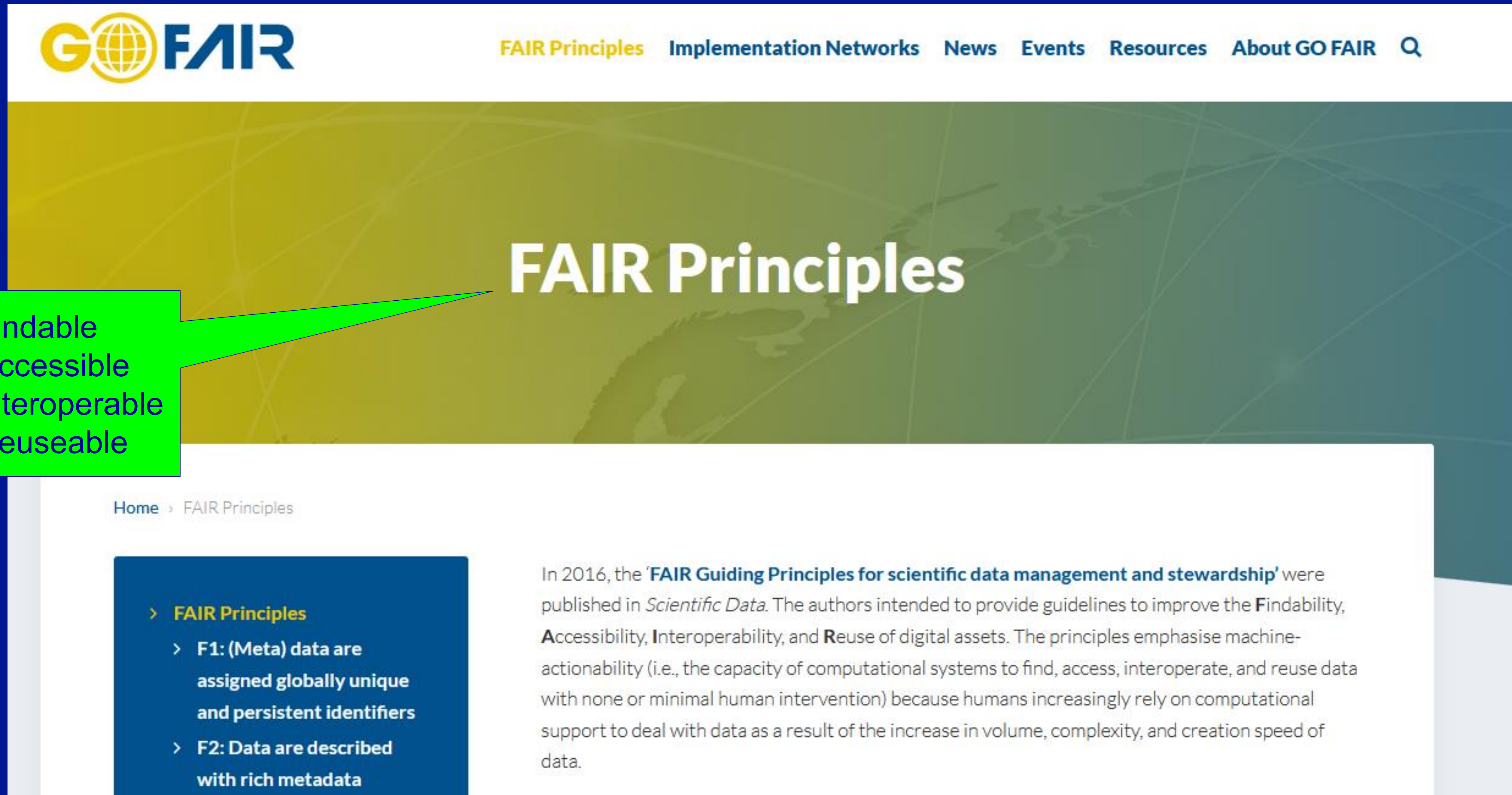


Image from <https://www.go-fair.org/fair-principles/> retrieved 2023-10-25

Data Sharing – Resource

Data repository advice from NIH

Desirable Characteristics for All Data Repositories

When choosing a repository to manage and share data resulting from Federally funded research, here are some desirable characteristics to look for:

