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# Mapping the Literature of Health Care Management

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**Objectives:** The research provides an overview of the health care management literature and the indexing coverage of core journal literature.

**Method:** Citations from five source journals for the years 2002 through 2004 were studied using the protocols of the Mapping the Literature of Allied Health Project and Mapping the Literature of Nursing Project. The productivity of cited journals was analyzed by applying Bradford's Law of Scattering.

**Results:** Journals were the most frequently cited format, followed by books. Only 3.2% of the cited journal titles from all 5 source journals generated two-thirds of the cited titles. When only the health care management practitioner–oriented source journals were considered, two-thirds of the output of cited journal titles came from 10.8% of the titles. Science Citation Index and PubMed provided the best overall coverage of the titles cited by all 5 source journals, while the cited titles from the 2 practitioner-oriented journals were covered most completely by Social Sciences Citation Index and Business Source Complete.

**Conclusions:** Health care management is a multidisciplinary field. Librarians must consider the needs of their users and assist them by providing the necessary materials and combination of indexes to access this field adequately.

## INTRODUCTION

The Mapping the Literature of Allied Health Project of the Nursing and Allied Health Resources Section (NAHRS) of the Medical Library Association seeks to identify the core literature in allied health fields to provide information useful to collection development librarians and end users and to suggest titles for coverage to index producers [1]. The project also examines current coverage of core journals by electronic indexes to guide researchers and reference librarians to the tools that will be most effective in accessing the journal literature in each discipline. The present study focuses on assessing the general health care management literature as reflected in US journals.

## THE HEALTH CARE MANAGEMENT FIELD

Health care managers, also known as health care administrators or executives, ''plan, direct, coordinate, and supervise the delivery of health care'' [2]. As of May 2004, there were approximately 248,000 health care managers in the United States. The demand for these professionals is predicted to grow by 18% to 26% through 2014 [2, 3]. The US Department of Labor lists a master's degree in health services administration, long-term care administration, health sciences, public health, public administration, or business administration as a required qualification for medical and health care managers, although a bachelor's degree is adequate for some entry-level jobs. Students may study this discipline at the undergraduate, master's, and doctoral level [2].

Fast-paced change in the health care management field has led to a revamping of curricula and accreditation standards. Health care management education,

### Highlights

- The literature of health care administration is multidisciplinary.
- As evidenced by their citation patterns, authors of articles in health services research and health policy journals utilized health services/health policy and biomedical journals most frequently. This group did not heavily use health care administration and general business titles.
- More than one-third of the core journals cited by authors in health care management practitioner–oriented journals were general business titles. General business and organizational behavior titles accounted for almost one-fourth of the titles in the two most productive zones for practitioner journals.
- No one database provided adequate coverage of all the cited journal titles.

### Implications

- Librarians should assist their users in choosing a combination of indexes and table of contents services to access the journal literature adequately.
- Librarians who serve practitioners should provide access to general business titles.
- Researchers and practitioners need access to indexes that focus on social sciences and business as well as health care.

because of the multidisciplinary nature of the field, must cover not only health care–related subject areas, but borrow from fields including business administration and public administration. An informal survey conducted by the trade magazine *Modern Healthcare* in 2004 found that 70% of the responding health care executives and educators believed that the current academic programs adequately prepared students for their career. Over 50% of those responding also felt that areas such as finance, information technology, compliance, ethics, and construction and design needed more coverage [4].

Several articles recommending journals for health care administration education have been published [5, 6]. Other studies have reported faculty ratings of research journals for health care management on the basis of perceived quality and/or relevance as conduits of health care management research [7–9]. Recently, the Public Health/Health Administration Section of the Medical Library Association (PH/HA), as part of its Core Public Health Journal Project [10], published a list of ''essential core'' and ''research level core'' health services administration journals [11].

Studies of health care administration journals using bibliometric measures also exist [12–14]. Dame and Wolinsky studied twenty-six journals using measures based on ISI's impact factors. The top five journals were *The New England Journal of Medicine, JAMA, American Journal of Epidemiology, American Journal of Public Health,* and *Journal of Health and Social Behavior* [12]. Larson and Kershaw analyzed the references of health care administration textbooks using raw citation counts and a weighted measure. They found that the most frequently cited journal was *The New England Journal of Medicine,* followed by *American Journal of Public Health, Hospitals, JAMA,* and *Medical Care* [13]. Galganski studied the related field of nursing administration. Her list of core journals included several nursing and nursing administration titles as well as *The New England Journal of Medicine, JAMA,* and *Hospitals & Health Networks* [14].

## METHODOLOGY

This study primarily employs the common methodology of the NAHRS Mapping the Literature of Allied Health Project, as first presented by Schloman [15]. Additional modifications include the years studied (2002–2004), the addition of the government documents and Internet sites as format types, and the addition of business and health care administration databases to determine coverage.

