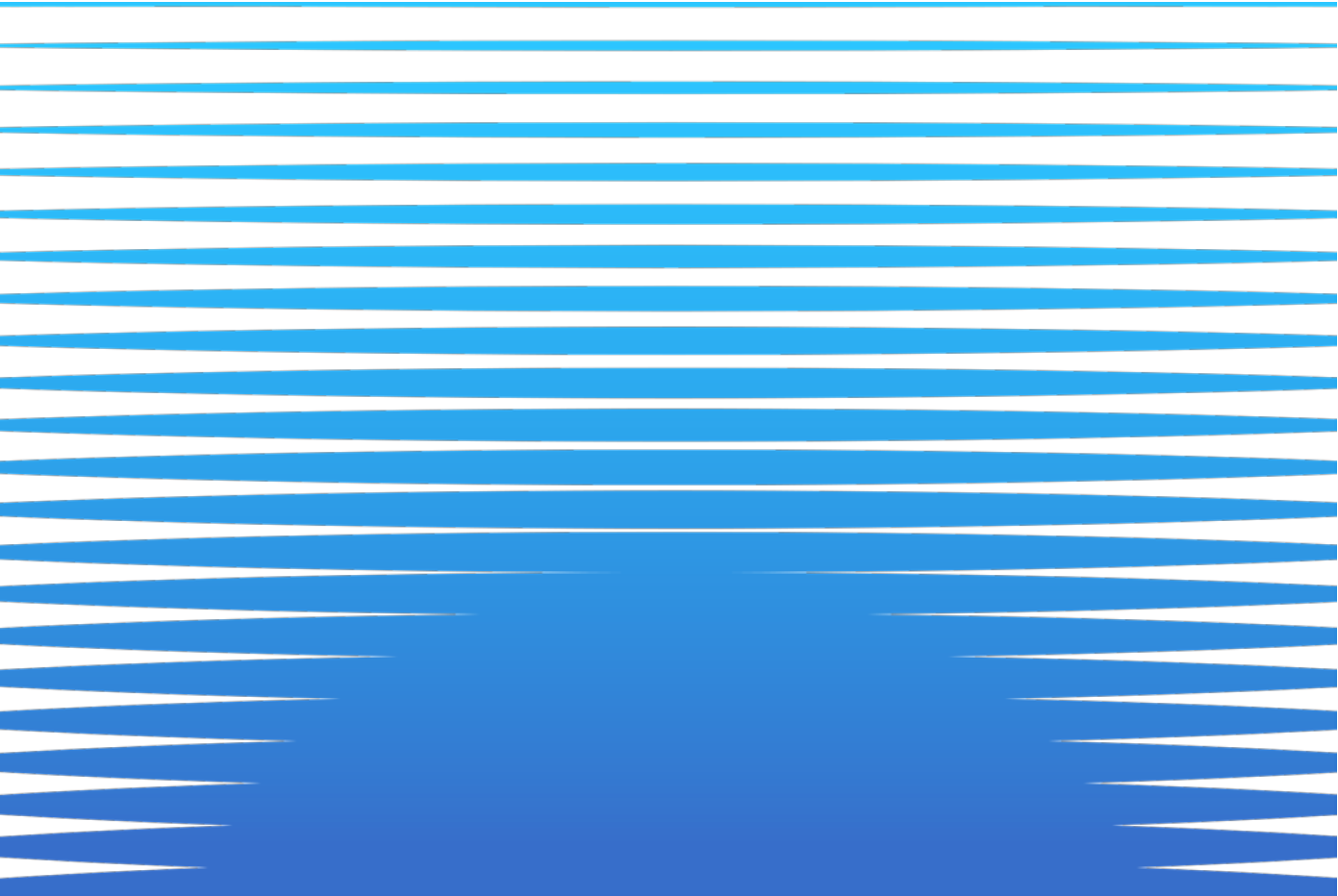


Academic Health Sciences Libraries

Structural Models and Perspectives

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Executive Summary

Over the past twenty years, the place of the academic health sciences library (AHSL) within the university has changed markedly. These institutions include libraries that may support schools of medicine, nursing, pharmacy, dentistry, veterinary medicine, and public health. Once, they may have been established as separate entities, serving a single school or campus, but many are now consolidated under a larger university library. Have these consolidations and mergers improved the services offered or impacted cost or service quality? What new structures have emerged and how well do they meet researchers' and clinicians' needs?

To address these research questions, we interviewed AHSL directors and leaders from university libraries. The key insights gained from the study based on the interviews conducted include:

- Health sciences libraries in the United States have been evolving in response to the changes in health sciences education, research, policy, and practice. Their roles are expanding, particularly in the areas of research support, data management, bioinformatics, systematic reviews, assessment of research impact, and public outreach.
- Regardless of the organizational model (independent or merged), the AHSL works closely with the main library and leverages the main library's services and expertise. Across the board, AHSL budget models vary widely, often involving funds from multiple sources (e.g., university library, health sciences schools, hospitals, National Library of Medicine).
- When the AHSL is a part of the main library system, key advantages include the ability to support interdisciplinary and cross-organizational work and to engage in large-scale collaborations within the library system. Potential disadvantages include losing administrative connection with the health sciences schools, facing challenges in providing specialized services such as biomedical data curation, and becoming a branch library with reduced prominence.
- Independent AHSLs value being a part of the health sciences community at their institution, as well as the ability to make nimble decisions such as engaging in partnerships with the learning and research technologies staff at the schools they support. Potential disadvantages include instability of reporting relations in the face of organizational and leadership changes within the school and challenges in offering seamless services for campus-wide researchers.
- When it comes to organizational structures, one size does not fit all. There are many organizational, financial, and leadership style variables that determine the success and satisfaction of AHSL directors. Because the AHSL serves a myriad of campus constituents including health care service providers, the directors made a case for having sufficient autonomy to harmonize services and procedures based on their user communities. So long as this autonomy is achieved while the AHSL's budget is protected, the organizational structure itself can be developed in a variety of ways.

