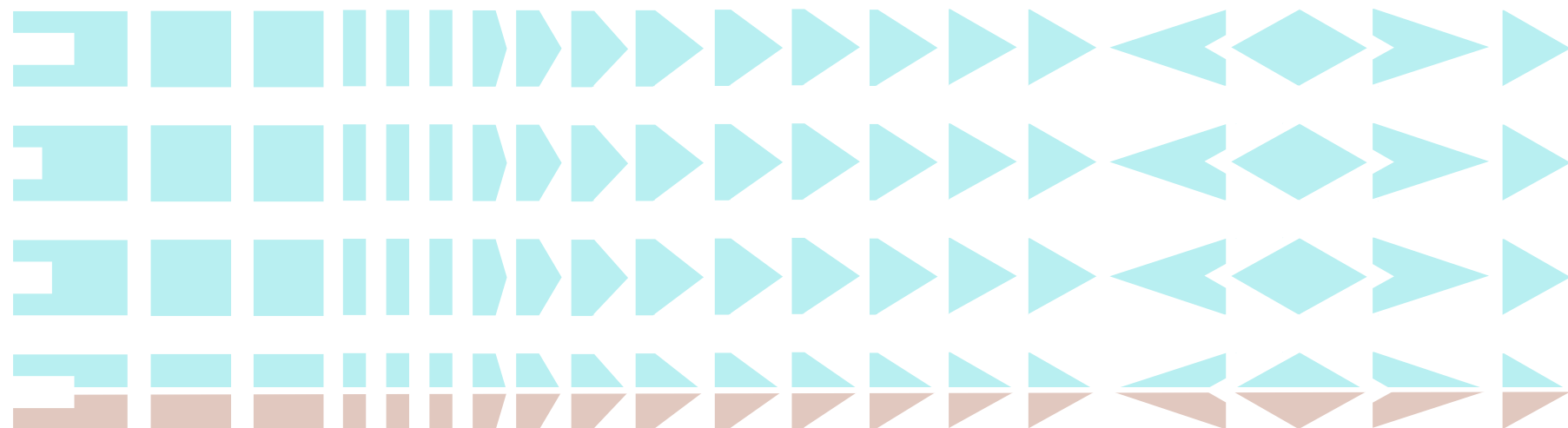
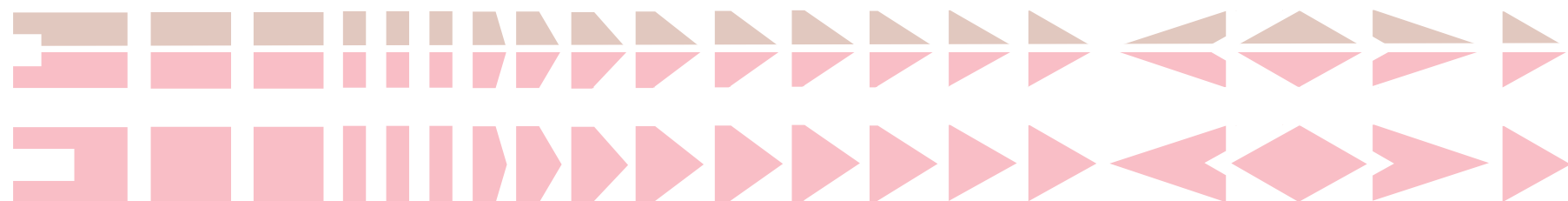




GUIDELINES FOR THE GOVERNANCE OF

INDIGENOUS PEOPLES' DATA

IN SCHOLARLY PUBLISHING



Guidelines for the Governance of Indigenous Peoples' Data in Scholarly Publishing

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EXECUTIVE SUMMARY

The Guidelines for the Governance of Indigenous Peoples' Data in Scholarly Publishing (Guidelines) describe steps that publishers, journal editors, data infrastructure providers, and indexers should take throughout the publishing workflow to implement the CARE Principles for Indigenous Data Governance (CARE Principles) and promote Indigenous Data Governance.

Section 1 presents recommendations for General Education and Cultural Safety Building for publishers and editors. These steps include understanding how the FAIR and CARE Principles work in tandem as well as how these principles should be implemented within a broader culture that is already set up to promote and reward transparency, diversity, equity, inclusion, and access within staff, editor, and reviewer groups.

Section 2 presents specific recommendations for each stage of the Publication Workflow in six key areas:

- 1 | pre-submission;
- 2 | publication policies;
- 3 | submission and author requirements;
- 4 | assessment and peer review;
- 5 | production and publication; and
- 6 | post-publication.

Together, the *Guidelines* in this section require changes to publishing workflows among journals and publishers across four key areas:

- (a) infrastructure;
- (b) policy;
- (c) operations; and
- (d) education and outreach.

Embedding Indigenous Peoples' rights, interests, and expectations in the research ecosystem requires collaborative efforts that involve Indigenous Peoples as rights holders as well as other data actors. Each data actor must assume responsibilities at all stages of the process. While scholarly journals are downstream in the process, publisher guidelines often influence the direction of funder and institutional priorities and policies. Moreover, many researchers design their projects to fit publishing requirements. Publishers, therefore, have a major role to play in ensuring that principles of Indigenous Data Governance are embedded in the research ecosystem.

We hope these recommendations provide a launching point and much-needed guardrails for publishers and editors supporting Indigenous Data Governance in scholarly publishing.

Many of these steps can and should be implemented by publishers working together with infrastructure providers, while others may require broader, sustained efforts to achieve maturity. Recognizing that different publishers and domains will require specific implementation plans, we have not prescribed implementation considerations in these recommendations. Small-scale pilots or implementation initiatives of these recommendations will provide examples and directions for other publishers. Future efforts should include continued distribution of these recommendations to publishers as well as collection and sharing of feedback and lessons learned from implementation.

HISTORY AND AIMS OF THE *GUIDELINES*

As funders and publishers promote openness in scientific research, policies increasingly require the sharing of data and other research outputs alongside published articles. However, this shift towards openness has not been paired with policies that respect a basic attribute of many data: their provenance or origins, and the peoples to whom they relate or are linked. The [CARE Principles for Indigenous Data Governance](#) (CARE Principles), released in September 2019, advance more equitable outcomes and benefits by “...*position[ing] data approaches within Indigenous cultures and knowledge systems ... [and promoting] equitable participation in processes of data reuse.*” The CARE Principles are increasingly being applied and operationalized in various phases of the data lifecycle and across the data ecosystem, but work remains to embed them in research.

In 2023, a partnership was formed to convene scholars, publishers, editors, and metadata experts to develop guidelines for supporting implementation of the CARE Principles among actors in the scholarly publishing ecosystem. The initiative was led by individuals from the [Collaboratory for Indigenous Data Governance](#), Sovereign Soils Research Collaborative, Indigenous Data Law Lab @NYU, and [Te Kotahi Research Institute](#), a partnership was formed with the [American Geophysical Union \(AGU\)](#), and the [National Information Standards Organization \(NISO\)](#). This community effort included contributions from 100+ participants gathered over 4 events held between 2023 and 2025 with funding support from the National Science Foundation (NSF).

