

Running Head: Physician Information Behavior

Information Needs of Physicians: An Assessment of the Information Behavior of the
Academic Faculty at the University of South Dakota School of Medicine

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ILS 680 Evaluation and Research

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January 7, 2004

Abstract

This study investigates the information behavior of the academic faculty, all practicing physicians, of the University of South Dakota School of Medicine (USDSM). The study found that patient care (17.29%) was the most frequent motivator for seeking information. Evidence-based medicine (20.75%) was the most frequently sought information, with journals (18.82%) being the most frequently used resource. The faculty most frequently looked for information themselves (28.09%) and identified lack of time (34.21%), difficulty accessing electronic resources (28.95%), and lack of technology and searching skills (15.70%) as barriers to information. The faculty identified better and easier access to electronic resources (54.85%) and more training in technology and searching skills (22.58%) as improvements to accessing information. The study finds that the USDSM academic faculty need electronic access to evidence-based medicine at the point of patient care.

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Medicine is an ever-changing discipline. New drugs, new procedures, new research, and new challenges are introduced to physicians on a daily basis. The “information explosion” has greatly impacted medical information and at times can overwhelm physicians. Since opening in 1998, the Wegner Health Science Information Center (Wegner Center) has been providing services to the University of South Dakota School of Medicine (USDSM) academic faculty. The Wegner Center librarians have worked to make medical information more accessible to the academic faculty.

Satisfaction surveys conducted by the Wegner Center have consistently shown that the USDSM academic faculty is very satisfied with library services, the collection, and document delivery times. A 2002 satisfaction survey of the USDSM academic faculty found 88.75% were very satisfied with library services, 86.33% were very satisfied with the collection, and 87.50% were very satisfied with document delivery times. Although the faculty is satisfied with the library and its services, a better understanding of the USDSM academic faculty information behaviors will assist the Wegner Center librarians identify and meet their information needs.

Studies exploring what motivates physicians to seek information have found that patient care is the most frequent motivator (Dee 1993; Dorsch2000; Ramos, Linscheid, & Schafer 2003). To answer the clinical questions initiated by patient care, physicians most frequently seek evidence-based medicine (Ramos, et.al. 2003; Schwartz, Northrup, Israel, Crowell, Lauder, et.al. 2003). However, earlier studies found clinical trials and current practice were the most frequent types of information sought by physicians in order to

answer clinical questions (Crabtree & Crawford 1997; Lundeen & Tenopir 1994). Even with the shift to evidence-based medicine, journals and journal articles are still the primary resource used by physicians (Crabtree & Crawford 1997; Curtis, Weller, & Hurd 1997; Dawes & Sampson's 2003; Lundeen & Tenopir 1994). The studies exploring the information seeking behaviors of physicians found that physicians most frequently look for information themselves (Lee, Guiuse, & Sathe 2003; Ramos, et.al. 2003). In previous studies, physicians identified difficulties in using and accessing electronic resources, lack of time, and lack of technology skills to be the barriers in their access to information (Curtis, et.al 1997; Dawes & Sampson 2003; Dorsch 2000; and Schwartz, et.al (2003).

This review of previous studies found six areas of exploration that gave insight into the information behavior of physicians.

- What motivates physicians to seek information?
- What type of information do physicians use?
- What resources do physicians use?
- How do physicians find information?
- What are the barriers that exist in physician access to information?
- What would improve physician access to information?

Methods

This study explores the information behaviors of the USDSM academic faculty, using the six areas identified through the literature review. Twenty-three academic faculty, all practicing physicians, participated in the study. A questionnaire (see Appendix for questionnaire) consisting of four multiple-choice questions and two open-ended questions was created. The multiple-choice questions asked the participants

to rank their responses to: what motivates them to seek information, what type of information they use, what type of resources they use, and how they find information. The participants were asked to rank their choices, with “1” as least frequently used. Each multiple-choice question included an “other (please indicate)” category to allow for the inclusion of unlisted but frequently used resources. The open-ended questions asked the participants to name three things that come between them and information and to name three things that would improve their access to information.

