Retention of retrospective print journals in the digital age: trends and analysis

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Purpose: The issue of retaining retrospective print journals is examined in light of the shift to electronic titles, the reallocation of library budgets from print to electronic, and the changing research practices of today's library users. This article also examines the evolving role of the physical library and its impact on space allocation.

Methods: To determine current practice and opinion, a survey of health sciences librarians and academic librarians was conducted. To demonstrate the use patterns of older journal issues, citation analyses and interlibrary loan statistics were examined.

Results: All methods indicate that recent material is accessed more frequently than older material, with a significant drop in use of materials greater than 15 years old. Materials greater than 20 years old constituted less than 5% of interlibrary loans and less than 9% of articles noted in the citation analysis.

Conclusions: It is possible to eliminate older years of a print journal collection without a large impact on the needs of researchers. Librarians' preference to maintain full runs of journal titles may be motivated by reasons outside of actual usage or patrons needs.

INTRODUCTION

Today's health sciences libraries support fast-paced, information-on-demand research. Clinical and academic communities expect information resources to be available on their desks or laptops, in their labs, offices, and practice sites. These users rely on libraries to obtain the latest information and in electronic format. Libraries themselves have undergone many changes with regard to the issue of physical, finite space. In addition to dealing with growing print collections and the ever-present need for research and study space, many academic libraries now house large numbers of public-access computers, computer labs and classrooms, training rooms, media or instructional resource centers, and even food courts or cafes. In the present economy, few libraries have the luxury of building significant additions.

For the authors, lack of growth space for collections and the need to provide new additional multiuse environments were the motivations to reassess the area that consumed the largest square footage in the library: the print journal collections. Ultimately, the Health Sciences Library at the Massachusetts College of Pharmacy and Health Sciences (MCPHS) eliminated an entire floor previously dedicated to housing print journal holdings, weeding or donating more than 50% of the volumes and retaining items from 1982 to the present only.

While a wealth of literature exists describing how libraries have made decisions on eliminating journal titles from their collection, very little is written on how to make such decisions regarding the retention of old-

Highlights

- Use of current information, material less than fifteen years old, dominates the majority of health sciences publications as demonstrated by national interlibrary loan (ILL) data and citation analyses used in this study.
- The majority of ILL requests and references cited in this study involved materials less than fifteen years old.
- Information users are demonstrating a preference for easy access to electronic information over use of the library's print collections.

Implications for practice

- Retention of retrospective journals of greater than fifteen years of age may not be necessary in most health sciences libraries.
- Space allocated for retrospective collections may be better utilized to meet other needs of the library and institution.

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er serials. Much theoretical discussion has been published in the field of information science regarding the ''obsolescence'' of published material or the length of time material remains useful after publication. In Line's classic article on journal obsolescence, he discusses the continuing limitations of techniques to evaluate obsolescence and the difficulties of applying such complex models to real life situations [1, 2]. Rothenberg [3] also points out the complexity of the problem, noting that print publications represent three dimensions: artifacts, information, and historical records. When deciding whether a publication has become obsolete, consideration should be given to the discipline, potential users and uses, and the type of library holding the item. Most librarians, while they may be fully aware of potential uses of their collections, are forced to make decisions based on a limited subset of these factors.

Libraries that prolong the decision to reduce journal back runs by transferring volumes to remote storage have their own set of problems, in addition to the continuing expense of housing and retrieving the material. For example, Hill and Hayes [4] report a dramatic decrease in usage after relocating 50,000 volumes into a storage facility.

It is a common belief that medical researchers rely primarily on current information. In an examination of in-house use of information and citation age distributions by title using the *ISI Journal Citation Reports (JCR),* peak in-house usage occurred during the first year after publication and overall citation frequency peaked in the 3rd year after publication [5]. The author discovered that journals less than 10 years old received more than 80% of total usage and contributed to more than 70% of the total cited references. Consequently, medical libraries should find little use for their retrospective collections.

