

BIREME / PAHO / WHO

Latin American and Caribbean Center on Health Sciences Information

Health Information Locator Methodology

**Criteria for the Selection of Health Information Sources
Available on the Internet**

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Criteria for the Selection of Health Information Sources Available on the Internet

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This document was produced with the use of Documents Conformation Methodology (NorDoc) developed by BIREME.

Methodology document set

The complete set consists of 3 documents:

1. Implementation and Operation Guide;
2. **Criteria for the selection of health information sources available on the Internet;**
3. Guidelines for the Entry of Information Sources.

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Abbreviations used

- AACR2. Anglo-American Cataloguing Rules - 2nd Edition.
- BIREME. Latin American and Caribbean Center on Health Sciences Information.
- BVS. Biblioteca Virtual em Saúde (see VHL).
- CNICM. Centro Nacional de Información de Ciencias Médicas.
- DeCS. Health Sciences Descriptors.
- Dublin Core. Dublin Core Metadata Initiative (DCMI).
- GILS. Global Information Locator Service.
- HTML. HyperText Markup Language.
- HTTP. HyperText Transfer Protocol.
- INFOMED. Red Telemática de Salud en Cuba.
- IS. Information source.

- ISO. International Organization for Standardization.
- LILACS. Latin American and Caribbean Health Sciences Literature.
- LIS. Health Information Locator.
- PAHO. Pan American Health Organization.
- PDF. Portable Document Format.
- PHP. PHP: Hypertext Preprocessor.
- SciELO. Scientific Electronic Library Online.
- SSH. Secure Shell.
- UNIFESP. Universidade Federal de São Paulo
- UNISIST. United Nations Information System in Science and Technology.
- URL. Universal Resource Locator.
- VHL. Virtual Health Library.
- WHO. World Health Organization.
- XML. eXtensible Markup Language.
- XSL. eXtensible Stylesheet Language.

How to use this manual

This guide is part of [HIL Methodology](#) and provides the criteria to the selection of information sources in health available in the internet that will take part in both Regional and specific (geographic or thematic) HIL databases.

The guide combines eighteen (18) sections and subsections that underlie these criteria, being the main sections: Scope, Audience, Origin / Responsibility, Certification, Contents and Access.

It serves to aid Cooperating Centers to select the contents more suitable to be included in HIL as well as to establish the common selection and classification criteria to guarantee the integrity, compatibility and quality of the registers in the database.

It is not intended to be a cataloguing manual; therefore it does not offer this practice. For the cataloguing process it has been adopted the Anglo American Cataloguing Rules (AACR-2). In order to help the data entry in the authorship, the Annex 1 of "Guidelines for the Entry of Information Sources" may be used. This is not intended as an indexing manual or a guide to the operation of any database.

The selection criteria presented in this Guide may probably not solve all questions and doubts that will emerge during the process. If a question or doubt persists, even after analysis of the core elements, including the advice of trustable specialists, the user may choose either or not to add the information source.

1 Preface

1.1 About BIREME

Year after year, BIREME has been following its mission of being a center dedicated to scientific and technical health information for the region of Latin America and the Caribbean. Founded in Brazil in 1967, under the name of Regional Medicine Library (which the acronym BIREME comes from), it has always met the growing demand for up-to-date scientific literature from the Brazilian health systems and the communities of healthcare researchers, professionals and students. Then, in 1982, its name changed to Latin-American and Caribbean Center on Health Sciences Information so as to better express its dedication to the strengthening and expansion of the flow of scientific and technical health information across the region, but kept the acronym.

Networking, based on decentralization, on the development of local capacities, on sharing information resources, on developing cooperative products and services, on designing common methodologies, has always been the foundation of BIREME's technical cooperation work. It has been like this that the center established itself as an international model that fosters professional education with managerial and technical information with the adoption of information and communication paradigms that best meet local needs.

