

Value of Library and Information Services in Patient Care Study

Summary Report

Health Sciences Library System,
University of Pittsburgh, Pittsburgh, PA
May 25, 2011

National Network of Libraries of Medicine,
Middle Atlantic Region

School of Information & Library Science, University of North
Carolina at Chapel Hill



Study overview

- The purpose of the study was to understand the value and impact of the information resources and services provided by the library and the librarian on patient care.
- Focus groups of librarians who had interviewed their administrators about their perceptions of the value of library services informed the study design.
- The research built on the original Rochester study:
Marshall, JG. The impact of the hospital library on clinical decision making: the Rochester study. *Bulletin of the Medical Library Association*. 1992 Apr;80(2):169-78.

Acknowledgments

- The Value Study was a partnership of the National Network of Libraries of Medicine, Middle Atlantic Region (NNLM/MAR) and the University of North Carolina at Chapel Hill (UNC).
- This project has been funded in part with federal funds from the National Library of Medicine, National Institutes of Health, Department of Health and Human Services, under Contract #N01-LM-6-3501 from New York University, NNLM/MAR.
- Additional support was provided by the Hospital Library Section of the Medical Library Association (MLA), the NY/NJ Chapter of MLA; the Philadelphia Chapter of MLA; the Upstate New York and Ontario Chapter of MLA; the New York State Reference and Research Library Resources Councils and the Donald Lindberg Research Fellowship from MLA.

Study team

NN/LM MAR Planning Team

- Julia Sollenberger, University of Rochester Medical Center
- Susan K. Cavanaugh, UMDNJ Camden
- Sharon Easterby-Gannett, Christiana Care Medical Libraries
- Sue Hunter, NN/LM MAR
- Mary Lou Klem, Health Sciences Library System, University of Pittsburgh
- Joanne Gard Marshall, UNC
- Lynn Kasner Morgan, Mount Sinai Medical Center
- Kate Oliver, NN/LM MAR
- Neil Romanosky, NN/LM MAR

UNC Research Team

- Joanne Gard Marshall, UNC Principal Investigator
- Cheryl A. Thompson, Project Manager
- Jennifer Craft Morgan
- Marshica Stanley
- Amber Wells

Participating pilot sites

- Edward G. Miner Library, University of Rochester Medical Center, Rochester, NY
- NYU Health Sciences Libraries, NYU Langone Medical Center, New York, NY
- Gustave L and Janet W Levy Library, Mount Sinai Medical Center, New York, NY
- Lewis B. Flinn Medical Library, Christiana Care Health System, Newark & Wilmington, DE
- Health Sciences Library System, University of Pittsburgh, Pittsburgh, PA
- Lankenau Hospital Medical Library, MainLine Health System, Wynnewood, PA
- Medical Library, AIDHC Hospital for Children, Wilmington, DE

Methodology

Study design

- Pilot phase: Seven health libraries serving 19 hospitals in Middle Atlantic Region
 - Survey of physicians, residents and nurses (Sept – Nov 2010)
 - Follow-up interviews with survey respondents (Jan – April 2011)

Survey methods

- Collaborative development of the survey questions and protocol
- Listserv or portal announcement and invitation followed by three email reminders.

Critical incident technique

In the Value Study, respondents were asked to think about an occasion in the last six months when they looked for information resources for patient care (beyond what is available in the patient record, EMR system or lab results) and to answer questions regarding that occasion.

University of Pittsburgh response rate

- Overall response rate 26% (n=1150)
- Physicians response rate 11% (n=531)
- Residents response rate 23% (n=211)
- Nurses response rate 9% (n=300)

Note: The total sample size was 4,362 physicians, residents, and nurses. The Ns reported by position do not add up to 1,150 because 76 respondents reported “Other” for their position and 32 did not report a position.

Respondent Demographics

Gender (n=950)

- Male 50%
- Female 50%

Interest in follow-up interview

- Yes – 79 respondents

Age (n=951)

- Under 25 1%
- 25-44 52%
- 45-64 44%
- Over 64 3%

Education (Questions D2a-D2b)

Attending & resident physicians (n=728)

