

FIOCRUZ, OPEN ACCESS POLICY AND THE ARCA – INSTITUTIONAL REPOSITORY, an experience

**Ana Maria Neves Maranhão – Instituto de Comunicação e Informação Científica e
Tecnológica em Saúde - ICICT**

**Paula Xavier dos Santos – Vice-Presidência de Ensino, Informação e Comunicação
– VPEIC**

Abstract

Presents Fundação Oswaldo Cruz, its structure and actions in the area of information and communication. The process of developing the institutional policy of open access. The institutional repository Arca and its implementation through the creation of the operating plan.

Keywords: open access; institutional repository; open access policy; Arca; Fiocruz

Introduction

Promote health and social development, generating and disseminating scientific and technological knowledge, to be a citizenship agent - are concepts that guide the actions of Fundação Oswaldo Cruz - Fiocruz, bound to the Ministry of Health, which has its history started in 1900 with the creation of the Instituto Soroterápico Federal in Rio de Janeiro, in order to produce serums and vaccines against the bubonic plague. Since then, the institution has an intense path that merges with its own development of public health in Brazil.

In 1902, Oswaldo Cruz, assumes the general direction of the Institute and is then appointed General Director of Public Health triggering sanitation campaigns in Rio de Janeiro, his mission was to make health reform of the capital, fighting yellow fever, bubonic plague and smallpox. During this period Oswaldo Cruz begins construction of the architectural ensemble of Manguinhos, including the Castelo Mourisco, vivarium, among others, in the molds of the Pasteur Institute in Paris, which had held its expertise. His performance against what would be Instituto Oswaldo Cruz did it become public health reference, exceeding the city limits, through scientific expeditions by Country.

The central components of the Institute, a pioneer for its time, is the link between research activity in experimental medicine, production of immunobiological and drug-chemical products and microbiology teaching. (SANTOS, 2007).

Awareness of the importance of information as input for the action, as a strategic element, is relevant to all health actors, be subsidizing the managers in the formulation of public policies, users in the adoption of healthy behaviors and defending the right to health, researchers in knowledge production, professionals in their practices or the process of training human resources in health. The dissemination of scientific knowledge is therefore essential prerequisite to enable actions and changes in policies and health practices.

Thus, Fiocruz participated, throughout time, a number of initiatives in which information is treated as a public good in order to establish links between the production and the use of knowledge, strengthening the relationship between science and society.

Fundação Oswaldo Cruz

Fundação Oswaldo Cruz – Fiocruz has the mission to produce, disseminate and share knowledge and technologies focused on the strengthening and consolidation of the Sistema Único de Saúde (Unified Health System - SUS) and contribute to the promotion of health and quality of life of the population, to reduce social inequalities and for the national dynamics of innovation, with the defense of the right to health and the wide citizenship as central values.

Works from the perspective of being a public and strategic health institution, recognized by Brazilian society and other countries for its ability to put science, technology, innovation, education and production technology services and strategic inputs for promotion of population health, reducing inequalities and social inequities, strengthening the SUS, the development and the improvement of public health policies.

Are values of Fiocruz:

- 1 - Institutional commitment with the public and state character.
- 2 - Science and innovation as the basis of socio-economic development and health promotion.

- 3 - Ethics and transparency.
 - 4 - Cooperation and integration.
 - 5 - Ethnic diversity, gender and socio-cultural.
 - 6 - Employee, students and employees Appreciation.
 - 7 - Quality and excellence.
 - 8 - Reduction of inequities.
 - 9 - Commitment to major goals of social transformation of the Brazilian state.
 - 10 - Environmental commitment.
 - 11 - Participatory democracy.
 - 12 - Democratization of knowledge.
 - 13 - Education as an emancipatory process.
- (Fiocruz Portal)

It is structured in five Vice Presidents, each focused on its particular area of expertise - Vice President of Research and Reference Laboratories, VP of Production and Innovation in Health, VP Education, Information and Communication, VP Environment, Care and Promotion of Health, VP of management and Institutional Development, and organs of direct assistance and advice, technical and administrative units that operate in the management of the Foundation.

