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# Use Study of *Excerpta Medica* Abstract Journals: To Drop or Not to Drop?\*

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## ABSTRACT

The directors of the Claude Moore Health Sciences Library, a medium-sized library serving the University of Virginia medical and nursing schools, were concerned over the increasing cost of periodical subscriptions and so studied the use of the printed copy of *Excerpta Medica*. This study had six parts: (1) availability in other campus libraries; (2) staff perceptions of in-library use; (3) results of studies performed by other libraries in the United States; (4) recorded in-library use; (5) users' opinions; and (6) personal interviews with library users and with selected departments that corresponded with the forty-four subject areas of *Excerpta Medica*. The user-survey parts (4 and 5) elicited few responses, but personal interviews allowed a good look at levels of use and interest. The overall results convinced staff to drop some sections and publicize those that remained.

THE ESCALATING cost of secondary periodicals poses serious problems for libraries. As the price of an average journal subscription has increased 13.3% since 1980, many libraries are reevaluating their indexing and abstracting tools [1]. The Claude Moore Health Sciences Library, a medium-sized academic library that serves the University of Virginia medical and nursing schools, recently undertook a study of the use of *Excerpta Medica* Abstract Journals.

In 1976, La Rocco and Feng determined the unit cost per abstract for six of the forty-four major *Excerpta Medica* sections, and found *Excerpta Medica* sections on the average to be 138% more expensive than corresponding abstract journals [2]. Dolcourt and Braude used SERLINE to examine titles from *Excerpta Medica* and *Index Medicus*, and found a 47% overlap between the two [3]. Timour's study of use of the major indexing and abstracting journals and their on-line counterparts

did not include *Excerpta Medica* [4]. However, he believed that most, if not all, sections had already been canceled by most major libraries: the Scott Library's entire subscription was canceled in 1973, with only one complaint recorded during the next six years. In contrast, a recent study by Green and Jackson at the Houston Academy of Medicine-Texas Medical Center Library found that library's assumption of low use of *Excerpta Medica* to be incorrect [5].

These conclusions, coupled with *Excerpta Medica*'s overlap of several major indexes, our reference staff's strong belief that it is little used, and its availability on-line through DIALOG, led us to examine *Excerpta Medica* use at our library. Although we did not expect to drop the entire subscription, we believed that some sections were used infrequently, and might be canceled. However, we wished to be cautious in reviewing sections for cancellation because many users might simply be unaware of the existence of *Excerpta Medica*. To increase use of the retained sections, we decided to advertise *Excerpta Medica* subscription services as a phase-II project through the reference department's user education program. (A phase II follow-up study of use of the retained sections will also be performed.)

## METHODOLOGY

Use surveys, interviews, study of local availability, input from professional staff, and shelving statistics have all been used to collect the information for decisions regarding cancellation of journal subscriptions [6-8]. We combined all these techniques. Our study took place over a typically busy three-month period (September to November 1981). Data collection and analysis of the results from another recent study have shown that a three-month trial is sufficient [8].

Cancellation is an obvious consideration when an

\*Based on a paper presented at the Eighty-second Annual Meeting of the Medical Library Association, Anaheim, California, June 14, 1982.

TABLE 1  
CONSIDERATIONS FOR RETENTION

1. If at least one use of section was noted from shelving statistics, issue slip surveys, or personal interviews, section was considered for retention.
2. If section was believed to be of clinical orientation (as defined by University of Virginia's most common clinical problems), it was considered for retention.
3. If section was believed to be within scope of university's medical center research activities (as indicated by sample of on-line search requests), it was considered for retention.
4. If section was believed to be important enough to keep by The Claude Moore Health Sciences Library patrons (as indicated by personal request or by response to issue survey question 5 or interview survey questions 7 and 8), it was considered for retention.
5. If section met three of first four criteria, it was retained.

institution holds more than one subscription to the same title [6]. To determine whether *Excerpta Medica* (partial or full) was available elsewhere on campus, we examined the holdings lists for all university libraries.