The Guidelines for the Governance of Indigenous Peoples’ Data in Scholarly Publishing (*Guidelines*) outline practices to embed principles of Indigenous Data Governance in scholarly publishing ecosystems for both peer-reviewed research articles and the data that

accompany them. Drawing on parallel efforts (e.g., the [CARE Data Maturity Model](#), [CARE for repositories](#), and [Local Contexts](#)), the *Guidelines* describe how the CARE Principles can be operationalized throughout the publishing workflow. Also needed to actualize Indigenous Data Governance principles are ethics frameworks; incentives for community-engaged research; and metrics for promoting and rewarding openness. These and other broader, adjacent initiatives -- beyond Indigenous data -- are included in the *Guidelines*’ recommendations whenever appropriate to stress the importance of a holistic approach to fully recognizing Indigenous expertise in the scholarly publishing ecosystem.

The recommendations in the *Guidelines* are intended to provide a launching point and much-needed guardrails for publishers and editors supporting Indigenous Data Governance in scholarly publishing. Many of these steps can and should be implemented by publishers working together with infrastructure providers, while a few others may require broader, sustained effort to achieve maturity. Recognizing this -- and that various publishers and domains will require tailored implementation plans -- we have not prescribed implementation considerations in these recommendations. Small-scale pilots of elements of these recommendations may be useful and are common among publishers (e.g., [AGU’s Inclusion in Global Research policy](#)). Future efforts should include continued distribution of these recommendations to publishers as well as collecting and sharing feedback and lessons learned from implementation.

IMPORTANT
CONSIDERATIONS

1 This work parallels and supports the [CARE Data Maturity Model](#): Guidelines for the Governance of Indigenous Peoples' Data (CARE DMM). The CARE DMM is an assessment tool for individuals, institutions, and other data actors to evaluate and improve implementation of the CARE Principles within their data ecosystems. The CARE DMM includes criteria and indicators (i.e., measurable actions for the governance of Indigenous data) to evaluate an organization or project's policies, practices, relationships, and data infrastructure for alignment with the CARE Principles. Figure 1 shows the frequency of CARE subprinciple application in the *Guidelines*.

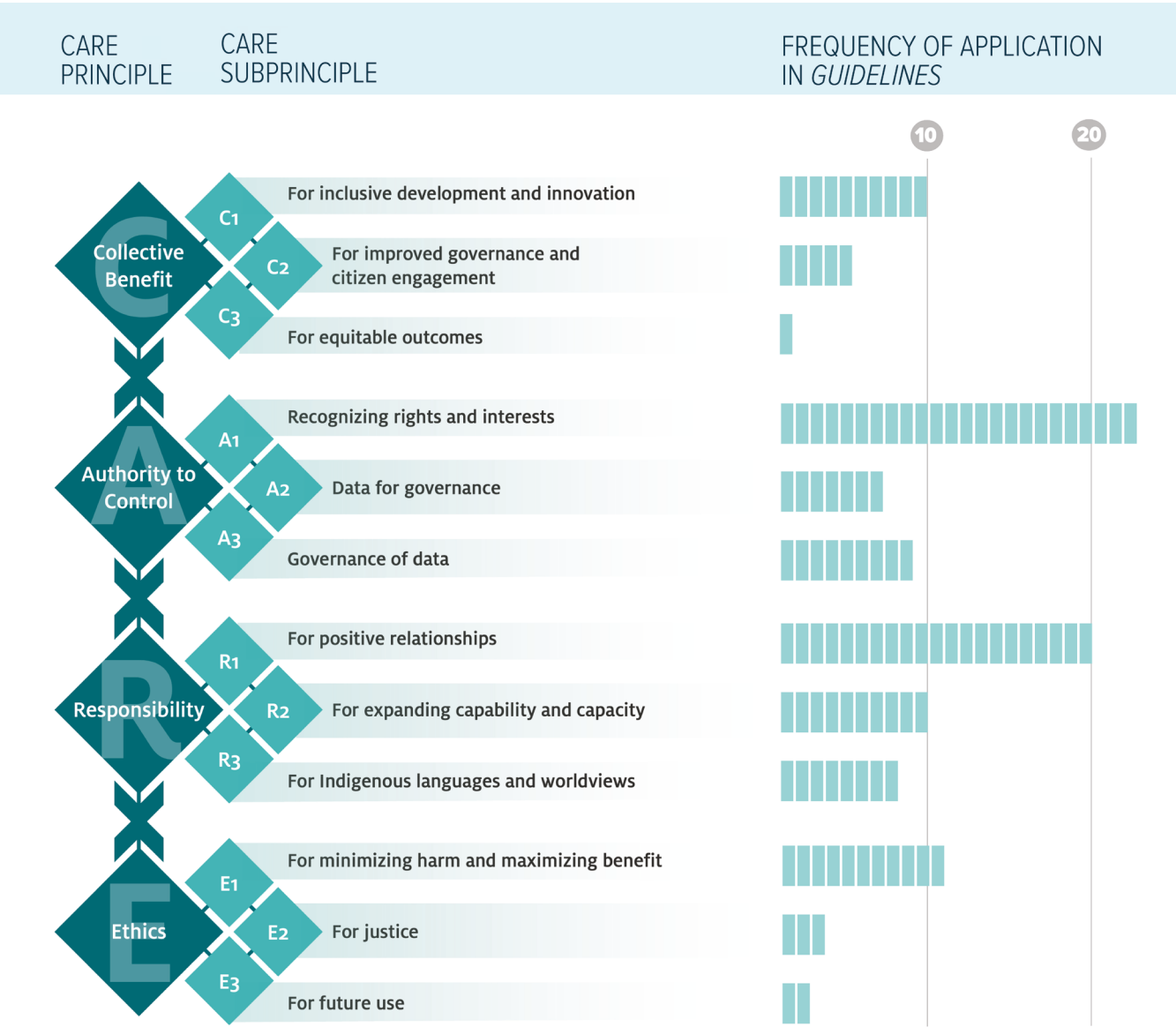


Figure 1. CARE Principles for Indigenous Data Governance Application in Guidelines.
Adapted from: Jennings, L., Anderson, T., Martinez, A. et al. Applying the 'CARE Principles for Indigenous Data Governance' to ecology and biodiversity research. *Nat Ecol Evol* 7, 1547–1551 (2023). <https://doi.org/10.1038/s41559-023-02161-2> Image adapted from © Carroll, S. R. et al. CC-BY 4.0.