The idea of the library as a place is also shifting. Greenstein notes, ''The real change is a cultural one, and it's deep . . . users are telling us it's all about access, and libraries are all about ownership, and this is a problem. [Users] are telling us that the place doesn't matter'' [6]. Other surveys have found that ''Faculty spend only 10% of their work time in the library; 85% of the time, they worked in their office or at home. Thirty-five percent of students use the library 'significantly less' than they did 2 years ago; that figure was higher, at 43% for faculty members'' [6].

Additionally, the perception among librarians is that the use of print journals is decreasing as patrons desire remote electronic access. The literature supports this perception: Research conducted at the University of Michigan found that 75% of the faculty in the social sciences preferred electronic access and only 6% favored print [7]. Similarly, an article in the *Chronicle of Higher Education* reported that almost 90% of researchers go online first before consulting print sources. Seventy-five percent of students accessed the Internet first and used print sources last [6].

Health sciences librarians have acknowledged that users are coming to the library less often and instead are opting, and greatly preferring, to obtain information electronically. Statistics compiled for the Association of Academic Health Sciences Libraries (AAHSL) indicate a consistent decline in both gate counts and circulation while the number of electronic titles continues to grow almost exponentially [8].

While the literature documents users' preference for online information over print and reduced use of the physical library, it also documents changing use patterns of print journal collections when electronic journals are introduced. Peterson et al. [9] found medical students greatly preferred using electronic information resources over the more traditional print sources. DeGroote and Dorsch [10] found a significant decrease in the use of print journals in a health sciences library after the introduction of online journals; the decrease also occurred in print-only journals and ILL requests. In contrast, the number of national DOCLINE requests has remained fairly constant over the last few years. Obst [11] reported reduction in the use of print journals in a two-year study of an academic medical sciences library in Germany that found that, while use of all print titles declined since the introduction of online journals, print/online titles lost 30.4% of usage while print-only titles fared worse, losing 45.8% of usage.

These compelling data and statistics raise the questions: Are the library's print collections becoming secondary as users increasingly become more comfortable with and desirous of remote access to the literature? What are the roles and reasons for maintaining the traditional library's retrospective print journal collections during this electronic information revolution? As Greenstein suggests, should libraries be moving more toward ''access'' models of information delivery instead of traditional ''ownership?'' This article, illuminated by ILL and citation analysis data and responses to a survey about issues of retention, provides an overview of the many factors surrounding print retention. The retention issue will become more important as libraries transition away from print, retrospective journal collections toward the library of the future: a virtual, electronic environment that dynamically integrates teaching, learning, and research.

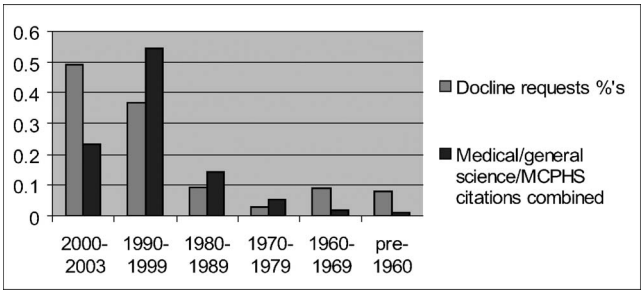
METHODS

Investigation of current practice

The authors compiled and examined two readily available data sets: ILL statistics and a citation analysis of selected articles from major medical and scientific journal titles to investigate current practice regarding the need for maintaining a retrospective journal collection in the growing digital library environment.

Interlibrary loan. Statistics were compiled from DOCLINE, the National Library of Medicine's (NLM's) automated ILL system, for the period covering 2002 to 2003. The statistics formed the basis of the analysis and represented national trends. About three million requests were filled during this period and were included in these statistics.

Figure 1
DOCLINE statistics and citation analysis (medical/general science/ Massachusetts College of Pharmacy and Health Sciences combined)



Citation analysis. The citation analysis examines high-impact factor journals based on the annual *JCR* [12], published by ISI. Using the 2002 *JCR*, 2 groups were chosen: the top 10 medical titles and the top 10 general science titles. To provide a preliminary examination of medical and science journals that were not among the top 10 high-impact factor titles, an additional list of journals was selected from the publications by the faculty at the MCPHS, which covered a broad range of journals in the health sciences as well as pharmacology and chemistry. The college compiles a list of all faculty publications, from which random articles were selected for this analysis. In all, 56 articles were randomly selected from these 3 lists from 2000 to 2003. In total, 1,920 references were cited in the 56 selected articles. A list of journal titles from each group is included online in Appendix A.