Library staff's perceptions of patron use of library materials has also been described as a means of title evaluation [8]. A list of the *Excerpta Medica* section titles was prepared and distributed to The Claude Moore Health Sciences Library reference librarians and interlibrary loan staff to record their perceptions of patron use of these indexes. Each staff member evaluated the titles and noted if a section should be dropped without testing, tested before dropping, or further considered before either testing or dropping.

Use by the library's clientele is a significant indicator of the value of the title to a library. This is a local measurement: a given title untouched at one

TABLE 2  
CONSIDERATIONS FOR CANCELLATION

If section was found to have had zero response from any survey, it was considered for removal based on following criteria:

1. Lack of University of Virginia Medical Center research orientation (as defined by sample of on-line search requests).
2. Subject scope covered in other printed or on-line indexes.
3. Lack of clinical orientation (as defined by University of Virginia's most common clinical problems).

TABLE 3  
MEDICAL CENTER RESEARCH ACTIVITIES\*

Section No.	Section Title
16	Cancer
18	Cardiovascular diseases and cardiovascular surgery
15	Chest diseases, thoracic surgery, and tuberculosis
29	Clinical biochemistry
13	Dermatology
21	Developmental biology and teratology
3	Endocrinology
48	Gastroenterology
5	General pathology
36	Health economics and hospital management
25	Hematology
26	Immunology, serology, and transplantation
6	Internal medicine
4	Microbiology
8	Neurology and neurosurgery
10	Obstetrics and gynecology
7	Pediatrics and pediatric surgery
30	Pharmacology and toxicology
32	Psychiatry
28	Urology and nephrology

\*As determined by random sample of on-line search requests.

TABLE 4  
MOST COMMON CLINICAL PROBLEMS, UNIVERSITY OF VIRGINIA HOSPITALS, 1978

Problem	<i>Excerpta Medica</i> Section No.
Hypertension	18, 6
Heart disease	18
Diabetes	3
Pregnancy	10, 7
Neuroses	32
Alcoholism	40, 48
Congestive heart failure	18
Chronic obstructive pulmonary disease	15
Anemias (unspecified)	25
Epilepsy	50
Concussion	8
Obesity (nonendocrine)	6
Urinary tract infection	28
Iron deficiency anemias	25

## EXCERPTA MEDICA

TABLE 5  
LIBRARIANS' PERCEPTIONS REGARDING  
*EXCERPTA MEDICA*

Section No.	Section Title	Drop	Test	Keep	Final Action	Section No.	Section Title	Drop	Test	Keep	Final Action
1	Anatomy, anthropology, embryology, and histology	4	1	0	Drop	25	Hematology	1	3	1	Keep
24	Anesthesiology	1	4	0	Drop	22	Human genetics	2	3	0	Drop
31	Arthritis and rheumatism	2	1	2	Drop	26	Immunology, serology, and transplantation	0	4	1	Drop
27	Biophysics, bioengineering, and medical instrumentation	3	2	0	Drop	6	Internal medicine	0	3	2	Keep
16	Cancer	0	3	2	Drop	4	Microbiology: bacteriology, mycology, and parasitology	2	3	0	Drop
18	Cardiovascular diseases and cardiovascular surgery	1	1	3	Keep	8	Neurology and neurosurgery	0	3	2	Keep
15	Chest diseases, thoracic surgery, and tuberculosis	1	2	2	Keep	23	Nuclear medicine	0	5	0	Drop
29	Clinical biochemistry	1	3	1	Drop	10	Obstetrics and gynecology	1	3	1	Keep
13	Dermatology and venerology	2	3	0	Keep	35	Occupational health and industrial medicine	2	3	0	Drop
21	Developmental biology and teratology	4	1	0	Keep	12	Ophthalmology	2	2	1	Drop
40	Drug dependence	3	2	0	Drop	33	Orthopedic surgery	1	2	2	Keep
3	Endocrinology	2	2	1	Keep	11	Otorhinolaryngology	1	2	2	Keep
46	Environmental health and pollution control	3	2	0	Drop	7	Pediatrics and pediatric surgery	1	2	2	Keep
50	Epilepsy	2	2	1	Drop	30	Pharmacology and toxicology	0	2	3	Drop
49	Forensic science	4	1	0	Drop	2	Physiology	2	3	0	Drop
48	Gastroenterology	2	2	1	Keep	34	Plastic surgery	1	3	1	Drop
5	General pathology and pathological anatomy	2	3	0	Keep	32	Psychiatry	2	3	0	Keep
20	Gerontology and geriatrics	3	1	1	Drop	17	Public health, social medicine, and hygiene	3	2	0	Drop
36	Health economics and hospital management	1	3	1	Drop	14	Radiology	0	4	1	Drop
						19	Rehabilitation and physical medicine	1	4	0	Drop
						9	Surgery	1	3	1	Drop
						28	Urology and nephrology	1	3	1	Keep
						47	Virology	1	4	0	Drop