2 The CARE Principles are a general set of guidelines. [Deference should be given to Indigenous Peoples and communities](#) that may have more specific protocols and requirements. It is important to note that the CARE Principles require operationalizing locally-designed Indigenous Data Sovereignty and Indigenous Data Governance models, principles, and frameworks to ensure that actions for the governance of Indigenous data adhere to the rights and interests of the Indigenous Peoples to whom the data relate. (See [Genetic research with Indigenous Peoples: perspectives on governance and oversight in the US](#) and [Aligning policy and practice to implement CARE with FAIR through Indigenous Peoples' protocols](#) for further discussion of the application of the CARE Principles through Indigenous Peoples regional or community-specific data protocols and principles.) Of equal importance, Indigenous Peoples are diverse and care should be taken to respect this diversity and avoid assumptions (e.g., not all Indigenous communities are based in rural areas).

3 Publishers should recognize and respect the authority of Indigenous leadership and design. Indigenous leadership is a critical element of these *Guidelines*. Most of the recommendations suggested by Indigenous participants focus on involving Indigenous Peoples in decision-making and governance. However, attention should be paid to not overburdening communities. Trust must be built over time before the publishing community can operate on its own with these measures. It is, therefore, critical to exercise responsibility and care in creating safe spaces as data actors invite and partner with Indigenous Peoples. The goal is to move beyond “token” or “checkmark” engagements to meaningful action. Emphasis should be placed on cultural safety, bias training, and procedures to purposefully raise and address issues. As these efforts are undertaken, it is also important to share and develop cross-organization collaborations to reduce duplicate efforts and avoid overtaxing participants.

4 There is sometimes a misperceived tension between CARE and FAIR. Some people interpret the intent of FAIR as promoting unrestricted open data and CARE as antithetical to open data. This confusion often arises from actions by data actors, not the principles. This myth often arises from actions by data actors, not the principles. While the FAIR Principles set parameters to ensure that data are accessible, [FAIR does not mandate “open”](#). Moreover, the CARE Principles were designed as a complement to FAIR and to “[honor] the ‘FAIR Guiding Principles for scientific data management and stewardship’..., while ensuring data sharing on Indigenous terms.” There are aspects of CARE that require data to be “findable, accessible, interoperable, and reusable” (i.e., FAIR) to operationalize and support Indigenous Data Governance. For example, existing data needs to be “findable” before “authority to control” can be actioned, “interoperability” and “reusability” contribute towards “collective benefit”, and “accessibility” is part of “responsibility” and “ethics”. (See the [CARE Principles for Indigenous Data Governance](#) and a discussion of [operationalizing CARE with FAIR](#) for an explanation of how CARE was created to complement FAIR.)

5 We note that principles and practices to support Indigenous Data Sovereignty may evolve, as may scholarly publishing workflows. These *Guidelines* and their recommendations should be revisited regularly and discussed by Indigenous Peoples, scholars, publishers, and other relevant communities.

**Different strategies
should be
considered with
the goal of building
confidence and
expertise over
time in partnership
with communities,
allowing various
entry points
into the work
while fostering
incremental
progress.**

THE APPROACH - FROM RECOMMENDATIONS TO IMPLEMENTATION

This document outlines broadly applicable recommendations and examples. By providing recommendations and examples, we hope that any journal or publisher can find a starting point for actions that contribute to these efforts, even within the constraints of organizational resources and the need to balance workloads and expectations. There is no wrong place to start, and many actions can be taken without additional resources. To strengthen alignment, each recommendation is paired with one or more CARE DMM indicator(s).

Recognizing significant differences in various journal or publisher communities and organizations, we leave specific implementation details for publishers to define. We encourage active participation by all while recognizing differences in organizational context (e.g., people, time, financial resources, discipline-specific considerations) and workload for editors and publishing staff. Publishers might consider various approaches to implementation. For example, for each guideline's recommendation, there could be (1) a range of implementation opportunities across a portfolio of journals; (2) a pilot with just one or two journals at a time; or (3) a phased approach across a portfolio. Different strategies should be considered with the goal of building confidence and expertise over time in partnership with communities, allowing various entry points into the work while fostering incremental progress. It is strongly recommended that sharing and transparency among journals and publishers are used to drive and accelerate collective impact and consistency as experience grows with implementation. As with any best practice, these *Guidelines* should be revisited over time.

A 'coalition' approach might also be beneficial. This is especially true if multiple publishers can agree on implementation standards or values (if not practices, which are likely to have greater variation from publisher to publisher). A coalition approach may allow for shared resources and efforts, while supporting broader uptake and adoption of the *Guidelines*.

To accelerate progress and drive collective impact, we strongly urge sharing and transparency among journals, publishers, and other organizations as they explore and implement the *Guidelines'* recommended practices.

GUIDELINES FOR THE GOVERNANCE OF INDIGENOUS PEOPLES' DATA IN SCHOLARLY PUBLISHING

The work of embedding Indigenous Peoples' rights, interests, and expectations in the research ecosystem requires collaborative efforts that include Indigenous Peoples as rights holders and other data actors (Figure 2). Each data actor must assume appropriate responsibilities at all stages of the process. While scholarly journals are downstream in the process, publisher guidelines often influence the direction of funder and institutional priorities and policies.

Moreover, many researchers design their projects to fit publishing requirements. Publishers, therefore, have a major role to play in ensuring the principles of Indigenous Data Governance are embedded in the research ecosystem. Aligning publication standards with Indigenous Data Governance influences research funding, design, practice and implementation. Publishers, along with institutions and data actors involved in the research publication process, should endorse and promote these *Guidelines* (including but not limited to: Indigenous Peoples and communities, federal agencies, repositories, universities, corporations, NGOs, and individuals).

