

Analysis of One Year's Circulation at the Downstate Medical Center Library*

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ABSTRACT

A survey of the circulation of books and journals at the Downstate Medical Center Library was conducted, based on cancelled circulation cards accumulated during a one-year period. Analysis of the results shows the frequency of use of various materials by several groups of borrowers and brings out important differences between circulation of books and that of journals. One of the results was the compilation of a list of most frequently used journals. The findings are graphically represented by several tables and charts.

A LIBRARY should serve its readers' needs. One way of learning these needs is to study the use of the collections.

While several studies in the past few years have reported statistics on the circulation of periodicals in medical libraries (1-4), there seems to be a need for studies of the circulation of books as well and for surveys noting the relationship between the types of borrowers and the types of circulated material. Such studies may affect the purchasing policies of the library and help with decisions on the division of collections. The latter use will be of importance to the Downstate Medical Center Library when a division of its collection becomes necessary during the merger with the Academy of Medicine of Brooklyn Library in the near future.

The search for an answer to the question of

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"who is using what and how often?" was the main reason for the present study, which is an analysis of the circulation of books and periodicals at the Library of the Downstate Medical Center for the one-year period from September 1962 through August 1963. A complete year has been deemed necessary so that the seasonal peaks and slumps may be averaged out. Only the initial circulation of materials has been counted—not renewals—so that totals are about one-third lower than the circulation figures tabulated by the Library. The tables, moreover, do not include categories that showed a low use.

The Library of the Downstate Medical Center contained about 31,000 books and 34,000 bound journals and subscribed to 1,600 periodical titles at the time of the survey. The Medical Center is not on a university campus but is adjacent to Kings County Hospital and Brooklyn State Hospital. The Library's patrons are members of the faculty, staff, and students of the medical school, interns and residents at Kings County Hospital, and special groups consisting of nonaffiliated scientists and alumni. Interlibrary loans have been omitted from the study.

METHODOLOGY

From September 1, 1962, to August 31, 1963, every charge card was saved for materials returned to the Library. These cards were then divided into two groups—those pertaining to books and those pertaining to journals. Each card was tabulated for date of publication and type of borrower. The journals were arranged alphabetically by title, and books were arranged by classification groupings. The term "journal" is used for all serial publications which appear

at regular intervals, but it does not include multiple-volume book series.

The circulation charge cards are filled out by the borrowers. With the exception of a few restricted journal titles, material in the Library's open-shelf collection circulates for a period of two weeks with an unlimited number of renewals permitted, provided there are no other requests for the material. The charge cards indicate the borrowers' status—whether members of the faculty, the student body, etc.

The greatest emphasis was placed on studying the interests of each group of borrowers using the Library's collection and learning where a better coverage of the literature was advisable. The user and the material are equally of interest. Therefore, one should be studied just as much as the other.

While collecting the information, certain discrepancies and oddities were noticed. For instance, the charge cards have designations for "Faculty" and for "Staff," as well as for "Special" individuals and for "Residents." Invariably certain members of the faculty checked "Staff," and residents checked the "Special" category. Wherever it was possible to change or correct these discrepancies, the corrections were made. However, about 25 percent of the total figure under "Staff" should be regarded as relating to the faculty. It might also be necessary to explain that "Special" includes outside investigators who had special borrowing privileges while working in a scientific field but who were not connected with the Downstate Medical Center.

The fact that this Library has an open-shelf collection has a great deal to do with the pattern of its use. The Library keeps a count of the material reshelfed from its tables. These figures show distinctly that at a time when there was no increase in the circulation figures a great increase occurred in the "within the library" use of the material.

RESULTS

The total number of items circulated for the year September 1, 1962, through August 31, 1963, was 41,628 (17,601 books and 24,027 journals). The number of items analyzed for this report was 28,114 (12,081 books and 16,033 journals); i.e., 13,514 less than the total circulation. The items excluded were journal titles and book subject classifications used less than an arbitrary minimum number of times.