library might be used extensively at another [6]. Patron use of the *Excerpta Medica* sections was determined by three in-house measurements: shelving statistics, individual use records, and personal interviews. Because *Excerpta Medica* does not circulate, each time an issue or volume was left on a table or book truck it was recorded as one use before reshelving [9]. A questionnaire was placed

inside each volume or issue. A completed questionnaire was recorded as one use. To supplement shelving and individual use data, a second questionnaire was designed for personal interviews of patrons in the reference area regarding their evaluation and use of *Excerpta Medica* sections.

It cannot be assumed, however, that the period we surveyed will yield similar results in all librar-

TABLE 6  
SUMMARY OF RESULTS OF 39 HEALTH SCIENCES  
LIBRARY SURVEYS\*

Question	Response, No. (%)
Current subscription to any or all sections	Yes, 25 (64%); no, 14 (36%)
Subscription to all sections	11 (44%)
Partial subscription	14 (56%)
Reasons for partial subscriptions	Cost, 12 (43%); space, 4 (14%); out of user scope, 3 (11%); other, 4 (14%); no reason given, 5 (18%)
On-line access	Yes, 34 (87%); no, 5 (13%)
Frequency of on-line access	Never, 5 (15%); occasionally, 25 (73%); regularly, 3 (9%); frequently, 0; no response, 1 (3%)
Use or user studies conducted	Yes, 13 (33%); no, 24 (62%); in process, 1 (2.5%); not known, 1 (2.5%)
Action taken after user survey	Dropped certain sections, 6 (38%); discontinued entire series, 5 (31%); added sections, 1 (6%); added on-line, 2 (12.5%); no action, 2 (12.5%)

\*Response rate, 71%.

ies [7]. To examine overall use of the *Excerpta Medica* titles, we sent a questionnaire to fifty-five health sciences libraries, requesting information on their *Excerpta Medica* subscription policies and use studies.

#### ANALYSIS

Results of previous studies indicate that recorded use from shelving statistics, issue slip surveys, and personal interviews cannot by themselves justify subscription cancellation. Criteria based on the needs and objectives of the institution must be outlined and survey results measured against them; only then can the final decision be made [6]. Thus, the responses from all three in-house surveys were combined onto a master sheet and measured against a list of considerations for collection retention (Table 1) or considerations for collection removal (Table 2), both of which were developed by the Claude Moore Health Sciences Library reference librarians. In general, if a section was used at least once, was within the scope of the University of Virginia research activities, was within the medical center's treatment activities, or

if the library received a request that it not be dropped, it was considered for retention. The decision to retain a section was based on its meeting three of these four criteria. On the other hand, if a section had no recorded use, it was automatically considered for removal, use being defined as its not having been recorded in any of the three in-house use surveys. For a section to be dropped, it also had to lack either a clinical or research orientation pertaining to the University of Virginia Medical Center, or its subject scope had to be covered in other printed or on-line indexes.

To determine our medical center's research activities, a random sample of our 1980 MEDLINE search request forms was performed. MEDLINE search request subject scope was compared with that of the forty-four *Excerpta Medica* section titles (Table 3). The medical center's clinical orientation, on the other hand, was defined according to the 1978 list of "Most Common Clinical Problems at the University of Virginia Hospitals" (Table 4).