Investigation of current opinion: user survey

The authors developed a Web-based survey to explore how other libraries and librarians were handling the effects of digital access and impact on the use and retention of print journals. To reach the academic health sciences community, the survey was sent to the AAHSL mailing list. Hospital librarians were also surveyed by contacting the MEDLIB-L mailing list. To receive expanded input beyond the medical library community, surveys were sent to the mailing lists of three Association of Colleges and Research Libraries (ACRL) sections: (1) College Libraries Section, (2) University Libraries Section, and (3) Science and Technology Section. The 2 health sciences mailing lists had approximately 2,400 subscribers. Three thousand and one hundred members subscribed to the ACRL mailing lists. A copy of the survey is included online in Appendix B.

RESULTS

Current practice

Interlibrary loan statistics. According to the following data from NLM, 98% of all requests in 2003 were for material published from 1970 to the present. Over 95% were from 1980 onwards (Table 1).

Table 1
DOCLINE interlibrary loan borrowing national statistics, October 2002 to September 2003

Publication date	Number of requests	Percentage
2000–2003	1,410,167	49.0
1990–1999	1,060,793	36.9
1980–1989	264,680	9.2
1970–1979	88,249	3.1
1960–1969	27,232	0.9
1950–1959	8,738	0.3
1940–1949	4,045	0.1
Pre-1940	13,499	0.4

Citation analysis. The citation analysis of published references was very similar to the ILL borrowing statistics (Table 2). Ninety-seven percent (N = 1,862/1,920) of all references cited were published from 1970 to 2003, and over 91% (N = 1,747/1,920) were from 1980 onwards. The percentages of citations from MCPHS differed from the more universal figures, which was probably due to the fact the faculty tend to publish in science journals and multidisciplinary titles that included social science topics, resulting in the use of somewhat older material. These data suggest that it is important to examine local statistics when making collection policy decisions to identify institutional uniqueness that may not align with national averages.

Interestingly, ILL requests illustrate a greater reliance on more recently published articles (2000–2003) than do the citation analysis data. This reliance might be due to the lag time between completing research and getting the article published. Both sets of data illustrate a dramatic drop in journal use after the current fifteen years (Figure 1).

Current opinion

Characteristics of survey participants. A total of 277 individuals responded to the surveys, yielding an approximate response rate of 5%. The surveys attempted to reveal both practice and opinion regarding retention of print serials and the impact of electronic resources on library collections and users' research behaviors. Respondents represented 40 academic health sciences libraries, 101 hospital libraries, and 136 academic libraries.

Table 2
Citation analysis of selected medical and general science journals

	% of citations		
Decade	Medical	General science	Massachusetts College of Pharmacy and Health Sciences
2000–2003	38.00	24.39	7.14
1990–1999	51.27	54.51	56.92
1980–1989	6.55	11.27	24.94
1970–1979	2.00	6.56	7.03
1960–1969	1.82	1.23	2.72
Pre-1960	0.187	2.04	1.25

Table 3
Survey responses by library type (%/N)