The Foundation is installed in 10 states and has an office in Maputo, capital of Mozambique, Africa. In addition to the institutes based in Rio de Janeiro, Fiocruz has units in the Northeast, North, South and Southeast of Brazil. From its expansion projects, foundations for the institutionalization of units were created - offices - in Ceará, Mato Grosso do Sul, Rondônia and Piauí.

In all there are 16 technical-scientific units, focused on teaching, research, innovation, service, technological development and extension in the field of health. There is also a technical support unit, active in the production of laboratory animals and from animals. The units: Casa de Oswaldo Cruz, Escola Nacional de Saúde Pública Sergio Arouca, Escola Politécnica de Saúde Joaquim Venâncio, Fiocruz África, Centro de Pesquisa Leônidas e Maria Deane (Amazonas), Centro de Pesquisa Gonçalo Moniz (Salvador), Centro de Pesquisa René Rachou (Minas Gerais), Instituto Carlos Chagas (Minas Gerais), Centro de Pesquisas Aggeu Magalhães (Pernambuco), Instituto de Comunicação e Informação Científica e Tecnológica em Saúde, Instituto de Tecnologia em Fármacos (Farmanguinhos), Instituto de Tecnologia em Imunobiológicos

(Biomanguinhos), Instituto Nacional de Controle de Qualidade em Saúde, Instituto Nacional de Infectologia Evandro Chagas, Instituto Nacional de Saúde da Mulher, da Criança e do Adolescente Fernandes Figueira, Instituto Oswaldo Cruz.

Fiocruz develops initiatives in collaboration with international organizations and participates in the Brazilian representation at the World Health Organization (WHO). Next to the collegiate bodies of the entity, the Foundation is present in the debates on issues such as disease control, social determinants of health, intellectual property, strengthening health systems and reform of WHO itself - forum in which Brazil raised questions as: access to drugs, universalization of health system, the social determinants of health and strengthening the international recruitment of health workforce.

It also operates in the debate on drugs and intellectual property within the World Trade Organization (WTO) and the World Intellectual Property Organization (WIPO); is a collaborating center of Pan American Health Organization (PAHO).

It has a staff of approximately 12,000 employees / professionals, 1,000 with PhD degree; produces about 140 million doses of vaccine, 5 million diagnostic kits, 1 billion drugs. In the area of teaching and research, in 2013, had 7,000 students, and annually produces more than 1,000 articles indexed in Web of Science.

Also in the teaching and research area are run over a thousand research projects and technological development, which produce knowledge for the control of diseases such as AIDS, malaria, Chagas, tuberculosis, leprosy, measles, rubella, schistosomiasis, meningitis and hepatitis, and other issues related to public health, including violence and climate change, and the history of science. It is the main non-university institution for training and qualification of human resources for SUS and for science and technology in Brazil. Has 18 *stricto sensu* postgraduate programs in various areas, one technical level school and several *lato sensu* programs.

In addition to generating knowledge, the Fiocruz works in the development of products and processes with potential application as new vaccines, herbal drugs, diagnostic methods and monitoring of workers' health, increasing the number of Brazilian patents and improvement of the national health system, activities focused on innovation of health production complex.

On the health services the Fiocruz units offer varied services to articulate their teaching and research activities. Every year are carried over 80,000 outpatient visits for primary care and almost 130,000 procedures, and thousands of hospitalizations. It has two referral hospitals in the health of women and children - Instituto Nacional de Saúde da Mulher, da Criança e do Adolescente, and infectious diseases - Instituto de Pesquisa Clínica Evandro Chagas. Its laboratories achieve more than 210,000 examinations of reference and have recognition from the World Health Organization (WHO) and the Pan American Health Organization (PAHO).

The areas of communication and information are considered strategic at Fiocruz, contributing to the democratization of information and knowledge in health, through various channels - in print, electronic and digital formats. In addition to participating in the formulation and implementation of policies, programs and interventions in the area.