Five source journals related to health care management were selected for analysis. These journals reflected the interdisciplinary nature of the field and the tension between research and practice:

Health services policy research source journals were:

- *Health Affairs (Millwood):* an official journal of AcademyHealth, a professional organization for health services researchers and practitioners [16, 17]
- *Health Services Research:* also an official journal of AcademyHealth [17, 18]
- *Medical Care Research and Review*: identifies its audience as ''researchers, policy makers, and health care administrators'' [19]

The practitioner-related research source journals were:

- *Health Care Management Review:* features ''high-level, reader-friendly content to support administrative practice decisions'' with research that ''bridge[s] the gap between clinical practice arenas and administration'' [20]
- *Journal of Healthcare Management*: features articles for ''executives, managers, educators and researchers'' that also have ''operational utility for the practicing manager'' [21]

These journals are considered highly relevant to the field by several sources: *Health Affairs, Health Services Research, Medical Care Research and Review,* and *Health Care Management Review* were viewed as the most relevant sources for health care management research by research- and practitioner-oriented health care administration faculty, according to a 2002 study [10]. The *Journal of Healthcare Management* merits inclusion as the official journal of the American College of Healthcare Executives, the general professional association for the discipline [21]. All five journals also are on the PH/HA's list of core health administration journals [12]. *Health Care Management Review* and the *Journal of Healthcare Management* are recommended for purchase by the ''Brandon/Hill Selected List of Print Books and Journals for the Small Medical Library'' [22]. All five journals are peer reviewed and available from US publishers.

References from research articles published from 2002 to 2004 in the source journals were examined after being entered into a Microsoft Access database. The information about each individual resource was entered into the database only once per article. The year of publication, name of the source journal, and format was noted for all citations. Titles of cited journals were included, and citations for journals that had undergone title changes or had been absorbed by other journals were combined under the most recent title for the journal.

The cited resources were divided into five format categories: books, government documents, journal articles, Internet sites, and miscellaneous materials. All monographs, except those published by a government agency, were classified as books. Government documents included items published at the international (e.g., United Nations), national, regional, and local levels. All government-sponsored serials were counted in the journal articles category, which included journals and periodicals, except for newspapers. All online nongovernmental and non-journal article sites were counted as Internet sites. The miscellaneous classification included all other sources. The frequency of each type of format was also tabulated and percentages of the total calculated.

According to Bradford's Law of Scattering, ''for any specialty, a relatively small core of journals can be expected to account for a disproportionate amount of the literature'' [23]. To assess the validity of this statement

**Table 1**
Cited format types by source journal and frequency of citations for all source journals

| Cited format type | No. of citations in source journals | | | | | Citations | |
|---|---|---|---|---|---|---|---|
| | *HA* | *HCMR* | *HSR* | *JHM* | *MCRR* | Total | Frequency (%) |
| Books | 1,963 | 607 | 1,370 | 346 | 539 | 4,825 | 16.5 |
| Journal articles | 5,888 | 2,121 | 6,681 | 1,105 | 2,598 | 18,393 | 62.8 |
| Government documents | 1,771 | 36 | 479 | 75 | 112 | 2,474 | 8.4 |
| Internet resources | 761 | 33 | 105 | 76 | 30 | 1,004 | 3.4 |
| Miscellaneous | 1,747 | 150 | 446 | 123 | 143 | 2,634 | 8.9 |
| Total | 12,130 | 2,947 | 9,081 | 1,725 | 3,422 | 29,305 | 100.0 |

*HA = Health Affairs.*
*HCMR = Health Care Management Review.*
*HSR = Health Services Research.*
*JHM = Journal of Healthcare Management.*
*MCRR = Medical Care Research & Review.*

**Table 2**
Cited format types by publication year period

| Publication year | Books | | Government documents | | Internet | | Journals | | Miscellaneous | | All formats | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | No. | % | No. | % | No. | % | No. | % | No. | % | No. | % |
| 2002–2004* | 706 | 14.6 | 730 | 29.5 | 425 | 42.5 | 3,623 | 14.3 | 938 | 36.0 | 5,423 | 18.5 |
| 1996–2001 | 2,343 | 48.6 | 1,099 | 44.4 | 359 | 35.7 | 9,594 | 52.2 | 1,285 | 49.4 | 14,680 | 50.1 |
| 1990–1995 | 851 | 17.6 | 235 | 9.5 | 7 | 0.7 | 3,779 | 20.5 | 182 | 6.9 | 5,054 | 17.2 |
| 1980–1989 | 542 | 11.2 | 114 | 4.6 | 2 | 0.2 | 1,805 | 9.8 | 45 | 1.7 | 2,508 | 8.6 |
| 1970–1979 | 214 | 4.4 | 26 | 1.1 | 0 | 0 | 422 | 2.3 | 19 | 0.7 | 681 | 2.3 |
| 1960–1969 | 65 | 1.3 | 6 | 0.2 | 0 | 0 | 93 | 0.5 | 4 | 0.2 | 168 | 0.6 |
| Pre-1960 | 71 | 1.5 | 18 | 0.7 | 0 | 0 | 57 | 0.3 | 3 | 0.1 | 149 | 0.5 |
| No dates | 33 | 0.7 | 246 | 9.9 | 210 | 20.9 | 20 | 0.1 | 133 | 5.0 | 642 | 2.2 |
| Total | 4,825 | 99.9† | 2,474 | 99.9† | 1,004 | 100.0 | 18,393 | 100.0 | 2,609 | 100.1† | 29,305 | 100.0 |