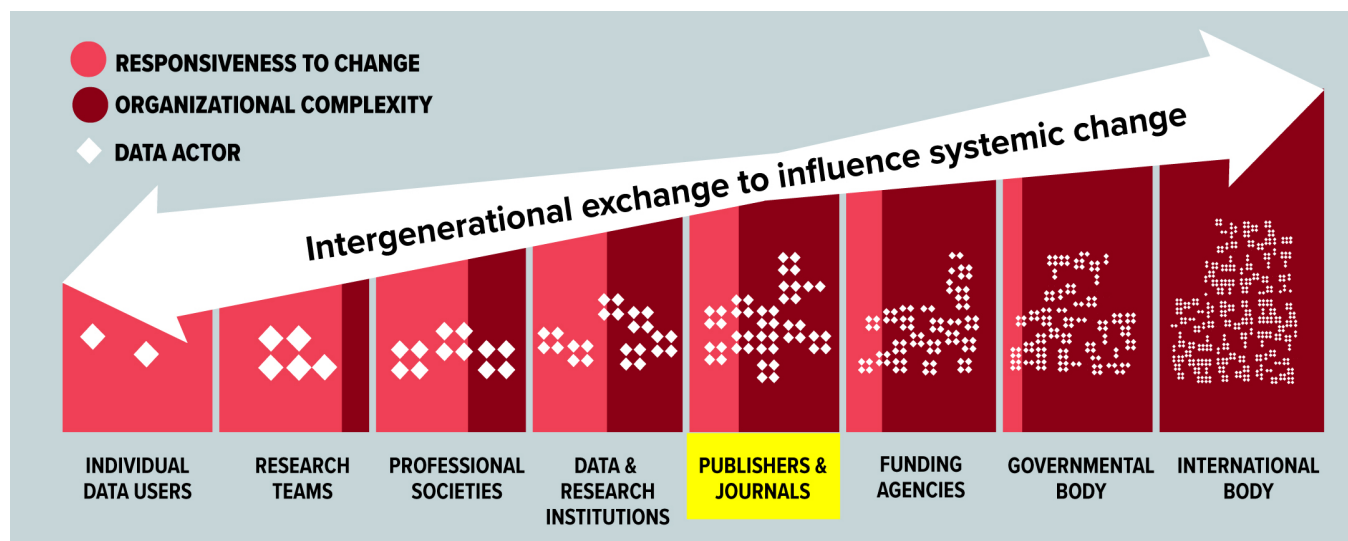


Figure 2. Relationships spanning individuals, groups, and institutions to initiate CARE for data governance.

The CARE Principles may be implemented by data actors anywhere on the spectrum from individual data users to research institutions, journals, publishers, and international bodies. Interactions across scales reinforce the uptake of data governance practices that embed Indigenous Peoples' rights, interests, and expectations in data and research ecosystems.

Adapted from [Jennings et al \(2025\)](#). Image credit: Kathy Bogan, CIRES.



1 GENERAL EDUCATION & CULTURAL SAFETY BUILDING

The publishing community, authors, editors, and publishers should all take action towards competency-building on CARE and FAIR in the broader context of ethical publication practices and legal obligations to uphold Indigenous sovereignty. General education and competency-building ensure a strong baseline that will underpin effectiveness and adoption of these *Guidelines*. These efforts should be undertaken with the recognition that the needs, goals, and values of each participant group (authors, editors, and publishers) are diverse and need appropriate resources and support.

While journals and publishers should work towards requiring FAIR data policies, these actors need not wait until they have a “required” FAIR data policy in place to adopt these *Guidelines*. These *Guidelines* advance the recognition of Indigenous knowledges, identities, and rights throughout the research process. Their adoption will also strengthen the future implementation of FAIR data policies. The Guidelines below detail recommendations for **General Education & Cultural Safety Building** and list which CARE DMM indicators align with these actions. Journals and publishers should presume that there’s no wrong place to start, rather than not starting at all.

1

CARE DMM DATA MATURITY MODEL INDICATOR(S)

A1: Recognizing rights and interests
R3: For Indigenous languages and worldviews

Align journal and publisher data sharing policies and practices with the FAIR Principles

- » Promote, educate, and train authors, editors, and staff in FAIR journal and/or publisher policies and practices.
- » Organize to move from ‘encourage’ to ‘require’ FAIR practices.
- » Understand the limitations of FAIR for Indigenous Peoples’ Data.
- » Learn how to resolve the tension between open sharing “mandates” and Indigenous data control (e.g., genomic data deposition - can be solved by having authors provide useful metadata and a transparent process for requesting access to the data).
- » Provide guidance for both physical and digital data storage and metadata annotation.
- » Reference and provide citation to the Indigenous standards for metadata (e.g., [IEEE Recommended Practice for the Provenance of Indigenous Peoples’ Data](#))
- » Review FAIR data sharing policies and practice annually (or at another set period). Include a “review by” date to indicate that the policies are maintained as a living document.

Promote, educate, and train authors, editors, and staff on the CARE Principles and appropriate regional and community-specific principles (e.g., Ownership, Control, Access, and Possession (OCAP®)¹ for First Nations in Canada)

- » Create an online course for publishers on the CARE Principles and on how to identify community-specific principles.
- » Get informed about global, regional, and community-specific principles related to the data authors are publishing (about) in your journal(s).

Incentivize and reward journals and publishers for adoption of these Guidelines

- » Use a visible mechanism to recognize publishers' commitment to adopting these *Guidelines* such as the Local Context CARE Principles Notice (under development).
- » Feature examples of adoption of these *Guidelines* at the publication level on journal and/or publisher websites, etc.
- » Promote examples of adopting these *Guidelines* at conferences, publisher workshops, and through metrics of success.

¹ | OCAP® is a registered trademark of the First Nations Information Governance Centre (FNIGC) (<https://fnigc.ca/ocap-training>)

4

CARE DMM DATA MATURITY MODEL INDICATOR(S)

A2 - Data for governance
C2 - For improved governance and citizen engagement

Develop benefit-sharing with Indigenous Peoples and communities

- » Directly share and provide Indigenous Peoples and communities with free access to publications.
- » Create mechanisms to share publisher profits with communities.

5

CARE DMM DATA MATURITY MODEL INDICATOR(S)

A1 - Recognizing rights and interests

Publish journal and/or publisher position statements outlining commitment and intention to adopt these Guidelines

- » Link clearly to [CARE Principles](#) and associated publications in position statements and ensure that statements are featured prominently, such as in submission platforms, author instructions, and peer review instructions.
- » Ensure alignment among related policies (including FAIR and open data) for individual journals, publishers, and editorial boards.
- » Issue position statements by publishing industry coalitions that could inform individual journal and publisher position statements (i.e. [COPE](#), [ICMJE](#), [NISO](#)).

6

CARE DMM DATA MATURITY MODEL INDICATOR(S)

A3 - Governance of data
R2 - For expanding capability and capacity
E1 - For minimizing harm and maximizing benefit

Implement equity and inclusion best practices in publishing

- » Provide bias training for authors and editors.
- » Recruit Indigenous and allied (designated or nominated by Indigenous Peoples and communities) editorial board members.
- » Provide evidence-based Indigenous cultural safety education, resources, and training for editors, reviewers, and publishing staff.

7

CARE DMM DATA MATURITY MODEL INDICATOR(S)

A2 - Data for governance

Monitor progress towards adoption of these *Guidelines*

- » Set baselines and targets for implementing the *Guidelines* and measure progress regularly.
- » Publish progress on implementation of the *Guidelines* for transparency and accountability.
- » Create or join scholarly publishing industry efforts to share comparable data on implementing the *Guidelines*.

8

CARE DMM DATA MATURITY MODEL INDICATOR(S)

A1 - Recognizing rights and interests
R1 - For positive relationships

Build cross-organizational efforts and collaborations among publishers, editors, researchers, librarians, publishing infrastructure experts, etc.