Library type	Academic	Health sciences	Hospital	Total all libraries
In general, use of the print journal collection is decreasing	Agree 91% (N = 122/134)	Agree 94.7% (N = 36/38)	Agree 62.3% (N = 63/101)	81.0% (N = 221/272)
If the information is not available electronically, then researchers are less likely to try to obtain earlier printed references	Agree 69.9% (N = 95/136)	Agree 70% (N = 28/40)	Agree 47.5% (N = 48/101)	61.7% (N = 171/277)
Today's researchers are no different than earlier researchers; they will try to obtain all relevant information whether it is in electronic form or in print	Agree 35.3% (N = 48/136)	Agree 35% (N = 14/40)	Agree 45.5% (N = 46/101)	39.0% (N = 108/277)
Libraries maintaining both print and electronic versions of the same title would discontinue the print and only keep the online version if high costs necessitated cancellation	Agree 78.7% (N = 107/136)	Agree 77.5% (N = 31/40)	Agree 37.6% (N = 38/101)	64.6% (N = 176/277)
Libraries try to retain both formats (print and electronic)	Agree 15.4% (N = 21/136)	Agree 22.5% (N = 9/40)	Agree 28.7% (N = 29/101)	22.2% (N = 59/277)
There is a direct shift in resources (money) from print subscriptions to electronic journals and databases	Agree 82.4% (N = 111/134)	Agree 81.6% (N = 31/38)	Agree 71.3% (N = 72/101)	78.4% (N = 214/273)
The "cost" of maintaining older print journal collections has a lower priority than in the past	Agree 67.9% (N = 91/134)	Agree 68.4% (N = 26/38)	Agree 71.4% (N = 70/98)	69.3% (N = 187/270)
Space once allocated for print collections is now up for grabs as libraries look to create or expand computer facilities, classrooms, etc.	Agree 61.2% (N = 82/134)	Agree 73% (N = 27/37)	Agree 73.4% (N = 69/94)	67.2% (N = 178/265)
The concept of "access instead of ownership" will play an increasingly important role	Agree 94.8% (N = 127/134)	Agree 92.3% (N = 36/39)	Agree 90.7% (N = 88/97)	93.0% (N = 251/270)
Libraries will still keep print back runs after canceling print titles in favor of electronic-only access	Agree 87.3% (N = 117/134)	Agree 72.5% (N = 29/40)	Agree 72.0% (N = 72/100)	79.3% (N = 218/275)

Maintenance of retrospective journal collections. Fifty-four percent (N = 73/136) of the general academic libraries and 65% (N = 26/40) of the academic health sciences libraries tried to maintain full journal runs as far back as the initial subscription. Not surprisingly, only 6.9% (N = 7/101) of hospital libraries reported full runs of their journals. Historically, space has always been an issue for hospital libraries. When libraries have decided not to maintain full journal runs, 89.4% (N = 151/169) of the time they only weeded when they ran out of space.

When queried about how they would determine cut-off dates for journal runs, respondents reported that they relied on perceived needs of the researchers at their institution and actual usage studies. Most cut-off decisions were on a title-by-title basis, followed by determining a date for the whole collection; few said they deselected by subject area alone.

For libraries with sufficient space for their print journals, little proactive weeding appeared to occur. Only 13.2% (N = 18/136) of academic, 17.5% (N = 7/40) of health sciences, and 4.0% (N = 4/101) of hospital librarians said that their users were demanding print backfiles. When asked if maintaining these collections was considered mission critical, only 21.3% (N = 29/136) of general academic librarians, 27.5% (N = 11/40) of AAHSL librarians, and 3.0% (N = 3/101) of hospital librarians responded that it is their mission to maintain these collections. Surveys also asked who ultimately should be responsible for maintaining complete runs of journal titles. Only 6.3% (N = 17/272) of respondents wanted, or trusted, publishers to fully archive titles and make them completely available in electronic form. Twenty-six percent (N = 73/272) would like to see this responsibility fall to the national libraries (NLM or Library of Congress); 40.8% (N = 111/272) preferred selected libraries through cooperative agreements (in the case of the health sciences libraries, the coordinating body would be the National Network of Libraries of Medicine); and 26.1% (N = 71/272) thought that the individual institution or library should make their own decisions based on institutional needs and available space.

Impact of electronic journals on print collections. Responses to a question about the percentage of print collection available electronically ranged from 1% to 100% for all types of libraries, with median values of 40% for academic libraries, 60% for health sciences libraries, and 35% for hospital libraries. Table 3 contains

responses by type of library and total numbers for percents given for all survey results reported in this section.