The main foundations that gave origin and which support the existence of BIREME are following:

- ✓ access to scientific and technical health information is essential for the development of health;
- ✓ the need to develop the capacity of Latin American and Caribbean countries to operate their sources of scientific-technical health information in a cooperative and efficient manner;
- ✓ the need to foster the use and to respond to the demands for scientific-technical health information from governments, health systems, educational and research institutions.

BIREME, as a specialized center of the Pan-American Health Organization (PAHO)/ World Health Organization (WHO), coordinates and conducts technical cooperation activities on the management of scientific information and knowledge with the aim of strengthening and expanding the flow of scientific health information in Brazil and in other Latin American and Caribbean countries as a key condition for the development of health, including its planning, management, promotion, research, education, and care.

The agreement that supports BIREME is renewed every five years by the members of the National Advisory Committee of the institution (PAHO, Brazilian Ministry of Health, Brazilian Ministry of Education and Culture, Secretary of Health of the State of São Paulo, and Federal University of São Paulo – Unifesp). The latter provides the physical infrastructure necessary for the establishment of the institution.

In 2004 the institution took on the responsibility of becoming a knowledge-based institution.

1.2 The Virtual Health Library (VHL)

With the rise and consolidation of the internet as the prevailing means of access to information and communication, BIREME's technical cooperation model evolved,

as of 1998, to build and develop the Virtual Health Library (VHL) as a common space for the convergence of the cooperative work of producers, intermediaries, and users of information. The VHL promotes the development of a network of sources of scientific and technical information with universal access on the internet. For the first time there has been a real possibility of equal access to health information.

To BIREME, the Virtual Health Library is a model for the management of information and knowledge, which includes the cooperation and convergence between institutions, systems, networks, and initiatives of producers, intermediaries, and users in the operation of networks of local, national, regional and international information sources favoring open and universal access.

Today, every country in Latin America and the Caribbean (Region) participates either directly or indirectly in the cooperative products and services offered by the VHL, which includes over 1,000 institutions in more than 30 countries.

The VHL is simulated in a virtual space of the internet formed by a collection or network of health information sources in the Region. Users of different levels and locations can interact and navigate in the space of one or many information sources, regardless of where they are. Information sources are generated, updated, stored and operated on the internet by producers, integrators, and intermediaries, in a decentralized manner, following common methodologies for their integration in the VHL.

The VHL organizes information in a structure that integrates and interconnects reference databases, specialist directories, events and institutions, a catalogue of the information resources available on the internet, collections of full texts with a highlight for the SciELO (*Scientific Electronic Library Online*) collection of scientific journals, selective information dissemination services, information sources to support education and decision-making, news, discussion lists, and support to virtual communities. The space of the VHL is, therefore, a dynamic and decentralized network of information sources based on which it is possible to retrieve and extract information and knowledge to support health decision-making processes.

The Virtual Health Library can be visualized as a distributed base of scientific and technical health knowledge that is saved, organized and stored in electronic format in the countries of the Region, universally accessible on the internet and compatible with international databases.

1.3 About the Health Information Locator Methodology

As one of the sources of the Virtual Health Library (VHL), the Health Information Locator (HIL) methodology allows the creation of a catalog of information sources available on the Internet of interest to the users of health information.

Besides structuring and aggregating value to the indexed sources, the HIL methodology brings to us the discussion on quality, originality and credibility of the information sources. It takes in consideration that the Internet, for its own nature, allows access to an extensive amount of information sources. At the same time, the users' community has never been so exposed to information based on commercial interests and/or whose origin is not certified nor updated.

The HIL methodology described in this Guide has resulted from technical cooperation between the Centro Nacional de Información de Ciencias Médicas (CNICM) and Red Telemática de Salud en Cuba (INFOMED), and BIREME. It includes modules for the entry and administration of information sources, as well as a search interface.

The HIL methodology follows currently accepted standards and formats adopted internationally by libraries and documentation centers for indexing information resources on the Internet. It is based on formats used in the GILS (Global Information Locator Service) and the Dublin Core, with some additional data fields.

