

Value of Library and Information Services in Patient Care Study

Summary Aggregate Report for Physicians and Residents

January 13, 2013

National Network of Libraries of Medicine,
Middle Atlantic Region

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



Value of Library and Information Services in Patient Care Study

- The purpose of the study was to assess the impact of the library, information services 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 builds 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 and under Contract No. HHS-N-276-2011-00003-C with the University of Pittsburgh, Health Sciences Library System, (NN/LM 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

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UNC Research Team

- Joanne Gard Marshall, UNC Principal Investigator
- Cheryl A. Thompson, Project Manager
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Methodology

Study design

- **Total study: 56 health libraries serving 118 hospitals.**
- Pilot phase: 7 health libraries serving 19 hospitals in the Middle Atlantic Region
 - Survey of physicians, residents and nurses (Sept – Nov 2010)
 - Follow-up interviews with survey respondents (Jan – June 2011)
- Full launch phase: 49 health libraries serving 99 hospitals in the United States and Canada
 - Survey of physicians, residents and nurses (March – May 2011)
 - Interviews (June – July 2011)

Participating sites by region

Region	Sites (n=56)
Middle Atlantic*	23
Greater Midwest	12
Southeastern Atlantic	7
Pacific Southwest	4
Pacific Northwest	3
South Central	2
Mid-Continental	1
Canada	4

Participating site characteristics

	Sites (n=56)
Council of Teaching Hospitals member	77%
Located in an urban area	86%
Bed size:	
Less than 500	45%
500 or more	54%

Survey methods

- Collaborative development of the survey questions and protocol
- Web-based survey
- Invitation from librarian and local study champion customized by site and sent via listserv or portal
- Three survey reminders

For further information see: Dunn K, Brewer K, Marshall JG, Sollenberger J. Measuring the value and impact of health sciences libraries: planning an update and replication of the Rochester Study. *J Med Libr Assoc.* 2009 Oct;97(4):308-12.

Participant benefits

- Each site received its own de-identified dataset, a copy of the survey, a set of presentation-ready PowerPoint slides for use in their own institution, and a summary report of the aggregate findings.
- No identifying information about survey respondents or individual sites will be included in published results of the full study.
- A list of the participating libraries is available on the study website <http://nnlm.gov/mar/about/value.html>

Critical incident technique

In the survey, 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.

Response rates

- Overall response rate 10% (n=16,122)*
- Physicians 10% (n=5,379)
- Residents 12% (n=2,123)
- Nurses 7% (n=6,788)

Note: Response rates are conservative estimates using as a denominator the number of employed physicians, residents and nurses reported by each site (N= 172,463). The N's reported by position do not add up to 16,122 because 1,158 respondents reported "Other" for their position and 674 did not report a position.

Response rates for individual sites (n=56)

- 10% or less 38%
- 11% to 20% 45%
- 21% to 30% 9%
- 31% or more 9%

Results for Physicians and Residents

Respondent demographics

Gender (n=6,633)

- Female 37%
- Male 63%

Age (n=6,643)