- **Unique Persistent Identifiers:** Assigns datasets a citable, unique persistent identifier, such as a digital object identifier (DOI) or accession number, to support data discovery, reporting, and research assessment. The identifier points to a persistent landing page that remains accessible even if the dataset is de-accessioned or no longer available.
- **Long-Term Sustainability:** Has a plan for long-term management of data, including maintaining integrity, authenticity, and availability of datasets; building on a stable technical infrastructure and funding plans; and having contingency plans to ensure data are available and maintained during and after unforeseen events.
- **Metadata:** Ensures datasets are accompanied by metadata to enable discovery, reuse, and citation of datasets, using schema that are appropriate to, and ideally widely used across, the community(ies) the repository serves. Domain-specific repositories would generally have more detailed metadata than generalist repositories.
- **Curation and Quality Assurance:** Provides, or has a mechanism for others to provide, expert curation and quality assurance to improve the accuracy and integrity of datasets and metadata.
- **Free and Easy Access:** Provides broad, equitable, and maximally open access to datasets and their metadata free of charge in a timely manner after submission, consistent with legal and ethical limits required to maintain privacy and confidentiality, Tribal sovereignty, and protection of other sensitive data.
- **Broad and Measured Reuse:** Makes datasets and their metadata available with broadest possible terms of reuse; and provides the ability to measure attribution, citation, and reuse of data (i.e., through assignment of adequate metadata and unique PIDs).
- **Clear Use Guidance:** Provides accompanying documentation describing terms of dataset access and use (e.g., particular licenses, need for approval by a data use committee).
- **Security and Integrity:** Has documented measures in place to meet generally accepted criteria for preventing unauthorized access to, modification of, or release of data, with levels of security that are appropriate to the sensitivity of data.
- **Confidentiality:** Has documented capabilities for ensuring that administrative, technical, and physical safeguards are employed to comply with applicable confidentiality, risk management, and continuous monitoring requirements for sensitive data.
- **Common Format:** Allows datasets and metadata downloaded, accessed, or exported from the repository to be in widely used, preferably non-proprietary, formats consistent with those used in the community(ies) the repository serves.
- **Provenance:** Has mechanisms in place to record the origin, chain of custody, and any modifications to submitted datasets and metadata.
- **Retention Policy:** Provides documentation on policies for data retention within the repository.

Singapore Statement 2010 – Report findings

Make research findings available

- **Report findings fully and objectively**

3. Research Methods: Researchers should employ appropriate research methods, base conclusions on critical analysis of the evidence and report findings and interpretations fully and objectively.

Reporting Research Findings

Reporting standards

- **Guidelines re: items to be included in research articles**
- **Based on study design**
 - Address potential sources of bias
- **Improve the completeness of reporting**
- **Enhance transparency**
- **Good sources for locating relevant standards**
- **Journal recommendations/requirements**
- **MERIDIAN: Managerie of Reporting guidelines Involving Animals**
 - Animal focused
- **EQUATOR Network**
 - As of Sept 26, 2023, 579 reporting guidelines
 - E.g., REFLECT for reporting randomized trials for livestock and food safety, ARRIVE for reporting any area of bioscience research using laboratory animals



Reporting Research Findings

Fully and objectively

- **Transparent**

Example: *Livestock Science* policy on use of reporting guidelines

Livestock Science | Supports open access

Submit your article ↗

Articles & Issues ▾ About ▾ Publish ▾ Order journal ↗ Search in this journal Guide for authors

Studies in humans and animals

If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with [The Code of Ethics of the World Medical Association \(Declaration of Helsinki\)](#) for experiments involving humans. The manuscript should be in line with the [Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals](#) and aim for the inclusion of representative human populations (sex, age and ethnicity) as per those recommendations. The terms *sex* and *gender* should be used correctly.

Authors should include a statement in the manuscript that informed consent was obtained for experimentation with human subjects. The privacy rights of human subjects must always be observed.

All animal experiments should comply with the [ARRIVE guidelines](#) and should be carried out in accordance with the U.K. [Animals \(Scientific Procedures\) Act, 1986](#) and associated guidelines, [EU Directive 2010/63/EU for animal experiments](#), or the [National Research Council's Guide for the Care and Use of Laboratory Animals](#) and the authors should clearly indicate in the manuscript that such guidelines have been followed. The sex of animals must be indicated, and where appropriate, the influence (or association) of sex on the results of the study.

Unnecessary cruelty in animal experimentation is not acceptable to the Editors of *Livestock Science*.

Comply with ARRIVE guidelines

Reporting Research Findings

Fully and objectively

- **Transparent**

Example: *Journal of Dairy Science* policy on use of reporting guidelines

Requires completed checklist

Reporting Guidelines

The *Journal of Dairy Science* requires the submission of an appropriate reporting guideline checklist with each paper. This is a widespread practice and common requirement in leading scientific and medical journals. Reporting guidelines help to ensure complete and accurate reporting of a study, which contributes to reproducibility and allows for critical appraisal of the work, as well as eventual inclusion of the study in systematic reviews and meta-analyses. Reporting guidelines do not prescribe study design or analysis but have been shown to improve the clarity and completeness of reporting. More information on the policy and its implementation can be found here: <https://www.adsa.org/Publications/Journal-of-Dairy-Science/jds-authors>.