2 Introduction

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In the specific case of health resources on the Internet, it is possible to find a wide range of information. For instance, available information ranges from empirical research-based texts published by institutions or professionals of recognized competence, to home-based recipes and advices published by someone who considers such information useful and bases himself/herself on the popular tradition or in his/her own experiences. The lay user, most of the time, does not have the ability to evaluate the quality of this type of information and, consequently, the use of inaccurate information can bring potential harm to his/her health.

The discussion about the information quality available on the Internet is wide-ranging. This discussion, by containing strong ethical characteristics, goes beyond the scope of the criteria here presented. These criteria for the selection of information sources on the Internet, gathered here, has the objective of suggesting a reflection on the theme to the institutions which are creating a HIL catalog in the VHL. The second objective is to guide the institutions develop their own criteria, enlarge or adapte the criteria proposed here to the specific characteristics and themes of their HIL.

Published here is the preliminary version of the Criteria for the Selection of Information Sources for HIL involving the concepts of scope, target audience, origin/responsability, certification, content and access. These criteria are elaborated in the widest possible way so that they can be used as a guideline in the elaboration of particular criteria to each theme in VHL. Comments will always be welcome to the e-mail <lis@bireme.br>

3 Scope

Definition

It determines the nature and/or the characteristics of the information source. They are the knowledge areas or the themes which will be covered by HIL.

Application

The information source should be inserted in the theme/specialty of HIL and in its related areas. In most cases, the title, purpose, introduction, and/or preface of the information source should be enough to determine its scope.

Example

HIL specialized in the theme: Toxicology

Title: National Pesticide Information Center - NPIC

URL: <http://npic.orst.edu/>

NPIC provides **pesticide information** related to **food, emergency, poisoning and treatment, safety practices, disposal, pest control, legislation, pets and wildlife, risk evaluation, labeling, and active ingredients.**"

4 Audience

Definition

It is the users' community for whom the information source is intended.

Application

In order to define the audience for whom the information source is intended, consult the presentation of the site (i.e., *About this site*) or the purpose of the information source to be indexed, if there is one. If HIL is intended for specialists (e.g., professionals, academics, teachers and researchers), a monograph of generic and introductory character may not be useful. On the other hand, if HIL is intended for non-specialists (e.g., students and the general public), a text that requires a solid base of knowledge for its understanding will also not be useful.

Example

HIL specialized in the theme: Toxicology

Title: National Pesticide Informatio Center - NPIC

URL: <http://npic.orst.edu/>

" ... a service that provides objective, science-based information about a wide variety of pesticide-related subjects to **any caller in the United States, Puerto Rico, or the Virgin Islands** ".

5 Origin / Responsibility

Definition

It determines who is publishing the information source on the Internet. They can be institutions related to government (i.e., ministries, departments, foundations, institutes, agencies, and others), universities, research institutes, public or university hospitals, international organizations (e.g., UNICEF, FAO, WHO), associations of consumers advocacy and of support to patients, institutions related to public health, health care providers, centers for disease control and toxicology information, or commercial companies and services providers. With reference to sites of commercial companies, responsibility falls to the institution to determine a special policy that allows its selection and inclusion in HIL.

Application

Verify who is the originator of the information source to be indexed in the home page of the site that is publishing such source. Generally, the home page can be accessed through the first part of the URL <<http://www.institution.extension>>.

Example

Title: BVS - Health sciences information and knowledge

URL: <http://www.bireme.br/>

Originator: Centro Latino-Americano e do Caribe de Informação em Ciências da Saúde - BIREME

Title: ATSDR's Hazardous Substance Release and Health Effects Database - HazDat

Originator: Centers for Disease Control and Prevention. Agency for Toxic Substances and Disease Registry

URL: <http://www.atsdr.cdc.gov/hazdat.html>

Suggestions

A good reliability indicator, in relation to the information published, is to which organizations the institution originator of the source is related; links to other sites, icons and promotion banners, declarations of affiliation, and the text 'About this site' can be good elements for verification. For instance, an article published by a pharmaceutical laboratory may contain, discreetly, publicity regarding its products, or a general practitioner may publish information in an area in which he/she is not a specialist.

