Letters to the Editor JAMIA

A Standard Metadata Scheme for Health Resources

To the Editor:—In their article in *JAMIA*, Malet et al.[1] developed a medical core metadata (MCM) model to enhance Internet health document retrieval. The MCM uses the Dublin Core (DC) metadata standard, as do 44 others in various fields (http://purl.org/DC/projects/subject.htm#medicine) and another in medicine, CISMeF[2] (http://www.chu-rouen.fr/cismef/). In addition, MCM and CISMeF use the MeSH thesaurus.

The MCM (see Table 2 of the article by Malet et al.) and CISMeF (Table 1, here) resource-type controlled lists include some MEDLINE publication types and some new resource types specific to the Internet. Resource type describes the nature of the resource, and MeSH describes the subject of the resource. For example, in the case of a clinical guideline about carbon monoxide intoxication, ''carbon monoxide poisoning'' is the MeSH keyword and ''clinical guidelines'' is the resource type. The MCM resource-type list has omitted some major resource types, such as clinical guidelines, consensus development conferences, periodicals, societies, libraries, foundations, institutions, hospitals, and universities. In contrast, the CISMeF resource-type list includes the previous resource (*N* =

Table 1 ■

CISMeF Controlled List of Resource Types

- Advertisements (PT)
- Architectural drawings (PT)
- Commercial company
- Community networks
- Database (PT)
  - Database, bibliographic
- Directory
  - Annual directory
  - Catalogs (PT)
  - Registry
  - Resource guides (PT)
- Education
  - Teaching material
    - Educational courses
    - Instruction (PT)
    - Problems and exercises (PT)
    - Tutorial
  - Teaching structure
    - School
    - University
  - Training
- Establishment, institution, organization
- Foundation
- Hospital
  - Hospital department
- Image database
- Library
- Museum
- Newsgroup and discussion list
- Patient information
- Periodicals (PT)
- Publisher
- Research structure
- Scientific society
- Search tools
- Society
- Software
- Text
  - Bibliography (PT)
  - Congresses (PT)
  - Consensus development conference (PT)
  - Dictionary (PT)
  - Dissertation, memoir
  - Educational courses
  - Encylopedias (PT)
  - Guide
  - Guidelines
    - Practice guidelines
  - Journal article (PT)
  - Legislation (PT)
  - Medical thesis
  - Monograph (PT)
  - Problems and exercises (PT)
  - Technical report (PT)
- Trade association, trade society

NOTE: PT indicates MEDLINE publication type.

54) and contains a hierarchic structure to permit the explode command.

The CISMeF medical librarian (B.T.) is a member of the DC Type Working Group (http://purl.org/DC/groups/type.htm). At the Library of Congress Web site (http://www.loc.gov/marc/dc/typequalif.html), Rebecca Guenther, from the Library and chair of this working group, has collected the DC projects using their own lists of values for types.

In conclusion, we agree with Malet et al. that the development of a standard metadata scheme for health resources is a major issue. International cooperation under the IMIA umbrella could maximize the success of this project.—STEFAN J. DARMONI, MD, PHD, BENOIT THIRION

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Affiliation of authors: Rouen University Hospital, Rouen, France.

Correspondence and reprints: Stefan J. Darmoni, MD, PhD, Computing Department, Rouen University Hospital, 1 rue de Germont, F76031 Rouen, France;
e-mail: ⟨stefan.darmoni@chu-rouen.fr⟩.

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Informatics at NIH

To the Editor:—We read with great interest the recent article in *JAMIA* by Hendee, in which he called for the creation of a new NIH institute or center to support biomedical engineering, imaging, and informatics.[1] We agree with much of his analysis but wish to offer some additional observations and alternative suggestions for how the informatics community might address the concerns that he has raised.

The three cited disciplines clearly do ''form the infrastructure on which many of the advances in medical science are built,'' and we agree that they ''must be nurtured and supported so that they will continue to function as the foundation for the knowledge revolutions of the 21st century.'' We question, however, Hendee's claim that ''there is no home at the NIH for the basic research that is essential to growth of the intellectual capital of these disciplines'' and his characterization of the NIH as composed wholly of disease- or organ-specific research agencies. If one reviews the history of research in bioengineering, imaging, and informatics at the NIH, one will find that two entities have funded a large portion of both the basic and applied work in these fields, neither of which is disease- or organ-specific—the National Center for Research Resources (NRCC, formerly the Division of Research Resources or DRR) and the National Library of Medicine (NLM). Hendee refers to the NLM a few times in the article but fails to capitalize on what we believe is an obvious suggestion: *the NLM is the natural home for an expanded intra- and extramural research program in bioengineering, imaging, and informatics*. It would be much easier to expand the charge and funding for an existing agency than to create a new one. Furthermore, any new institute or center would, by Hendee's proposal, wrest from the NLM a body of research activities (informatics) that it has long nurtured and promoted, both internally and through its grants program. Furthermore, as Hendee notes, bioengineering, imaging, and informatics are today ''experiencing a remarkable convergence spurred by several factors,'' which makes even more logical the addition of bioengineering and imaging to the NLM's portfolio of activities. Active coordination or merger with some of the activities of the NCRR might also be appropriate in any such expansion of the NLM and its roles.