TABLE 1
CIRCULATION BY TYPE OF BORROWER

Borrowers	Books	Journals	Total
Faculty.....	2,704	5,232	7,936
Students.....	4,084	6,200	10,284
Staff.....	2,172	2,341	4,513
Residents.....	1,891	1,007	2,898
Interns.....	319	382	701
Special.....	911	871	1,782
Total.....	12,081	16,033	28,114

Table 1 shows the circulation of books and journals by types of borrowers. The heaviest borrowers were the medical students, followed by the members of the faculty. These two groups account for two-thirds of the total circulation. Although both of these groups borrowed more journals than books, the faculty borrowed a proportionately higher number of journals than the students. Two groups, residents and special, borrowed more books than journals. It should be indicated that the latter group consists mostly of outside investigators, who prefer to retain journal articles for future use and use the Library's photocopying services extensively. While this preference might explain the higher use of books than journals by special borrowers, there was no plausible explanation available for the higher use of books than journals by the residents, in contrast to the usual pattern.

BOOKS

Only those subject categories are listed in Table 2 which showed a usage of 100 or more times. Additional information on other categories is available from the Downstate Medical Center Library upon request.

Table 2 includes 36 classification categories totalling 11,571 books and a "New Books" category (books not yet cataloged) of 510 items. A breakdown of the subject categories indicates that 7,523 books were in the fields of clinical medicine and medical specialties (W classes) and 4,048 books were in the basic sciences and peripheral subject fields (Q classes, BF, and HA). The latter category is surprisingly high, but it is a direct result of the basic science research activities of the Medical Center.

The greatest surprise was the number one subject, "psychiatry," because of the great fre-

TABLE 2
Books

Subject	Class	Number Circulated
1. Psychiatry	WM	1,159
2. Biochemistry	QU	760
3. Nervous System	WL	699
4. Cardiovascular System	WG	606
5. Biology	QH	602
6. Pathology	QZ	569
7. Human Anatomy	QS	439
8. Endocrine System	WK	422
9. Surgery and Anesthesia	WO	411
10. Ophthalmology	WW	402
11. Musculoskeletal System	WE	384
12. Bacteriology	QW	364
13. Chemistry	QD	358
14. Pediatrics	WS	339
15. Practice of Medicine	WB	330
16. Gastrointestinal System	WI	292
17. Respiratory System	WF	275
18. Hemic and Lymphatic System	WH	269
19. Radiology	WN	237
20. Physiology	QT	212
21. Urogenital System	WJ	207
22. Medical Profession	W	198
23. Pharmacology	QV	190
24. Psychology	BF	189
25. Gynecology	WP	178
26. History of Medicine	WZ	168
27. Deficiency Diseases, etc	WD	164
28. Infectious Diseases	WC	162
29. Clinical Pathology	QY	149
30. Otorhinolaryngology	WV	133
31. Dermatology	WR	131
32. Geriatrics	WT	129
33. Public Health	WA	121
34. Zoology	QL	116
35. Obstetrics	WQ	107
36. Statistics	HA	100
Subtotal	—	11,571
New Books	—	510
Total	—	12,081

quency of use and also because the Psychiatry Department is the only department within the Downstate Medical Center which maintains a professionally supervised library (one full-time professional librarian is in charge). The circulation figures of this branch library have not been included in this study.

A detailed breakdown of category by year, beginning with 1954, is also available upon request. An interesting result of this part of the survey is the indication of a comparatively high circulation of books published prior to 1954.

The first five subject categories, three clinical and two preclinical, show a circulation of 3,826 books. A breakdown by date of publication indicates that 2,867 (approximately 75 percent) had copyright dates from 1954 to 1963 and 959 titles (nearly 25 percent) were published at an earlier date.

The research activities of the institution are closely related to the use of certain publications and might vary from year to year. For instance, the subject "biology" ranked fifth on the list, but most likely it would be much farther down the list this year; during the survey period an investigator was writing a textbook and used the biology collection extensively. This incidence, however, is the only one readily accounted for; other findings may have no special explanations.

Advance awareness of particular research projects makes it possible for the Library to secure additional materials. Faculty cooperation in notifying the Library of new projects is essential.

Figure 1 shows the circulation of books by date of publication. The totals are not a true reflection of the circulation for the most recent years. As the study began during 1962 and ended in 1963, not all the books published during this period were available during the entire time of the study.