- » Leverage existing networks across publishing industry coalitions, funders, society memberships and sections, and organizations such as the Committee on Publication Ethics ([COPE](#)), the International Committee of Medical Journal Editors ([ICMJE](#)), National Information Standards Organization ([NISO](#)), International Society of Managing and Technical Editors ([ISMTE](#)), Council of Science Editors ([CSE](#)), Society for Scholarly Publishing ([SSP](#)), International Association of Scientific, Technical, and Medical Publishers ([STM](#)), World Association of Medical Editors ([WAME](#)), International Academy of Nursing Editors ([InANE](#)), International Society of Addiction Journal Editors ([ISAJE](#)), Committee on Data of the International Science Council ([CODATA](#)), Research Data Alliance ([RDA](#)), Coalition for Publishing Data in the Earth and Space Sciences ([COPDESS](#)), American Library Association ([ALA](#)), Association of Research Libraries ([ARL](#)) etc., to distribute *Guidelines*, collaborate on implementation, and make changes across disciplines and scales.
- » Coordinate between a) publisher policies on data sharing and b) repository and archive support for Indigenous data (e.g., repositories and/or aggregators such as [DataCite](#), [Dataverse](#), [ORCID](#), [GBIF](#)).
- » Establish common communication strategies for Indigenous Peoples and communities to provide feedback on implementation of these *Guidelines*.

9

CARE DMM DATA MATURITY MODEL INDICATOR(S)

A1 - Recognizing rights and interests
R1 - For positive relationships

Develop champions inside publishing organizations

- » Identify and support champions for these *Guidelines* across leadership, editorial, and staff levels at publishing houses, university presses, societies, associations, and other professional organizations to widen advocacy across scales.
- » Create task forces at publishing institutions to coordinate and implement these *Guidelines*.
- » Support journals and editors considering implementation of these *Guidelines*.



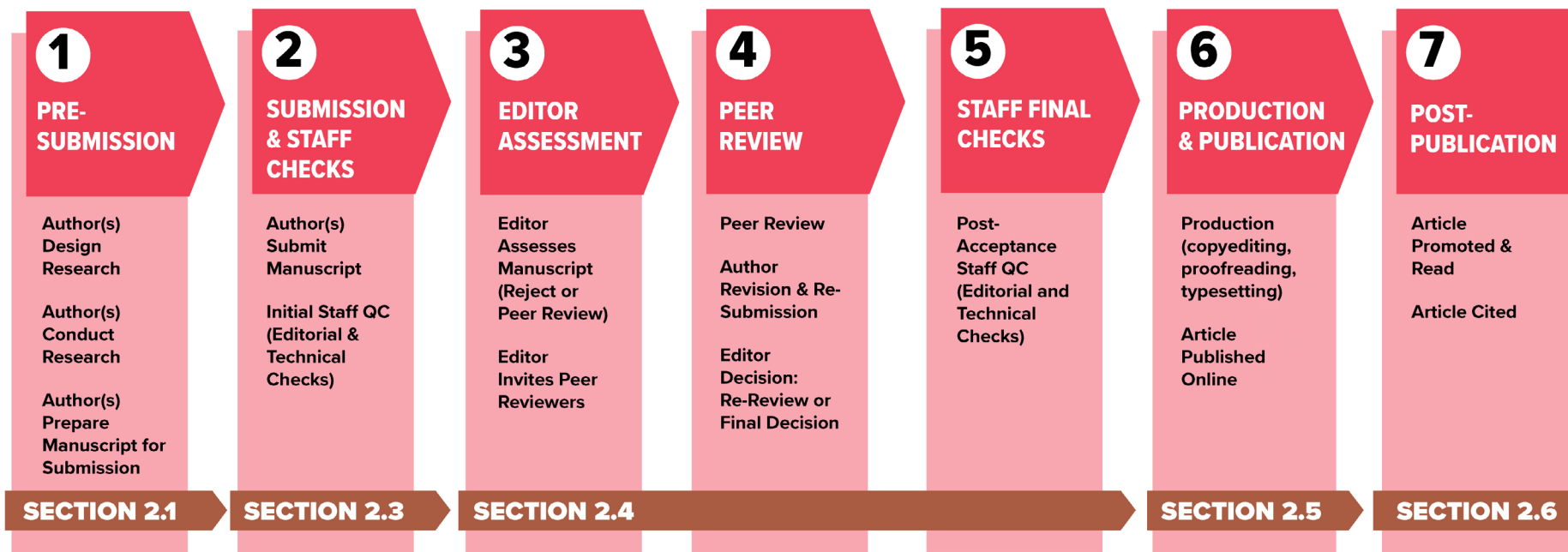
2 THE PUBLISHING WORKFLOW

The following sections of the *Guidelines* are structured to follow the various stages of the typical scholarly publishing workflow (Figure 3), progressing from pre-submission of the manuscript to final publication.

- 1 | pre-submission;
- 2 | publication policies;
- 3 | submission and author requirements;
- 4 | assessment and peer review;
- 5 | production and publication; and
- 6 | post-publication.

Figure 3 (below). The stages of the scholarly publishing workflow, including author, staff, editor, and reviewer actions.

These Guidelines are structured so that recommendations map directly to workflows. Section 2.1 of these recommendations deals with pre-submission considerations for Indigenous Data Sovereignty, which is step 1 in this diagram; Section 2.2 (not shown) maps to broad publisher policies; Section 2.3 maps to step 2; Section 2.4 maps to steps 3 through 5; Section 2.5 maps to step 6; and Section 2.6 maps to step 7.





GUIDELINES

2.1 Pre-Submission: Conducting & Designing Research

Journals and publishers can help researchers and authors understand activities that embed Indigenous Data Governance principles. These should be included from the beginning of research by promoting existing guidance/protocols in an “Author’s Guidance” document. Journals and publishers should help guide best practice for the governance of Indigenous

data among authors and researchers through clear guidance, checklists, and training that is available prior to manuscript submission.

1

CARE DMM DATA MATURITY MODEL INDICATOR(S):

C1 - For inclusive development and innovation
A1 - Recognizing rights and interests
R2 - For expanding capability and capacity

Provide author resources such as guidance, checklists, and/or training

- » Make resources accessible on journal and publisher websites.
- » Direct authors to review resources prior to submission.
- » Encourage researchers to use Local Contexts Notices and, if working closely with a community, create a Local Context Project to select and publish the community-defined Labels.

2

CARE DMM DATA MATURITY MODEL INDICATOR(S):

R2 - For expanding capability and capacity

Link to examples of acceptable publications that uphold CARE and local Indigenous Data Governance principles

- » Provide a range of examples that demonstrate CARE in relation to the:
 - Project (e.g., community endorsement or Indigenous Data Sovereignty agreement)
 - Paper (e.g., community attribution or authorship)
 - Data (e.g., community data governance, data management plan)



2.2 Publication Policies: Journal & Publisher Policies

Journals and publishers across the research enterprise or ecosystem should provide comprehensive ethics policies, guidelines, and support to all participants in the publishing process. Implementation of Indigenous Data Governance principles will be a multi-stage process that includes the endorsement of policies and guidance. Simultaneously, publishing workflows and policies should promote inclusion and representation of Indigenous perspectives

in the publishing community, removing barriers to access for Indigenous Peoples, communities, and individuals.