Links to checklists

Reporting Research Findings

Fully and objectively

- **Transparent**

Example: *Journal of Dairy Science* policy on use of reporting guidelines

Requires completed checklist

The screenshot shows the website for the American Dairy Science Association (ADSA). The header includes the ADSA logo and navigation links for Membership, Publications, Meetings, Foundation, and About ADSA. A search icon and a LOGIN button are also present. The main heading reads "REPORTING CHECKLISTS FOR JOURNAL OF DAIRY SCIENCE® AND JDS COMMUNICATIONS®". Below this, a breadcrumb trail indicates the path: Publications > Journal of Dairy Science > jds authors. The main content area contains a paragraph stating that submission of a reporting checklist is required for the Journal of Dairy Science and JDS Communications. It then lists several checklists under two categories: ANIMAL STUDIES and NON-ANIMAL STUDIES. The ANIMAL STUDIES category includes REFLECT, ARRIVE, PRISMA, STROBE-Vet, and MERIDIAN. The NON-ANIMAL STUDIES category includes Non-Animal Studies Reporting. Two callout boxes highlight specific checklists: "Some suitable checklists" points to the ARRIVE checklist, and "MERIDIAN Checklists" points to the MERIDIAN checklist.

AMERICAN DAIRY SCIENCE ASSOCIATION® Membership Publications Meetings Foundation About ADSA

REPORTING CHECKLISTS FOR JOURNAL OF DAIRY SCIENCE® AND JDS COMMUNICATIONS®

Publications > Journal of Dairy Science > jds authors

Submission of a reporting checklist is required for the *Journal of Dairy Science* and *JDS Communications*. These checklists help to ensure clear and complete reporting of your study, which assists reviewers and readers of your work. We have provided the links below to help authors complete a suitable checklist to upload with their manuscript.

ANIMAL STUDIES

- REFLECT:** Reporting Guidelines for Randomized Controlled Trials in Livestock and Food Safety (**checklist**)
- ARRIVE:** Animal Research: Reporting of In Vivo Experiments (Use full **checklist**)
- PRISMA:** Preferred Reporting Items for Systematic Reviews and Meta-Analyses (**checklist**)
- STROBE-Vet:** Strengthening the Reporting of Observational Studies in Epidemiology – Veterinary Extension (**checklist**)
- MERIDIAN:** Menagerie of Reporting guidelines involving Animals links to manually fillable **checklists**

NON-ANIMAL STUDIES

- Non-Animal Studies Reporting**
(download, fill form, save, upload with manuscript)

Some suitable checklists

MERIDIAN Checklists

Reporting Research – Resource for finding guidelines

meridian
Better reporting.
Menagerie of Reporting guidelines Involving Animals

HOME ARRIVE PRISMA REFLECT STROBE-VET STARD (DIAGNOSTICS) OTHER GUIDELINES

MERIDIAN : Menagerie of Reporting guidelines Involving Animals.

This website is a collection (*menagerie*) of reporting guidelines for research studies that involve animals. Animals are the subjects of research for many reasons, therefore reporting guidelines address a variety of animal purposes. The goal of reporting guidelines is to improve the approach to reporting research studies so that the results can be used more fully. Incomplete reporting makes it difficult to assess the internal and external validity of studies, so reporting guidelines address both concepts. Reporting guidelines are not risk of bias tools or quality appraisal tools. The reporting guidelines here describe how to report randomized controlled trials, observational studies and experiments.

Many disciplines/topics have also developed topic-specific guidelines. Both veterinary and biomedical examples can be found at [other guidelines](#)

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FOLLOW MERIDIAN ON TWITTER

ARRIVE

REFLECT

STROBE-VET

SYREAF
SYSTEMATIC REVIEWS FOR ANIMALS & FOOD

Try our tools for all checklists!

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Checklists

Reporting Research – Resource for finding guidelines

Fill out an ARRIVE checklist in RIGOR.

The ARRIVE (Animal Research: Reporting of In Vivo Experiments) guidelines improve the reporting of research that uses animals. Their goal is to reduce the number of unnecessary studies and to increase the amount of information published. The guidelines are produced by the National Centre for the Replacement Refinement & Reduction of Animals in Research (NC3Rs). Please see more information about ARRIVE [here](#).



Fill out a CONSORT checklist in RIGOR.

The CONSORT Statement provides recommendations for describing randomized trials. It seeks to help authors report conclusions drawn from the trials, make their reporting more complete and transparent, and make it easier to review and interpret the evidence. CONSORT stands for Consolidated Standards of Reporting Trials.

Fill out a PRISMA checklist in RIGOR.

PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) statement includes a reporting checklist for meta-analyses and systematic reviews. The main focus of PRISMA is on evaluating randomized trials. However, it can also be for reviewing other types of research, e.g., evaluations of interventions. More information about PRISMA can also be found [here](http://www.prisma-statement.org/) and at <http://www.prisma-statement.org/>.



Fill out a REFLECT checklist in RIGOR.

The overall goal of the REFLECT (Reporting Guidelines for Randomized Controlled Trials for Livestock and Food Safety) statement is to help authors improve the reporting livestock trials. More information about REFLECT can be found [here](#).

REFLECT

Fill out a STROBE-Vet checklist in RIGOR.

The STROBE-Vet (Strengthening the Reporting of Observational Studies in Epidemiology – Veterinary Extension) modifies the STROBE statement for reporting observational studies of animal populations. More information about STROBE-Vet can be found [here](#).



Reporting Research – Resource for finding guidelines

The screenshot shows the Equator Network website. At the top left is the logo for 'equator network' with a green globe icon. To its right is the tagline 'Enhancing the QUALity and Transparency Of health Research'. Further right is a globe icon with the text 'Website translation help'. Below this is a navigation menu with links: Home, About us, Library, Toolkits, Courses & events, News, Blog, Librarian Network, and Contact. A green banner below the menu reads 'Your one-stop-shop for writing and publishing high-impact health research' with sub-links: find reporting guidelines | improve your writing | join our courses | run your own training course | enhance your peer review | implement guidelines. The main content area is divided into three columns. The left column is titled 'Library for health research reporting' and contains a description and a list of links: 'Search for reporting guidelines', 'Not sure which reporting guideline to use?', 'Reporting guidelines under development', and 'Visit the library for more resources'. A green callout box with the word 'Searchable' points to the first link. The middle column is titled 'Reporting guidelines for main study types' and lists various guideline categories with links: Randomised trials (CONSORT, Extensions), Observational studies (STROBE, Extensions), Systematic reviews (PRISMA, Extensions), Study protocols (SPIRIT, PRISMA-P), Diagnostic/prognostic studies (STARD, TRIPOD), Case reports (CARE, Extensions), Clinical practice guidelines (AGREE, RIGHT), Qualitative research (SRQR, COREQ), Animal pre-clinical studies (ARRIVE), Quality improvement studies (SQUIRE, Extensions), and Economic evaluations (CHEERS). At the bottom of this column is a link 'See all 592 reporting guidelines'. The right column features a banner with the text 'Apologies!' and 'The CONSORT website is temporarily unavailable' over an image of tools.

equator network Enhancing the **QUALity** and **Transparency Of health Research** Website translation help

Home About us Library Toolkits Courses & events News Blog Librarian Network Contact

Your one-stop-shop for writing and publishing high-impact health research
find reporting guidelines | improve your writing | join our courses | run your own training course | enhance your peer review | implement guidelines

Library for health research reporting
The Library contains a comprehensive searchable database of reporting guidelines and also links to other resources relevant to research reporting.

- Search for reporting guidelines
- Not sure which reporting guideline to use?
- Reporting guidelines under development
- Visit the library for more resources

Reporting guidelines for main study types

Randomised trials	CONSORT	Extensions
Observational studies	STROBE	Extensions
Systematic reviews	PRISMA	Extensions
Study protocols	SPIRIT	PRISMA-P
Diagnostic/prognostic studies	STARD	TRIPOD
Case reports	CARE	Extensions
Clinical practice guidelines	AGREE	RIGHT
Qualitative research	SRQR	COREQ
Animal pre-clinical studies	ARRIVE	
Quality improvement studies	SQUIRE	Extensions
Economic evaluations	CHEERS	

[See all 592 reporting guidelines](#)

Apologies!
The **CONSORT** website is temporarily unavailable

Image from <https://www.equator-network.org/> retrieved 2023-10-25

Reporting Research – Resource for finding guidelines



Enhancing the QUALity and
Transparency Of health Research



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[Home](#) > [Library](#) > Reporting guideline

Search for reporting guidelines



Browse for reporting guidelines by selecting one or more of these drop-downs:

Study type

Please select... v

and

Clinical area

Please select... v

and

Section of report

Please select... v

Or search with free text

livestock

Search Reporting Guidelines

We recommend searching for reporting guidelines in English

[Start again](#) | [Help](#)

Displaying 592 reporting guidelines found.

Searchable



Reporting guidelines for main study types

Randomised trials	CONSORT	Extensions
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Study protocols	SPIRIT	PRISMA-P
Diagnostic/prognostic studies	STARD	TRIPOD
Case reports	CARE	Extensions

Reporting Research – Resource for finding guidelines

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[Home](#) > [Library](#) > Reporting guideline

Search for reporting guidelines

Browse for reporting guidelines by selecting one or more of these drop-downs:

Study type: and Clinical area: and Section of report:

Or search with free text:

We recommend searching for reporting guidelines in English [Start again](#) | [Help](#)

Reporting guidelines for main study types

Randomised trials	CONSORT	Extensions
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Animal pre-clinical studies	ARRIVE	
Quality improvement studies	SQUIRE	Extensions
Economic evaluations	CHEERS	

Displaying 2 reporting guidelines found.