The graph rises to 1960 and then declines gradually down to 1954. Although there was a brisk circulation of older books, no one year was significant enough to warrant plotting the graph beyond 1954. It may be seen then that the greatest circulation is of books published within the past three years.

JOURNALS

At the time of the survey, the Library had approximately 4,500 journal titles in its collection, including the 1,600 titles received currently.

The survey shows that 541 titles were used during the year, with 350 titles (about 65 percent) used more than 10 times and 191 (35 percent) used less often.

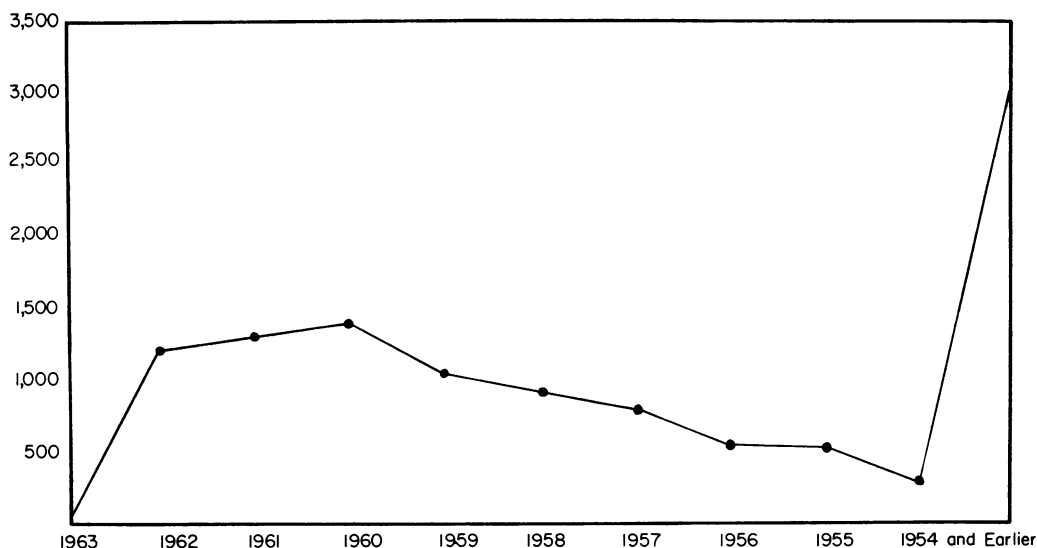


FIG. 1.—Circulation of books by year of publication (not including 510 unclassified "new books").