* Includes in press items.
† Does not equal 100% due to rounding.

for the health care management literature, journal titles were arranged in descending order by frequency of citation. The list of ranked titles was divided into three zones with approximately one-third of the citations in each zone. Zone 1 contained the core titles, which were the most frequently cited journals. Zone 2 included the next most productive set of journals, while Zone 3, which contained the greatest number of titles, represented the least productive journals.

Index coverage for the publication year of 2004 was determined for the titles in Zones 1 and 2. Business, health, and social sciences indices were examined because of the overlap of these areas with health care management. ABI INFORM, Business Source Complete, CINAHL Plus with Full Text, EMBASE (without MEDLINE, to provide a comparison with earlier studies in both mapping projects), Ovid HealthStar, EBSCO's Health Business FullTEXT Elite, ProQuest's Health Management, PubMed, Science Citation Index, and Social Sciences Citation Index were studied. Depth of coverage was rated on a scale of 0 (no coverage) to 5 (high coverage), based on the percentage covered.

Because there were more health services/health policy source journals, it was hypothesized that this group would contribute more citations and their output would dominate the results. Therefore, in addition to tabulating the overall results, the zones for the output from only the two practitioner-oriented journals were determined.

## RESULTS AND LIMITATIONS

Table 1 shows the frequency of citation of each format type by each source journal. As expected, the majority of the citations came from health services/health policy research journals. Journal citations dominated the results, constituting 62.8% of all analyzed references (Table 1). Journal article citations made up only 48.5% of the references from *Health Affairs* but constituted more than 60% of the citations from each of the other source journals. The next most common format cited was books. Also of note was that just over 20% of the citations from *Health Affairs* were from Internet sources and miscellaneous materials. When only the two practitioner-oriented journals, *Health Care Management Review* and *Journal of Healthcare Management,* were considered, journal citations made up almost 70% of the total and books were responsible for just over 20%.

Just over 50% of all of the citations came from the 5 years immediately preceding the study period (Table 2). This was the most frequently cited period for all formats, except for Internet resources, where most citations came from within the study period.

The 18,393 journal article citations from all 5 source journals represent 1,766 different journal titles (Table 3). In alignment with Bradford's Law of Scattering [23], almost two-thirds of the journal citations come from only 3.2% of the most frequently cited journal titles, with the core, Zone 1, containing 0.3%. When

**Table 3**
Distribution by zone of cited journals and references

| | All journals | | | | | *HCMR and JHM* only | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Cited journals | | Cited journal references | | Cumulative total | Cited journals | | Cited journal references | | Cumulative total |
| Zone | No. | % | No. | % | | No. | % | No. | % | |
| Zone 1 | 6 | 0.3 | 6,054 | 32.9 | 6,054 | 11 | 1.6 | 1,086 | 33.7 | 1,086 |
| Zone 2 | 52 | 2.9 | 6,143 | 33.4 | 12,196 | 65 | 9.2 | 1,043 | 32.3 | 2,128 |
| Zone 3 | 1,708 | 96.7 | 6,196 | 33.7 | 18,392 | 628 | 89.2 | 1,097 | 34.0 | 3,225 |
| Total | 1,766 | 99.9* | 18,393 | 100.0 | | 704 | 100.0 | 3,225 | 100.0 | |

* Does not equal 100.0% due to rounding.

the citations from *Health Care Management Review* and *Journal of Healthcare Management* alone are considered, Zones 1 and 2 contain a greater percentage and number of titles, but the total number of titles is less than that for all 5 journals combined (Table 3).

Table 4 shows the ranking of the cited journal output for all five source journals. Two of the five, *Health Affairs* and *Health Services Research,* are in Zone 1, while *Health Care Management Review, Journal of Healthcare Management,* and *Medical Care Research and Review* are in Zone 2.