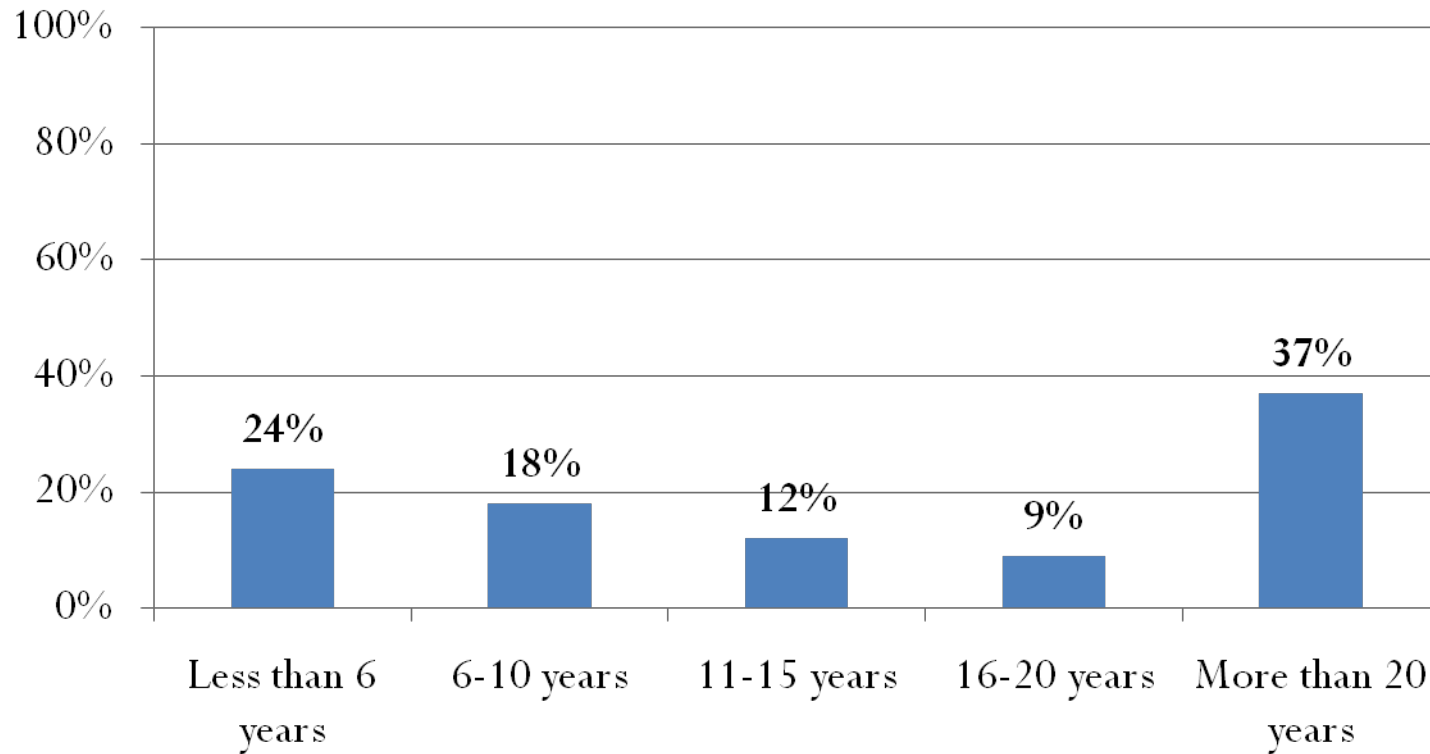
- MD 90%
- Master 10%
- PhD 9%
- DO 6%
- Other 4%

Nurses (n=223)

- Bachelor 37%
- Associate 30%
- Diploma 20%
- Master 16%
- Other 2%
- Certified Nurse Practitioner 1%
- PhD 1%

