

Putting FAIR Evidence into Practice

Citation for published version (APA):

Leung, T. I., & Dumontier, M. (2019). Putting FAIR Evidence into Practice. *Journal of General Internal Medicine*, 34(8), 1369-1369. <https://doi.org/10.1007/s11606-019-05021-7>

Document status and date:

Published: 01/08/2019

DOI:

[10.1007/s11606-019-05021-7](https://doi.org/10.1007/s11606-019-05021-7)

Document Version:

Publisher's PDF, also known as Version of record

Document license:

Taverne

Please check the document version of this publication:

- A submitted manuscript is the version of the article upon submission and before peer-review. There can be important differences between the submitted version and the official published version of record. People interested in the research are advised to contact the author for the final version of the publication, or visit the DOI to the publisher's website.
- The final author version and the galley proof are versions of the publication after peer review.
- The final published version features the final layout of the paper including the volume, issue and page numbers.

[Link to publication](#)

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal.

If the publication is distributed under the terms of Article 25fa of the Dutch Copyright Act, indicated by the "Taverne" license above, please follow below link for the End User Agreement:

www.umlib.nl/taverne-license

Take down policy

If you believe that this document breaches copyright please contact us at:

repository@maastrichtuniversity.nl

providing details and we will investigate your claim.

LETTERS—CONCISE RESEARCH REPORTS

Putting FAIR Evidence into Practice

Tiffany I. Leung, MD, MPH, FACP, FAMIA¹ and Michel Dumontier, PhD²¹Faculty of Health, Medicine and Life Sciences, Maastricht University, Maastricht, The Netherlands; ²Institute of Data Science, Maastricht University, Maastricht, The Netherlands.

J Gen Intern Med 34(8):1369

DOI: 10.1007/s11606-019-05021-7

© Society of General Internal Medicine 2019



To the Editors:

In the commentary by Guise et al., the authors describe a learning cycle for learning health systems in which evidence is rapidly generated, integrated into practice, and further evidence can be generated for further medical and clinical insights.¹ The novel aspect suggested is the archiving of data, whether from clinical trials, systematic reviews and meta-analyses, and other study types, in such a manner that enables rapid reproducibility and continuous updating of medical evidence. In the clinical world, this is indeed a novel approach: the realities of healthcare delivery—the fragmented systems of care, misaligned values and incentives, slow adoption of new effective technologies, or the recognizable black box in which clinicians enter burdensome amounts of data without the feedback of intelligent insights—could all significantly benefit from the findability, accessibility, interoperability, and reusability of data in all of its forms.

These principles form the FAIR guiding principles for digital objects, such as algorithms, workflows, as well as data²—identical to the digital knowledge objects that the authors describe, which include recommendations, guidelines, and other forms of evidence. Originating from a workshop of diverse stakeholders who convened in The Netherlands in 2014, the FAIR guiding principles were developed to address thorny problems of data discovery and reuse. For example, the principles stipulate that digital objects should have unique identifiers, high-quality metadata, unambiguous licensing, adhere to data standards, and follow community expectations.³ Since then, the principles have been further delineated as a result of debates about each principle to ensure meaningful implementation.⁴ Also, metrics for measuring FAIRness of digital objects have been developed.⁵ Furthermore, FAIR principles have already been adopted across global

communities, including governments, governing bodies, publishers, and funding bodies.

The FAIR guiding principles may be a complementary and already widely accepted framework for the construction of digital infrastructure needed to empower a learning health system. Ensuring that all digital objects are readable by human and machine is no small feat. But it seems to us that in order to “mind the gap” between evidence generation and practice, and back again, also means that it is time to be FAIR.

Corresponding Author: Tiffany I. Leung, MD, MPH, FACP, FAMIA; Faculty of Health, Medicine and Life Sciences Maastricht University, Maastricht, The Netherlands (e-mail: t.leung@maastrichtuniversity.nl).

REFERENCES

1. **Guise J-M, Savitz LA, Friedman CP.** Mind the gap: putting evidence into practice in the era of learning health systems. *J Gen Intern Med* 2018; <https://doi.org/10.1007/s11606-018-4633-1>
2. **Wilkinson MD, Dumontier M, Aalbersberg IJJ, et al.** The FAIR guiding principles for scientific data management and stewardship. *Sci Data* 2016;3:160018.
3. **Leung TI, Dumontier M.** The role of FAIR in the integration of clinical practice guidelines for the learning health system. In: *MEDINFO 2017: Health and Wellbeing E-Networks for All - Proceedings of the 17th World Congress on Medical and Health Informatics*, Lyon, France, 25-30 August 2019. *Studies in Health Technology and Informatics*; accepted for publication.
4. **Mons B, Neylon C, Velterop J, Dumontier M, da Silva Santos LOB, Wilkinson MD.** Cloudy, increasingly FAIR: revisiting the FAIR Data guiding principles for the European Open Science Cloud. *ISU* 2017;37(1):49-56.
5. **Wilkinson MD, Sansone S-A, Schultes E, Doorn P, Bonino da Silva Santos LO, Dumontier M.** A design framework and exemplar metrics for FAIRness. *Sci Data* 2018;5:180118.

Publisher's Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.