- Under 25 >1%
- 25-44 53%
- 45-64 40%
- Over 64 6

Interest in follow-up interview

- Yes – 570 respondents

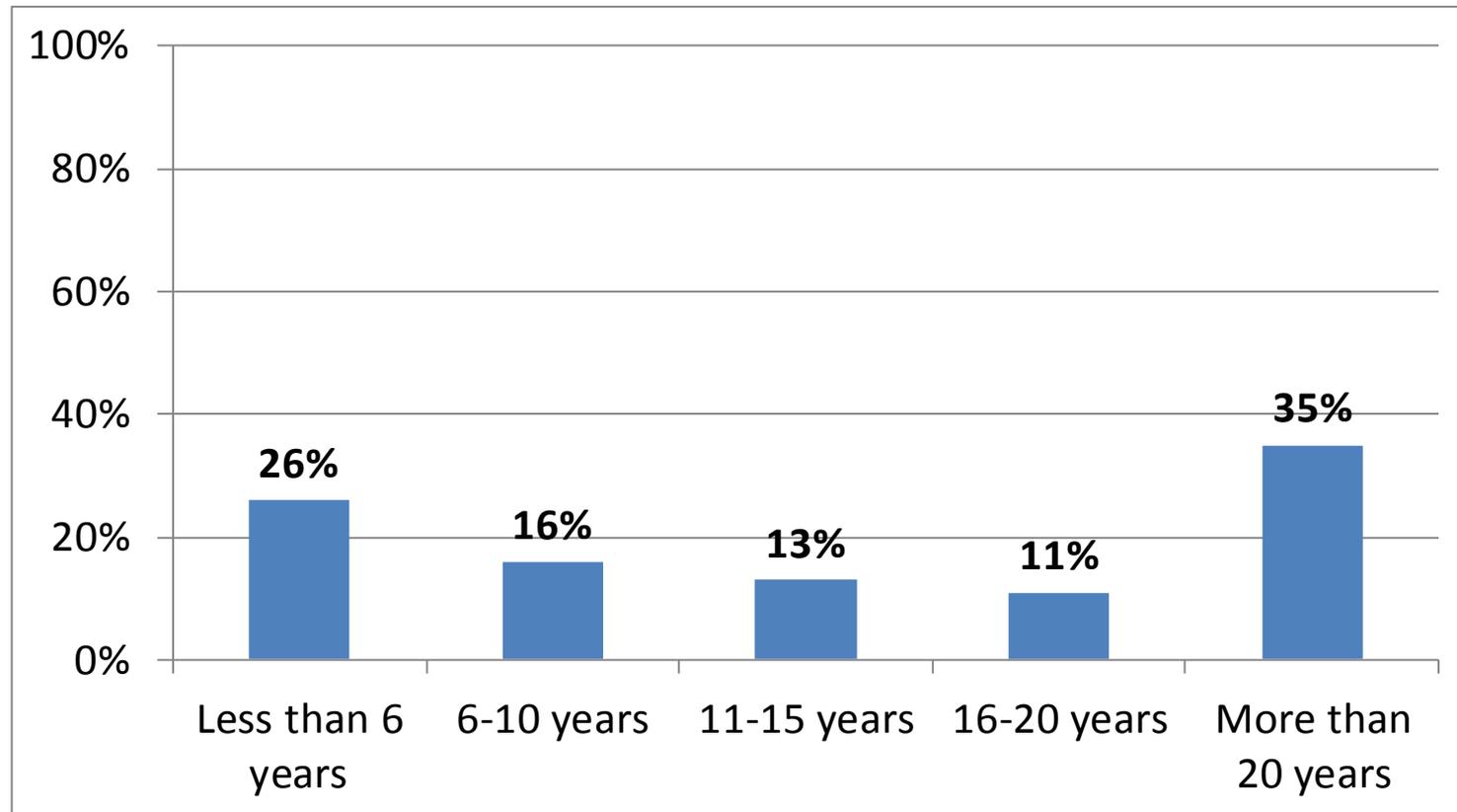
Education (Questions D2a-D2b)

(n=7,526)

- MD 92%
- Master 9%
- PhD 6%
- DO 6%
- Other 3%

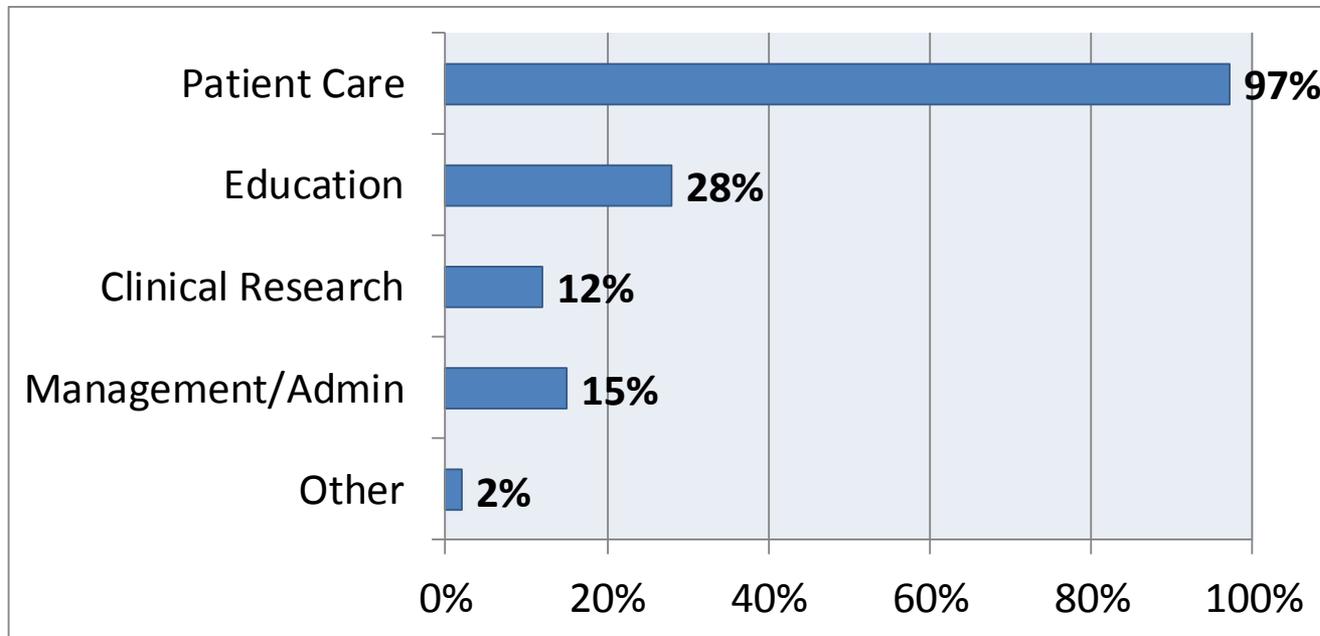
Note: For this question, respondents were able to check all that apply. The percents will not equal 100.