1

CARE DMM DATA MATURITY MODEL
INDICATOR(S):

A1 - Recognizing rights and interests
R1 - For positive relationships

Consider a cross-publisher coalition approach to implement the Guidelines

- » Conduct cross-publisher workshops to discuss implementation of these *Guidelines*.
- » Engage the Committee of Publication Ethics (COPE) and other scholarly publishing ethics groups to explore new discussions and guidance for implementing the *Guidelines*.
- » Collaborate to design implementation standards.

2

CARE DMM DATA MATURITY MODEL
INDICATOR(S):

E1 - For minimizing harm and maximizing benefit

Implement clear and comprehensive ethics policies and practices

- » Embed these Guidelines in existing or new ethics policies.
- » Include global, regional, and community-specific Indigenous Data Governance frameworks, as relevant to the journal or publisher content, in existing or new ethics policies.
- » Require adherence to Indigenous Data Governance frameworks, research review protocols, and community review and approval processes.

3

CARE DMM DATA MATURITY MODEL INDICATOR(S):

E2 - For justice

Make publications accessible

- » Allow sharing of preprints and author accepted manuscripts alongside other ways to broaden Open Access, in general.
- » Provide Indigenous Peoples and communities with free access to publications, especially where research concerns their knowledge, data, or experiences.
- » Create multiple pathways for authors to retain control over their work, e.g. retaining copyright.

4

CARE DMM DATA MATURITY MODEL INDICATOR(S):

C2 - For improved governance and citizen engagement
R2 - For expanding capability and capacity

Incorporate these Guidelines into peer review

- » Develop reviewer, editor, and staff guidance on implementing these *Guidelines* in submissions.
- » Identify how to integrate these *Guidelines* into the manuscript submission systems software and platforms.
- » Avoid automation of checks as a first pass (e.g., using AI for initial assessment).

5

CARE DMM DATA MATURITY MODEL INDICATOR(S):

A3 - Governance of data
R2 - For expanding capability and capacity
R3 - For Indigenous languages and worldviews
E3 - For future use

Redesign publisher workflows

- » Ensure that any new policies have clear workflows associated with them.

6

CARE DMM DATA MATURITY MODEL INDICATOR(S):

C2 - For improved governance and citizen engagement
R1 - For positive relationships

Include Indigenous perspectives within journal content

- » Recognize Indigenous sciences, knowledges, and methods as research eligible to be published as research articles in the publishing ecosphere.
- » Recognize that not all communities want peer reviewed papers, so offer other article types, such as policy briefs, multimedia, preprints, webinars, reports, etc.

7

CARE DMM DATA MATURITY MODEL INDICATOR(S): A2 - Data for governance

Remove cost barriers to publishing for Indigenous Peoples, communities, and individuals

- » Provide full or partial cost-waivers for Open Access publishing fees for Indigenous authors, community organizations, and Indigenous-led projects.

8

CARE DMM DATA MATURITY MODEL INDICATOR(S): R3 - For Indigenous languages and worldviews

Implement functionality to feature publications in Indigenous languages

- » Provide system functionality to display and/or link translated versions directly alongside English-language publications.
- » Ensure journal platforms can render Indigenous language characters, including diacritics, tone markers, and special glyphs.
- » Validate with a fluent translator if publicly available LLMs are used for translation.

9

CARE DMM DATA MATURITY MODEL INDICATOR(S): A3 - Governance of data R2 - For expanding capability and capacity R3 - For Indigenous languages and worldviews E3 - For future use

Align metadata standards

- » Create appropriate metadata and transfer (including [Local Contexts Labels](#)) to Crossref.
- » Use metadata standards that ensure interoperability, findability, and indexing, e.g. in bibliographic search engines or in ORCID profiles.
- » Ensure metadata rights fields include Local Contexts Labels and Notices (e.g. Traditional Knowledge [\(TK\)](#)/Biocultural [\(BC\)](#)) alongside any Creative Commons (CC) [Licenses](#).



2.3 Submission Process, Systems, & Author Requirements

The journal or publisher's submission guidelines should require authors to explain how they have engaged CARE, regional, and/or community-specific Indigenous data principles where applicable. They should also describe any efforts to engage Indigenous Peoples and communities in the research and development of the publication (e.g., in their manuscript's methods section). These requirements should be embedded in the submission infrastructure as checklists, which may require documentation of Indigenous Data Sovereignty agreements; community letters of support; data sharing agreements; research permits and permissions; inclusive research classification vocabulary; and description of engagements with Indigenous Peoples and communities. If agreements and permissions are not present, authors should be given space to explain

where they are in the engagement process. Colonial or extractive research practices by outside groups, commonly referred to as “helicopter research” or “parachute science”, can occur at any point during the research and publication lifecycle. Policies should be implemented to elevate Indigenous data control, ensure appropriate attribution, and seek community agreements and permissions. Where possible, publishers should streamline guidance and requirements, recognizing that authors – in particular early-career researchers – are often overburdened with compliance checklists and other submission requirements. It is recognized that publishers will need to work with their systems suppliers to build into submission systems support for these new functionalities.

1

CARE DMM DATA MATURITY MODEL INDICATOR(S): A1 - Recognizing rights and interests

Clearly outline requirements for how manuscripts uphold Indigenous Data Governance principles at submission

- » Emphasize adherence to CARE, regional, or more locally relevant principles as an important component of meeting the minimum standard for publication rather than a perfunctory checklist.
- » Make manuscript requirements specific for all research artefact types (e.g. samples, field sites, surveys, derived data).
- » Consider an optional pre-submission inquiry or consultation process to guide authors for relevant papers.
- » Include requirements at metadata level from [Datacite](#) and [ORCID](#).
- » Promote use of metadata for embedding Indigenous authority (e.g., [Labels](#)).

2

CARE DMM DATA MATURITY MODEL INDICATOR(S):

A1 - Recognizing rights and interests

Indigenous data control should be elevated and clear guidance should be provided

- » Emphasize using Data Sharing and Management Agreements with Indigenous Peoples, indicate their use alongside published articles, and make them accessible, if agreed to by Indigenous Peoples.
- » Review material and seek appropriate reviewer comment as needed.
- » Provide authors with instruction on ensuring implementation of CARE or locally relevant principles and oversight as appropriate.