Eighty-one percent of those surveyed indicated that the use of their print journal collections was decreasing. Librarians responding to the surveys had a strong sense that the information-seeking behavior of today's researchers has been changing dramatically in the electronic age. In fact, 61.7% agreed that, when information was not available electronically, their patrons were less likely to try to obtain earlier printed references. Only 39.0% of respondents reported that they thought that today's researchers still tried to obtain all relevant information, whether it was in electronic form or in print. This finding indicated that librarians believed researchers were not using older print material and assumed that the desire for electronic access has caused this shift in information retrieval behavior.

Regarding costs, librarians were well aware of the rising costs of maintaining journal subscriptions. This was especially true when factoring in the added expense of acquiring electronic equivalents to the print collections. Increasing journal subscription costs were making it difficult for libraries to maintain both print and online versions of the same title. When asked if rising prices made it more difficult to maintain both print and electronic versions of the same title, 78.7% of academic, 77.5% of health sciences, and 37.6% of hospital librarian respondents noted that they would discontinue the print and keep only the online version if high costs necessitated cancellation. Only 22.2% of those surveyed said they would try to retain both formats.

In response to these economic pressures, over 78% also indicated a direct shift in resources (money) from print journal subscriptions to electronic journals and databases. In addition, 69.3% of those surveyed said the ''cost'' of maintaining older print journal collections had a lower priority than in the past. With librarians weighing cost, use, and space issues, 67.2% of those surveyed agreed that space once allocated for print collections was now up for grabs as libraries looked to create or expand computer facilities, classrooms, and other multiuse environments.

Future implications for the print journal. Attitudes toward collection development seemed to be changing significantly under the financial pressures of double-digit price increases (both print and electronic). Ninety-three percent of respondents stated that the concept of ''access instead of ownership'' would play an increasingly important role.

Despite the perception that patrons were using more electronic and less print information and budgets were being reallocated to electronic resources, few librarians were parting with their print (increasingly retrospective holdings) journals. Seventy-nine percent of respondents indicated they would still keep print back runs after canceling print titles in favor of electronic only access.

Limitations

In general, this paper focused on helping other health sciences libraries make retention decisions in light of increased digital resources and physical storage limitations. Consequently, the data collection was conducted using sources relevant and available to health sciences libraries and might be somewhat biased. Before generalizing the results to other academic libraries, the following potential limitations should be considered.

Interlibrary loan statistics. The ILL statistics were taken from the DOCLINE system, which is used exclusively by libraries with medical or health care interests. Due to the importance of using current information in the medical sciences, articles requested through DOCLINE might represent a preponderance of requests for recent information. If a more general ILL system (e.g., OCLC Resource Sharing) was used in the study, other disciplines in which older materials were more highly valued would have been included. Publication dates for those requested articles might have shown a different distribution pattern with a wider range of years included in the requests.

Citation analysis. A potential limitation of the citation study is the predominant use of high-impact factor medical or general science journals. High-impact journals were selected because they typically represent premier journals and have been subjected to a scrupulous peer-review process. Standards set by high-impact journals in science and medicine should represent the best accepted research practice. Although it is hoped that lower impact journals, when similarly subjected to peer review, might produce the same results, such conclusions cannot be drawn from this paper. In addition, an analysis of nonmedical or science journals was not considered for this paper.

User survey. The response rates from both health sciences or hospital and general academic libraries were equal at 5% ($\pm$1%). While the low response rates limited the conclusiveness of the information, respondents to the survey identified general academic and hospital library trends.

DISCUSSION

Clearly, there is a tremendous economic and user-driven push to access the library's collections electronically. Librarians realize, particularly in the medical sciences, that electronic information plays a vital role in providing current information and speedy delivery, issues of vital importance to today's researchers and clinical practitioners. This desire for fast access to current information is reinforced by the recency of citations in the medical literature and survey responses, which indicate a strong preference for electronic information. Preferences for current information are also supported by the ILL statistics and citation analysis. While the assumption is that this is a relatively new

development in information-seeking behavior, interestingly, the fact is that most researchers have always used the journal literature for current information. In 1971, before there were electronic journals, Totten noted that 80% of all requested journal articles were published within the current 5 years [13].