Key reporting guidelines, shaded green, are displayed first. [Show the most recently added records first.](#)

- [The REFLECT statement: methods and processes of creating reporting guidelines for randomized controlled trials for livestock and food safety by modifying the CONSORT statement](#)
- [Consensus-based reporting standards for diagnostic test accuracy studies for paratuberculosis in ruminants](#)

Searchable

REFLECT

Reporting Research – Resource for finding guidelines

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[Home](#) > [Library](#) > [Reporting guideline](#) > The REFLECT statement: methods and processes of creating reporting guidelines for randomized controlled trials for livestock and food safety by modifying the CONSORT statement

Search for reporting guidelines

Use your browser's Back button to return to your search results

The REFLECT statement: methods and processes of creating reporting guidelines for randomized controlled trials for livestock and food safety by modifying the CONSORT statement

Reporting guideline provided for? (i.e. exactly what the authors state in the paper)	Reporting randomised controlled trials for livestock and food safety
Full bibliographic reference	O'Connor AM, Sargeant JM, Gardner IA, Dickson JS, Torrence ME, Consensus Meeting Participants, Dewey CE, Dohoo IR, Evans RB, Gray JT, Greiner M, Keefe G, Lefebvre SL, Morley PS, Ramirez A, Sisco W, Smith DR, Snedeker K, Sofos J, Ward MP, Wills R. The REFLECT statement: methods and processes of creating reporting guidelines for randomized controlled trials for livestock and food safety by modifying the CONSORT statement. This guideline was published simultaneously in 4 journals. You can read the guideline in any of these journals using the links below. Zoonoses Public Health. 2010;57(2):95-104. PMID: 20070653 J Food Prot. 2010;73(1):132-139. PMID: 20051216 J Vet Intern Med. 2010;24(1):57-64. PMID: 20002546 Prev Vet Med. 2010;93(1):11-18. PMID: 19926151
Language	English
Relevant URLs (full-text if available)	The REFLECT statement 22-item checklist is available to download: MS Word version PDF version

Reporting guidelines for main study types

Randomised trials	CONSORT	Extensions
Observational studies	STROBE	Extensions
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Animal pre-clinical studies	ARRIVE	
Quality improvement studies	SQUIRE	Extensions
Economic evaluations	CHEERS	

Translations

Some reporting guidelines are also available in languages other than English. Find out more in our [Translations section](#).

About the Library

Checklist

Reporting Research – Resource for finding guidelines

Relevant URLs (full-text if available)	The REFLECT statement 22-item checklist is available to download: MS Word version PDF version
Explanation and elaboration papers	<p>Sargeant JM, O'Connor AM, Gardner IA, Dickson JS, Torrence ME; Consensus Meeting Participants. The REFLECT statement: reporting guidelines for randomized controlled trials in livestock and food safety: explanation and elaboration. <i>Zoonoses Public Health</i>. 2010;57(2):105-136. PMID: 20070652</p> <p>Sargeant JM, O'Connor AM, Gardner IA, Dickson JS, Torrence ME, Dohoo IR, Lefebvre SL, Morley PS, Ramirez A, Snedeker K. The REFLECT statement: reporting guidelines for randomized controlled trials in livestock and food safety: explanation and elaboration. <i>J Food Prot</i>. 2010;73(3):579-603. PMID: 20202349</p>
Availability in additional languages	<p>The REFLECT statement checklist is available to download in the following languages:</p> <p>Spanish: REFLECT checklist (PDF) French: REFLECT checklist (PDF)</p> <p>Visit our translations page to find out what other reporting guidelines are available in languages other than English: reporting guideline translations</p>
Reporting guideline website URL	http://www.reflect-statement.org/statement/ 
Reporting guideline acronym	REFLECT
Applies to the whole report or to individual sections of the report?	Whole report
Record last updated on	November 25, 2021

Explanation and Elaboration

Checklist available in French

Guideline link

About the Library

For information about Library scope and content, identification of reporting guidelines and inclusion/exclusion criteria please visit [About the Library](#).

Visit our [Help page](#) for information about searching for reporting guidelines and for general information about using our website.