- Regardless of organizational configuration, there is tremendous pressure to do more with less, save money, be efficient, and keep up with emerging or expanding service areas such as research data and bioinformatics support.¹ Regional and national associations and networks such as the Association of Academic Health Science Libraries (AAHSL) and the National Library of Medicine (NLM) are important in providing leadership, guidance, and vision for AHSLs.

We hope that the findings will inform institutions that are considering or planning various kinds of reorganizations in the future. Although we focus on AHSLs, we believe that some of the insights gained through this study will apply to other types of specialized libraries as they share similar challenges in meeting the information needs of contemporary researchers and learners in specific professional or disciplinary communities.

Research Methodology

Literature Review

We initiated the study with a literature review and an analysis of organizational trends in order to understand how academic health sciences libraries are structured from the leadership, program, financial, IT, and HR perspectives in relation to the university libraries. Although a vast amount has been written about different health library programs (e.g., hospital library vs. AHSL), their collaborations, internal organizational structures, and new roles, we were not able to identify any recent studies that investigated the nature of reporting lines and funding structures that are specific to AHSLs.

AHSLs are concerned with the education, research, and clinical care values and missions of an institution and exist to support students, faculty, and affiliated clinicians. Traditionally, they have been primarily organized under one of three types of reporting structures:

- Most commonly, the AHSL director reports to an administrator in a health sciences school (or a joint group if there are multiple schools).
- Alternatively, the director reports to someone in the main campus library.
- Although rare, some directors might report to another university-wide administrator.

The most relevant and prominent study on organizational structures was conducted by Amy G. Buhler and her colleagues in 2010 to examine the trends in reporting lines over the years and consider the strengths and weaknesses of different arrangements.² In addition to their analysis

¹ This article illustrates efforts to develop an innovative AHSL service: Ansuman Chattopadhyay, Carrie L Iwema, Barbara A Epstein, Adrian V Lee, and Arthur S Levine, "Molecular Biology Information Service: An Innovative Medical Library-based Bioinformatics Support Service for Biomedical Researchers," *Brief Bioinform* 21, no.3 (2020):876-884, <https://doi.org/10.1093/bib/bbz035>.

² Amy G. Buhler, Nita Ferree, Tara T. Cataldo, Michele R. Tennant, "External Reporting Lines of Academic Special Libraries: A Health Sciences Case Study," *College & Research Libraries* 71, n0. 5 (2010):, 467-494, <https://doi.org/10.5860/crl-49r1>.

of 1977-2007 statistics from the Association of Academic Health Sciences Libraries (AAHSL), they also conducted an online survey and held phone interviews with six AAHSL library directors. The study indicated a change in the trend of external reporting lines of academic health sciences library directors. Although more institutional directors reported to a position within the health sciences center, the number was declining. Meanwhile, while the number of those reporting elsewhere on campus (e.g., the university library director or university administration) increased. According to the AAHSL statistics, during 1990-2007, 50 libraries had changed reporting structures, some more than once. In their online survey, 24 of the 68 respondents (about 35 percent) indicated they changed reporting structures during their tenure as director. A majority of respondents were “somewhat satisfied” or “very satisfied” about their reporting structure whether they report within or outside of the health sciences center. However, a director with a reporting line with the health sciences center was more likely to be “very satisfied,” and they were more likely to respond “not satisfied” if they reported to the main campus. The key factor that determined satisfaction level was the autonomy to make budget, administrative, and service decisions. Also, the authors observed a “grass is greener” perception—some AHSL directors reporting to the health sciences center felt that it would be more advantageous to report to a library dean/director because of their advocacy role. Whereas some directors who reported outside the health science center thought that reporting to the health science center would align them more closely to leaders who understand the educational, research, and clinical mission of the center.

AHSLs are mission-driven organizations that thrive to align their programs and services based on needs and trends stemming from various health sciences fields. A quick review of such trends provided a framework for the study in order to understand the pressures and opportunities surrounding AHSLs:³

- Health care establishments (e.g., academic health centers, hospitals, and clinics) have vibrant organizational structures as they go through mergers and restructurings triggered by various market forces such as health care reform initiatives and economic pressures.⁴
- There is a trend for hospitals and health systems to consolidate with academic medical centers to leverage their assets. Such changes have implications on AHSLs as their user groups change in composition and numbers. For instance, one can envision the implications of such changes on licensing agreements that take into consideration FTE.⁵

³ “Which Innovations Are Revolutionizing Healthcare Today?” School of Business, George Washington University, July 24, 2019, <https://healthcaremba.gwu.edu/blog/which-innovations-are-revolutionizing-healthcare-today>; “Stanford Medicine’s 2020 Health Trends Report Spotlights the Rise of the Data-driven Physician,” Stanford Medicine, <https://med.stanford.edu/news/all-news/2020/01/health-trends-report-spotlights-rise-of-data-driven-physician.html>.