The questionnaire with accompanying cover letter and return envelope was mailed to the participants via campus mail. An e-mail reminder with the questionnaire attached was sent to the faculty one week after the questionnaire was mailed.

Non-responses to the multiple-choice questions were coded as a missing variable.

Because the questionnaires were returned anonymously, it was not possible to follow up with non-respondents.

Results

Of the 66 USDSM academic faculty to whom questionnaires were mailed, 34.8% (n=23) responded. Their responses were analyzed to provide descriptive statistics and frequency distributions. Patient care was the primary motivation for the respondents to seek information, closely followed by teaching. Each of the respondents ranking “other” indicated research was the motivator. Table 1 presents the data. Fifty-two percent (12 out of 23) of the respondents ranked patient care as the most frequent motivator. Thirteen percent (3 out of 23) of the respondents ranked patient care as the least frequent motivator. Table 2 presents the data.

Table 1

*What Motivates Faculty to Seek Information
Descriptive Statistics*

	M	SD
Patient Care	5.14	2.37
Teaching	5.00	1.35
Preparation for Talk/Paper/Proposal	4.90	1.97
Self-instruction	4.40	1.66
Patient Education	3.75	1.88
Other	3.40	3.28
Administration/Management Issues	3.11	1.64

Table 2

What Motivates Faculty to Seek Information – Frequency Distribution

	Least Frequent			-	Most Frequent		
	1	2	3	4	5	6	7
Patient Care	3	2	1	1	3		12
Teaching		1	1	8	3	7	3
Preparation for Talk/Paper/Proposal	2	1	3		5	5	5
Self-instruction	1	1	4	5	4	2	3
Patient Education	3	3	4	1	5	3	1
Other	3						2
Administration/Management Issues	3	4	5	3		3	

Evidence-based medicine is the primary type of information used by the respondents. Current research and clinical trials, which studies from the 1990's found to be the primary type of information used by physicians, rank second and third. Each of the respondents ranking "other" indicated patient examination and diagnostic test was a type of information used. Table 4 presents the data. Forty-three percent (10 out of 23) of the respondents ranked evidence-based medicine as the information they use most frequently. Eight percent (2 out of 23) of the respondents ranked evidence-based medicine as the information they use least frequently. Table 4 presents the data.

Table 3

What Type of Information Faculty Use
Descriptive Statistics

	M	SD
Evidence-Based Medicine	4.57	1.75
Current Research	4.38	1.59
Clinical Trials	4.10	1.25
Current Practice	3.80	1.73
Guidelines and Policies	3.74	1.73
Other	2.20	2.17

Table 4

What Type of Information Faculty Use – Frequency Distribution

	Least Frequent		-		Most Frequent	
	1	2	3	4	5	6
Evidence-Based Medicine	2	1	3	2	3	10
Current Research	1	2	4	2	5	7
Clinical Trials	1	1	3	7	6	2
Current Practice	3	1	5	4	2	5
Guidelines and Policies	1	6	2	2	4	4
Other	3	1				1

Journals were the primary type of resources used by the respondents. Electronic resources and books/textbooks ranked second and third. Respondents ranking “other” indicated patient examination and diagnostic test were a type of resource used. Table 5 presents the data. Thirty-five percent (8 out of 23) of the respondents ranked journals as the information they use most frequently. Four percent (1 out of 23) of the respondents ranked journals as the information they use least frequently. The frequency distribution for electronic resources reveals a gap in the middle of the ranking – possibly showing the gap that still exists between respondents who have and have not embraced electronic resources. Table 6 presents the data.