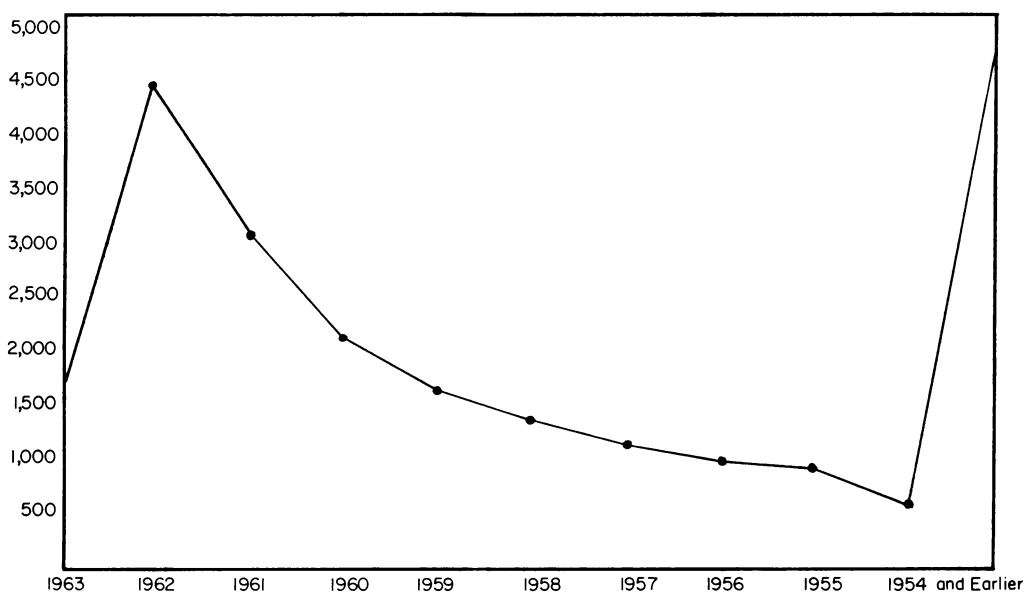


FIG. 2.—Circulation of journals by year of publication

The circulation of journals by year of publication is shown in Figure 2. The rise for journals is more rapid than for books. The highest circulation was for material about one year old, with a rapid and smooth decline down to 1954.

The first 150 titles were tabulated in an identical manner, as shown by Table 3, which

lists the first 50 titles. Table 3 indicates the total number of times the 50 journals circulated. In instances when 2 titles had the same total figures, an alphabetical arrangement was followed in order to keep the numerical listing consecutive.

The information secured from the tabulation

TABLE 3
PERIODICALS

Title	Number Circulated			Borrowers					
	Total	Published before 1955	Published after 1955	Faculty	Students	Staff	Residents	In-terns	Special
1. Amer. J. Med.....	512	63	449	75	331	30	34	30	12
2. New Eng. J. Med.....	454	46	408	87	257	37	31	23	19
3. J. Biol. Chem.....	412	232	180	175	60	131	8	2	36
4. J. Clin. Invest.....	393	82	311	98	214	39	16	13	13
5. Amer. J. Physiol.....	392	181	211	111	156	98	9	6	12
6. J. Exp. Med.....	392	265	127	247	76	39	12	4	14
7. J. A. M. A.....	329	67	262	92	161	31	22	12	11
8. J. Physiol. (London).....	291	154	137	116	99	61	3	1	11
9. Nature (London).....	280	30	250	172	46	48	4	1	9
10. Lancet.....	278	49	229	96	124	27	17	2	12
11. Biochim. Biophys. Acta.....	263	32	231	111	64	59	2	4	23
12. Ann. N. Y. Acad. Sci.....	260	27	233	69	97	39	24	2	29
13. Ann. Intern. Med.....	254	40	214	35	170	23	16	7	3
14. Arch. Intern. Med. (Chicago).....	247	37	210	31	150	23	25	11	7
15. Proc. Soc. Exp. Biol. Med.....	243	106	137	110	78	37	6	3	9
16. Med. Clin. N. Amer.....	230	20	210	16	147	5	15	40	7
17. Circulation.....	228	27	201	45	136	28	12	2	5
18. Pediatrics.....	213	29	184	65	116	12	11	5	4
19. Physiol. Rev.....	206	64	142	67	84	37	5	2	11
20. Pediat. Clin. N. Amer.....	204	2	202	22	105	17	24	28	8
21. J. Immun.....	199	106	93	124	38	33	1	0	3
22. Amer. J. Path.....	188	66	122	45	93	17	26	4	3
23. J. Pediat.....	188	21	167	39	120	19	6	0	4
24. Surg. Clin. N. Amer.....	187	24	163	22	104	4	33	21	3
25. Blood.....	183	41	142	48	92	27	3	4	9
26. Brit. Med. J.....	177	20	157	71	76	17	4	2	7
27. Science.....	176	59	117	84	49	37	3	0	3
28. J. Pharmacol. Exp. Ther.....	160	71	89	43	56	50	1	0	10
29. J. Clin. Endocr.....	155	35	120	40	98	7	5	2	3
30. Medicine (Balt.).....	150	50	100	27	69	7	20	17	10
31. J. Lab. Clin. Med.....	148	39	109	61	47	30	7	1	2
32. Biochem. J.....	143	68	75	66	27	28	2	0	20
33. Arch. Path. (Chicago).....	138	76	62	41	59	10	18	1	9
34. Endocrinology.....	131	48	83	72	35	20	0	0	4
35. Proc. Nat. Acad. Sci. U.S.A.....	125	10	115	75	23	22	0	2	3
36. Cancer.....	122	43	79	29	56	4	26	2	5
37. Amer. Surg.....	121	55	66	33	48	7	22	4	7
38. Arch. Biochem.....	120	50	70	66	15	21	1	0	17
39. Sci. Amer.....	119	13	106	24	40	43	11	0	1
40. J. Comp. Neurol.....	118	62	56	25	39	42	0	0	12
41. J. Amer. Chem. Soc.....	117	56	61	62	7	32	1	0	15
42. Amer. J. Obstet. Gynec.....	116	45	71	37	36	6	29	1	7
43. Exp. Cell Res.....	113	16	97	44	28	30	1	1	9
44. Arch. Ophthal. (Chicago).....	109	52	57	39	18	25	22	1	4
45. J. Path. Bact.....	108	73	35	50	35	8	9	1	5
46. Amer. J. Dis. Child.....	107	37	70	29	57	5	9	1	6
47. Amer. J. Ophthal.....	107	33	74	27	27	26	22	1	4
48. Circ. Res.....	106	6	100	27	61	8	7	3	0
49. Amer. J. Cardiol.....	105	0	105	27	58	11	4	2	3
50. Diabetes.....	99	6	93	18	63	12	4	2	0

