

Guide to Planning, Evaluating, and Improving Health Information Outreach

**National Network of Libraries of Medicine,
Pacific Northwest Region (NNLM, PNR)**

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The National Library of Medicine (NLM) maintains an enduring interest in and places great value on evaluation as a tool to enable important management decisions and to assess the quality and impact of its programs and services. Some noteworthy examples:

- In the early 1980's, NLM closed the card catalog, and management was faced with the decision to install one of two very early online systems. A comparative evaluation was undertaken in the reading room as a controlled field experiment; one system was found preferable and it provided exceptional service to our users and staff for many years.¹
- In the late 1980's, NLM helped usher in the era of CD-ROM technology with nationwide field tests in library and clinical settings. Countless new end-users had their first introduction to easy Medline searching.²
- At about the same time, NLM adapted a novel methodology, the Critical Incident Technique, once used to evaluate the performance of World War II bomber pilots. In the present instance, the intent was to document and assess the impact of using Medline-derived information on professional activities, especially on clinical decisions and patient outcomes.

We found that Medline does, indeed, make a difference.³ NLM has sponsored the development of evaluation frameworks for telemedicine and for health information privacy,⁴ and has asked its contractors to apply these frameworks where appropriate.⁵ During this past decade, outreach to underserved populations, including those in minority or rural communities, became one of NLM's highest priorities. Yet, effectively evaluating outreach has also been one of our toughest challenges. A five-year review carried out in the mid-1990s of literally hundreds of outreach projects had among its recommendations that "NLM and the Regional Medical Libraries (RMLs) should work together to develop further expertise in evaluation methodology... [and that]... evaluation components should be an integral part of all NLM-sponsored outreach."⁶

With this objective in mind, NLM and the Pacific Northwest Regional Medical Library, along with a stellar group of advisors, undertook to develop an evaluation guide for the health sciences library community. The underlying theme is that planning and evaluating an outreach initiative is one and the same process, and that asking the right questions at the beginning is essential for getting useful results at the end. Moreover, the guide would be practical in purpose, theory-based, and offer a range of methodological possibilities and strategies that can be adapted to the most simple or complex of outreach projects. Not an easy task.

To what extent we have succeeded remains to be evaluated. We prefer to think of this edition of the guide as a beta-test version, to be tried in the field by the RMLs and other librarians and health information providers. We very much need and welcome your feedback.

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References

1. Siegel, E.R., Kameen, K., Sinn, S.K., and Weise, F.O.: A comparative evaluation of the technical performance and user acceptance of two prototype online catalog systems. Information Technology and Libraries. March 1984, 3(1), 35-46.
2. Rapp, B.A., Siegel, E.R., Woodsmall, R.M. and Lyon-Hartmann, B.: Evaluating Medline on CD-ROM: An overview of field tests in library and clinical settings. Online Review, June 1990, 14(3), 172-186.
3. Lindberg, D.A.B., Siegel, E.R., Rapp, B.A., Wallingford, K.T., and Wilson, S.R.: Use of Medline by physicians for clinical problem solving. Journal of the American Medical Association, June 23/30 1993, 269(4), 3124-3129.
4. Marilyn J. Field, Editor, and Committee on Evaluating Clinical Applications of Telemedicine, Institute of Medicine, Telemedicine: A Guide to Assessing Telecommunications in Health Care (Washington, DC: National Academy Press, 1996); Committee on Maintaining Privacy and Security in Health Care Applications of the National Information Infrastructure, Computer Science and Telecommunications Board, National Research Council, For the Record: Protecting Health Information (Washington, DC: National Academy Press, 1997).
5. See NLM National Telemedicine Initiative, <http://www.nlm.nih.gov/research/teledinit.html>.
6. Wallingford, K.T., Ruffin, A.B., Ginter, K., Spann, M.L., Johnson, F.E., Dutcher, G.A., Mehnert, R., Nash, D.L., Bridgers, J.W., Lyon, B.J., Roderer, N.K., and Siegel, E.R.: Outreach activities of the National Library of Medicine: A five-year review. Bulletin of the Medical Library Association, April 1996 (Supplement), 84(2), 1-60.

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