It is important to point out that when selecting a particular information source you are somehow establishing a link, although subtle, between the institution responsible for HIL and the selected information source.

6 Certification

Definition

It refers to certification seals acquired through the voluntary or mandatory adoption of a code of ethics or conduct that regulates the content of the information published and the services offered by institutional, commercial and personal sites.

Application

These certification seals can be supplied by professional associations, like the American Medical Association, regulating institutions, such as the Federal or Regional Councils of Medicine, Nursing, Dentistry or other, or by certification institutions, like the Health On the Net Foundation – HON <<http://www.hon.ch/home.html>>, the American Accreditation HealthCare Commission - URAC <<http://www.urac.org/>>, or The Centre for Health Information Quality – CHIQ <<http://www.hfht.org/chiq/>>.

Examples

- **InteliHealth:** commercial site with content in Health Sciences
URL: <http://www.intelihealth.com/IH/ihtIH/WSIHW000/408/408.html>
- **Lymphoma Information Network** - institutional site with specific content on lymphomas (neoplasms)
URL: <http://www.lymphomainfo.net/>

Note:

It is important not to confuse a certification seal of quality with the seals of awards offered to the most voted or accessed web sites by the users; such awards don't necessarily warrant the quality of the information.

7 Content

Definition

It concerns the pertinence of the themes presented in the websites.

Application

For content analysis, the following aspects should be verified:

7.1 Coverage

Definition

They are the areas covered by the information source, the range of the different subjects treated inside of a given knowledge area, and the retrospective coverage (if the material is archived and for how long).

Example

Title: Lymphoma Information Network - Institutional site with specific content in lymphomas (neoplasms).

URL: <http://www.lymphomainfo.net/>

7.2 Precision

Definition

It is the accuracy of the information and data presented.

Application

Although it is difficult to evaluate the factual accuracy of the information presented, some questions may be useful in this process: does the information have a scientific basis?; is it based on conclusions originated from scientific researches or personal opinion?; was it referenced or cited in other publications?; did it go through an editorial process or peer review?

Example

Title: Asthma Management: Guidelines for the Primary Care Physician

URL: <http://www.vh.org/pediatric/provider/pediatrics/Asthma/Asthma.html>

7.3 Up-to-dateness

Definition

It is related to the currentness of the information contained in the various types of available sources, and also, to the frequency and the regularity of its updating.

Application

Although this is an aspect to be observed, in many cases, it should not be used as criterion for exclusion, because many sources are consulted and used in retrospective and historical studies. In these cases, a sentence should be included in the abstract indicating that the material refers to a specific time and that it has value for its content, even if it has not been updated.

Example

Title: Indicators of resources and health services coverage by subregion of the Americas, 1980 and 1997.

URL: <http://www.paho.org/English/SHA/subindb98rs.htm>

7.4 Conflict of interests

Definition

It is related to the intentions and objectives (explicit or not) of the information source.

Application

Given the ease and means for creating and publishing websites on the Internet, anyone has the conditions of doing it. Therefore, if somebody decides to include sources published by people, companies, or organizations which do not have a

solid reputation in their areas of activity, it is important to discover, if possible, what are the intentions and the objectives of such sources. This is not always explicit, but, publicity banners, sponsorship and links to other sites can be good indicators of conflicts of interest.

Example

If an article indicates a certain drug for treatment of a disease, and in the site there are banners that promote the pharmaceutical laboratory that manufactures the drug or associated companies, that can be indicative of the conflict of interest of the information source. With regard to project documents, a good indicator is how the sponsoring institution is mentioned.

7.5 Bias or Intention

Definition

They are directly related to the ideological, moral, religious, ethical, commercial or personal matters underlying the information sources published.

Application

This is another factor that is not always clear in the information source and, therefore, of difficult perception, but there may be some indicators. When evaluating the information source, verify if there is any relationship between its content and the "philosophy" of the institution that publishes or sponsors the site (as indicated in the following examples).

Examples

- An institution that is opposed to the legalization of abortion publishes articles that just point out the moral, ethical or religious aspects and ignores other fundamental matters to this subject;
- An article points out the properties of a particular drug and the site that publishes the article is sponsored by the laboratory that produces such drug.