To analyze both the reference staff's perception of *Excerpta Medica* use and the results of our survey of other health sciences libraries, we had to gather the data onto a tabular format and compare the results (Tables 5, 6).

In terms of public relations, interviews were the most productive. They let us become more closely acquainted with our users. We better understood their research habits; we advised them on reference problems; and we discovered new areas of interest. We initiated a dialog that developed into a genuinely useful mechanism for library-user communication. Our phase II follow-up study, to be performed in 1984, will include personal interviews.

The results of study of our own librarians' perceptions of *Excerpta Medica* use showed the need to test use, as did the results of the health sciences librarians questionnaire.

Our experience with the various data collection methods and the comments of our interviewees indicate that *Excerpta Medica* is more effective as a comprehensive research tool when searched on-line. We agree with Garfield's assertion that the major drawback of *Excerpta Medica* is its lack of a unified index [10]. This is a severe problem, especially for subjects that spread across the boundaries of subject sections. By its very nature, the subject section can be accessed only by persons interested solely in subjects that correspond with the forty-four defined by *Excerpta Medica*. For this reason, we conclude that the *Excerpta Medica* retrospec-

TABLE 7  
INDIVIDUAL SECTIONS SUBSCRIBED TO BY 39 HEALTH  
SCIENCES LIBRARIES WITH PARTIAL SUBSCRIPTIONS\*

Section No.	Section Title	No. of Libraries Subscribing	Section No.	Section Title	No. of Libraries Subscribing
1	Anatomy	5	22	Human genetics	4
24	Anesthesiology	1	26	Immunology, serology, and transplantation	4
31	Arthritis and rheumatism	2	6	Internal medicine	3
27	Biophysics, bioengineering, and medical instrumentation	5	4	Microbiology, bacteriology, and parasitology	2
16	Cancer	6	8	Neurology and neurosurgery	5
18	Cardiovascular diseases and cardiovascular surgery	2	23	Nuclear medicine	2
15	Chest diseases, thoracic surgery, and tuberculosis	1	10	Obstetrics and gynecology	2
29	Clinical biochemistry	2	35	Occupational health and industrial medicine	3
13	Dermatology and venereology	2	12	Ophthalmology	4
21	Developmental biology and teratology	3	33	Orthopedic surgery	2
40	Drug dependence	2	11	Otorhinolaryngology	1
3	Endocrinology	4	7	Pediatrics and pediatric surgery	3
46	Environmental health and pollution control	4	30	Pharmacology and toxicology	5
50	Epilepsy	2	2	Physiology	2
49	Forensic science	2	34	Plastic surgery	2
48	Gastroenterology	1	32	Psychiatry	5
5	General pathology and pathological anatomy	5	17	Public health, social medicine, and hygiene	3
20	Gerontology and geriatrics	4	14	Radiology	1
36	Health economics and hospital management	4	19	Rehabilitation and physical medicine	4
25	Hematology	3	9	Surgery	2
			28	Urology and nephrology	2
			47	Virology	2

\*Response rate, 71%.

tive search is more effective when carried out on-line, using a unified approach to all forty-four sections.

The retention of sections in our library is now based on our clientele's demonstrated needs and not on the librarian's traditional desire to be comprehensive and complete. The fact that *Excerpta Medica* is geared toward subject specialties leads us to believe it can be more effectively marketed as a current awareness service rather than a retrospective searching tool for the biomedical researcher or physician.

#### RESULTS

The examination of the university's holdings showed that no other libraries on campus subscribed to *Excerpta Medica*.