shows two interesting points: that there was a frequent use of older volumes of certain journals, mostly in the basic sciences, and that there was a marked difference in the use of journals by various groups of borrowers.

When comparing the journals listed in Table 3 with the Fleming and Kilgour listings (1), there seem to be certain variations. Eleven journals out of the first fifty titles listed by their survey are not included in Table 3. One title is a dental journal not carried by this Library, but the other ten are in the Library and are found later in the list.

There is no significant difference in the use of clinical and preclinical publications between the two surveys. Variations in the use of any one title may be affected by the number of copies a library owns as well as the circulation policies it follows. The fewer the restrictions, the higher the circulation figures may be. On the other hand, if the library carries several copies of journals in heavy demand, the journal title will certainly appear more frequently in the statistics. The Downstate Medical Center Library received only thirty second copies of current journals and maintained an even smaller collection of third copies at the time of the survey, because of a lack of space.

Additional information and an alphabetical listing of the first 350 journals is available from the author upon request.

SUMMARY

An analysis of circulation statistics was undertaken in order to learn which parts of the library's collections were most used and who used them. The method was to count the frequency of circulation of various types of material among different groups of patrons. Fortunately, the circulation records of the Library contained the raw data for this type of investigation.

The study brought out some interesting and no doubt useful facts regarding the relative circulation of books and journals by faculty members, staff, students, and other groups of borrowers. Figures of book circulation revealed

important variations in regard to classes of books (particularly in the comparison of medical classes with those in the premedical and peripheral categories) and also striking differences in regard to date of publication. One by-product of this survey was the compilation of a list of subject classes which show substantial circulation. The somewhat surprising fact that some groups of users borrowed more books than journals may help in directing greater attention to the importance of books in regard to acquisition and subject analysis.

The circulation of journals was, of course, given primary consideration. Comparison was sought with some previous studies by similar libraries. The resultant compilation of fifty most frequently circulated journals should prove of practical value, along with a detailed "break-down" to show the use by various groups of each of these important titles. Analysis of frequency of circulation in relation to recency of publication provides important figures which could affect retention periods, storage arrangements, etc.

The study resulted mainly in a statement of factual findings. No attempt has been made to pose any hypotheses or formulate broad generalizations. The presentation is based on the belief that the facts, when given in an organized fashion, are useful *per se*. A gradual cumulation of related information, coming from similar sources and covering various periods of time, will no doubt lead to significant conclusions of tangible value to the whole medical library profession.

REFERENCES

1. FLEMING, THOMAS P., AND KILGOUR, FREDERICK G. Moderately and heavily used biomedical journals. *BULLETIN* 52: 234-241, Jan. 1964.
2. KILGOUR, FREDERICK G. Use of medical and biological journals in the Yale Medical Library: Part I. Frequently used journals. *BULLETIN* 50: 429-443, July 1962.
3. KILGOUR, FREDERICK G. Use of medical and biological journals in the Yale Medical Library: Part II. Moderately used journals. *BULLETIN* 50: 444-449, July 1962.
4. YALE MEDICAL LIBRARY. Annual Report, 1952/53, p. 28-35.