⁴ Some universities structure their hospitals (and other clinical care units) as separate not-for-profit organizations to limit their liability as healthcare becomes a less profitable sector. See Howard B. Fleishon, Jason N. Itri, Giles W. Boland, and Richard Duszak Jr., “Academic Medical Centers and Community Hospitals Integration: Trends and Strategies,” *Journal of the American College of Radiology* 14, no. 1 (2017): 45-51, <https://doi.org/10.1016/j.jacr.2016.07.006>.

⁵ Some hospitals are forming “affiliated” hospital agreements to assist rural hospitals with training, supply ordering, etc. without being an official part of the university. In such cases, licensing restrictions might surface in regard to providing affiliated hospitals access to licensed information resources.

- Health sciences schools are evolving as they become more interdisciplinary and more holistic. As they transition to evidence-based-medicine, teaching and learning is much more evidence-based, requiring curriculum revamp.⁶
- A growing emphasis on collaboration and interdisciplinary research and new models of scientific communication (e.g., increasing reliance on large sets of research data, emphasis on replicability of findings, experiments to facilitate early dissemination through preprints, public access requirements to make research results broadly accessible) are changing these centers.
- There continues to be fierce competition among academic health sciences organizations to recruit the best researchers and students as well as a growing need for demonstrating research impact and greater expectancy for accountability.
- Evolving patient care practices, emerging requirements stemming from the Affordable Care Act, and other health policies require increasing the leveraging of technologies.
- There is a growing emphasis on health literacy and community health initiatives (bench-to-community, not only bench-to-bed).
- Advancements in technology continue to improve healthcare from electronic patient records to tele-health, and from artificial intelligence and augmented reality to personalized wearable medical devices.
- The rise of data-driven health sciences aims to advance medicine and improve health outcomes by bringing new insights, requiring access to supporting services and expertise.

Research Questions and Interview Protocol

Following the literature review, we held a virtual meeting of the project advisory group, which includes leaders from academic health sciences libraries and university libraries, to review our research questions and get their input on the project scope and research methods.

The semi-structured interview guide aimed to seek insights on a number of issues:

1. The AHSL as a separate entity versus integrated within the university library system:
 - Key success factors, positive outcomes, and opportunities
 - Potential risks, negative outcomes, lessons learned, and tradeoffs
2. Role of consolidations and mergers on service quality:
 - User engagement, satisfaction, perception
 - Alignment with emerging needs of researchers and clinicians
3. Impact of organizational changes on libraries:
 - Costs and resource allocations

⁶ Evidence-based medicine is an interdisciplinary approach that relies on techniques from science, engineering, biostatistics and epidemiology to make decisions about the care of individual patients. It integrates research evidence with clinical expertise and patient values. For more information, see David L. Sackett, William M.C. Rosenberg, J.A. Muir Gray, R. Brian Haynes, and W. Scott Richardson, "Evidence Based Medicine: What it Is and What it Isn't," *BMJ* 312 (1996): 71–72, <https://doi.org/10.1136/bmj.312.7023.71>.

- Staff motivation and morale

The interview guide is included in Appendix A. Because the conversations are confidential, interviewees felt comfortable freely sharing their experiences.

Interviewees

The interviewees represented 28 of 129 AHSLs (as identified through AAHSL data) and included different library types, reporting relations, and university types as described in Table 1. Potential interviewees were contacted via email in June-July, 2020 and invited to participate in a 60-minute confidential interview. We interviewed 36 individuals from 28 libraries including leaders of HS libraries and their supervisors. No effort was made to speak with paired leaders of AHSLs and their supervisors from the same institution.

Table 1: Sample Characteristics (28 AHSL)

Library Type	Number
BML (Biomedical Library: MD + life sciences)	5
FMGL (Full MS and Graduate Biomedical Sciences Library)	5
FMOL (Full MS plus Other Schools Library)	18
Reporting Relation	Number
Health Science College Admin	3
University Admin	2
Medical School	9
Library	14
University Type	Number
Private	10
Public	18

Most of the interviewees have been in the field for several years and many have held other positions in libraries with different organizational configurations so their remarks were informed by their overall experiences, and were not limited to their current role.

The directors reporting to the health sciences schools had been in their current position for between two and 21 years, with an average of 8.9 years in the current position. Those reporting to the main library had held their current position for between one and 11 years, with an average of 3.7 years. The directors interviewed had long leadership careers, averaging 19 years of service

in the health sciences field. The AHSL reporting to the academic side had between nine and 60 staff members, averaging 28.2. The AHSL reporting to the main library had between five and 35 staff members, averaging 16.8. Directors reported a larger staff in cases where the AHSL had merged with other STEM libraries.

