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Apr 6th, 12:00 AM

Library support for clinical and translational research: research data management and data science

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Repository Citation

Nyhan, K., Funaro, M., & Hersey, D. (2017). Library support for clinical and translational research: research data management and data science. *University of Massachusetts and New England Area Librarian e-Science Symposium*. <https://doi.org/10.13028/p9wy-tt63>. Retrieved from https://escholarship.umassmed.edu/escience_symposium/2017/posters/2

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Library support for clinical and translational research

Research data management and data science

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RESEARCHERS SUPPORTED BY CLINICAL AND TRANSLATIONAL SCIENCE AWARDS AND LIBRARIANS

CTSA-funded research involves complex, multi-tiered projects implemented by staff with diverse tasks and skill sets. No one person can be expected to manage every step involved, and so librarians are natural partners. By providing targeted services and training, librarians can help CTSA staff do research better and faster.

To marry the needs of CTSA staff and the strengths of librarians involves wide-ranging conversations to identify strategic synergies between existing library services and pain points in CTSA projects. This partnership benefits immediate projects as well as the larger goal of translating new findings into practice.

NEXT STEPS FOR CUSHING/WHITNEY MEDICAL LIBRARY AND YALE CENTER FOR CLINICAL INVESTIGATION

- Present at a Lunch and Learn session hosted by Yale's CTSA-funded translational science institute, YCCI
- Schedule follow-up training sessions based on researcher requests
- Conduct outreach
- Present a research data management training session
- Educate Yale librarians about CTSA-specific needs and how they can use their existing skillsets with this audience
- Create an online presence for the library's CTSA program
- Continue to assess researchers' needs and our program's impact

RESEARCH PAIN POINTS AND LIBRARY RESOURCES

Data support	Common pain points	Relevant resources
LITERATURE SEARCHING AND RESEARCH QUALITY		
<p>When researchers need assistance during on-boarding or when taking on a new role, we can point them to a number of resources, such as textbooks outlining methods or ethics of clinical research. Library staff can also create an online guide to relevant resources.</p>	Prove viability of study and look for similar studies	Mediated searches and search training of relevant resources
	New researchers sometimes need guidance and training	Textbooks, manuals, handbooks, appropriate LibGuides
PREPARING A PROTOCOL		
<p>When researchers need assistance preparing a protocol and articulating which data elements (variables and outcome measures) to use, we can offer our expertise in metadata schemas and retrieval of grey and published literature discussing them. NIH encourages researchers to use common data elements (CDEs), and some institutes and centers even encourage investigators to use a specified CDE, which librarians can identify.</p>	Deciding which variables to use	Literature searching, NIH Common Data Elements
	Finding appropriate instruments	Literature searching in resources such as Health and Psychosocial Instruments
	Finding information about the reliability and validity of instruments	Literature searching in resources such as Health and Psychosocial Instruments
	Investigating cost and benefits of different data collection instruments and devices	Literature searching in resources such as Embase
DEVELOPING THE STUDY POPULATION		
<p>When researchers need assistance recruiting a diverse population of participants for their study, we can offer our expertise in finding and manipulating census data through GIS or online mapping platforms. With these tools, researchers can identify research sites whose catchment areas include members of under-represented groups. This strategy can help researchers include participants from different racial or ethnic groups, of different ages or socioeconomic status, or with different environmental exposures.</p>	Recruiting study participants	Literature searching on behavioral psychology and training recruiters
	Articulating inclusion and exclusion criteria	Literature searching, including grey literature from ClinicalTrials.gov
	Identifying instruments to assess study participants' capacity to consent	Literature searching, including point of care resources
	Recruiting study participants from under-represented populations	Census data and analytical tools, including online mapping platforms and geographic information systems
	Retaining study participants	Training research staff to find high-quality consumer health information
ONGOING STUDY		
<p>When researchers need assistance using neighborhood-level information from the American Community Survey or other Census products, we can offer our expertise in geocoding addresses and cross-referencing census data about socioeconomic status. Of course, a thorough literature search is also important to understand the advantages and disadvantages of using neighborhood-level aggregate information in connection with individual research participants.</p>	Associating neighborhood-level data such as socio-economic status or environmental exposures with individual study participants	Geographic information systems
	Measuring distance or time to treatment	Geographic information systems
<p>When researchers need assistance using spatial statistics, we can offer our expertise in geographic information systems. Distance or travel time to health care facilities is an area where GIS can be crucial for analysis of individual patient outcomes.</p>	Predicting expected incidence of adverse events	Literature searching, including Patient Volume Data
	COMPLIANCE	
<p>When researchers need assistance with research data management—in terms of practical day-to-day documentation and conventions, data management plans, or data sharing requirements from funders or journals—we can provide information and training about research data management best practices. Thanks to the Research Data Consultation Group (presented at last year's e-science conference), librarians are also well-positioned to make successful referrals to other providers of research data services on campus.</p>	Preparing for renewal of IRB approval by identifying the latest relevant literature	Literature searching, including auto-alerts
	Preparing literature searches for protocol submission to the Institutional Animal Care and Use Committee	Mediated searches, workshops, and LibGuide on IACUC searching and search documentation
SCHOLARLY COMMUNICATION		
<p>When researchers are considering registering (or ideally, preregistering) a trial, we can use our expertise in scholarly communication to help them understand the registration requirements of the International Committee of Medical Journal Editors, as well as the importance of pre-registration in evidence-based medicine.</p>	Publishing	Advice on scholarly communication, from predatory publishing to open access article processing charges, from ORCID to research impact, and NIH public access compliance
	Complying with the data sharing requirements of funders and journals	Advice about repositories outside Yale and referrals to the Yale Research Data Consultation Group
	Complying with pre-registration requirements	Advice on pre-registration

GETTING STARTED AT YOUR INSTITUTION

Identify individuals to approach with questions and offers of support—perhaps starting at the website of your institution's CTSA-funded translational science institute. You can also use databases like NIH RePORTER and FEDRIP to identify grants and individuals whose experiences will help you understand the skills and needs of local CTSA researchers. Approach them with an open mind and learn about their workflow, frustrations, and needs. Use these conversations to develop relationships; “close the loop” by returning to these stakeholders for continuous feedback as you develop your program.

Conduct a literature review to determine how other libraries have worked with CTSA researchers at their institutions.

Share information with colleagues; they may already be supporting some CTSA researchers as part of existing services. Consider the skills that librarians at your institution already possess that might help CTSA researchers solve problems.

CITATIONS

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ACKNOWLEDGMENTS

Rosa McElheny, Yale University
Mary Geda, Yale University, Program on Aging
Sally Gore, UMass Medical School
Cushing/Whitney Medical Librarians, Yale University