Library index

- [What is a reporting guideline?](#)
- [Search for reporting guidelines](#)
- [Browse reporting guidelines by specialty](#)
- [Reporting guidelines under development](#)
- [Translations of reporting guidelines](#)
- [EQUATOR Network reporting guideline manual](#)
- [Reporting guidelines for animal research](#)
- [Guidance on scientific writing](#)
- [Guidance developed by editorial groups](#)
- [Research funders' guidance on reporting requirements](#)
- [Professional medical writing support](#)
- [Research ethics, publication ethics and good practice guidelines](#)
- [Links to other resources](#)
- [About the Library](#)

Reporting Research – REFLECT guideline

Checklist



Checklist for REFLECT statement: Reporting guidelines For randomized control trials in livestock and food safety. Bold text are modifications from the CONSORT statement description (Altman DG et al. Ann Intern Med 2001; 134(8):663-694).

Paper section and topic	Item	Descriptor of REFLECT statement item	Reported on Page #
Title & Abstract	1	How study units were allocated to interventions (eg, "random allocation," "randomized," or "randomly assigned"). Clearly state whether the outcome was the result of natural exposure or was the result of a deliberate agent challenge.	
Introduction Background	2	Scientific background and explanation of rationale.	
Methods Participants	3	Eligibility criteria for owner/managers and study units at each level of the organizational structure , and the settings and locations where the data were collected.	
Interventions	4	Precise details of the interventions intended for each group, the level at which the intervention was allocated , and how and when interventions were actually administered.	
	4b	Precise details of the agent and the challenge model, if a challenge study design was used.	
Objectives	5	Specific objectives and hypotheses. Clearly state primary and secondary objectives (if applicable).	
Outcomes	6	Clearly defined primary and secondary outcome measures and the levels at which they were measured, and, when applicable, any methods used to enhance the quality of measurements (eg, multiple observations, training of assessors).	
Sample size	7	How sample size was determined and, when applicable, explanation of any interim analyses and stopping rules. Sample-size considerations should include sample-size determinations at each level of the organizational structure and the assumptions used to account for any non-independence among groups or individuals within a group.	
Randomization -- Sequence generation	8	Method used to generate the random allocation sequence at the relevant level of the organizational structure , including details of any restrictions (eg, blocking, stratification)	
Randomization -- Allocation concealment	9	Method used to implement the random allocation sequence at the relevant level of the organizational structure , (eg, numbered containers or central telephone), clarifying whether the sequence was concealed until interventions were assigned.	

O'Connor, A.M., Sargeant, J.M., Gardner, I.A., Dickson, J.S., Torrence, M.E. and consensus meeting participants: C.E. Dewey, I.R. Dohoo, R.B. Evans, J.T. Gray, M. Greiner, G. Keefe, S.L. Lefebvre, P.S. Morley, A. Ramirez, W. Sisco, D.R. Smith, K. Snedeker, J. Sofos, M.P. Ward, R. Wills (2010), The REFLECT Statement: Methods and Processes of Creating Reporting Guidelines for Randomized Controlled Trials for Livestock and Food Safety. Journal of Veterinary Internal Medicine, 24: 57–64. [doi:10.1111/j.1939-1676.2009.0441](https://doi.org/10.1111/j.1939-1676.2009.0441).

Reporting Research – REFLECT guideline

Checklist

Randomization -- Implementation	10	Who generated the allocation sequence, who enrolled study units , and who assigned study units to their groups at the relevant level of the organizational structure .
Blinding (masking)	11	Whether or not participants those administering the interventions, caregivers and those assessing the outcomes were blinded to group assignment. If done, how the success of blinding was evaluated. Provide justification for not using blinding if it was not used.
Statistical methods	12	Statistical methods used to compare groups for all outcome(s); Clearly state the level of statistical analysis and methods used to account for the organizational structure, where applicable ; methods for additional analyses, such as subgroup analyses and adjusted analyses.
Results Study flow	13	Flow of study units through each stage for each level of the organization structure of the study (a diagram is strongly recommended). Specifically, for each group, report the numbers of study units randomly assigned, receiving intended treatment, completing the study protocol, and analyzed for the primary outcome. Describe protocol deviations from study as planned, together with reasons.
Recruitment	14	Dates defining the periods of recruitment and follow-up.
Baseline data	15	Baseline demographic and clinical characteristics of each group, explicitly providing information for each relevant level of the organizational structure. Data should be reported in such a way that secondary analysis, such as risk assessment, is possible.
Numbers analyzed	16	Number of study units (denominator) in each group included in each analysis and whether the analysis was by "intention-to-treat." State the results in absolute numbers when feasible (eg, 10/20, not 50%).
Outcomes and estimation	17	For each primary and secondary outcome, a summary of results for each group, accounting for each relevant level of the organizational structure , and the estimated effect size and its precision (e.g., 95% confidence interval)
Ancillary analyses	18	Address multiplicity by reporting any other analyses performed, including subgroup analyses and adjusted analyses, indicating those pre-specified and those exploratory.
Adverse events	19	All important adverse events or side effects in each intervention group.
Discussion Interpretation	20	Interpretation of the results, taking into account study hypotheses, sources of potential bias or imprecision, and the dangers associated with multiplicity of analyses and outcomes. Where relevant, a discussion of herd immunity should be included. If applicable, a discussion of the relevance of the disease challenge should be included.
Generalizability	21	Generalizability (external validity) of the trial findings.
Overall evidence	22	General interpretation of the results in the context of current evidence.