Key Findings

Qualitative research is a situated activity. The interviews conducted in this study aimed to understand different points of view on the organizational structures of AHSLs. Rather than striving for generalizability, the following analysis aims to present various themes that emerged during the discussions with 36 interviewees. Therefore, the findings should be approached as an empirical snapshot of the insights, perceptions, and experiences of those interviewed rather than broad characterizations of organizational circumstances.

Core Services and Budget Configurations

When it comes to the core library services such as collection development, cataloging/metadata, acquisition, and ILL, regardless of whether the health science library (HSL) is reporting to School or UL, there is a blended service model that applies to all AHSLs included in this study. Almost all share the Integrated Library System with the main library and work closely with the university library's technical services that provide cataloging, acquisition, and licensing services. Many are moving towards a centralized licensing system, trying to provide equal and consistent access for the entire university community, especially to support interdisciplinary research. They stress that collection building is not as specialized as it used to be and it is considered more of a commodity service that they would like to "outsource," leveraging the main library's services. Several mentioned scholarly communication as another collaboration area (e.g., organizing OA weeks, relying on the university library UL for copyright support). They often share IRs such as Digital Commons.

Across the board, the funding models of the AHSLs studied vary widely with no clear patterns. Some key findings include:

- Many universities are implementing a Responsibility Center Management (RCM) budget model, under which units are responsible for managing their own revenues and expenditures for increased transparency into budget decisions and enhanced stewardship of funds.⁷
- There are a range of budgetary arrangements, some involving funds from multiple sources (e.g., university library, health sciences schools, hospitals), and some single source (university library or health sciences schools).
- Across the board, there is tremendous pressure to do more with less, save money, and be efficient. One of the interviewees, who reports to an academic dean, noted, "There have been

⁷ In the RMC model, the colleges are the "responsibility centers" and units like the library, general administration, etc. are "cost centers" that receive their funding allocation from the "responsibility centers."

lots of mergers involving hospitals and clinics to save money. Then there is pressure on my library system to continue the services at the same level without considering the consequences of organizational changes on my collections and services.”

- Even if a part of a UL, sometimes funds come from the school; or just the opposite. For instance, some AHSLs within the academic side rely on some support from the main library through services (e.g., Integrated Library System) or subscriptions.

This study has not found any correlation between reporting structures and the scope of AHSL directors’ responsibilities. This might be due to the qualitative nature of the study and the limited sample size.

Making a Case for Autonomy

Each health sciences librarian interviewee made a point to mention that their library serves a myriad of campus constituents, including the school of medicine, nursing, dentistry, public health, kinesiology, pharmacy, and allied health, in addition to affiliated hospitals and clinics. Some also provide services for the veterinary or biological sciences (especially merged STEM libraries within UL). Accordingly, they made a case for needing sufficient autonomy based on their clients, including researchers, graduate and professional students, residents, clinicians, nurses, etc. One interviewee who reports to an academic dean captured this sentiment, noting, “Our mission, priorities, work circumstances are so different so academic health sciences libraries need the autonomy to meet the needs of clients. We need to be able to harmonize our services and procedures based on the HS school’s distinctive operational environment.”

Job satisfaction among the AHSL directors seemed to be quite high as many mentioned the gratification stemming from their participation in “saving lives” by supporting health sciences professionals. “Health sciences librarianship is such a rewarding field because my staff feel needed and well-respected,” stated one interviewee. Another director explained that, among research libraries, AHSLs often take the lead in rolling out new programs such as systematic reviews that were initially dedicated for health sciences users but expanded to other parts of the campus. Also, several interviewees offered examples to illustrate how effective the AHSL has been in integrating and embedding training in teaching and clinical research. Due to the emphasis on evidence-based practices in health sciences, AHSL staff remain active and visible with heavy demand for their instructional and reference services. Embedding a librarian within the clinical setting as part of the team allows the librarian to be proactive and collaborative, providing more immediate expertise at the point of need for the rest of the health care team and the patient.

Almost all interviewees stressed that health sciences schools are the main revenue generators at their university and are important in bringing grants, building institutional reputation, and contributing to the university’s revenue sources. One university librarian stressed that the health sciences have a different culture than the general university, describing the four-pillar mission of the library as education, research, clinical, and community engagement. Autonomy is important to the AHSL director reporting to the university librarian, “Working in partnership

with a medical clinical enterprise is complicated and not everyone at the main library knows or appreciates how it operates.” On the same theme, another university librarian with the oversight of the AHSL noted, “Health sciences is the engine that generates research and clinical revenue through grants and patient care. Health sciences librarians need to attend to their constituents as they are a powerhouse for reputation building and bringing in money.”

Organizational Cultures and Leadership Styles Matter

Out of 28 AHSL directors included in the study, eight report to the university librarian or dean of libraries (one with a dotted line to the vice dean for health affairs at the medical school). Another six reported to an associate university librarian (one with a dotted line to the senior associate dean of the medical school). For those administratively situated in a Health Sciences Center, five were reporting to the dean or associate dean of the medical school and two to an executive vice dean or vice chancellor for academic affairs. Illustrating a wide range, AHSL directors within health sciences schools report to the chief administrative officer of the school of medicine, the dean of the graduate college and vice provost for health sciences, the dean of student affairs, the senior associate dean for academic affairs, the senior chancellor for health sciences administration, vice dean for clinical and translational research; vice president health affairs and academic provost; and vice provost for IT (see Table 2).