We also question Hendee's assertion that correction of the current ''utilitarian'' multi-institute support for bioengineering, imaging, and informatics would ensure that resources ''would be invested to support the basic science, engineering, and mathematics essential'' to the growth and productivity of the three disciplines. It is unfortunately the case that computing, communications, and engineering have suffered from inadequate basic-research support in recent years, not only at NIH but also across all federal research agen-

cies. This was a major finding of the recent report of the Presidential Information Technology Advisory Committee,[2] which led to their recommendations for enhanced support for basic research in information technology across all research-related agencies, including NIH. As was noted in the report, one key to accomplishing this at NIH is to push for recognition that ''biomedically motivated basic research in information technology should be . . . viewed both as important information technology research *and* as fundamental biomedical research.'' Until the culture of biomedical research in general, and of the NIH in particular, appreciates the fundamental issues that must be addressed by researchers in bioengineering, imaging, and informatics, we will continue to see the disciplines viewed as what Hendee calls ''utilities whose purpose is to produce tools and techniques useful to the research missions of the individual NIH institutes.'' Thus, any consolidation of research support for these fields in a reconfigured and expanded NLM will also require both an explicit NLM (and budgetary) commitment to basic research in the fields *and* a concerted effort to inform leaders and scientists at the other institutes about the fundamental roles that bioengineering, imaging, and informatics play in the evolution of all biomedical science.

It is ironic that these proposals for the NIH are being discussed in the United States at precisely the time that a new set of biomedical research entities, the Canadian Institutes of Health Research (CIHR), is being created in Canada. In reviewing the plans for the CIHR (see the CIHR Web site at http://www.cihr.org/), we have been concerned to note that the proposal calls for the creation of multiple institutes that are organ- or disease-oriented, similar to those at the NIH, but without any evident consideration of the need for an entity to support research in bioengineering, imaging, and informatics. We find this troubling, since we are entering an era in which many of the most important breakthroughs are likely to occur at the intersections among traditional disciplines. Since the CIHR is new, it has a wonderful opportunity to create internal entities that will reflect such interdisciplinary opportunities and needs.

A proposed CIHR institute that would appear to have an interdisciplinary focus is their Institute of Health Services, Clinical Evaluation and Technology Assessment. This would appear to be similar in motivation to the Agency for Health Care Policy and Research (AHCPR) in the United States, but the title suffers from not even recognizing its research focus explicitly. Altogether missing from the description of this proposed institute are additional, key, cross-cutting areas such as health-sciences educational research (including cognition as it relates to learning and decision making), bioengineering, imaging, and informatics. Thus, the Canadian proposal does not call for the creation of an organization with a charge similar to the intra- and extra-mural research program of the NLM, limited though the latter may be in light of our discussion above.

In a letter to the Medical Research Council of Canada, one of us (V.L.P.) has accordingly urged that the CIHR consider creating an institute that would include the mandate of the NLM (but of course without the need to recreate the international library functions of the NLM). Such a new agency could still capture the notions of clinical evaluation and technology assessment but would appropriately broaden its charge to include informatics, bioengineering, and imaging while emphasizing the research, educational, cultural, and social issues that underlie the institute's goals and activities.

Thus, the issues addressed in Hendee's article are topical and pertinent for the informatics communities in both the United States and Canada. We suspect that there are analogous issues arising in government research agencies in other countries as well. We accordingly urge a lively dialogue and effective educational and political efforts both in North America and more broadly in the international community.—EDWARD H. SHORTLIFFE, MD, PHD, VIMLA L. PATEL, PHD, DSC

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Affiliations of the authors: Stanford University School of Medicine, Stanford, California (EHS); McGill University School of Medicine, Montreal, Quebec, Canada (VLP).

Correspondence and reprints: Edward H. Shortliffe, MD, PhD, Professor of Medicine and of Computer Science, Stanford University School of Medicine, Medical School Office Building X-201, 251 Campus Drive, Stanford, CA 94305-5479;
e-mail: ⟨ted.shortliffe@stanford.edu⟩.

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