We can identify two areas in the field of scientific and technological information in health - information on health services, which is related to production, processing and use of information in care activities and health care of individuals and communities; health surveillance; planning, management and operation of national health information systems; scientific and health information, with respect to production, communication, creation of stocks, processing, uses and flows of information in health sciences - scientific journals, specialized libraries, documentary collections, institutional repositories among many other products and services.

As an institution focused on innovation, information has an important role, becoming a strategic element in its development. Institutional innovation promoters environments are necessarily intensive information and knowledge, which entails structures, modes and devices - collecting, recording, stock, circulation, scientific and technological information uses.

Currently, produced more than 10 journals, various bulletins, stock photography, websites and information portals - <http://portal.fiocruz.br/pt-br/content/publicacoes>. The institution also counts as an own label, as well as channel and video distributor.

Information and Open Access Policy to Knowledge

Implement structures that can streamline information flows between research, teaching, technology development and production is a constant action at Fiocruz.

In the early years, the library, the museum and scientific collections, alongside the weekly meetings that became known as "Wednesdays table", when Oswaldo Cruz met with researchers to exchange information on the latest articles published in foreign journals, the journal "Memory of the Instituto Oswaldo Cruz" and the application course formed a set of atypical information of management structures in the then existing research institutions (SANTOS, 2014).

Today Fiocruz has a Library Network, coordinated by the Instituto de Comunicação e Informação Científica e Tecnológica em Saúde - ICICT, which brings together 17 physical libraries.

Participates in the Virtual Library Network in Health (VHL) cooperative network between institutions and professionals aimed at the management of information, the exchange of knowledge and scientific evidence on health in open access. Coordinated by BIREME / PAHO / WHO the network is operated in a decentralized manner relying on 33 BVS, and 13 being are under the coordination - development and maintenance - of Fiocruz.

Thus it can be said that open access to knowledge is a guiding principle of information and communication practices at Fiocruz, since its beginning (SANTOS, 2014).

In 2010, it is included as a strategic objective of the institution in its four-year plan, "prioritize the free access policy in the management of information and knowledge produced at Fiocruz".

From there, it is released in 2011 the Arca Institutional Repository, created and maintained by Instituto de Comunicação e Informação Científica e Tecnológica em Saúde – ICICT, with the function of host, make available and provide visibility to the intellectual output of the institution. In 2012 the Theme Repository is created from Escola de Saúde Pública Sergio Arouca (ENSP), aimed specifically for school production.

Also participates in the network SciELO books in partnership with publishers of Universidade Estadual Paulista Júlio de Mesquita Filho (Unesp) and Universidade Federal da Bahia.

In 2012, through the Information and Communication Technical Chamber, the body responsible for assisting the Presidency and the Deliberative Council in its area of competence, a working group is created consisting of experts in order to formulate what would become the Open Access Policy to Knowledge of Fiocruz. Analysis and studies were carried out on national and international initiatives, technical visits, promotion of scientific events with the participation of experts in order to generate data for conceptual and strategic settings - incentives and financing, governance mechanisms, mandatory character, technological infrastructure, human resources and copyright.

Upon completion of the proposal prepared by the Working Group, the Policy was appreciated by other technical councils and managers and professionals in the areas of teaching, research, information and communication, entering public consultation on the intranet for all Institution professionals. This process ensured greater consistency of the proposal, with a greater degree of alignment and representativeness.

In 2013, the Executive Board approves the guiding principles of the policy, with a new Committee appointed to examine questions and contributions raised in the public consultation and other institutional forums.

In March 2014 is published decree with the implementation of policy and launched the Arca Operating Plan - Institutional Repository, which operationalize the policy.

The Policy is structured in eight general principles, 32 articles divided into chapters - Chapter 1. Definitions and objectives, Chapter 2. Instances and governance mechanisms, Chapter 3. Operating guidelines of the Arca Institutional Repository, Chapter 4. Rights and duties of the authors, Chapter 5. From stimulus and funding, Chapter 6. Final provisions.