Table 2: Reporting Lines

Unit	Number	Reporting Lines
Library	8	Main Library Dean/University Librarian
Library	6	Main Library Associate University Librarian
School	5	Dean or Associate Dean for Medical School
School	2	Executive Vice Dean or Vice Chancellor for Academic Affairs
School	7	Other senior leaders

Reporting relationships seem to be contextual and complicated, depending on many factors including the organizational and budget structures of a university. Being administratively situated within a university library or a health sciences school does not seem to be consistent. Elaborating on this principle, one of the library directors explained, “You cannot strip organizational models from the people aspect. Sometimes people can impede or empower reporting relationships. I have been in the field for a long time and can tell you that there is not an ideal configuration. It all depends on the circumstances of your health sciences campus, your deans, library leadership, and your university’s priorities and budget. You cannot rely on a reporting relationship as there is always job turnover and constant reorganizations and appointments.” Illustrating the last point made about the transient nature of leadership, one director explained, “I used to report to an academic dean who was very supportive of the library, but the new one does not seem to understand what libraries do.” Along the same lines, another

interviewee (director reporting to the academic side) described, “Sometimes success and visibility relates to how the head of medical school views the library. If they love the library and they use the library, you are in. If you are unlucky, they don’t want to deal with the library and it is hard to get the library on the table.” The director continued describing how it boils down to personalities because libraries are in a service role and it all depends on how they are perceived by people who are high-level decision makers.

Several mentioned how the autonomy challenges can be mitigated if the library leadership recognizes the unique circumstances of a health sciences library and provides sufficient autonomy to serve their clientele. Some with reporting lines to the main library mentioned how supportive their ULs are and how much freedom they were allowed to run their libraries. As one noted, “Regardless of where you are organizationally located, you need to network and find opportunities to work closely with your user groups.”

It was evident from the interviews that the topic of reporting relations is a commonly discussed issue in the health sciences librarian community. One library director, who reported to the vice dean for educational affairs, said, “When I talk with my colleagues about their reporting relationships, we all agree that it is all about the ability to maintain autonomy and being able to function as a special library; avoid being a branch library that becomes a uniform service point.” Almost all the library directors with health science school reporting lines stressed the importance of working closely with the main library. “I am able to stay in touch and benefit from the university library without reporting to the dean of libraries,” said one director, explaining that it was about relationship-building and knowing when and how to collaborate without giving up the library’s autonomy. One director who reported to the chief information officer was empowered to deliver many new, high-value research data and bioinformatics services for which the library can charge back.

The interviews revealed that the AHSL can be siloed even when it is part of the main library system. By the same token the AHSL can work well and collaborate broadly with the main library even if it is independent. “When I arrived at the university, my library was siloed although we were administratively a part of the library. Decisions were being made without consulting with me and my staff,” said one director. The director had needed to work hard to change the culture.

Whether they report to a library leader or a dean, AHSL directors see their supervisors as busy senior leaders who don’t have enough time to understand the intricacies of the AHSL. The leaders act more as sounding boards. Library directors from both organizational types explained that they meet with their supervisors usually once a month or as needed, often to go over financial or facilities related issues. During the interviews, it was common to hear comments such as, “I rarely meet with the person [associate dean of health sciences school] I report to as he has a lot of stuff to attend to and the library is not on his radar. But I keep him in the loop. I am not being micromanaged. He trusts me, gives me autonomy, and knows that I work with the right people.” The programmatic issues are often discussed by other specialized senior leaders such as a dean of finance or lead of a specific research group. One of the deans of libraries candidly remarked, “When I was appointed, I did not have much knowledge of health sciences

librarianship. I have the good fortune of having an excellent [AHSL] director who is so experienced and is trying to educate me.” The library dean went on to explain the differences between the AHSL and the rest of the campus, “They are different worlds, there are different expectations. They truly function in a digital library world as informationists.”

Almost all directors interviewed stressed that their visions were informed through their professional network and collaborations with other libraries and the regional and national network such as the Association of Academic Health Sciences Libraries or the National Library of Medicine (NLM). Illustrating this point, one director (reporting to an academic dean) said, “I often rely on my AAHSL peers for ideas. Sometimes I survey them to see who is doing what.” The director pointed out that the NLM was critical, noting “That’s where I get my leadership guidance and inspiration.”

When it comes to organizational structures, one size does not fit all and it is difficult to make any generalizations. There are many variables that determine the success and an AHSL director’s satisfaction level.

- Size and complexity of the health sciences schools and affiliated organizations such as hospitals and clinics;
- University’s administrative culture (e.g., distributed versus centralized authority) and structure;
- Relationship (governance and finance) between the main campus and the health sciences schools;
- Leadership qualities and styles of the supervisors in regard to their understanding of the unique qualities of the AHSL and willingness to allow autonomy;
- Source of funding as it varies regardless of organizational type;
- Physical proximity of the main and health campuses and buildings.

Insights from AHSLs within the Main Library

The study included 14 health science libraries that are organizationally included in the main library system. The interviewees in this category included 14 AHSL directors and six university librarians and associate university librarians (reporting lines). Among the libraries studied, the merger with the main library took place between four and 26 years ago, representing a broad span (33 percent merged more than five years ago).⁸ Only one library mentioned that there were some initial discussions about a future merger with the main library. The following section provides a summary of the opinions on the effectiveness of the organizational model.