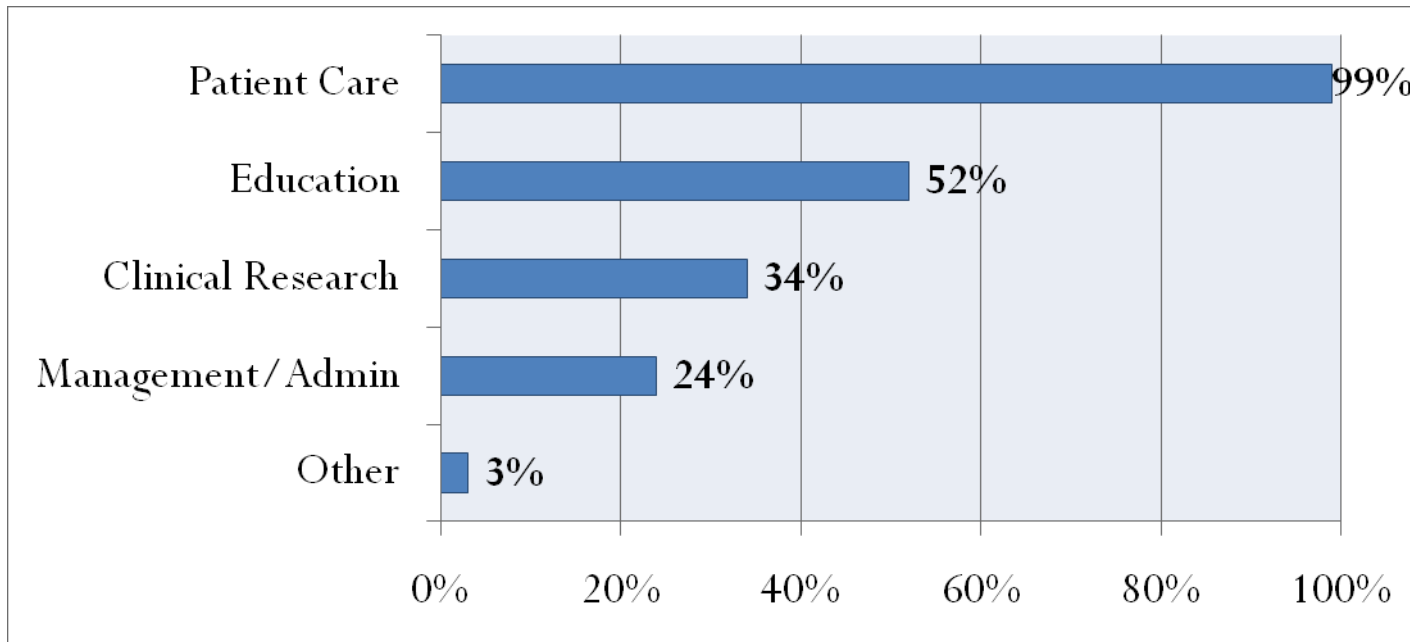
Note: For this question, respondents were able to check all that apply. The percents will not equal 100.

Years as a health care professional (n=951) (Question D5)



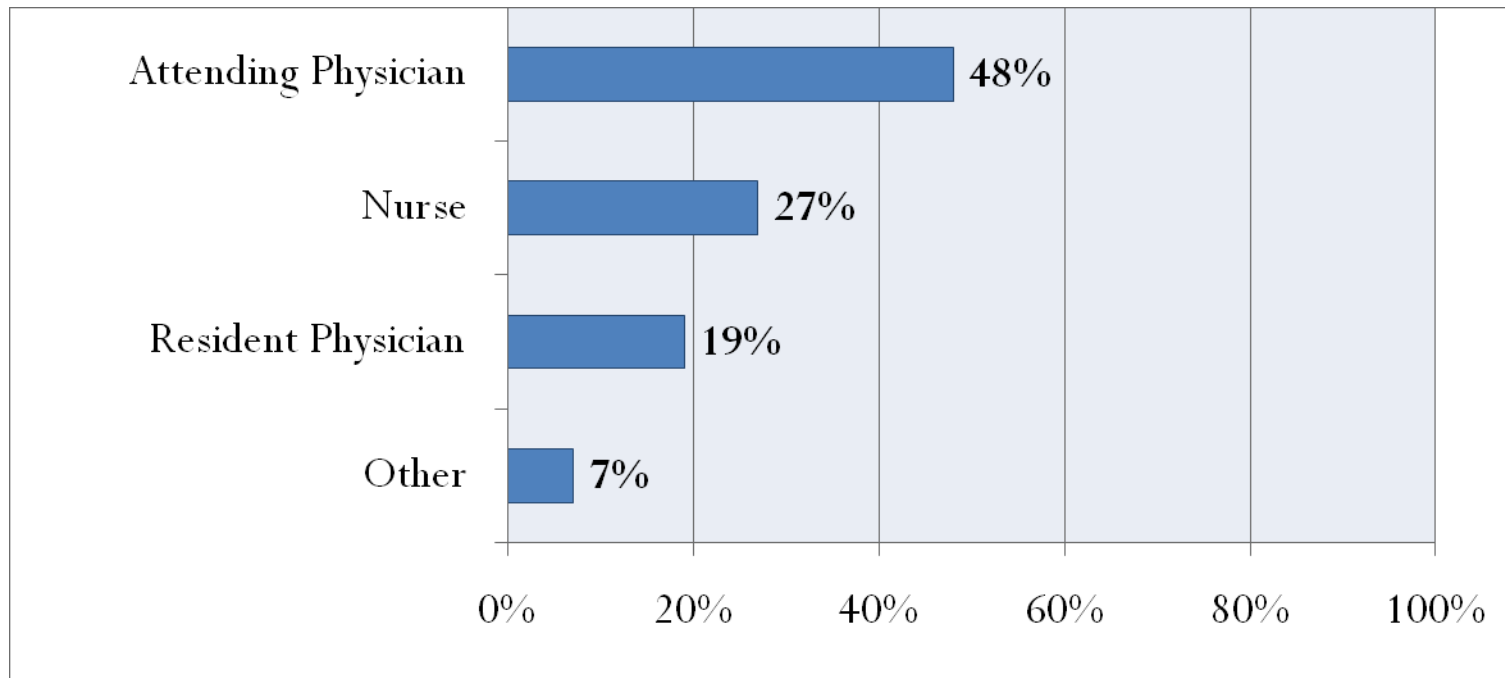
Job duties (Question IN1b)