It is worth mentioning: the mandatory character of the deposit in the Arca - Institutional Repository of dissertations and theses defended in the Fiocruz Postgraduate programs and articles produced within the institution and published in scientific journals; the governance structure, consisting of the Regulation of Open Access Policy

to Knowledge Committee, the Steering Committee and the Open Access to Knowledge Cores (NAAC), created to operate the process at the level of institutional unit, sharing in this way, the RI management with the responsible unit, ICICT, and respect for certain embargo period on contract by the various scientific journals.

In parallel, a new Working Group has been implementing actions and communication strategies for dissemination of open access to culture and encouraging adherence to policy, and follows in progress, the adequacy of internal legal instruments.

Arca – Institutional Repository of Fiocruz

As stipulated in Open Access Policy to Knowledge, the Arca Institutional Repository is the main achievement of open access tool. It is maintained by the Instituto de Comunicação e Informação Científica e Tecnológica em Saúde - ICICT and its functions is to gather, host, provide and give visibility to the intellectual production of the institution, bringing it into a single point of access.

Institutional repositories, which began as a strategy for the exchange of preprints in the nineties of the last century, emerge in response for a wide range of inequalities in access to information, in its various manifestations - whether as a response to the escalation in costs scientific journal subscriptions, as an information service, such as scholarly communication system or even for digital preservation of institutional memory (GUIMARÃES, 2009).

The Arca was developed in DSpace, free software, used by educational and research institutions worldwide, which allows management of scientific literature in any kind of material, by creating a database. DSpace is developed by Massachusetts Instituto of Tecnhnology – MIT in partnership with Hewlett-Packard – HP, and, as a free software, open source, transfers to organizations customization of responsibility and application development to meet specific needs; is in constant development and improvement, with a community of international developers. Uses the OAI-PMH protocol that allows interoperability with other systems and to search through engines like Google.

It is internally organized in communities that represent the scientific technical units of Fiocruz, in sub-communities, representing the postgraduate programs, and collections that bring together documents by type - theses, dissertations, journal articles.

RI currently employs September 2014, with nearly 6,000 digital objects and is powered, receives data in two ways - by importing data and digital objects (full text, theses, dissertations and scientific articles) of other systems used Institution of the various libraries or direct insertion of data and objects in Arca, as in the case of self-deposit by authors.

Created in 2007, officially launched in 2011 as an institutional repository is developed and maintained by the Comunicação e Informação Científica e Tecnológica em Saúde - ICICT. Its population in the period between its launch and the launch of the policy took place irregularly, by the ICICT own initiatives or voluntary participation of some units of the Institution.

As mention earlier, to comply with the mandatory character of Open Access Policy to Knowledge, it was necessary to establish an operating plan, to define responsibilities, flows to operation and maintenance, ensuring alignment in the actions of different units.

Under the responsibility of ICICT, was developed the Operational Plan which mapped all scientific technical of Fiocruz units and their reference libraries, i.e. libraries that support research in these units and are responsible to receive, catalog and make available theses and dissertations on paper - reserve requirements; the management systems used by the same - ALEPH, LILDBI e ISIS - in order to develop and enhance interoperability of the same with the Arca, establishing procedures and routines for export and import records and digital objects, avoiding duplication of effort. For the inclusion of scientific papers were provided, in addition to feeding the Libraries, the self-archiving and capture through services such as IS Experta, which extracts data from the Lattes Platform of CNPQ. Process maps were created for all procedures in order to clarify roles / responsibilities and flows.

After formal presentation, the Operational Plan was submitted to public consultation on the intranet of Fiocruz, to receive comments and suggestions for its improvement and adjustment.

With the approval of the Arca Operative Plan comes into operation the Open Access to Knowledge Policy of Fiocruz and its mandatory character regarding the deposit in the institutional repository of theses, dissertations and scientific articles.

The development of an objective operating plan and available for access and knowledge of the whole community involved is one of the strategies for adherence to policy, in parallel with other actions to encourage, dissemination and communication intra and extramural.

Conclusion

As stated by Guimarães (2009), long before another device or technology infrastructure, institutional repositories are presented with a socio-technical complex, where actors are involved with visions, practices and diverse perspectives, whose relations are involved in local and global micro and macro policies. It is only by using the user's perspective that a technology is absorbed and recognized for its quality and merits.