Years as a health care professional (n=6,638) (Question D5)



Job duties (Question IN1b)

Which of the following does your job involve?* (n=6,782)



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

Results: Value of library and information resources

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

	Attending physicians (n=5,034)	Residents (n=1,979)
Definitely Yes	38%	38%
Probably Yes	47%	47%
Probably No	13%	13%
Definitely No	2%	1%

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

Changes Reported	Attending physicians (n=4,906)	Residents (n=1,890)
Advice given to patient or family	47%	45%
Choice of drugs	46%	52%
Choice of other treatments	42%	43%
Diagnosis	36%	42%
Choice of test	35%	40%
Post hospital care or treatment	12%	15%
Length of stay	7%	11%
Not applicable	7%	8%

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

Value of the information (Question V1)

Percent who agree that the information was...	Attending physicians (n)	Residents (n)
Relevant	100% (4,943)	100% (1,906)
Accurate	100% (4,893)	100% (1,889)
Will be of use in the future	99% (4,882)	100% (1,897)
Was of clinical value	99% (4,915)	100% (1,896)
Current	98% (4,918)	98% (1,897)
Resulted in a better informed clinical decision	98% (4,817)	98% (1,859)

Value of the information (continued)

Percent who agree that the information...	Attending physicians (n)	Residents (n)
Refreshed my memory of details or facts	97% (4,727)	98% (1,855)
Contributed to higher quality of care	97% (4,796)	98% (1,848)
Substantiated my prior knowledge or belief	95% (4,671)	97% (1,818)
Provided new knowledge	92% (4,831)	97% (1,895)
Having the information saved me time	85% (4,523)	90% (1,768)

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

	Attending physicians (n=3,607)	Residents (n=1,482)
Mean	2.6	2.8
Median	1.0	1.0
Standard deviation	8.4	8.3

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

Adverse Event Avoided	Attending physicians (n=4,801)	Residents (n=1,847)
Additional tests or procedures	29%	32%
Misdiagnosis	22%	23%
Patient misunderstanding of disease	19%	23%
Adverse drug reaction or interaction	15%	16%
Medication error	13%	17%
Patient mortality	7%	10%
Not applicable	38%	35%

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	Attending physicians (n)	Residents (n)
Library/Information resource	98% (4,599)	98% (1,773)
Discussion with colleagues	87% (4,105)	97% (1,730)
Lab tests	86% (3,983)	90% (1,623)
Diagnostic imaging	80% (3,642)	86% (1,490)

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	Attending physicians Mean (S.D.)	Residents Mean (S.D.)
Library/Information resource	3.5 (0.8)	3.5 (0.8)
Discussion with colleagues	2.8 (1.3)	3.4 (0.9)
Lab tests	2.8 (1.4)	3.0 (1.2)
Diagnostic imaging	2.4 (1.6)	2.7 (1.5)

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.)
Attending physicians (n=5,230)	3.8 (2.4)
Residents (n=2,047)	4.5 (2.6)

Top five library resources used (Question IN3)

	Attending physicians (n=5,233)	Residents (n= 2,050)
Journals (online)	59%	56%
PubMed/MEDLINE	54%	59%
UpToDate	53%	77%
Books (online)	32%	46%
Books (print)	24%	25%

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)

	Attending physicians (n=5,233)	Residents (n= 2,050)
Ovid Medline	22%	18%
Journals (print)	22%	12%
eMedicine	20%	38%
MD Consult	19%	25%
ePocrates	18%	28%
Micromedex	14%	18%

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 total number of respondents. Note not all libraries had all resources.

Other library resources used (Question IN3) continued

	Attending physicians (n=5,233)	Residents (n= 2,050)
Professional assoc. website	12%	8%
Clinical Evidence (BMJ)	10%	15%
CINAHL	1%	1%
Nursing Reference Ctr.	0%	0%
Other	9%	6%

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 total number of respondents. Note not all libraries had all resources.

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

	Attending Physicians (n=5,069)	Residents (n=1,997)
Completely	64%	63%
Partially- time constraints	15%	19%
Partially – information incomplete	16%	14%
Partially- other reason	4%	3%
Not at all	0%	0%

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

	Attending physicians (n=5,230)	Residents (n=2,047)
On your institution's library web site	60%	72%
On your institution's intranet	48%	61%
Search engine such as Google	38%	39%
Personal/departmental subscription	36%	27%
In your institution's library	21%	26%

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 total number of respondents. 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 (Question IN4_1-IN4_OTH) continued

	Attending physicians (n=5,230)	Residents (n=2,047)
Mobile device	20%	31%
Via patient's electronic medical record	18%	16%
Bookmarked website	17%	12%
Asked librarian or library staff	15%	12%
Asked colleague	7%	7%

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 total number of respondents. 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.

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