Which of the following does your job involve?* (n=1117)



*Respondents had to perform patient care or clinical research to be included in the study.

Positions held by respondents (n=1118) (Question IN1)





Results: Value of library and information sources

Did you handle any aspect of the clinical situation differently as a result of having the information? (Question IN8)

	Overall (n=1009)	Attending physicians (n=503)	Residents (n=194)	Nurses (n=245)
Definitely Yes	32%	37%	36%	16%
Probably Yes	44%	46%	50%	37%
Probably No	21%	16%	12%	39%
Definitely No	3%	2%	2%	8%

Changes in patient care as a result of the information (Question V3)

Changes Reported	Overall (n=969)	Attending physicians (n=491)	Residents (n=187)	Nurses (n=226)
Advice given to patient or family	49%	48%	49%	48%
Choice of drugs	38%	44%	50%	14%
Choice of other treatments	32%	37%	42%	14%
Diagnosis	29%	36%	40%	6%
Choice of test	27%	34%	36%	4%
Post hospital care or treatment	11%	10%	14%	9%
Not applicable	14%	9%	5%	31%

Note: For this question, respondents were able to check all that apply unless they selected Not applicable. The percents will not equal 100. Changes included here must have had at least 10% or more of respondents in at least one of the 4 categories.

Value of the information (Question V1)

Percent who agree that the information was...	Overall (n=989)	Attending physicians (n=496)	Residents (n=191)	Nurses (n=236)
Relevant	99%	99%	98%	97%
Accurate	98%	99%	97%	98%
Will be of use in the future	98%	99%	97%	94%
Was of clinical value	97%	99%	97%	94%
Current	96%	98%	95%	94%
Refreshed my memory of details or facts	93%	93%	95%	91%

Value of the information (continued)

Percent who agree that the information...	Overall (n=989)	Attending physicians (n=496)	Residents (n=191)	Nurses (n=236)
Contributed to higher quality of care	91%	95%	94%	82%
Provided new knowledge	90%	90%	93%	86%
Resulted in a better informed clinical decision	90%	95%	93%	77%
Substantiated my prior knowledge or belief	89%	90%	92%	85%
Having the information saved me time	76%	80%	82%	62%

If the information saved time, how many hours? (Question V2)

	Overall (n=689)	Attending physicians (n=373)	Residents (n=145)	Nurses (n=127)
Mean	2.3	2.7	2.0	1.4
Median	1.0	1.0	1.0	0.5
Standard deviation	7.4	9.6	3.4	3.2

Key adverse events avoided as a result of the information (Question V4)

Adverse Event Avoided	Overall (n=955)	Attending physicians (n=485)	Residents (n=183)	Nurses (n=223)
Patient misunderstanding of disease	22%	17%	25%	28%
Additional tests or procedures	21%	25%	33%	4%
Misdiagnosis	16%	22%	19%	1%
Adverse drug reaction or interaction	14%	16%	19%	6%
Medication error	12%	14%	16%	4%
Patient mortality	6%	5%	8%	4%
Not applicable	42%	40%	38%	54%

Note: For this question, respondents were able to check all that apply unless they selected Not applicable. The percents will not equal 100. The most frequent events were included along with patient mortality.