7.6 Context

Definition

It is related to the situation or way the information is supplied.

Application

This is also a criterion that may, in many cases, not to be applied in the moment of the selection. When analyzing the information source look for facts such as the following:

- if the information is supplied as publicity or support to a particular service, product or drug, it is necessary that such fact be clear to the user;
- if a certain drug was proven efficient in the treatment or prevention of a type of headache whose origin is, for instance, the migraine, it would not be appropriate if the information source affirms that it is effective for the prevention or treatment of other types of headaches.

Suggestion

If the site provides some form for completion, verify if it contains privacy policy for the data supplied by the user and, if so, indicate such policy at the end of the abstract.

8 Access

Definition

It concerns the technical, technological, monetary and copyright aspects presented below for access to the information sources available on the Internet.

8.1 Stability

Definition

It is the possibility of permanent and constant access to the information source.

Application

Verify if the site is permanently accessible, or if the access is intermittent due to the instability of the server or excess of traffic.

8.2 Ease of use

Definition

It is related to the technical prerequisites for accessing the site.

Application

Many information sources are only accessible if certain versions of browsers, plug-ins or specific softwares are used (e.g., Adobe Acrobat Reader, Java console, Quick Time, some group of characters, and certain resolutions for the monitor). Verify if there is a need for software or plug-ins to access the information source, and if so, be sure there are links to download them.

8.3 Access restrictions

Definition

They can be related to monetary, copyright, and idiomatic aspects of accessing the documents.

Application

A considerable number of sites allow the initial full access to their sources for a limited period of time (evaluation/trial period). After that period, only summaries and abstracts are available; then, free or paid registration is requested. In this case, it is necessary to indicate such fact to the users.

Another restriction concerns the copyright; it is necessary to verify if there is any restriction of use and indicate this in the abstract.

Another item that deserves attention is the language in which the source is presented; certain languages can be considered an access restriction to the information sources. If this is the case, be sure to verify if there are other language versions of the site or the information source is available in other languages, or if translation engines can be used.

8.4 Help and Support

Definition

They are the means offered by the sites to assist with problems or questions relating to the access to the available sources.

Application

This is not necessarily a criterion for selection, but it is important to verify if the sites possess help and/or support services. This is particularly interesting concerning access to sites which possess databases for consultation that demand refinement in search strategies.

8.5 Navigability

Definition

It is related to the distribution or location of the information sources contained in the site and the consequent ease of navigating through it.

Application

It is interesting to verify if the sites are easily browsable, in other words, if the information is easily found or if it is necessary to perform many searches inside the site to find it. Check also if the links lead to the pointed sources or not, and if they are not "broken", i.e., if they just result in error messages.

8.6 Graphic design

Definition

They are the visual and graphic aspects presented in the site or in the information source.

Application

Verify if the site makes use of very large images, in other words, images that demand a long time to load; check, also, if an 'only text' version of the site is available.

9 Bibliographical references

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10 Glossary

- **Analytical.** Part of a document, such as the article of a periodical or the chapter of a book.
- **Application.** Program used to execute tasks in connection with an application, such as the creation or edition of texts, drawings, animations, layout, etc. E.g. : text processor, database manager, Internet browser, etc.
- **Backup.** Procedure used to duplicate one or more files and/or directories in another storing device (tape or disc), thus producing a backup copy that may be restored in the event of accidental deletion or physical damage to the original data.
- **Bibliographic Description.** Description of a bibliographic item by using attributes such as author, title, edition, size, etc.
- **Browser.** Internet page navigator, such as Internet Explorer and Netscape Navigator.