⁸ Among the libraries included in this study, the mergers took place two to five years ago for four libraries; six to ten for three libraries; 11-15 for three libraries; 16+ for two libraries.

What Works Well

Supporting interdisciplinary and cross-organizational work. Being part of a system with different specialized libraries may allow more opportunities for supporting interdisciplinary and cross-organizational collaborations. Emphasizing this issue, one Associate University Librarian (AUL) said, “We see ourselves as one library system and the model works quite well from my perspective. We [university library] continue to learn from them [HS library]. Explaining that they look for ways they can find inroads, “Their curriculum work gives us good insights but it is hard to do it in arts and sciences or engineering as we do not have a seat in shaping the curriculum.” One university librarian (UL) echoed a similar sentiment, “In my opinion, medical schools gain from affiliation with the university library. I recognize that the medical school work is different and I give her [HSL director] a great deal of freedom. I do not give the same level of independence to other branch libraries.” However, the UL was quick to note, “Overall I think integration is better but I know that some medical library people by default prefer to be independent.”

Collaborating at scale. If AHSL directors are given sufficient power within the main library system, there are opportunities for collaborating on larger-scale projects that would benefit both the health sciences and the main library. Stressing this benefit, a library director who reports to a dean of library noted, “The current arrangement works well because I have lots of autonomy and take advantage of library services [offered by the main library] so that my staff can focus on health-specific services.”

Maintaining neutral grounds. In universities with various health sciences schools (medical, dentistry, nursing, etc.), some felt that being a part of the main library allows the AHSL to be independent without a close association to only one of the schools. “I am okay with being under the university library as it provides a neutral space,” said a library director with more than two decades of experience, continuing, “I have a good relationship with the new UL . . . who is trying to understand the landscape and does not seem to be interested in the details of my work anyway.”

Providing financial security. For some AHSLs with a small staff and financial challenges, being a part of a larger library system might provide some protection and shelter from budget cuts. A university librarian described how the recent integration worked well as they can now offer greater resources in support of interdisciplinary work. The AHSL director at the same institution (on a separate interview) elaborated on this benefit, “What has changed for the library is that integration allows us to take advantage of many resources that the main library is providing.” They were able to get services from the main library before the merger too but now the process is streamlined and formalized. Another AHSL director who is reporting to a dean of libraries made an important point about the importance of staying connected with the academic side: “We need to proactively forge relationships and it should always be seen as work in progress.” Another interviewee described meeting with each health sciences dean regularly, “So the fact that I report to the main library does not seem to affect my ability to align and network with the health sciences colleges.”

Concerns

Losing visibility and agency. A number of interviewees, especially AHSL directors who report to an AUL, described the risk of being buried in the hierarchy of branch libraries and the library administration. Several interviewees mentioned that they feel pressure to advocate for health sciences clients and articulate why they are different from other branch libraries. One AHSL director explained, “I have to go through an enormous process to justify why the university library system needs to invest in my library. We are now dealing with shrinking collection budgets and need to participate in cancelling our Elsevier package. I tried so hard to explain how devastating the lack of access will be for my faculty and practitioners but the process was heavily driven with an open access agenda.” Illustrating the complexity of the situation, another director felt that when the AHSL was a part of the school prior to the merger, it was recognized as an academic partner. Since the merger eight years ago, it was getting increasingly difficult to explain the role and scope of his library to faculty and researchers, “Often I hear why libraries still need so much money when everything is online and there is more OA content. The main library pushes for OA but we will suffer if we don’t have a plan to rebrand ourselves. If everything is free, what is the reason for investing so much into the library?”

Communicating distinguishing attributes. AHSLs can be siloed and left out even in an integrated system. Some AHSL directors feel that they are constantly trying to educate their library colleagues about their unique programs and needs and how they are serving a different clientele. “We have been doing what the university library has been aspiring to do for years successfully with a huge demand for our services such as research data, systematic reviews, and integration into the curriculum,” explained one AHSL director interviewed. Although they were ahead of the curve in offering innovative services, the AHSL staff sometimes felt underappreciated by the main library staff.

Supporting data curation. Many interviewees expressed concerns about the scope and effectiveness of their data curation program. One explained, “We have capacity only to provide instruction on best practices but do not have resources to offer data curation services. I don’t see it getting any better given the current budget situation.” This director felt that the research data support programs in university libraries try to serve too many subject areas and as a result biomedicine does not get sufficient attention (especially for data curation beyond awareness building programs).

Other drawbacks mentioned included:

- The main library policies and procedures may not align with the health science library culture. As one AHSL director explained, “We need to rely on the library’s lengthy timeline and process for hiring.” The director added that there were too many committees and meetings at the main library, many with little relevance to AHSL priorities.
- The trend to shift reporting relation from UL to AUL is disconcerting mainly because directors felt that they were no longer “a part of the decision making and cannot take advantage of the authority and recognition the UL can bring.”

- The main library collection policies sometimes can inhibit acquiring clinical resources, especially software and other research applications.
- AHSL directors want their libraries to be recognized as specialized libraries, not branch libraries.