Importance of library and non-library sources I (Question V4b)

Source	Overall (n)	Attending physicians (n)	Residents (n)	Nurses (n)
Library/Information resource	96% (898)	97% (458)	95% (183)	94% (196)
Discussion with colleagues	91% (820)	87% (401)	95% (179)	92% (179)
Lab tests	87% (772)	88% (395)	85% (172)	85% (153)
Diagnostic imaging	81% (685)	80% (346)	83% (162)	80% (131)

Note: For this question, respondents were able to check all that apply so the percents will not equal 100. The importance rating is based on the percentage of respondents who indicated a source was “important” or “very important”.

Importance of library and non-library sources II (Question V4b)

Source	Overall Mean Score (S. D.)	Attending physicians Mean Score (S. D.)	Residents Mean Score (S D.)	Nurse Mean Score (S. D.)
Library/Information resource	3.5 (0.6)	3.6(0.6)	3.5(0.6)	3.4 (0.7)
Lab tests	3.3 (0.8)	3.3 (0.8)	3.3 (0.8)	3.2 (0.8)
Discussion with colleagues	3.3 (0.7)	3.2 (0.7)	3.5 (0.6)	3.3 (0.7)
Diagnostic imaging	3.2 (0.9)	3.2 (0.9)	3.2 (0.9)	3.1 (0.9)

Note: For this question, mean scores were calculated based on 1=not at all important; 2=not very important; 3= important; and 4=very important. “Not used” was removed from this analysis.



Results: Library resources used

Number of library resources used (Question IN3)

	Mean number of resources used (S. D.)
Overall (n=1060)	3.6 (2.6)
Attending physicians (n=517)	3.6 (2.5)
Residents (n=202)	4.9 (2.9)
Nurses (n=268)	2.6 (1.9)

Top five library resources used (Question IN3)

	Overall (n=1063)	Attending physicians (n=517)	Residents (n=202)	Nurses (n=270)
Journals (online)	49%	53%	62%	29%
PubMed/ MEDLINE	47%	50%	62%	26%
UpToDate	46%	50%	80%	14%
Books (online)	33%	34%	47%	19%
Ovid Medline	22%	27%	27%	11%

Note: For this question, respondents were able to check all that apply so the percents will not equal 100.

Other library resources used (Question IN3)

	Overall (n=1063)	Attending physicians (n=517)	Residents (n=202)	Nurses (n=270)
eMedicine	23%	19%	42%	15%
Books (print)	21%	24%	23%	15%
MD Consult	20%	22%	31%	10%
Micromedex	19%	15%	19%	29%
Journals (print)	16%	19%	15%	11%
ePocrates	13%	13%	28%	2%
Professional association websites	13%	12%	9%	15%
Clinical evidence (BMJ)	10%	9%	19%	2%
CINAHL	5%	1%	1%	18%
Other	9%	8%	5%	15%

Note: For this question, respondents were able to check all that apply so the percents will not equal 100. Library resources included here must have had at least 10% or more of respondents in at least one of the 4 categories.

Did you find the information you needed? (Question IN6)

	Overall (n=1025)	Attending Physicians (n=506)	Residents (n=197)	Nurses (n=253)
Completely	58%	64%	56%	49%
Partially- time constraints	21%	15%	22%	32%
Partially – information incomplete	16%	16%	16%	15%
Partially- other reason	4%	5%	6%	2%
Not at all	1%	0%	0%	2%

Access points used for all resources (Question IN4_1-IN4_OTH)

	Overall (n=1118)	Attending physicians (n=531)	Residents (n=211)	Nurses (n=300)
On your institution's library web site	53%	62%	70%	25%
On your institution's intranet	49%	48%	69%	37%
Search engine such as Google	37%	35%	41%	38%
Personal/departmental subscription	22%	28%	22%	12%
In your institution's library	16%	17%	22%	10%

Note: For this question, respondents were able to check all that apply so the percents will not equal 100. Access points included here must have had at least 10% or more of respondents in at least one of the 4 categories. Since institutions make online library resources available in different ways, options for both the library web site and the intranet were included in the survey.

Access points used for all resources (Continued)

	Overall (n=1118)	Attending physicians (n=531)	Residents (n=211)	Nurses (n=300)
Mobile device	14%	15%	27%	3%
Bookmarked web site	11%	16%	9%	4%
Asked librarian or library staff	9%	9%	10%	8%
Via the patient's electronic medical record	7%	5%	9%	9%

Note: For this question, respondents were able to check all that apply so the percents will not equal 100. Access points included here must have had at least 10% or more of respondents in at least one of the 4 categories. Since institutions make online library resources available in different ways, options for both the library web site and the intranet were included in the survey.

Study Acknowledgment for use in all presentations and publications

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