From this perspective, some actions and challenges are present within the Fiocruz and beyond:

- Promotion and awareness of the scientific community in relation to open access;
- Creation of incentive mechanisms and promotion of open access;
- Copyright, adequacy of notices, covenants, contracts, internal regulations;
- Expansion of the policy scope to other types - REA, research data;
- Institutional articulation;
- Digital preservation;
- Standardization;
- Creation of value services.

By adopting the Open Access Policy to Knowledge, Fiocruz recognizes and respects the copyright, moral or property in respect of the knowledge produced and considers it the obligation of public institutions to ensure access to knowledge which they have produced to the society, and the democratization and universal access to the knowledge essential condition for equitable and sustainable development of nations.

However, it is important to realize and keep in perspective that, on the one hand, there is genuine commitment and effort of research institutions, individual researchers, government agencies, trade organizations for the promotion and implementation of RI, on the other, it remains doubtful of how to accomplish the power of universal access when established practices, cultures and economic interests inherited from centuries still remain at the heart of scientific dynamics. (GUIMARÃES, 2009).

References

Brasil. Fundação Oswaldo Cruz. Portaria 329/2014-PR. Instituir a Política de Acesso Aberto ao Conhecimento, visando garantir à sociedade o acesso gratuito, público e aberto ao conteúdo integral de toda obra intelectual produzida pela Fiocruz. Rio de Janeiro, março de 2014. Available in: <https://portal.fiocruz.br/sites/portal.fiocruz.br/files/documentos/portaria_-_politica_de_acesso_aberto_ao_conhecimento_na_fiocruz.pdf >. Access on: 13 SEP 2014.

CARVALHO, Maria da Conceição Rodrigues de; SILVA, Cícera Henrique da; GUIMARÃES, Maria Cristina Soares. Repositório institucional da saúde: a experiência da Fundação Oswaldo Cruz. Informação & Sociedade: Estudos, João Pessoa, v.22, n.1, p.97-103, jan./abr. 2012. Available in: <http://www.arca.fiocruz.br/handle/icict/4153>. Access on: 17 SEP 2014.

GUIMARÃES, M. C. S.; SILVA, C. H.; NORONHA, I. H. RI é a resposta, mas qual é a pergunta? Primeiras anotações para a implementação de repositório institucional. In: Sayão, Luis et al. (Org.). Implantação e gestão de repositórios institucionais : políticas,

memória, livre acesso e preservação. Salvador : EDUFBA, 2009. p.261-281. Available in: <http://www.arca.fiocruz.br/handle/icict/1342>. Access on: 14 SEP 2014.

SANTOS, Paula Xavier dos (Coord.). A informação como elemento estratégico no processo de inovação científica e tecnológica em saúde: uma análise histórica no âmbito do Instituto Oswaldo Cruz. Rio de Janeiro: Casa de Oswaldo Cruz, Instituto de Comunicação e Informação Científica e Tecnológica em Saúde, 2007. 57 p.

SANTOS, Paula Xavier dos. A experiência da Fiocruz em gestão da informação. In: Seminário Tendências da Gestão da Informação em Instituições de C&T, 2013, Brasília: EMBRAPA.

SANTOS, Paula Xavier dos et AL. Política de acesso aberto: ao conhecimento análise da experiência da Fundação Oswaldo Cruz/Fiocruz. Rev. Eletron. De Comun. Inf. Inov. Saúde, 2014, jun. Available in: <http://www.reciis.icict.fiocruz.br/index.php/reciis/article/view/944>, accessed on: 13/SEP/2014.

Fundação Oswaldo Cruz. Instituto de Comunicação e Informação Científica e Tecnológica em Saúde. Plano operativo: ARCA repositório institucional: versão setembro/2014. Available in: <http://www.arca.fiocruz.br/handle/icict/8070>. Accessed on: 14 SEP 2014.

Portal Fiocruz. Available in: <http://portal.fiocruz.br/pt-br>. Accessed on: 15 SEP 2014.