The present study's survey results also indicate that continuing increases in journal subscriptions costs and the demand for electronic information have shifted budgets away from print journals to electronic-only holdings. In addition to the price of subscriptions, print journals also carry other cost factors including the expense of storing material (in-house or in remote storage), the costs of preservation and binding, and the salaries of staff for shelving or retrieving physical volumes or conducting manual use statistics.

Previous authors have discussed cost comparisons between electronic and print journal collections [14, 15]. At Drexel University, investigators determined that the cost of access from the current periodicals room was $8.50 per issue reshelved and the per-use costs for electronic articles ranged from $4 for individual subscriptions, $3 for publisher packages, and $2 for aggregator titles. The cost per use of print bound journals (which had significantly less use when compared to current print issues or electronic titles) went up to $30 per use. In addition to the cost savings for the library, researchers also realized additional benefits in using electronic titles by obtaining information more quickly (time being money) and perceiving that they found more and better quality information via electronic access [14].

Another cost factor to consider is that retrospective print journals simply take up a great deal of space, and real estate has a definable cost. Drexel University estimated that the annual cost of housing its print journal collections was $245,000. This figure included shelving costs, staffing, and the going rate for real estate, which was estimated at $20 per square foot [15].

Cost can also have political implications. Ineffectively utilized or justified space can be taken away in the politics and power struggles in an institution, as occurred at MCPHS. This reality demonstrates the danger of not being proactive. Retention of retrospective print journal collections should not be examined in isolation as solely a collections issue or a space dilemma but, in addition, as an opportunity to provide areas of new or expanded services for both the library and institution. The reduction of high-volume, low-use print journal collections can be viewed as a chance to create a library of the future, a place where information, teaching, learning, and research are successfully integrated.

This theme of reexamining the library as a place has recently been discussed in the literature, at symposiums, and at conferences. As Weise states in the Janet Doe Lecture at the 2003 annual meeting of the Medical Library Association: ''we must advocate strongly the role for the library beyond the 'storage facility,' and even the 'access facility,' and focus attention on the many other place-centered activities and services that the library can support'' [16]. Future libraries can employ space to create environments for active learning and study or possibly cultural and social activity such as art galleries, cafes, and lecture space [17, 18].

CONCLUSION

The library is no longer just a repository for print collections and a quiet place to study, but a center for learning, communication, and interaction. Libraries are at a crossroads between the print-centered past and the electronic information future. This transitional period has not yet allowed most libraries to comfortably take the leap and reduce their retrospective print journal collections in favor of other access models. Issues that are still of concern are confidence in publishers expanding and maintaining online backfiles and the development of regional and national journal archives. In analyzing collection retention decisions, each library should examine its own mission and regional obligations and role in relevant library consortia and networks.

The authors believe that the evidence discussed in this article provides support for those libraries that either need to reduce print collections because of space problems or desire to create a more dynamic institutional role for their libraries by restructuring space for non-collection functions. Citation analysis and ILL statistics clearly indicate that the current literature is used predominately and that use of older journal literature drops dramatically after the current fifteen years. The literature review and surveys also indicate the user population desires electronic information over print and prefers to conduct research and acquire information remotely instead of using the brick and mortar library. Librarian respondents to the survey indicate a decreasing use of print journal collections and the cancellation of print titles in favor of electronic-only access. The authors and the majority of survey respondents think that the tide is slowly shifting away from maintaining large, costly retrospective collections toward the concept of access instead of ownership with a fresh approach to the library as a place. While not all health sciences libraries will need to or want to reduce their retrospective print journal titles, justification exists for those librarians rethinking their collection development and maintenance strategies.