3

CARE DMM DATA MATURITY MODEL INDICATOR(S):

A1 - Recognizing rights and interests

C2 - For improved governance and citizen engagement

Revise and update data sharing policies to embed CARE and community-specific Indigenous Data Governance as appropriate

- » Provide system functionality to display and/or link translated versions directly alongside English-language publications.
- » Ensure journal platforms can render Indigenous language characters, including diacritics, tone markers, and special glyphs.
- » Validate with a fluent translator if publicly available LLMs are used for translation.

4

CARE DMM DATA MATURITY MODEL INDICATOR(S):

R1 - For positive relationships

E1 - For minimizing harm and maximizing benefit

Ask authors to clearly describe Indigenous Peoples engagements in their research at submission

- » Incorporate statements into existing open research sections and/or sections describing authorship and collaboration.
- » Add required questions in submission systems. There should be space for authors to explain where they are in the engagement process if they have not reached the stage of full agreement and to request guidance for how to proceed.
- » Respect requests arising from situations in which a community may consent to publication but not to being named. Naming of the Indigenous People must only be done with their consent.

Revise authorship requirements to increase community recognition

- » Create space for positionality or relationality statements in the manuscript or other sections, which describe how the identities of the authors relate to the research topic and to the identity of the participants or communities involved.
- » Create inclusive authorship policies that encourage credit for co-created and community-led research and encourage adding authors that may have been omitted (e.g., policies on “helicopter research”).
- » Include community affiliation(s) (e.g., Indigenous Peoples, Tribal Nation, or other appropriate terminology for community belonging) in author bylines for Indigenous authors in journal articles or other platforms (e.g. ORCID, Scopus, Web of Science).
- » Design pathways for attributions to multi-person entities, group authorships, and other innovative authorship solutions (like incorporating non-human authors).
- » List Indigenous lands in author affiliations and embed within article and attribution metadata.
- » Develop clear policies on retraction and corrections. Prepare for the possibility that an author may misrepresent Indigenous identity.
- » Update style guides at journals to incorporate guidance sensitive to Indigenous language inclusion, including the use of diacritical marks in author names.

Publishers and editors should collect information about author and research adherence to Indigenous Data Governance principles

Create a checklist embedded in the submission system for staff, reviewers, and or editors to record their assessment of author requirements, for example:

- » Authors’ explanation on how they have engaged CARE, regional, and/or community-specific Indigenous data principles where applicable.
- » Authors’ stated efforts taken to engage Indigenous Peoples and communities in research and development of the publication (e.g., in their manuscript’s methods section).
- » Use of Local Context Labels and Notices.
- » Submission of Indigenous Data Sovereignty agreements, authorship agreements, research permits, endorsement letters from Indigenous Peoples and communities, data management plans, data sharing permissions, etc.
- » Proof of consent for naming of Indigenous Peoples in publications.
- » Description of the repository where data is deposited.

Redefine publication categories to include Indigenous Knowledges, sciences, and methods as research (not limited to commentary or perspectives)

- » Expand research definitions to include Indigenous methodologies and methods.
- » Provide ways for authors to publish oral history and storytelling data.
- » Provide space for visuals and imagery to assist with presentation of Indigenous data.
- » Allow for use of Indigenous names instead of requiring non-Indigenous naming.
- » Adopt inclusive research classification vocabulary that includes Indigenous sciences, knowledges, and methods as research.



2.4 Assessment & Peer Review

Before peer review, staff and editors should have access to guidance, checklists, and templates that facilitate implementation and communication for the governance of Indigenous data that upholds CARE. Meanwhile, Indigenous subject matter experts and editors should be appointed and compensated. Notably, publishers should ensure that their editorial boards are safe and welcoming spaces that do not tokenize Indigenous appointees. During peer review, Indigenous reviewers should be involved,

acknowledged, and compensated through multiple types of community-based peer review, with publishers exercising caution so as not to overtax Indigenous researchers and communities.

1

CARE DMM DATA MATURITY MODEL INDICATOR(S):

R1 - For positive relationships
A1 - Recognizing rights and interests
R2 - For expanding capability and capacity

Revisit and revise editorial board composition

- » Appoint Indigenous researchers to editorial boards with clear and specific work expectations.
- » Expand editorial board size to create capacity and time for editors to participate (recognizing many editors already have high workloads).
- » Compensate editors and experts.
- » Establish editorial fellowships for Indigenous scholars.

2

CARE DMM DATA MATURITY MODEL INDICATOR(S):

A1 - Recognizing rights and interests
R1 - For positive relationships
A3 - Governance of data

Revisit and revise review process and standards

- » Designate roles for assessing and enforcing CARE (editor-in-chief, subject matter expert editor, editorial board or advisory board, community partnership boards, dataset reviewers, etc.).
- » Include questions for assessing implementation of Indigenous Data Governance principles, including the use of CARE and relevant regional or community-specific standards in manuscripts, datasets, and research artifacts in review instructions, reviewer scoresheet, and recommendation form.

- » Require authors to share revised manuscripts with community partners per community protocol or agreement.
- » Decide on thresholds for revision or rejection if the submission is reviewed and does not uphold CARE and relevant regional or community-specific standards.
- » Allow flexible timelines for authors to collaborate or consult with communities on revisions.

3

CARE DMM DATA MATURITY MODEL INDICATOR(S):

A1 - Recognizing rights and interests
A3 - Governance of data

Guidance and resources for editors and staff for initial assessment of submissions

- » Provide templates for editors and staff to communicate with authors about Indigenous Data Governance on papers that do not meet threshold.
- » Create independent checklists for initial assessment of CARE that editors can send on a case-by-case basis to authors.
- » Define what journal staff can review versus what needs editor assessment.

4

CARE DMM DATA MATURITY MODEL INDICATOR(S):

A1 - Recognizing rights and interests
A3 - Governance of data

Include reviewers from Indigenous Peoples and communities

- » Create compensated Indigenous reviewer boards or councils composed of community-based peer reviewers.
- » Establish mentorship or other development programs to build more review capacity.
- » Include community peer reviewers from outside academia to provide expert opinion as needed.
- » Consider ways for publishers to identify, collate, and share (with permission) lists of appropriate peer reviewers.
- » Create incentives for Indigenous reviewers (e.g., compensation, credit, Publons, acknowledgement in the article/journal, etc.).
- » Ensure that Indigenous reviewers and communities are not overburdened



2.5 Production & Publication

During production, publishers should be inclusive of Indigenous languages and principles. Publisher article metadata should feature information about any metrics, badges, notices, or other Indigenous content-related metadata to enable crosslinking across existing infrastructure. For example, metrics or Labels and Notices should be featured visibly in articles and linked to author ORCiDs. This linkage ensures robust interconnections through citations among articles, Indigenous data, and other research outputs or resources (e.g., pre-registered reports). Implementing these connections will allow publications to be traced

back more clearly to places and communities, creating a more robust web of research and outputs. Precedents for the implementation of badges in the publication ecosystem include the implementation of [Open Science badges](#), [NISO recommendations for reproducibility badging](#), and ACM's badging. These connections could also strengthen incentives and recognition for researchers to practice CARE, potentially serving as the foundation for publishers, funders, and others to assess CARE implementation.