Table 5

*What Resources Faculty Use
Descriptive Statistics*

	M	SD
Journals	5.57	1.75
Electronic Resources	5.15	2.08
Books/Textbooks	4.61	1.40
Conference/Professional Meetings	4.50	1.68
Discussions with Colleagues	4.19	1.54
Newsletter/Other Publications	3.16	2.80
Other	2.40	2.60

Table 6

Resources Faculty Use – Frequency Distribution

	Least Frequent			-	Most Frequent		
	1	2	3	4	5	6	7
Journals	1	1	2	1	1	9	8
Electronic Resources	1	4			2	7	6
Books/Textbooks	1	1	2	5	8	5	1
Conference/Professional Meetings	1	2	3	4	6	3	3
Discussions with Colleagues	1		7	6	2	3	2
Newsletter/Other Publications	1	10	1	2	2	3	
Other	3	1					1

When seeking information, respondents primarily look for information themselves. The respondents then relied on librarians, above all other persons, to find information for them. Table 7 presents the data. Sixty five percent (15 out of 23) of the respondents most frequently look for information themselves. Thirteen percent (3 out of 23) of the respondents least frequently look for information themselves. The frequency distribution table reveals the respondents seldom rely on colleagues, residents, medical students, secretaries, or research assistants to find information for them. Table 8 presents the data.

Table 7

How Faculty Find Information
Descriptive Statistics

	M	SD
Look for the information myself	5.00	1.85
Have librarian look for the information	4.00	1.63
Contact colleague for the information	3.00	1.45
Have resident or medical student look for the information	2.53	1.40
Have a secretary or research assistant look for the information	2.33	1.29
Other	1.00	1.45

Table 8
USDSM Academic Faculty Locate Information – Frequency Distribution

	Least Frequent		-		Most Frequent	
	1	2	3	4	5	6
Look for the information myself	3	1			3	15
Have librarian look for the Information	2	2	3	2	7	3
Contact colleague for the Information	4	2	5	5	1	1
Have resident or medical student look for the information	4	5	2	2	2	
Have a secretary or research assistant look for the information	5	4	3	2	1	
Other	4					

The first of two open-ended questions asked the respondents to name three things that come between them and information. The responses were easily categorized into five areas: lack of time (34.21%), difficulty in accessing electronic resources (28.95%), lack of technology and searching skills (15.79%), limited selection of books and journals (13.50%), and distance to the library (7.90%). The second open-ended question asked the respondents to name three things that would improve their access to information. The responses to the second open-ended question were again easily categorized into five areas: better and easier access to electronic resources (54.84%), training in technology

and searching skills (22.58%), wider selection of journals and textbooks (9.68%), more time (6.45%), and longer library hours (6.45%).

Discussion

This study indicates that the faculty needs electronic access to evidence-based medicine at the point of patient care. Over half of the USDSM academic faculty indicated that better and easier access to electronic resources would improve their access to information. Over one-third of the faculty indicated that evidence-based medicine was the type of information they most frequently to fill their information needs. Over half of the faculty indicated patient care as their most frequent motivation to seek information. However, over one-third of the faculty identified lack of time as their primary barrier to accessing information. This means that the information not only needs to be easy to access and immediately accessible but also complete and concise. This is supported by faculty comments to the open-ended questions on the questionnaire. These comments included: “easy access to electronic resources at the patient bedside would be my ideal,” “one click, 36 seconds, and I have my answer,” and “instantaneous information – when I need it and where I need it!”

This study found that the information behaviors of the USDSM academic faculty closely resemble the information behaviors of other physicians as shown in previous studies. These information behaviors include: patient care as the most frequent motivator to seek information, evidence-based medicine as the most frequently used type of information, journals as the most frequently used resources, and physicians most frequently find information for themselves. This study found that the barriers to information identified in previous studies were the same barriers identified by the faculty.

These barriers include: lack of time, difficulty in accessing electronic resources, and lack of training in technology skills. This study also found that the improvements identified by physicians in previous studies were the same improvements identified by the faculty. These improvements include: better and easier access to electronic resources and more training in technology and searching skills.

The results of this study highlight three areas the Wegner Center librarians can immediately begin to address. First, an evaluation of the Wegner Center's paper and electronic collections needs to be conducted to ensure that it contains evidence-based medicine, the type of information faculty use most frequently. Second, training that meets the time constraints of the faculty needs to be developed. Ideally this training would be in a format available to faculty 24 hours a day, seven days a week. Third, an evaluation of the Wegner Center's electronic resources and their delivery methods needs to be conducted in order to identify and eliminate any difficulties and delays in faculty access.