Health services research and policy titles constituted the bulk of the top-ranked journals in Zone 1 of Table 4. However, biomedical titles made up the largest share of all titles in Table 4, and *JAMA* and *New England of Journal of Medicine* appeared in Zone 1. The preponderance of citations from the health services research and health policy source journals might explain this result, as these journals relied on studies of the cost and effectiveness of treatments and protocols from biomedical journals.

When all five source journals were considered, Science Citation Index had the highest average coverage both for Zone 1 (4.67) and overall (3.78), while Social Sciences Citation Index had the highest average coverage for Zone 2 (3.04) (Table 4). PubMed had the second-highest average coverage for both zones. The large proportion of citations for biomedical journals in Table 4, in addition to the number of health services journals, especially in Zone 1, might explain why Science Citation Index and PubMed/MEDLINE performed well.

Table 5 displays the rankings of cited journal references from the two practitioner-oriented titles. The core literature for practitioner-focused research, as represented by Zone 1, was drawn from several fields, including health business, general business, health services research, health policy, and biomedicine. All five of the study's original source journals were in Zone 1. The importance of general business titles to the practitioner literature was emphasized by the presence of four titles from this field in Zone 1. Overall, general business and organizational behavior titles accounted for almost one-fourth of the titles. The interest of practitioners in human resource administration might explain the appearance of general applied psychology journals in Zone 2. The percentage of biomedical journals decreased to 25%, while the percentage of health care management titles increased to 25%.

Given the change in emphasis, it was not surprising that Social Sciences Citation Index and some of the business-oriented databases outperformed the science and health sciences databases in Table 5. For Zone 1 titles, Social Sciences Citation Index had the greatest coverage (4.36), followed by Health Business FullTEXT Elite (3.00) and Business Source Complete (3.00). Social Sciences Citation Index and Business Source Complete provided the best coverage for Zone 2 and for both zones combined. Of the health care administration databases, Ovid HealthStar had a greater depth of coverage than both Health Business FullTEXT Elite and Health Management, when both zones were considered (Tables 4 and 5). The performance of the latter two databases improved when only practitioner-oriented journals were considered (Table 5). No database scored over 4.0 overall for coverage either in Table 4 or Table 5.

This study has some limitations. The validity of the results of any citation analysis depends on the accuracy of the source citations. The authors only verified references with obvious errors. It also should be remembered when comparing databases that some databases index cover to cover, while others are more selective.

## CONCLUSION

The multidisciplinary nature of health care management requires the use of resources from diverse fields. Based on the data provided by this study, practitioners should have access to general business, applied psychology, health services research, and health policy journals, as well as health care management titles. Health services and health policy researchers depend heavily on the biomedical literature. Librarians should not assume that PubMed provides sufficient indexing of the journal literature of this field. Table of contents services via email and really simple syndication (RSS) feeds can provide updates about individual titles [24]. However, librarians also should consider subscribing to Social Sciences Citation Index and Business Source Complete if they serve practitioners and practice-oriented faculty and to Science Citation Index and Social Sciences Citation Index if they serve health services and health policy researchers.