1

CARE DMM DATA MATURITY MODEL INDICATOR(S):

C1 - For inclusive development and innovation
R1 - For positive relationships
C3 - For equitable outcomes

Develop schemes for acknowledging and accrediting Indigenous Knowledges and implementation of CARE for authors and publications

- » Develop badges to recognize Indigenous data and content.
- » Include Labels and Notices.
- » Showcase publication metrics through ORCiDs.
- » Update DOI metadata to include metadata relevant to Indigenous Knowledges.

2

CARE DMM DATA MATURITY
MODEL
INDICATOR(S):C1 - For inclusive development and innovation
R1 - For positive relationships**Integrate typesetting
and production with
Labels and Notices**

- » Enact badge visibility during production and ensure display on article PDF and web versions.
- » Ensure that data, samples, and other research outputs related to the publication maintain original badges, notices, and labels.

3

CARE DMM DATA MATURITY
MODEL
INDICATOR(S):

A2 - Data for governance

**Use a persistent
identifier**

- » Ensure inputs (e.g., samples, existing data, etc.) and outputs (e.g., pre-prints, manuscripts, data, etc.), which may be stored in different repositories, are linked back to places and communities using a persistent identifier, such as a DOI.



2.6 Post-Publication

Publishers should ensure that appropriate implementation of these *Guidelines* continues post-publication. In particular, CARE and Indigenous-data specific concerns should be considered as important to the validity of the peer-reviewed article as scientific errors or (mis)conduct. Changes resulting from these concerns should warrant article corrections and retractions (e.g., if a Label changes, the article should be updated or an update to the API made). More broadly, the ecosystem and incentives currently associated with scientific publishing should incorporate the CARE Principles. A system that

incentivizes and rewards authors, journals, and publishers for adopting these recommendations should be developed, including openly-accessible metrics for assessing the governance of Indigenous data at publication, journal, and publisher levels. Scoping and implementation of such a system will involve data actors beyond the publisher, such as funders, infrastructure providers (CrossRef, DataCite), and indexers.

1

CARE DMM DATA MATURITY MODEL INDICATOR(S):

E1 - For minimizing harm and maximizing benefit
E2 - For justice

Handle corrections and retractions with attention to Indigenous data-specific concerns

- » Update Labels and Notices changes through the API.
- » Create policy to address fraudulent claims of Indigenous authorship.

2

CARE DMM DATA MATURITY MODEL INDICATOR(S):

C1 - For inclusive development and innovation
A1 - Recognizing rights and interests

Transparent metrics for implementation of CARE in publishing

- » Make CARE publication metrics visible on journal and publisher websites.
- » Include a registry of CARE DMM indicators on metrics dashboards.
- » Include usage metrics, such as circulation metrics (e.g. downloads, full text views) on websites or as statistics related to the publication.



SUMMARY

These *Guidelines* describe steps that publishers, journal editors, data infrastructure providers, and indexers should take to implement the CARE Principles and promote Indigenous Data Governance. **Section 1** presents recommendations for General Education and Cultural Safety Building for publishers and editors. Steps include understanding how FAIR and CARE data principles work in tandem and recognizing that these principles should be implemented within a broader culture that is already set up to promote and reward transparency, diversity, equity, inclusion, and access within staff, editor, and reviewer groups. **Section 2** details recommendations for each stage of the Publishing Workflow:

- 1 | pre-submission;
- 2 | publication policies;
- 3 | submission and author requirements;
- 4 | assessment and peer review;
- 5 | production and publication; and
- 6 | post publication.

Together, these *Guidelines* require changes to journals and publishers across four key areas:

- 1 | policy;
- 2 | infrastructure;
- 3 | operations; and
- 4 | education and outreach.

POLICY

Publishers should clearly outline requirements for the governance of Indigenous data that align with CARE, regional, and locally-relevant Indigenous Data Governance principles before and throughout

submission, review, and production processes. These requirements should apply to authors in particular but also to editors and staff. Elements such as positionality statements; inclusive authorship statements; policies that reduce barriers to access (e.g., waiving article processing charges for Indigenous Peoples), and policies that foster more inclusive editorial boards and reviewer pools all support the implementation of the CARE Principles.

INFRASTRUCTURE

Publishers should support initiatives for developing badges and notices for Indigenous data and the metadata that support them. Supported metadata enable publisher and repository systems to share information about how papers, datasets, and other research outputs uphold Indigenous Data Governance. This information should be accessible in systems to authors, editors, reviewers, and readers. Systems should support Indigenous languages and alphabets -- in particular for names -- and include provisions for mirroring content in these languages. Systems should support ways of acknowledging affiliations and authorship that represent how authors and contributors align with, and represent, Indigenous Peoples and communities.

OPERATIONS

Implementation of any new policy or requirement has potential to cause author, staff, editor, and reviewer fatigue. Publishers should recognize this and take proactive steps to streamline implementation of these recommendations by holistically considering checklists and requirements for 1) author submission; 2) quality control; 3) staff checks; and 4) editor and reviewer assessment. Several capacity-building suggestions proposed can help combat this fatigue, including general education, outreach, and training for

...these principles should be implemented within a broader culture that is already set up to promote and reward transparency, diversity, equity, inclusion, and access within staff, editor, and reviewer groups.

all participants (both internally and through cross-publisher initiatives) as well as expanding Indigenous representation on editorial boards and in reviewer pools. Other important operational considerations include ensuring that processes support metadata and linking of badges, notices, and related research outputs (e.g., through citation) and that style guides support Indigenous languages.

EDUCATION & OUTREACH

Education and outreach for all participants – authors, publishers, editors and reviewers – is perhaps the most important first step of these recommendations. It will range from general awareness of Indigenous Data Governance and the CARE Principles to more specific, potentially discipline-specialized considerations for implementation assessment and peer review. Where possible, publishers should work together to align with leading practices to reduce author and researcher confusion. Coordination with other infrastructure providers (e.g., data repositories) will also be necessary to ensure consistency throughout the research and publication process.

Other areas beyond the scope of this work still require efforts from the broader research community to advance Indigenous Data Sovereignty and other related issues. In particular, there is a need to promote and reward greater implementation of the principles that benefit research as a whole, including FAIR and CARE. Frameworks for engagement with community members are needed to support research performed by, for, and with non-scientist communities. Many of these considerations share elements with those presented here concerning research with Indigenous Peoples and communities. By implementing these recommendations, publishers can help ensure that researchers recognize the importance of Indigenous Data Sovereignty and compliance with the CARE Principles. Much work is needed from both funders and academic and research institutions – other key players in research evaluation – to incentivize and ensure compliance with these principles.

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