O'Connor, A.M., Sargeant, J.M., Gardner, I.A., Dickson, J.S., Torrence, M.E. and consensus meeting participants: C.E. Dewey, I.R. Dohoo, R.B. Evans, J.T. Gray, M. Greiner, G. Keefe, S.L. Lefebvre, P.S. Morley, A. Ramirez, W. Sisco, D.R. Smith, K. Snedeker, J. Sofos, M.P. Ward, R. Wills (2010), The REFLECT Statement: Methods and Processes of Creating Reporting Guidelines for Randomized Controlled Trials for Livestock and Food Safety. Journal of Veterinary Internal Medicine, 24: 57–64. [doi:10.1111/j.1939-1676.2009.0441](https://doi.org/10.1111/j.1939-1676.2009.0441).

Reporting Research – REFLECT guideline

Example of Explanation and Elaboration

Item 11: Example and Explanation (in part)

J.M. Sargeant, A.M. O’connor, I.A. Gardner, J.S. Dickson, M.E. Torrence, Consensus Meeting Participants I.R. Dohoo, S.L. Lefebvre, P.S. Morley, A. Ramirez, K. Snedeker, The REFLECT Statement: Reporting Guidelines for Randomized Controlled Trials in Livestock and Food Safety: Explanation and Elaboration, Journal of Food Protection, Volume 73, Issue 3, 2010, Pages 579-603, ISSN 0362-028X, <https://doi.org/10.4315/0362-028X-73.3.579>.
(<https://www.sciencedirect.com/science/article/pii/S0362028X22109701>)

Item 11

Whether or not those administering the interventions, caregivers, and those assessing the outcomes were blinded to group assignment. If done, how the success of blinding was evaluated. Provide justification for not using blinding if it was not used.

Example

Two bottles, labeled “A” and “B,” were provided to each feedlot, so that the feedlot personnel were blind to the status of the vaccine. One bottle held the vaccine.... The other bottle held the placebo, which was the same as the vaccine but without the antigen (108).

Explanation

In controlled trials, blinding (synonym: masking) refers to the process of keeping different individuals involved in the trial unaware of the group allocation. Blinding is associated with internal validity and can be implemented in most RCTs, regardless of level of intervention allocation. The use of blinding often is reported poorly in livestock trials; only four of 100 randomly selected livestock trials with health or production outcomes, and zero of 100 randomly selected pre-harvest food-safety trials, reported blinding of the person administering the treatment and blinding of the outcome assessor 89, 91.

Trials which failed to report blinding and randomization in a systematic review of vaccines to prevent pinkeye in cattle were more likely to report favorable outcomes compared to trials that did report randomization and blinding (47% versus 20%) (14). This is consistent with studies in the human-health literature that have observed larger treatment effects in trials not reporting the use of blinding 52, 54, 93.

Recap

Transparency in scholarly publishing

- **Publication ethics**
 - Report authorship contributions
 - Declare potential competing interests
 - Share data when appropriate
- **Follow reporting standards for study type**
 - Complete reporting of research findings
- **Useful resources for finding guidelines**
 - MERIDIAN
 - EQUATOR Network

