NCBI Literature Resources

Ed Sequeira[1]

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Introduction

NCBI offers the following electronic services in the realm of literature resources. Figure 1, Overview of NCBI Literature Resources, depicts how they relate to one another.

The **NLM Catalog** database contains bibliographic records for journals, books, and other monographs and audiovisual materials. Many, but not all, of these items are in NLM's collection of traditional (print, film, etc.) and digital information resources. Note that the catalog contains just one record for a journal or a book, not individual records for every journal article or book chapter.

PubMed is a database of literature citations, primarily for articles from journals in the life sciences, but also for books and technical reports that are included in the NCBI Bookshelf. A large majority of the journal article records are curated by NLM subject experts who add appropriate MeSH terms (described below) to the PubMed records for better indexing and retrieval. This curated subset is also known as Medline. PubMed records provide links to full text in PMC and the Bookshelf as well as to thousands of external journal sites. PubMed records also have links to related data in dozens of biological databases offered by NCBI.

PubMed Central (PMC) is a repository of journal articles and a digital extension of NLM's permanent print collection. Everything in PMC is free to read, much of it from the time of publication, the rest after a delay that generally is 12 months or less. Almost all the articles in PMC have a corresponding citation in PubMed. The exceptions are a few types of material, such as book reviews, that PubMed does not cover.

Bookshelf is a companion to PMC for books (reference texts in the life sciences) and technical reports (clinical practice guidelines, health technology assessment reports, public health policy reports and similar material). User guides and technical documentation for NCBI's online services, such as the current document, the NCBI Handbook, are also part of the Bookshelf.

Functionally, all the material in the Bookshelf is part of the **LitArch** repository. LitArch also includes some document collections that are not accessible from the Bookshelf but are available through other NCBI services such as PubMed Health.

This section also discusses some complementary resources:

MeSH is the Medical Subject Headings thesaurus. It is a controlled set of terms, organized in a subject hierarchy, that is used by NLM staff to categorize (index) the subject matter of journal articles and other material that NLM manages.

Author Affiliation: 1 NCBI.

The **PubMed DTD** is a simple XML Document Type Definition (DTD) that publishers and other content providers use to provide NLM with journal article citations and abstracts for inclusion in PubMed. The PubMed DTD essentially is a DTD for article metadata, whereas the DTDs derived from JATS support the full-text of articles and other material that is deposited in PMC.

JATS is the Journal Article Tag Suite (JATS), officially identified as ANSI/NISO standard Z39.96-2012. JATS is a library of XML element and structure definitions from which one can create schemas for journal articles. It has its origins in a DTD developed at NCBI in 2001 to provide a common archival format for all content taken into PMC. Over the next few years, that DTD evolved into a tag suite and three journal article DTDs intended to be used variously for original content markup and as a standard, universal interchange format for exchanging data between parties who each use their own article modes, e.g., two publishers who have their own specific DTDs can convert to and from NLM DTD to exchange their content. As their use spread within the scientific publishing community, these DTDs came to be known as the NLM DTDs.

NIHMS is the NIH Manuscript Submission system. The NIH Public Access Policy (http://publicaccess.nih.gov/) requires all researchers who are supported by NIH to deposit in PMC the accepted manuscript of any peer-reviewed journal article that arises from their NIH-funded work. Some journals deposit the final published versions of such articles directly in PMC on behalf of their authors. In the remaining cases, the manuscript must be deposited in the NIHMS, where it is converted to a standard XML format before being transferred to PMC.
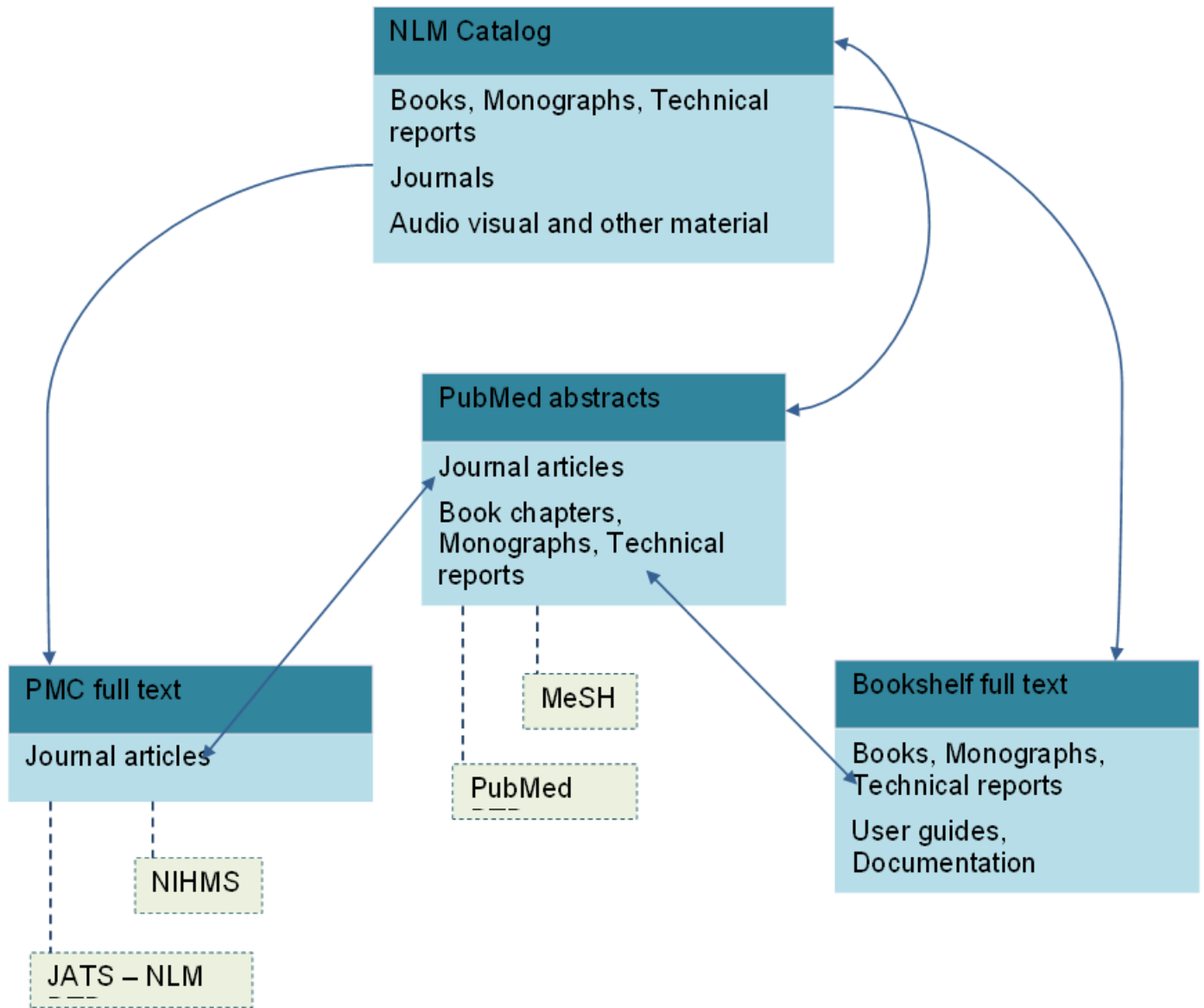
Figure 1. Overview of NCBI Literature Resources