BRIEF COMMUNICATIONS

Characteristics of reference transactions—challenges to librarians' roles*

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INTRODUCTION

As more and more resources are made available on the Internet, especially on the Web, are libraries still needed? Will the Web replace books and printed journals? How should librarians position themselves for the digital future? With these questions in mind, two librarians from two different academic medical libraries undertook a preliminary reference transaction study to determine the relative percentage of time traditional print sources and digital information were employed to answer user-initiated queries during a six month time frame in 1996.

A review of the literature revealed that a number of articles have been published on reference service analysis, but none attempted to analyze the extent to which electronic sources were used relative to print sources. Most studies were conducted to evaluate reference services [1–3], to measure user satisfaction [4], or to identify types of users [5], and most of them were done in the non-health sciences libraries. One study conducted by Sullivan, Schoppmann, and Redman [6] analyzed the user groups, question types, question type-user group correspondence, and hour-to-hour variance in a health science library.

METHODOLOGY

Two reference librarians, one from the University of South Alabama Biomedical Library and the other from

the Wayne State University Shiffman Medical Library, recorded reference transactions while they staffed the reference desks at their respective institutions from May 1, 1996, to October 31, 1996. The data were collected using a survey form that recorded type of service and sources used for reference help. All reference transactions by the two librarians, excluding questions related to library hours and facility directions, were marked on the survey form. Two types of data about the reference desk service categories were collected for this study: (1) types of tools or sources used to provide answers to reference queries; (2) instruction provided on different types of applications from the reference desk.
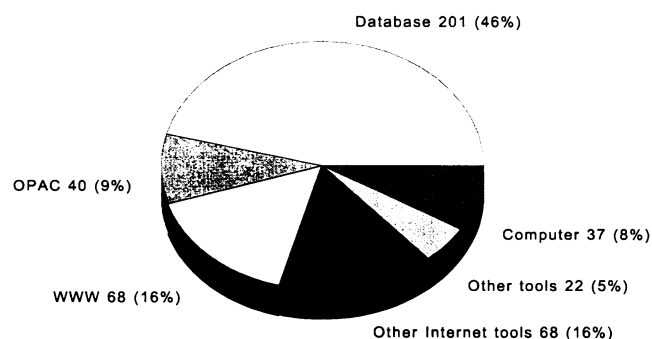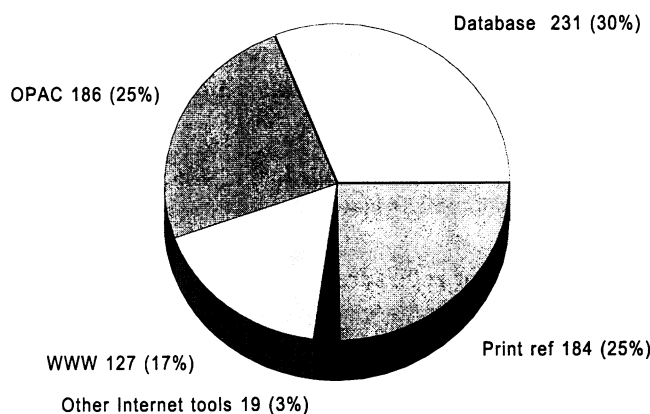
Tools or sources used for reference queries were further divided into five subcategories (Appendix): print reference, including reference books, and other print indexes used to answer queries; electronic database access, including searching bibliographic or full text databases to find answers for users or to verify citations; online public access catalog (OPAC), including using the online library catalog to find books or other material on a topic, or to determine library holdings and location; Web, including use of the Web and Web search engines to find information; and other Internet applications, including file transfer protocol (FTP), telnet, electronic mail, news groups, or discussion groups. Use of electronic databases, regardless of platform, was counted as database usage. The Web was separated from other Internet applications due to the increasing preference for the Web over other Internet applications.

Instruction was also further divided into six subcategories according to the type of instruction given to users (Appendix): database instruction, including electronic database access and protocols on different platforms; OPAC instruction, Web instruction, including Internet connection, browser use, identification of key resources in health sciences, search engine and Web indexes, and managing bookmarks; instruction on other Internet applications, including electronic mail, telnet, and FTP; instruction on computer programs, including operating systems and applications like DOS and Windows, word processing and various computer software and programs; and other instructions, including how to use printed indexes and other library materials.

RESULTS

A total of 1,183 transactions were recorded by the two librarians during the six month period, including 747 reference queries (63.1%) and 436 instructional transactions (36.9%). Types of reference transactions and

Database 231 (30%)

OPAC 186 (25%)

WWW 127 (17%)

Other Internet tools 19 (3%)

Print ref 184 (25%)

Database 201 (46%)

OPAC 40 (9%)

Computer 37 (8%)

Other tools 22 (5%)

WWW 68 (16%)

Other Internet tools 68 (16%)

the sources used to complete these transactions are shown in Figure 1.

Types of instructional transactions at the references desks are shown in Figure 2. The results are aggregated but the proportions of each type of service varied little between the two libraries. Bibliographic databases were used most often (30%) to provide answers to reference queries, followed by printed references (25%), and the OPAC (25%). As a form of instructional assistance, database searching assistance was given most often (46%). Instruction for the Web and other Internet tools (32%) was the second largest group of instructional transactions.

DISCUSSION

Not surprisingly, bibliographic database searching was used most often (30%) to answer reference queries as database searching would often be the best way to find recent publications to support patient care, research, and class assignments. When database searches are combined with other electronic resources such as the OPAC, Web, and other Internet sources, the total represents 75% of all sources used to answer reference queries during the six month period of the study. Even more revealing were the requests for electronic access including database searching (46%), the Web (16%), other Internet tools (16%), OPAC (9%), and other computer applications (8%). While survey results reported for instruction on the Web and other Internet tools were the same (16%) in 1996, it is predicted that less instruction on non-Web Internet applications (e.g., FTP, telnet) will be needed in the future as the Web has supplanted most other Internet applications.

CONCLUSION

Tenopir and Neufang suggested in 1992 that librarians "need to be hardware and software savvy to meet patrons' expectations and to keep the electronic resources running" as well as to provide assistance and instruction in various computer programs [7]. The need to be hardware and software savvy was certainly the case in the six month study of reference transactions from two academic medical centers in 1996. While a larger sample size would be needed to generalize conclusions, this preliminary study confirmed that an extensive skill set was required by librarians to handle user reference questions and instruction effectively and that this skill set needs to be largely composed of knowledge of electronic resources and methods of access to these resources. In particular, librarians in the electronic age require in-depth knowledge and skills in both print and electronic sources and information technology, skills to search different databases efficiently, and knowledge of the Internet and its resources, especially the Web.

Addressing the need for medical librarians to keep abreast of advances in technology, the Medical Library Association Platform for Change recommended in 1991 that librarians "Must assume personal responsibility for aggressively seeking lifelong education and professional development opportunities from a variety of sources" and "must design and implement a plan for continuing professional development" [8]. Based on the preliminary results of this study medical librarians who are prepared for and take active roles in the changing digital environment will most likely flourish in the new era rather than vanish.

ACKNOWLEDGMENTS

comments on the manuscript and her editorial assistance, and Judy Burnham of University of South Alabama Biomedical Library for her support of the study.

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APPENDIX

Survey form for reference transactions

Tools or sources used for reference query:	Types of instruction provided:
■ Print reference	■ Database
■ Database	■ OPAC
■ OPAC	■ Web
■ Web	■ Other Internet application
■ Other Internet application	■ Computer application
	■ Other tool