Of the fifty-five questionnaires sent to other health sciences libraries regarding the use of *Excerpta Medica*, thirty-nine (71%) were returned (Table 6). Twenty-five (64%) of the respondents subscribed to all or some sections, eleven carrying full subscriptions. Of the libraries maintaining only partial subscriptions, six subscribed to section 16, cancer (the most frequently listed section); whereas one library each held 24 (anesthesiology), 15 (chest diseases), 48 (gastroenterology), 11 (otorhinolaryngology), and 14 (radiology)—the least frequently mentioned sections (Table 7). Although cost was cited most often as the reason for partial subscriptions, other reasons included "... did not appear to be used much"; "it was decided that most of the medical specialty sections were well covered in *Index Medicus*"; "... dropped all except [sec-

tion] 12 after department chairmen were queried, etc." In addition, thirty-four of the thirty-nine responding libraries indicated they had on-line access to *Excerpta Medica*. Of these thirty-four, five never used it, twenty-five occasionally used it, and only three regularly used it. There were no frequent on-line users. Thirteen of the libraries surveyed had performed *Excerpta Medica* use studies, and one was in the process of doing so. Based on their own surveys, five of the libraries discontinued the entire printed subscription, and two retained the complete set. Others added or dropped sections or on-line access.

The results of our three in-house surveys are given in Tables 8 through 11. In general, sixteen sections had no use and were dropped. Another nine sections were canceled, despite recorded use, because they failed to meet the criteria. Finally, sixteen of the forty-four sections were retained. Thirteen of these had recorded use and met the considerations for retention; three did not, but were retained by special request.

It is interesting to compare our library's findings

TABLE 8  
CANCELLED SECTIONS WITH ZERO USE

Section No.	Section Title	Met Considerations
1	Anatomy, anthropology, embryology, and histology	2, 3
24	Anesthesiology	2
27	Biophysics, bioengineering, and medical instrumentation	2, 3
16	Cancer	2
29	Clinical biochemistry	2
40	Drug dependence	2
46	Environmental health and pollution control	2, 3
50	Epilepsy	2
20	Gerontology and geriatrics	2
22	Human genetics	2
26*	Immunology, serology, and transplantation	2, 3
23	Nuclear medicine	2
12	Ophthalmology	2
30	Pharmacology and toxicology	2
34	Plastic surgery	2
14	Radiology	2
47	Virology	2, 3

\*Retained by special request.

TABLE 9  
CANCELLED SECTIONS WITH RECORDED USE

Section No.	Section Title	Failed to Meet Considerations
31	Arthritis and rheumatism	2, 3, 4
49	Forensic science	2, 3, 4
36	Health economics and hospital management	2, 4
4	Microbiology: bacteriology, mycology, and parasitology	2, 4
35	Occupational health and industrial medicine	2, 3, 4
2	Physiology	2, 3, 4
17	Public health, social medicine, and hygiene	2, 3, 4
19	Rehabilitation and physical medicine	2, 3
9	Surgery	3, 4

with the reference staff survey of perceived use of *Excerpta Medica* by library patrons (Table 5). Our reference staff's perception was accurate 19% of the time, inaccurate 5% of the time, and split 21% of the time. Fifty-five percent of the last were believed to be questionable and in need of testing, of which 35% ultimately were retained and 65% were dropped.

#### CONCLUSION

User education, public relations, and a follow-up study are being planned as phase-II projects. Several difficulties encountered in the course of this study pointed out potential objectives for phase II.

One difficulty was obtaining responses to the slips placed in each issue and volume, even though the study was well publicized. Second, the shelving statistics did not always correspond to the numbers of issue slips returned; thus, we believed it was important to have more than one approach to actual use data. In addition, many interviewees had no knowledge of *Excerpta Medica*. This group primarily consisted of nurses, medical students, and dental residents. We will be targeting our publicity and user education programs to these groups, as well as to the faculty and house staff. The unfamiliarity with *Excerpta Medica* of the nursing students and dental residents may be explained by the lack of coverage of nursing and dental sciences.