**Table 4**
Distribution and database coverage scores of cited journals: all source journals

| Cited journal | Total citations | Bibliographic databases | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | CINAHL Plus | PubMed | Ovid HealthStar | Business Source Complete | SCI | SSCI | ABI Inform | Health Business | Health Management | EMBASE |
| **Zone 1** | | | | | | | | | | | |
| 1. Health Aff (Millwood) | 1,928 | 1 | 4 | 4 | 5 | 4 | 4 | 3 | 5 | 5 | 0 |
| 2. JAMA | 1,246 | 3 | 3 | 3 | 0 | 5 | 1 | 0 | 0 | 0 | 3 |
| 3. Med Care | 1,002 | 3 | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 0 | 0 |
| 4. N Engl J Med | 732 | 3 | 4 | 3 | 0 | 5 | 1 | 0 | 0 | 3 | 3 |
| 5. Health Serv Res | 726 | 5 | 5 | 5 | 0 | 5 | 5 | 4 | 0 | 0 | 5 |
| 6. Inquiry | 420 | 2 | 3 | 3 | 5 | 4 | 4 | 0 | 0 | 0 | 3 |
| Zone 1 average database coverage | | 2.83 | 4.00 | 3.83 | 1.67 | 4.67 | 3.33 | 1.17 | 0.83 | 1.33 | 2.33 |
| **Zone 2** | | | | | | | | | | | |
| 7. Am J Public Health | 390 | 4 | 4 | 4 | 5 | 5 | 5 | 0 | 5 | 5 | 4 |
| 8. J Health Econ | 340 | 0 | 4 | 4 | 5 | 4 | 4 | 4 | 0 | 0 | 4 |
| 9. Med Care Res Rev | 336 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 0 | 0 | 5 |
| 10. Health Care Financ Rev | 275 | 0 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 5 | 3 |
| 11. BMJ | 258 | 2 | 4 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 2 |
| 12. Milbank Q | 254 | 0 | 3 | 3 | 5 | 3 | 3 | 0 | 5 | 0 | 0 |
| 13. Soc Sci Med | 226 | 2 | 4 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| 14. Health Care Manage Rev | 212 | 2 | 4 | 4 | 4 | 0 | 4 | 4 | 4 | 5 | 4 |
| 15. Ann Intern Med | 197 | 2 | 5 | 4 | 0 | 4 | 1 | 0 | 0 | 4 | 3 |
| 16. Pediatrics | 197 | 4 | 4 | 4 | 0 | 5 | 1 | 0 | 0 | 0 | 4 |
| 17. J Health Polit Policy Law | 195 | 3 | 0 | 3 | 5 | 4 | 4 | 4 | 5 | 4 | 3 |
| 18. Arch Intern Med | 178 | 2 | 4 | 4 | 0 | 5 | 1 | 0 | 0 | 0 | 4 |
| 19. J Healthc Manag | 154 | 1 | 3 | 3 | 4 | 0 | 5 | 3 | 4 | 4 | 5 |
| 20. J Gen Intern Med | 129 | 0 | 1 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 1 |
| 21. Strateg Manage J | 125 | 0 | 0 | 0 | 4 | 0 | 5 | 4 | 5 | 5 | 0 |
| 22. Acad Manage J | 121 | 0 | 0 | 0 | 5 | 0 | 5 | 4 | 5 | 0 | 0 |
| 23. Gerontologist | 108 | 1 | 1 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 1 |
| 24. Acad Manage Rev | 106 | 0 | 0 | 0 | 5 | 0 | 5 | 4 | 5 | 0 | 0 |
| 25. Adm Sci Q | 106 | 0 | 0 | 0 | 5 | 0 | 4 | 4 | 5 | 0 | 0 |
| 26. J Am Geriatr Soc | 104 | 2 | 2 | 2 | 0 | 5 | 5 | 0 | 0 | 0 | 2 |
| 27. Psychiatr Serv | 101 | 2 | 3 | 3 | 0 | 5 | 5 | 0 | 0 | 0 | 3 |
| 28. Arch Gen Psychiatry | 97 | 0 | 4 | 4 | 0 | 5 | 5 | 0 | 0 | 0 | 3 |
| 29. Jt Comm J Qual Patient Saf | 97 | 4 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 30. J Fam Pract | 96 | 0 | 3 | 2 | 0 | 4 | 1 | 0 | 0 | 0 | 4 |
| 31. Lancet | 95 | 3 | 4 | 3 | 0 | 5 | 1 | 0 | 0 | 4 | 3 |
| 32. J Clin Epidemiol | 85 | 0 | 4 | 4 | 0 | 5 | 1 | 0 | 0 | 0 | 4 |
| 33. J Gerontol (J Gerontol A Biol Sci Med Sci; J Gerontol B Psychol Sci Soc Sci) | 85 | 2 | 4 | 2 | 0 | 5 | 5 | 0 | 0 | 0 | 4 |
| 34. Health Econ | 83 | 0 | 4 | 4 | 0 | 5 | 5 | 4 | 0 | 0 | 4 |
| 35. J Health Soc Behav | 81 | 0 | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 5 | 0 |
| 36. Am Econ Rev | 80 | 0 | 0 | 0 | 4 | 0 | 4 | 4 | 0 | 5 | 0 |
| 37. J Rural Health | 75 | 3 | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 0 | 4 |
| 38. Am J Manag Care | 74 | 2 | 4 | 4 | 0 | 5 | 5 | 0 | 0 | 0 | 2 |
| 39. Am J Epidemiol | 69 | 2 | 2 | 2 | 0 | 5 | 1 | 0 | 0 | 0 | 2 |
| 40. Mod Healthc | 69 | 1 | 2 | 2 | 4 | 0 | 0 | 2 | 4 | 5 | 0 |
| 41. Am J Psychiatry | 68 | 1 | 3 | 3 | 0 | 5 | 5 | 0 | 0 | 0 | 2 |
| 42. Am J Prev Med | 67 | 0 | 5 | 5 | 0 | 5 | 3 | 0 | 0 | 0 | 5 |
| 43. Annu Rev Public Health | 63 | 0 | 4 | 4 | 0 | 4 | 4 | 0 | 0 | 5 | 4 |
| 44. Diabetes Care | 63 | 2 | 5 | 4 | 0 | 5 | 1 | 0 | 0 | 0 | 5 |
| 45. CMAJ | 62 | 1 | 3 | 3 | 0 | 5 | 1 | 0 | 0 | 0 | 3 |
| 46. Harvard Bus Rev | 59 | 0 | 1 | 1 | 5 | 0 | 4 | 3 | 5 | 0 | 0 |
| 47. Healthc Financ Manage | 54 | 1 | 2 | 2 | 5 | 0 | 0 | 2 | 5 | 5 | 0 |
| 48. MMWR Morb Mortal Wkly Rep | 53 | 2 | 2 | 2 | 0 | 0 | 0 | 0 | 3 | 5 | 0 |
| 49. Public Health Reports | 53 | 5 | 4 | 4 | 0 | 5 | 5 | 0 | 5 | 0 | 4 |
| 50. J Am Stat Assoc | 52 | 0 | 0 | 0 | 5 | 3 | 0 | 0 | 0 | 0 | 0 |
| 51. Federal Register | 50 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 52. Arch Pediatr Adolesc Med | 47 | 3 | 4 | 4 | 0 | 5 | 1 | 0 | 0 | 0 | 4 |
| 53. J Hum Resour | 46 | 0 | 0 | 0 | 5 | 0 | 5 | 5 | 5 | 5 | 0 |
| 54. Q J Econ | 46 | 0 | 0 | 0 | 5 | 0 | 5 | 5 | 5 | 0 | 0 |
| 55.Front Health Serv Manage | 45 | 0 | 3 | 3 | 4 | 0 | 0 | 3 | 4 | 5 | 0 |
| 56. J Nurs Adm | 45 | 4 | 5 | 4 | 0 | 5 | 5 | 0 | 0 | 0 | 4 |
| 57. Econometrica | 44 | 0 | 0 | 0 | 5 | 4 | 4 | 4 | 0 | 0 | 0 |
| 58. J Health Care Finance | 44 | 3 | 3 | 3 | 4 | 0 | 0 | 3 | 4 | 5 | 0 |
| Zone 2 average database coverage | | 1.37 | 2.86 | 2.61 | 1.88 | 2.90 | 3.04 | 1.35 | 1.69 | 1.59 | 2.24 |
| **Average Zones 1 and 2** | | 2.10 | 3.43 | 3.22 | 1.77 | 3.78 | 3.19 | 1.26 | 1.26 | 1.46 | 2.28 |