- **Controlled or structured vocabulary.** Collection of related terms, organized according to a methodology, in order to facilitate the access to the information previously indexed with those terms.
- **Database.** Collection of data that are structured to be easily accessed and handled. It is formed by units called records whose attributes are represented by fields. For example, in a file called "customer base", each customer is a record, with several fields such as "NAME", "CUSTOMER CODE", "TELEPHONE" etc.
- **DeCS Server.** Application developed by Bireme using the IsisScript language to manage the database of health descriptors (DeCS).
- **Descriptor.** Embodies a concept accepted in a controlled vocabulary (like a thesaurus.)
- **Dublin Core.** A metadata element set. It includes all DCMI terms intended to facilitate discovery of resources. It has been in development since 1995 through a series of focused invitational workshops that gather experts from the library world, the networking and digital library research communities, and a variety of content specialties.
- **Electronic Format.** Any form of storage, retrieval or presentation of information that may be transmitted on-line or recorded in magnetic or optical media.
- **Field.** See Database.
- **File.** In computing, a set of data that may be saved into some type of storing device. The data files are created by applications, such as a text processor for example.

- **Format.** Definition for the content and organization of the data of a record representing an information source, which is interchangeable by computer.
- **GILS.** The Global Information Locator Service defines an open, low-cost, and scalable standard so that governments, companies, or other organizations can help searchers find collections of information, as well as specific information in the collections. Anyone who has used a library can use GILS. Based on the ISO 23950 search standard, GILS includes the most commonly understood concepts by which people worldwide find information sources in libraries--concepts like Title, Author, Publisher, Date, and Place. A GILS locator record is a kind of souped-up version of your trusty library catalog record.
- **HIL Format.** The format that was created for the identification and location of information sources according to HIL methodology.
- **HIL Record.** Set of related data elements that describe an information source and the information available in it, as well as the means of obtaining it.
- **Indexing.** Procedure to identify and describe the content of a document with terms that reflect the corresponding subject matters to allow the document to be retrieved later.
- **Information.** Knowledge related to objects, such as data, events, things, processes or ideas which may, in certain contexts, possess a private significance.
- **Internet.** Worldwide network of computer networks, enabling the exchange of information and sharing knowledge resources, that use a common group of communication protocols, known as TCP/IP.

- **ISO Format (of files).** Standard established by the ISO to allow the exchange of data between institutions, networks and users.
- **Knowledge.** Concepts and scientific representations of the surrounding world based on human understanding or interpretations of the material reality.
- **Methodology.** Set of rules and conventions used to standardize a process or the production of a source of information.
- **PDF.** File format developed by Adobe whose objective is to maintain the presentation format of a document designed for printing when this document is stored in digital media.
- **Record.** *See Database.*
- **TCP/IP Protocol.** Standard that defines the method of communication between digital equipment. It employs a single number of identification.
- **Technical Cooperation.** Exchange between developing countries or between developing countries and developed countries to enable cooperation in certain areas, such as the exchange of specialists and faculty members, development or transfer of technology, exchange of information, exchange of information and experiences to improve sanitary conditions.
- **Template.** File which contains the basic definition of the type of document that will be used, with style, predefined text, etc.
- **Thematic area.** Specific set of information on the subject matter of a VHL which allows user topic-based navigation.

- **Thesaurus.** Structured set of vocabulary that points at hierarchical and associative relationships, in addition to the preference relating to terms (descriptors). *See also* Controlled Vocabulary.
- **Uniform Resource Location (URL).** The URL includes information on the type of protocol used, the address of the site where the information source is located, the subdirectories, and the name of the file. It is composed of the following elements: protocol type (http), separation (://), name of the domain where the information source is stored (www.bireme.br), name of the directory (optional) and the name of the file (optional).
- **UNISIST.** Intergovernmental program designed to foster cooperation in the field of scientific and technological knowledge.
- **URL.** Standard defined for the addressing of data contents via the TCP/IP protocol. Internet browsers use the URL to access Web pages.
- **Virtual Health Library.** A distributed database of scientific and technical knowledge in the field of health, which is registered, organized and stored in electronic format; is accessible in a universal way through the Internet; and is compatible with international databases.
- **XML.** Language created to allow the arrangement of data in a structured and hierarchical manner, thus facilitating data communication between different systems and platforms.
- **XSL.** Language created to allow the navigation, selection and capture of data of an XML file.