The results of this study have provided the Wegner Center librarians with a minds-eye image of the typical USDSM academic faculty - a time-constricted physician who in order to support patient care is searching for evidence-based medicine in journals hampered by difficulties accessing electronic resources. Keeping this image in mind, should assist the Wegner Center librarians better meet the needs of the USDSM academic faculty.

References

- Crabtree, A. B., & Crawford, J. H., (1997). Assessing and addressing the library needs of health care personnel in a large regional hospital. *Bulletin of the Medical Library Association*, 85(2), 167-175.
- Curtis, K. L., Weller, A. C., & Hurd, J. M., (1997). Information-seeking behavior of health sciences faculty: the impact of new information technologies. *Bulletin of the Medical Library Association*, 85(4), 402-410.
- Dawes M., & Sampson U., (2003). Knowledge management in clinical practice: A systematic review of information seeking behavior in physicians. *International Journal of Medical Informatics*, 71(1), 9-15.
- Dee, C., & Blazek, R., (1993). Information needs of the rural physician: A descriptive study. *Bulletin of the Medical Library Association*, 81(3), 259-264.
- Dorsch, J. L. (2000). Information needs of rural health professionals: a review of the literature. *Bulletin of the Medical Library Association*, 88(4), 346-354.
- Lee, P., Giuse, N. B. , & Sathe, N. A. (2003). Benchmarking information needs and use in the Tennessee public health community. *Journal of the Medical Library Association*, 91(3), 322-336.
- Lundeen, G. W., Tenopir, C., & Wermager, P., (1994). Information needs of rural care practitioners in Hawaii. *Bulletin of the Medical Library Association*, 82(2), 197-205.
- Ramos, K., Linscheid, R., & Schafer, S., (2003). Real-time information-seeking behavior of residency physicians. *Family Medicine*, 35(4), 257-260.
- Schwartz, J. (2002). Internet access and end-user needs: Computer use in an academic library. *Reference & User Services Quarterly*, 47(8), 258-262.

Appendix

Questionnaire

Wegner Health Science Information Center: Pilot Patron Needs Assessment

Thank you in advance for taking time to complete this questionnaire. Please read the questions carefully and rank your responses according to the scale for each question. Return the questionnaire to the Wegner Center in the enclosed envelope by December 26th, 2003.

1. Which of the following most frequently motivates you to seek information for your clinical and professional activities?

(Please rank the following where 1 = less frequently and 7 = most frequently.)

_____ Administrative/Management Issues

_____ Patient Care

_____ Patient Education

_____ Preparation for Talk/Paper/Proposal

_____ Self-Instruction

_____ Teaching

_____ Other (please indicate) _____

2. Which type of information do you most frequently use to support your clinical and professional activities?

(Please rank the following where 1 = less frequently and 6 = most frequently.)

_____ Current Practice

_____ Current Research

_____ Clinical Trails

_____ Evidence-Based Medicine

_____ Guidelines and Policies

_____ Other (please indicate) _____

3. Which type of resources best meets your clinical and professional information needs?

(Please rank the following where 1 = least meets and 7 = most meets.)

_____ Books/Textbooks

_____ Conferences/Professional Meetings

_____ Discussions with Colleagues

_____ Electronic Resources

_____ Journals

_____ Newsletters/Other Publications

_____ Other (please indicate) _____

4. How do you most frequently find the resources to meet your clinical and professional information needs?

(Please rank the following where 1 = less frequently and 6 = most frequently.)

_____ Look for the information myself.

_____ Have librarian look for the information.

_____ Have a resident or medical student look for the information.

_____ Have a secretary or research assistant look for the information.

_____ Contact a colleague for the information.

_____ Other (please indicate) _____

What three things come between you and your access to clinical and professional information?

1.

2.

3.

What three things would improve your access to clinical and professionals information?

1.

2.

3.

Thank you for your participation in this questionnaire!