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APPENDIX A

Top ten medical journal titles determined by ISI impact factor, 2002

	Impact factor
New England Journal of Medicine	31.736
Nature	30.432
Science	28.956
Nature Medicine	28.740
Pharmacological Reviews	26.568
Annual Reviews in Pharmacology and Toxicology	19.678
Journal of the American Medical Association	16.783
Journal of Experimental Medicine	15.837
The Lancet	15.397
Journal of Clinical Investigation	14.051

Top ten general science journal titles determined by ISI impact factor, 2002

	Impact factor
Nature	30.432
Science	28.956
Cell	27.254
Proceedings of the National Academy Sciences	10.700
Scientific American	3.700
Naturwissenschaften	1.693
Annals of the New York Academy of Science	1.682
Philosophical Transactions of the Royal Society A	1.639
Proceedings of the Royal Society London A Materials	1.443
American Scientist	1.337

Journals in which Massachusetts College of Pharmacy and Health Sciences faculty published articles from 2000 to 2003

Academic Medicine
American Journal of Health-System Pharmacists
American Journal of Managed Care
Annals of Pharmacotherapy
Blood
Brain Research
Cambridge Quarterly of Healthcare Ethics
Clinical Therapeutics
Drug Safety
Formulary
Hospital Pharmacy
Journal of Chemical Education
Journal of Clinical Pharmacy and Therapeutics
Journal of Organic Chemistry
Journal of Pharmaceutical and Biomedical Analysis
Journal of Pharmacology and Experimental Therapeutics
Journal of Pharmacy Practice
Journal of the American College of Nutrition
Journal of the American Pharmaceutical Association
Journal of Thrombosis and Thrombolysis
Life Sciences
Medical Care
Pharmacological Research
Pharmacotherapy
Psychology and Health
Substance Use and Misuse
Toxicologic Pathology
US Pharmacist

APPENDIX B

Survey
Type of library

1. Please select one library setting that best matches your institution:
Medical school library ____
Academic health sciences library (without a medical school) ____
Hospital library ____
Pharmaceutical or biotech library ____
Other ____

Type of institution

2. If you are an academic institution, please select from the following Carnegie Foundation categories that best matches your institution:
Doctoral or research universities (programs through the doctorate) ____
Master's colleges and universities (programs through the master's degree) ____
Baccalaureate college (major emphasis on baccalaureate programs) ____
Baccalaureate or associate's colleges (majority of conferrals below the baccalaureate) ____
Specialized institutions:
Medical schools and medical centers (can also include other health professions) ____
Other separate health profession schools (without a medical school) ____

3. If you are associated with a medical school, does the school also support additional doctoral programs?
Yes ____
No ____
N/A ____

Geographic influences

4. In your city or town (immediate geographic area), are you considered to be the ''main or largest'' health sciences library?
Yes ____
No ____

5. In your state, are you considered to be the ''main or largest'' health sciences library?
Yes ____
No ____

6. In your city or town (immediate geographic area), how many medical schools are there?
0 1 2 3 more than 3

Collections

7. Based loosely on the RLG and WLIN Conspectuses, what collection development level best describes your *overall* journal collections:
Comprehensive ____
Research (supports doctoral programs) ____
Advanced study (supports masters' programs) ____
Instructional (supports undergraduate programs) ____
Basic information (supports community college or consumer programs) ____

8. What is the approximate percentage mix of journals?
Clinical medicine ____%
Nonmedical health areas (support to other health programs) ____%
Basic sciences (chemistry, pharmacology, biology, etc.) ____%
Social sciences ____%
Other ____%

9. What approximate percentage of your print journal collection is also available electronically? ____%

10. As prices continue to rise making it more difficult to support both print and online versions of the same title, are you more apt to:
Purchase electronic version only ____
Print version only ____
Try to maintain both formats ____

11. If you had a print subscription and you converted it to an online only title, are you keeping the older print issues?
Yes ____
No ____
N/A ____

12. Do you keep older print journal issues when you have cancelled the subscription?
Yes ____
No ____
Title by title decision ____

13. If the journal ceased publication, do you still keep the earlier issues?
Yes ____
No ____
Title by title decision ____

Physical space issues

14. Does your library contain full journal runs as far back as your initial subscription? (You have not weeded your journal collections.)
Yes ____
No ____
If no, please proceed to question 20

