 DOI: http://dx.doi.org/10.1590/1981-7746-sol00120

Open science, open data: Challenge and opportunity

Today, one of the main narratives in science is making access to research data universal, especially studies funded with public resources, a common motivation that underlies the open access to scientific information movement that began in the late 1990s. Without losing sight of the fact that the opening of research data in Brazil is part of a recent discussion, its implementation is necessary, not only because this has to do with offering open access to the outcomes of public funding, but also to meeting the commitment to do science under the inspiration of an open philosophy, supported by the infinite possibilities of information and communication technologies, which encourage collaborative, shared production among researchers, especially through the reuse of data.

In December 2017, after the 8th Luso-Brazilian Open Access Conference, which was held at its premises in Rio de Janeiro, the Oswaldo Cruz Foundation (Fiocruz) gave another unequivocal demonstration of its commitment to Open Science when it presented the *Open science and open data: Mapping and analysis of policies, infrastructures, and strategies from a national and international perspective* (Santos, Henning e Almeida, 2017) report on an analysis of international initiatives on policies, governance, and open data infrastructures as a result of the research carried out by the Working Group on Open Science, which has ties to the office of the vice president for Education, Information and Communication, in partnership with the Center for the Integration of Data and Knowledge in Health (Cidacs).

The Cidacs, which is based in Fiocruz Bahia, is part of one of the institutional strategies to subsidize the formulation and implementation of a policy that guides the opening of scientific data. It conducts research, develops new investigative methodologies, and promotes professional and scientific training based on interdisciplinary projects grounded on the integration of large databases *(big data)* to expand the understanding of the population's health issues and to provide evidence to support decision-making in public policies.

This study systematizes the experience of eight countries - Germany, Australia, Brazil, Canada, the United States, the Netherlands, Portugal, and the United Kingdom - and the initiatives promoted by the European Commission through its Horizon 2020 Research and Innovation Program to open data to society, aiming at the advancement of an open, collaborative, and shared science that guarantees the integrity of research and is coordinated with the social and economic sustainability of the nations.

The *Open science and open data: Mapping and analysis of policies, infrastructures, and strategies from a national and international perspective* report is a part of the "Open Science: What, for whom, how, and why? strategic recommendations for Fiocruz's Open Data Policy" research project, which has the specific objective of creating a set of guidelines for the preparation of a general framework proposal for an Open Data Policy for Fiocruz in connection with the Open Access to Knowledge Policy[1] and in compliance with na-

tional legislation on the subject. The recommendations contained therein, however, do not yet express Fiocruz's conclusive position, and represent an autonomous vision of the Working Group that materialized it to contribute to the collective formulation of the Policy.

As demonstrated by the analysis, the leading international development agencies, including the National Institutes of Health, The Wellcome Trust, and the Bill and Melinda Gates Foundation are preparing Open Data Policies. The theme is also treated as a priority by governments and research institutions that act in an integrated way in the development of a research management and evaluation ecosystem, in its various dimensions, such as policy and infrastructure formulation and capacity building, among others. The challenges to the implementation of open science practices are enormous, such as researcher resistance to relinquishing their data for fear of losing discovery priority.

Fiocruz's movement towards the opening of research data - attentive to the protection of confidential and sensitive data - also represents a natural evolution of its Open Access to Knowledge Policy, which is added to initiatives such as the creation of the Arca institutional repository, (Arca/REA), Editora Fiocruz's partnership in SciELO Livros, the launch of Fiocruz's Scientific Journal Portal, which hosts the seven scientific journals the institution produces, in addition to the Science, Technology, and Innovation in Health Observatory (Santos, 2014).

There is no doubt we are facing a great challenge, which implies not only the adoption of new practices, but also the need to review the established way of doing science. However, the moment represents an opportunity to create new mechanisms that strengthen the insertion of Brazilian science in the global flows of scientific information.

Paula Xavier dos Santos
Coordinator of Information and Communication, Oswaldo Cruz Foundation.

Paulo Guanaes
Executive editor of the Fiocruz *Trabalho, Educação e Saúde* journal, Oswaldo Cruz Foundation.

Note

[1] Fiocruz's Open Access to Knowledge Policy was established in 2014, and is mandatory for dissertations, theses, and articles. For more information, go to: <https://portal.fiocruz.br/pt-br/acessoaberto>.

References

SANTOS, Paula X. et al. Política de Acesso Aberto ao Conhecimento: análise da experiência da Fundação Oswaldo Cruz/Fiocruz. *RECIIS*: Revista Eletrônica de Comunicação, Informação & Inovação em Saúde, Rio de Janeiro, v. 8, n. 2, p. 210-226, 2014.

SANTOS, Paula X; HENNING, Patrícia; ALMEIDA, Bethânia A. (orgs.). *Ciência aberta e dados abertos*: mapeamento e análise de políticas, infraestruturas e estratégias em perspectiva nacional e internacional. Rio de Janeiro: Fiocruz, 2017. 125 p.