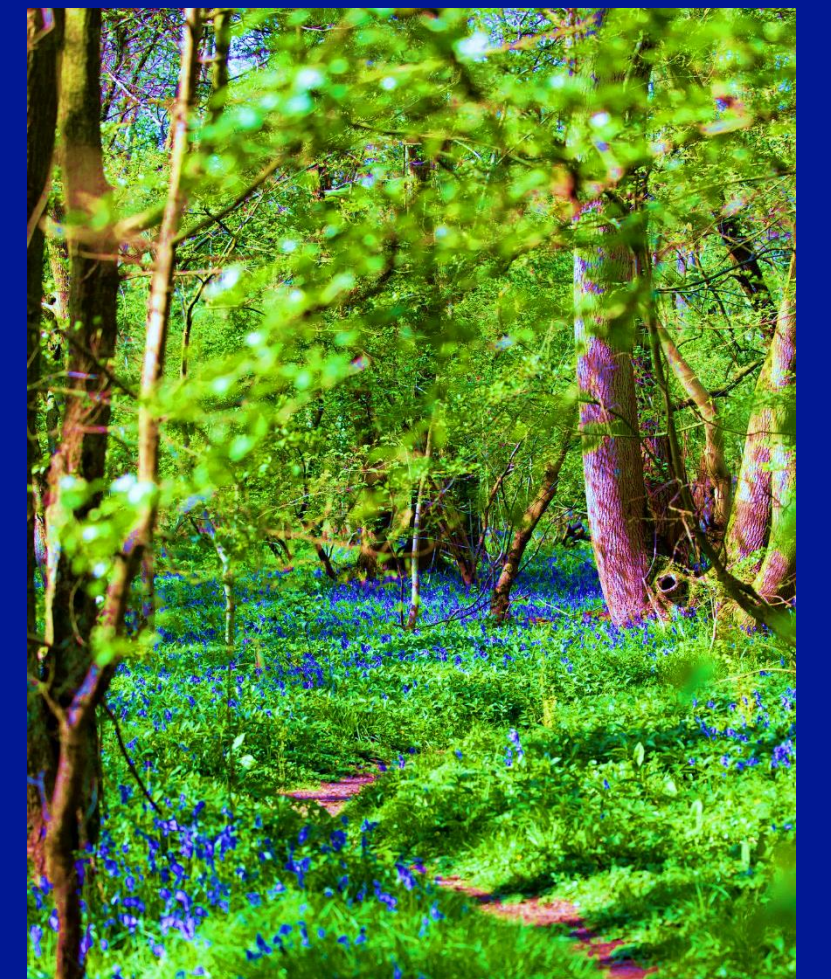


Image by [Key](#) from [Pixabay](#)



Image by [Hands off my tags!](#) [Michael Gaida](#) from [Pixabay](#)

Resources

Principles of Transparency and Best Practice in Scholarly Publishing: <https://publicationethics.org/resources>

World Conferences on Research Integrity Foundation (WCRIF): [Singapore Statement on Research Integrity \(2010\)](#)

ICMJE Author Criteria: <https://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html>

CRedit Roles: <https://credit.niso.org/contributor-roles-defined/>

Livestock Science: <https://www.elsevier.com/journals/livestock-science/1871-1413/guide-for-authors>

Journal of Dairy Science: <https://www.journalofdairyscience.org/pb-assets/Health%20Advance/journals/jods/JODS-Instruct-for-Contributors-2023-Policies-1675367345593.pdf>

Elsevier. Guide to Declaration of Competing Interests:

https://www.elsevier.com/_data/assets/pdf_file/0007/653884/Competing-Interests-factsheet-March-2019.pdf

MERIDIAN (Menagerie of Reporting Guidelines Involving Animals): <https://meridian.cvm.iastate.edu>

O'Connor, A.M., Sargeant, J.M., Gardner, I.A., Dickson, J.S., Torrence, M.E. and consensus meeting participants: C.E. Dewey, I.R. Dohoo, R.B. Evans, J.T. Gray, M. Greiner, G. Keefe, S.L. Lefebvre, P.S. Morley, A. Ramirez, W. Sisco, D.R. Smith, K. Snedeker, J. Sofos, M.P. Ward, R. Wills (2010), The REFLECT Statement: Methods and Processes of Creating Reporting Guidelines for Randomized Controlled Trials for Livestock and Food Safety. *Journal of Veterinary Internal Medicine*, 24: 57–64. [doi:10.1111/j.1939-1676.2009.0441](https://doi.org/10.1111/j.1939-1676.2009.0441).

J.M. Sargeant, A.M. O'Connor, I.A. Gardner, J.S. Dickson, M.E. Torrence, Consensus Meeting Participants I.R. Dohoo, S.L. Lefebvre, P.S. Morley, A. Ramirez, K. Snedeker, The REFLECT Statement: Reporting Guidelines for Randomized Controlled Trials in Livestock and Food Safety: Explanation and Elaboration, *Journal of Food Protection*, Volume 73, Issue 3, 2010, Pages 579-603, ISSN 0362-028X, <https://doi.org/10.4315/0362-028X-73.3.579>.

(<https://www.sciencedirect.com/science/article/pii/S0362028X22109701>)

Q&A

Acknowledgements:

- University of Florida George A. Smathers Libraries

This presentation is archived on the website of the Feed the Future Innovation Lab for Livestock Systems <https://livestocklab.ifas.ufl.edu>

Next webinar: 17 November 2023 (Friday)

**Topic: BEING ACCESSIBLE: IS OPEN ACCESS
PUBLISHING RIGHT FOR ME?**

Time: 8:00 a.m. U.S. Eastern Standard Time (EST)

Connect by Zoom:

<https://ufl.zoom.us/j/95299256589?pwd=M2t0UDlkckFRYXg2Rm0zdzNZSzU4QT09>



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