Based on database coverage score: 5 (95%–100%); 4 (75%–94%); 3 (50%–74%); 2 (25%–49%); 1 (1%–24%); 0 (< 1%).
CINAHL Plus = CINAHL Plus with Full Text.
Health Business = Health Business FullTEXT Elite.
SCI = Science Citation Index.
SSCI = Social Sciences Citation Index.

**Table 5**
Distribution and database coverage scores from practitioner-oriented journals: *Health Care Management Review* and *Journal of Healthcare Management*

| | | Bibliographic databases | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cited journal | Total citations | CINAHL Plus | PubMed | Ovid HealthStar | Business Source Complete | SCI | SSCI | ABI Inform | Health Business | Health Management | EMBASE |
| **Zone 1** | | | | | | | | | | | |
| 1. Health Care Manage Rev | 151 | 2 | 4 | 4 | 4 | 0 | 4 | 4 | 4 | 5 | 4 |
| 2. Health Aff (Millwood) | 118 | 1 | 4 | 4 | 5 | 4 | 4 | 3 | 5 | 5 | 0 |
| 3. J Healthc Manag | 118 | 1 | 3 | 3 | 4 | 0 | 5 | 3 | 4 | 4 | 5 |
| 4. Health Serv Res | 106 | 5 | 5 | 5 | 0 | 5 | 5 | 4 | 0 | 0 | 5 |
| 5. Strateg Manage J | 101 | 0 | 0 | 0 | 5 | 0 | 5 | 4 | 5 | 5 | 0 |
| 6. Acad Manage J | 100 | 0 | 0 | 0 | 5 | 0 | 5 | 4 | 5 | 0 | 0 |
| 7. JAMA | 90 | 3 | 3 | 3 | 0 | 5 | 1 | 0 | 0 | 0 | 3 |
| 8. Med Care | 89 | 3 | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 0 | 0 |
| 9. Acad Manage Rev | 82 | 0 | 0 | 0 | 5 | 0 | 5 | 4 | 5 | 0 | 0 |
| 10. Adm Sci Q | 77 | 0 | 0 | 0 | 5 | 0 | 4 | 4 | 5 | 0 | 0 |
| 11. Med Care Res Rev | 54 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 0 | 0 | 5 |
| Zone 1 average database coverage | | 1.73 | 2.55 | 2.55 | 3.00 | 2.18 | 4.36 | 2.73 | 3.00 | 1.73 | 2.00 |
| **Zone 2** | | | | | | | | | | | |
| 12. Harvard Bus Rev | 44 | 0 | 1 | 1 | 5 | 0 | 4 | 3 | 5 | 0 | 0 |
| 13. Milbank Q | 43 | 0 | 3 | 3 | 5 | 3 | 3 | 0 | 5 | 0 | 0 |
| 14. Healthc Financ Manage | 41 | 1 | 2 | 2 | 5 | 0 | 0 | 2 | 5 | 5 | 0 |
| 15. N Engl J Med | 41 | 3 | 4 | 3 | 0 | 5 | 1 | 0 | 0 | 3 | 3 |
| 16. J Manage | 36 | 0 | 0 | 0 | 5 | 0 | 4 | 0 | 5 | 0 | 0 |
| 17. Mod Healthc | 33 | 1 | 2 | 2 | 4 | 0 | 0 | 2 | 4 | 5 | 0 |
| 18. Front Health Serv Manage | 32 | 0 | 3 | 3 | 4 | 0 | 0 | 3 | 4 | 5 | 0 |
| 19. BMJ | 30 | 2 | 4 | 0 | 0 | 5 | 1 | 0 | 0 | 0 | 2 |
| 20. Hosp Health Netw | 27 | 1 | 3 | 3 | 5 | 0 | 3 | 2 | 5 | 5 | 2 |
| 21. Mark Health Serv | 27 | 0 | 2 | 2 | 5 | 0 | 0 | 0 | 5 | 0 | 2 |
| 22. Gerontologist | 26 | 1 | 1 | 1 | 0 | 0 | 5 | 0 | 0 | 0 | 1 |
| 23. J Appl Psychol | 24 | 0 | 5 | 4 | 5 | 0 | 5 | 5 | 0 | 0 | 0 |
| 24. J Nurs Adm | 24 | 4 | 5 | 4 | 0 | 5 | 5 | 0 | 0 | 0 | 4 |
| 25. J Health Care Finance | 22 | 3 | 3 | 3 | 4 | 0 | 0 | 3 | 4 | 5 | 0 |
| 26. Jt Comm J Qual Patient Saf | 22 | 4 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 27. J Rural Health | 21 | 3 | 5 | 5 | 0 | 5 | 5 | 0 | 0 | 0 | 4 |
