

Advancing Epidemiological Understanding and Response: A Comprehensive Review of Data Science and Data Sharing Strategies in the Latin American and Caribbean Region

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A review on data sharing strategies in LAC identified key approaches: sharing research data and infrastructure, collaboration networks, and document repositories, with the latter being the most common. While open science is prioritized in the region, only Colombia has a national open science policy.

BACKGROUND

The integration of data science into epidemiology has revolutionized the approach to understanding and managing diseases. Data science has become an important tool in epidemiology, allowing for the analysis of large datasets and the identification of patterns and correlations that are relevant to disease understanding and management. Data sharing is also critical for an effective public health response based on transparency and collaboration. This study aimed to map the landscape of data sharing and data science frameworks and policies on health research in the Latin America and the Caribbean (LAC) region.

METHODS

To better assess data sharing strategies in LAC research, an integrative literature review was conducted using databases, in September/2023, such as PubMed, Lilacs, and Epistemonikos. In addition, search government websites for national policies or legislation related to data sharing were also analysed.

The inclusion criteria for documents were as follows: they had to pertain to Latin America and/or the Caribbean region, present a strategy/infrastructure for data sharing, and be exclusive to the health field. The exclusion criteria were as follows: not presenting the full text and no data sharing and/or health research related.

RESULTS

We identified 1,334 articles, 25 of which were chosen following a thorough analysis. These documents presented data sharing strategies divided into three categories: **sharing research data and infrastructure**; **collaboration networks or courses for researchers**; and **sharing documents**, such as articles, repositories, and information, which was the most common strategy found in the documents.

The legislation examined across LAC countries was more focused on the theme of open science, rather than a specific approach to data sharing in health research. Colombia was the only country that presented a national policy for open science in the region (Table 1).

RESULTS CONTINUED

Table 1. Legislation related to Data Science.

Country (year)	Summary
Colombia (2022)	National open science policy 2022-2031 provides for the expansion of training, institutionalisation and scientific infrastructure in the country
National Research and Development Agency – Chile (2022)	National policy for open access to scientific information and publicly funded research data
Ecuador (2022)	Start of the creation of the national policy for open science and strategic research
Costa Rica (2021)0	National science, technology and innovation plan 2022-2027 for the development of science in the country, and among its principles is collaborative and ethical creation
Brazil (2018)	General Data Protection Law
Conacyt – Mexico (2018)	National open science policy and creation of repositories programme
Argentina (2013)	Law for creating open access institutional digital repositories
Colombia (2012)	Law 1581 on the protection of personal data
Mexico (2010)	Federal law on the protection of personal data

Source: author's own elaboration

CONCLUSIONS

The LAC region has made significant efforts to build a movement for data sharing. Notably, repository-centric strategies were the most used, indicating a growing recognition of the necessity for robust data storage and accessibility. Moving forward, leveraging data sharing initiatives, promoting and accelerating data use and reuse, will not only enhance epidemiological analysis but also foster a more effective response to public health challenges across the region and beyond.

ADDITIONAL KEY INFORMATION

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