Effect of Merger on Resources

One of the research questions of the study involved the impact of organizational changes on library budget and staff morale. Subsequently, we were interested in exploring how mergers might have impacted service quality. Among the AHSLs studied, mergers with the main library took place between four and 26 years ago, representing a broad span. The library directors and university librarians interviewed cited various motivations behind the mergers. For instance, some consolidations were prompted by the structural reorganization of health sciences schools or a change of leadership (especially affecting the AHSL director's reporting line). At one library, the newly appointed university librarian made a case to the health sciences school that unification would lead to improved and modernized services. Some of the AHSL directors were hired after the merger so they were not able to reflect on why and how the organizational change took place. None of the interviewees in this study cited immediate cost savings as the main motivation behind mergers. However, service effectiveness and cost-efficiency were listed as motivating factors behind combining multiple STEM (e.g., chemistry, physics, engineering, etc.) and health science libraries under one branch library.

Almost every AHSL director interviewed mentioned the importance of rolling out mergers carefully and thoughtfully. "You need to include people in the process so that it is happening with them, not to them, and build trust," said an AHSL director, continuing, "There was some resistance and confusion along the way, a strong sense of loss. As we were planning the merger, there were retirements and opportunities to recruit a new group of librarians who knew that the reporting structure was evolving."

When asked about user reactions to mergers, the most common response was that some researchers and faculty initially complain but then quickly get used to the new structure. This sentiment was captured by an AHSL director who oversaw the merger process a few years ago, "Faculty and researchers were first a bit worried when we started talking about the merger plans. But then they quickly were oblivious to the changes. They just wanted to make sure that the service quality would not suffer and they will be able to get help at the same caliber."

Insights from AHSLs within Health Sciences Schools

The study included 14 AHSLs that are organizationally under the academic side of a university. The interviewees in this category included 14 AHSL library directors and two administrators they report to. The following section provides a summary of the opinions on the effectiveness of the organizational model.

What Works Well

Having a sense of community. The library directors described how this organizational arrangement allowed them to be part of the health sciences community. “It is very helpful to be at the table with the deans and faculty when you are reporting to an academic leader,” stated one interviewee, “You are automatically included in meetings and other forms of communication.” Stressing the importance of professional identity, one director noted, “We sit on the curriculum and other academic committees. We are able to network with associate deans in charge of finance and facilities.”

Remaining nimble. Another advantage associated with an organizational affiliation with the school was the ability to make nimble decisions without spending too much time trying to build consensus and aligning policies and practice with the main library (e.g. print vs. electronic purchase decisions, circulation period for materials checked-out, expedited ILL, etc.). This point was illustrated by a library director from a large public health sciences center, “We have too much going on with a sense of urgency so we try to be proactive and avoid library committees and need to make quick decisions. I can work with the university library or they can work with us anytime it makes sense. Not being one unified unit does not mean that we don’t work together. We collaborate as needed but I need to remain very focused.”

Partnering with health sciences technologists. An important recurring theme was the appreciation for engaging in partnerships with the school’s information technology units with expertise in learning and research technologies specifically for health sciences disciplines. Highlighting the importance of biomedical data acumen, a director said, “I would not have access to the same high caliber technology support if I were merely dependent on the main library’s IT group.” The director went on to describe that the main library’s IT group was overwhelmed with an implementation of a new Library Management System and were spread thin with limited capacity. Several directors described their efforts in experimenting with virtual reality (VR) equipment and 3-D publishing in collaboration with academic technologists and faculty involved in the curriculum renovation. For instance, two of the AHSLs included in this study were testing an empathy tutorial to help students understand what a patient goes through and improve their communication skills. Another example was a VR anatomy program that allows medical students to zoom in and around a human body, from various angles. One interviewee described how software vendors were aggressively marketing new learning and research workflow tools and described the AHSL’s efforts in piloting them to assess their effectiveness in supporting learning and teaching.

Providing embedded data services. Research data management was often described as a priority service area—this was not limited to the health science libraries within the academic side. However, the AHSL directors within health sciences schools felt that they had better access to the required resources and expertise and emphasized the importance of working with individuals who understand biomedical policies, procedures, and workflows (especially involving clinical trials and human subjects). They also stressed the importance of working with IT teams with a knowledge of electronic medical records and privacy and security policies that pertain to health sciences data. Inevitably, the libraries included in this study illustrated the variations in service scope and depth based on the stature and financial resources of their home institution. Even for AHSLs within the academic side, research data programs were often described as work-in-progress. One interviewee explained, “We recognize that working with our constituents on data management, discovery, and reuse is critical. However, we are struggling to do it well. It is difficult to scale our services.” Explaining that their team is trying to follow the guidance from the NLM, one interviewee stated, “My vision is building an increasing number of tools to support research data and bioinformatics. It is important that my staff understands the nature of data created and published locally.” Noting that they are seen as an essential partner in research data support, the director explained, “I have built a research reproducibility service in collaboration with several departments within the school. We can deal with lifecycle management when the practice is integrated into daily work rather than trying to curate data at the end.”