## EXCERPTA MEDICA

TABLE 10  
DISTRIBUTION OF *EXCERPTA MEDICA* USE

Section No.	Section Title	Shelving Uses	Issue Slips Returned	Sections Used*
1	Anatomy, anthropology, embryology, and histology	0	0	1
24	Anesthesiology	0	0	0
31	Arthritis and rheumatism	0	0	2
27	Biophysics, bioengineering, and medical instrumentation	0	0	1
16	Cancer	0	0	0
18	Cardiovascular diseases and cardiovascular surgery	3	0	1
15	Chest diseases, thoracic surgery, and tuberculosis	7	2	1
29	Clinical biochemistry	0	0	2
13	Dermatology and venereology	4	2	0
21	Developmental biology and teratology	0	0	0
40	Drug dependence	0	0	1
3	Endocrinology	5	1	2
46	Environmental health and pollution control	0	0	0
50	Epilepsy	0	0	0
49	Forensic science	0	0	2
48	Gastroenterology	6	0	3
5	General pathology and pathological anatomy	0	0	4
20	Gerontology and geriatrics	0	0	0
36	Health economics and hospital management	0	0	1
25	Hematology	4	1	0
22	Human genetics	0	0	0
26	Immunology, serology, and transplantation	0	0	1
6	Internal medicine	8	3	4
4	Microbiology: bacteriology, mycology, and parasitology	4	0	1
8	Neurology and neurosurgery	3	4	2
23	Nuclear medicine	0	0	0
10	Obstetrics and gynecology	0	3	1
35	Occupational health and industrial medicine	3	1	1
12	Ophthalmology	0	0	0
33	Orthopedic surgery	0	1	1
11	Otorhinolaryngology	3	0	1
7	Pediatrics and pediatric surgery	0	0	3
30	Pharmacology and toxicology	0	0	2
2	Physiology	0	1	2
34	Plastic surgery	0	0	0
32	Psychiatry	0	0	3
17	Public health, social medicine, and hygiene	8	1	1
14	Radiology	0	0	0
19	Rehabilitation and physical medicine	1	1	0
9	Surgery	2	0	0
28	Urology and nephrology	0	1	2
47	Virology	0	0	0

\*The number only of *Excerpta Medica* sections used by the interviewee, not the number of uses.



TABLE 11  
SECTIONS RETAINED

Section No.	Section Title
18	Cardiovascular diseases and cardiovascular surgery
15	Chest diseases, thoracic surgery, and tuberculosis
13	Dermatology and venereology
3	Endocrinology
48	Gastroenterology
5	General pathology and pathological anatomy
25	Hematology
6	Internal medicine
8	Neurology and neurosurgery
10	Obstetrics and gynecology
7	Pediatrics and pediatric surgery
32	Psychiatry
28	Urology and nephrology
26*	Immunology, serology, and transplantation
33*	Orthopedic surgery
11*	Otorhinolaryngology

\*Retained by special request.

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#### REFERENCES

1. Brown NE, Phillips J. Price indexes for 1981: U.S. periodicals and serials services. *Libr J* 1981 July; 1387-94.
2. La Rocco A, Feng C. Excerpta Medica abstracting journals: a case study costs to medical school libraries. *Bull Med Libr Assoc* 1977 Apr;65:255-60.
3. Dolcourt JJ, Braude RM. Determination of overlap in coverage of Excerpta Medica and Index Medicus through SERLINE. *Bull Med Libr Assoc* 1976 July;64:324-5.
4. Timour JA. Use of selected abstracting and indexing journals in biomedical resource libraries. *Bull Med Libr Assoc* 1979 July;67:330-3.
5. Green AC, Jackson SJ. Excerpta Medica abstract journals: examination of use in medical center libraries. *Bull Med Libr Assoc* 1982 Jan;70:56-8.
6. Bourne CP, Gregor D. Planning serials cancellations and cooperative collection development in the health sciences: methodology and background information. *Bull Med Libr Assoc* 1975 Oct;63:366-77.
7. Shaw WM. A practical journal usage technique. *Coll Res Libr* 1978 Nov;39:479-84.
8. Wenger CB, Childress J. Journal evaluation in a large research library. *J Am Soc Info Sci* 1977 Sept;28:293-9.
9. Bastille JD, Mankin CJ. Report on subsequent demand for journal titles dropped in 1975. *Bull Med Libr Assoc* 1978 July;66:346-9.
10. Garfield E. Excerpta Medica: abstracting the biomedical literature for the medical specialist. *Curr Cont Agric Biol Environ Sci* 1980 July 14;28:5-11.

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