| 28. J Am Geriatr Soc | 21 | 2 | 2 | 2 | 0 | 5 | 5 | 0 | 0 | 0 | 2 |
| 29. Nurs Econ | 21 | 0 | 4 | 4 | 0 | 0 | 0 | 0 | 5 | 5 | 0 |
| 30. Organ Sci | 19 | 0 | 0 | 0 | 4 | 0 | 4 | 4 | 4 | 5 | 0 |
| 31. J Mark | 18 | 0 | 0 | 0 | 5 | 0 | 5 | 4 | 0 | 0 | 0 |
| 32. Acad Manage Perspect | 17 | 0 | 0 | 0 | 5 | 0 | 5 | 3 | 5 | 0 | 0 |
| 33. Am Sociol Rev | 16 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 |
| 34. Inquiry | 16 | 2 | 3 | 3 | 5 | 4 | 4 | 0 | 0 | 0 | 3 |
| 35. Health Forum J (ceased in 2003) | 15 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| 36. Manage Sci | 15 | 0 | 0 | 0 | 4 | 4 | 4 | 4 | 4 | 5 | 0 |
| 37. Soc Sci Med | 15 | 2 | 4 | 4 | 0 | 0 | 5 | 0 | 0 | 0 | 5 |
| 38. Ann Intern Med | 14 | 2 | 5 | 4 | 0 | 4 | 1 | 0 | 0 | 4 | 3 |
| 39. J Health Econ | 14 | 0 | 4 | 4 | 5 | 4 | 4 | 4 | 0 | 0 | 4 |
| 40. Org Behav Hum Decis Process | 14 | 0 | 0 | 0 | 5 | 0 | 4 | 4 | 0 | 0 | 0 |
| 41. Arch Intern Med | 13 | 2 | 4 | 4 | 0 | 5 | 1 | 0 | 0 | 0 | 4 |
| 42. CMAJ | 13 | 1 | 3 | 3 | 0 | 5 | 1 | 0 | 0 | 0 | 3 |
| 43. Healthc Exec | 13 | 0 | 2 | 2 | 4 | 0 | 0 | 2 | 4 | 5 | 0 |
| 44. J Fam Pract | 13 | 0 | 3 | 2 | 0 | 4 | 1 | 0 | 0 | 0 | 4 |
| 45. J Manage Stud | 13 | 0 | 0 | 0 | 5 | 0 | 5 | 4 | 5 | 0 | 0 |
| 46. J Health Polit Policy Law | 12 | 3 | 0 | 3 | 5 | 4 | 4 | 4 | 5 | 4 | 3 |
| 47. Am J Public Health | 11 | 4 | 4 | 4 | 5 | 5 | 5 | 0 | 5 | 5 | 4 |
| 48. Hum Relat | 11 | 1 | 0 | 0 | 5 | 0 | 5 | 4 | 0 | 0 | 0 |
| 49. J Health Adm Educ | 11 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 50. Acad Med | 10 | 0 | 5 | 5 | 0 | 4 | 1 | 0 | 0 | 0 | 4 |
| 51. Calif Manage Rev | 10 | 0 | 0 | 0 | 4 | 0 | 5 | 4 | 4 | 0 | 0 |
| 52. Health Care Financ Rev | 10 | 0 | 2 | 2 | 3 | 3 | 3 | 3 | 3 | 5 | 3 |
| 53. J Health Hum Serv Adm | 10 | 0 | 3 | 3 | 4 | 0 | 0 | 3 | 3 | 4 | 2 |
| 54. J Nurs Scholarsh | 10 | 4 | 4 | 4 | 0 | 5 | 5 | 0 | 0 | 0 | 0 |
| 55. J Pers Soc Psychol | 10 | 0 | 5 | 4 | 5 | 0 | 5 | 0 | 0 | 0 | 0 |
| 56. Pers Psychol | 10 | 0 | 0 | 0 | 5 | 0 | 4 | 4 | 5 | 5 | 0 |
| 57. Qual Manag Health Care | 10 | 2 | 3 | 3 | 4 | 0 | 0 | 3 | 0 | 5 | 0 |
| 58. Am J Sociol | 9 | 0 | 0 | 0 | 5 | 0 | 5 | 0 | 0 | 0 | 0 |
| 59. Behav Healthc | 9 | 0 | 2 | 2 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| 60. Health Care Strateg Manage | 9 | 0 | 1 | 1 | 4 | 0 | 0 | 2 | 0 | 5 | 0 |
| 61. J Bus Ethics | 9 | 0 | 0 | 0 | 5 | 0 | 5 | 2 | 0 | 5 | 0 |
| 62. Health Serv Manage Res | 8 | 3 | 3 | 3 | 4 | 0 | 0 | 0 | 0 | 5 | 3 |
| 63. J Organ Behav | 8 | 0 | 0 | 0 | 5 | 0 | 5 | 5 | 0 | 0 | 0 |
| 64. J Telemed Telecare | 8 | 3 | 4 | 4 | 0 | 4 | 1 | 0 | 0 | 5 | 0 |
| 65. Psychol Bull | 8 | 0 | 4 | 3 | 5 | 5 | 5 | 0 | 0 | 0 | 0 |
| 66. Am J Community Psychol | 7 | 0 | 5 | 5 | 0 | 0 | 5 | 0 | 0 | 0 | 0 |
| 67. Am J Prev Med | 7 | 0 | 5 | 5 | 0 | 5 | 3 | 0 | 0 | 0 | 5 |