15. If yes, do you anticipate maintaining full runs in the future?
Yes ____
No ____

16. If you anticipate retaining full print runs of your journals, is it because (check all that apply):
You feel it is important to keep full runs, and you have sufficient in-library, stack space to maintain full collections. ____
You feel it is important to keep full print runs, and your older journal collections will be retained in a separate, remote storage facility. ____
Faculty and researchers prefer onsite access. ____
As a major health sciences library in my region, it is the mission of the library to maintain significant retrospective collections including full runs of journal. ____
I will maintain full journal runs because I have sufficient stack space even though current use or library mission does not require me to do this. ____
Other ____

17. If you are using, or will use, a remote storage facility for your collections, is the facility serving just:
Your library collections ____
University library collections ____
Consortia collections ____
N/A ____

18. If, in the future, you need to reduce older journal runs, would you determine the cut-off dates by (check all that apply):
Strictly space considerations ____
Use patterns ____
Perceived needs of the researchers at your institution

19. If, in the future, you need to reduce older journal runs, would you determine the cut-off date (choose all that apply):
On a title by title basis ____
By subject area ____
By whole collection ____

If you answered *yes* to question 14, please proceed to question 26

20. If your library does *not* maintain full journals runs, was that decision based on shortage of space?
Yes ____
No ____

21. If you answered *yes* to question 20, was it strictly shortage of collection space or was it a reallocation of space for other purposes (i.e., computer labs/ classrooms/study space)?
Shortage of collection space only ____
Reallocation of space for other purposes ____
(please describe) _____

22. We do not keep full journal runs because (check all that apply):
In a health sciences library, it is not necessary to maintain old journal runs. ____
There are larger area health sciences libraries that do maintain full retrospective journal holdings. ____

23. When you initially reduced your older journal runs, did you determine the cut-off dates by:
Strictly space considerations ____
Use patterns ____
Perceived needs of the researchers at your institution

24. How did you determine the cut-off date (choose all that apply)?
On a title by title basis ____
By subject area ____

By whole collection ____
25. What is the specific cut-off date (for each option, if different)?
On a title by title basis ____
By subject area ____
By whole collection ____
Comments? _____

Personal perspectives

Many academic libraries are reporting that patron use statistics have fallen, which is reflected in lower number of reference questions and gate counts. The reason usually given is that more and more patrons are accessing the library's electronic resources from office, home, or lab and visiting the physical library less often. How does this affect how we collect and what we retain? _____
26. In your opinion, as it pertains to your institution, is the growing influence and number of electronic resources affecting the way researchers approach the literature (please check all that apply)?
Today's researchers concentrate on current information much more than in the past. ____
If the information is not available electronically, then they are less likely to try to obtain earlier printed references. ____
Today's researchers are no different than earlier researchers; they will try to obtain all relevant information whether it is in electronic form or in print. ____
27. Who should ultimately be responsible for maintaining complete runs of journal titles?
The publisher, in electronic form ____
The National Library of Medicine ____
Selected libraries through cooperative agreements organized by the National Network of Libraries of Medicine ____
The individual institution or library needs to make its own decision based on its needs and available space ____
28. As publisher prices continue to rise and library budgets struggle to maintain current subscriptions, will the concept of ''access instead of ownership'' play a more important role in your collection development policies?
Yes ____
No ____

Please mark *agree* or *disagree* in response to the following statements.
29. Overall, more money is being allocated for electronic databases and electronic journals resulting in proportionally less for money for print journal subscriptions.
Agree ____
Disagree ____
30. In general, use of the print journal collection is decreasing.
Agree ____
Disagree ____
31. The ''cost'' of maintaining older print journal collections has a lower priority than in years past.
Agree ____
Disagree ____
32. As libraries look to create or expand computer facilities, classrooms, and other multiuse environments, sacred space that was once allocated for print collections is now up for grabs.
Agree ____
Disagree ____
33. I am more likely to consider reducing my own retrospective print journal collections because of the latest trends in creating electronic archives (i.e., National Institutes of Health public access policy, various ''open access'' initiatives, publishers providing access to older back files, and national and university digitization projects).
Agree ____
Disagree ____
Additional comments? _____

By filling out this survey, you are granting permission to have your answers published in an article being written for the *Journal of the Medical Library Association*. No individual data will be listed and all data will be in aggregate form.