**Table 5**
Continued

| Cited journal | Total citations | Bibliographic databases: CINAHL Plus | PubMed | Ovid HealthStar | Business Source Complete | SCI | SSCI | ABI Inform | Health Business | Health Management | EMBASE |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 68. Anesthesiology | 7 | 1 | 3 | 2 | 0 | 5 | 1 | 0 | 0 | 0 | 3 |
| 69. Healthc Manage Forum | 7 | 0 | 5 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 70. Interfaces | 7 | 0 | 0 | 0 | 5 | 5 | 5 | 4 | 0 | 0 | 0 |
| 71. Int J Technol Assess Health Care | 7 | 0 | 5 | 5 | 0 | 5 | 1 | 0 | 0 | 0 | 5 |
| 72. J Gen Intern Med | 7 | 0 | 1 | 1 | 0 | 5 | 1 | 0 | 0 | 0 | 1 |
| 73. J Health Soc Behav | 7 | 0 | 4 | 4 | 0 | 0 | 2 | 0 | 0 | 5 | 0 |
| 74. Nurs Manage | 7 | 4 | 3 | 3 | 4 | 0 | 0 | 3 | 4 | 5 | 0 |
| 75. Public Health Rep | 7 | 5 | 4 | 4 | 0 | 5 | 5 | 0 | 5 | 0 | 4 |
| 76. Telemed J E Health | 7 | 0 | 4 | 4 | 0 | 5 | 1 | 0 | 0 | 0 | 0 |
| Zone 2 average database coverage | | 1.00 | 2.59 | 2.45 | 2.67 | 1.92 | 2.69 | 1.41 | 1.69 | 1.72 | 1.30 |
| **Average Zones 1 and 2** | | 1.36 | 2.57 | 2.50 | 2.84 | 2.05 | 3.53 | 2.07 | 2.34 | 1.72 | 1.65 |

Based on database coverage score: 5 (95%–100%); 4 (75%–94%); 3 (50%–74%); 2 (25%–49%); 1 (1%–24%); 0 (< 1%).

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