Justifying the budget. The budgetary arrangements vary widely regardless of organizational models. One AHSL director made an interesting observation, “When I defend the library budget during [the school’s] planning meetings, sometimes I am asked why the library spends so much money on journals.” With increasing open access, more and more researchers feel that it is all out there free and question why the library is still spending so much money on subscriptions. This increases pressure to add more value-added services such as systematic reviews to illustrate the value of the library, “Licensing a bunch of databases is not important enough.” Several other directors with reporting lines to the academic side also mentioned that they have their budget challenges just like anyone else. One director elaborated, “I know that I need to have budget reductions and do my part when my school is under pressure. Everybody knows about the school’s financial hardship so we are not questioned about why our services are curtailed.”

Potential Benefits of Merging with the Main Library

Maintaining stability. In some health sciences schools, the reporting relations are in flux due to new appointments or organizational changes. Several AHSL directors with reporting lines to the school commented that frequent changes in reporting lines sometimes have consequences for their reporting relationship, which can be problematic. However, the directors interviewed noted that they make it work as they seldom have meetings with their supervisors and have quite a bit of autonomy anyway. On the other hand, some wondered if being under the main library might enable more stability. “In some cases, it might make sense for the dean of libraries to represent the entire system, stated an AHSL director. “But the university librarian hardly has time to develop an understanding of what’s going on in the health sciences libraries.” Nevertheless, there were variations in the way the library directors characterized their

sentiments on reporting relations. “I see benefits to both sides,” pointed out one interviewee. Noting that this might be “a minority view,” the director said, “we will be better off if we become a part of the main library as I can take advantage of the library system better.” However, the director does have concerns about the organizational change process and thought that it would be “painful” based on staff members’ anxieties and reactions.

Protecting the budget. Interviewees described several other ways the AHLS could benefit from close administrative alignment with the main library. One director wondered if a merger with the main library could provide some safety and security in face of budget cuts due to the status of the library dean on campus. Another pondered about the value of shared advocacy strategies, “Now I don’t have easy access to fundraising support and need to coordinate it with the med school development office.” The director went on to explain that the main library has a dedicated development and communication support unit and was quick to point out that the main library is running several units with competing priorities. The director questioned if and how the AHSL needs will rise to the top and if so how it would be perceived by other branch library directors.

Supporting interdisciplinary scholarship. There was a strong recognition of the expanding importance of interdisciplinary and cross-college collaborations, for instance in global health, and the need to make services more seamless for researchers across the board. Almost all AHSLs reporting to the school mentioned that the potential merger with the university library comes up from time to time but is not being considered now (as they don’t see a compelling case). Only one indicated that there were some initial discussions about merging.

Concluding Remarks: Priorities and Challenges

Health sciences libraries, similarly to all research libraries, continue to be in a perpetual mode of innovation and rebranding. All libraries are grappling with budget constraints, changing technical environments, and reskilling the workforce to keep pace with new requirements and health sciences libraries are no exception. This study aimed to understand different points of view on the organizational structures of AHSLs rather than striving for generalizability. Regardless of the organizational type, the following themes emerged in the interviews with the AHSL directors as some potential differentiating factors:

- They value and appreciate the services provided by the main library; however, they don’t feel a strong alignment with the main library’s priorities and strategic directions.⁹
- Engaging in close collaborations with health sciences faculty and researchers to support evidence-based medicine, especially through integration into the curriculum and engaged learning, is an important priority.
- While systematic reviews are very popular and well established, increasing capacity to match the demand was a problem for everyone interviewed.

⁹ One exception to this sentiment was expressed by a director who is overseeing a group of health science and STEM libraries as a merged operation.

- AHSLs included in this study are engaged in research data support but at varying levels, and the most valued collaborations are with the academic IT and bioinformatics research groups within the health sciences schools.
- Many are active in licensing and supporting research workflow tools to support data visualization and statistical and bibliometrics analysis for faculty, students, researchers, and clinicians (often in collaboration with the health sciences academic technology or units, and some through a cost recovery system as they charge the labs/units).
- Some are positioning themselves as “informationists”—merging the knowledge and expertise of a healthcare professional with the information retrieval skills of a librarian for searching for literature, building information literacy through teaching, providing data management services, and assisting in the overall research process.
- Several interviewees mentioned that they either hired a person or revised the job description of an existing staff member to lead communications, especially social media, to promote services.

Community outreach and service is an important and gratifying part of the AHSL staff member’s job. “We are trying to identify and respond to the information needs of health professionals in the community and the general public in the state, with special attention given to the needs of minorities and other underserved populations,” explained one interviewee (HSS). The director described how they work closely with the state’s public health and public library staff to provide orientations to the public about accessing and using reputable free information sources. Another interviewee described staff outreach efforts to engage with patients and their families. Several interviewees referred to their participation in the Network of the National Library of Medicine (NNLM), which aims to provide equal access to biomedical information to enable the public to make informed decisions about their health.¹⁰

Whether the preference is for administrative affiliation with the main library or the academic side, the interviewees stressed the situated nature of the arrangement and factors such as the styles and attitudes of library leaders. As one AHSL director put it, “Library organizational structures reflect their own institutions as they need to adapt to the culture. The structures stem from needs of HS. If you see one academic medical center you see one academic medical center.” Although diversity and inclusivity issues are gaining more traction, many interviewees expressed that they have a long way to go. As one stated, “As a profession we are accepting that there are structural barriers in recruiting, training, and retaining.”

The study was conducted during the COVID-19 pandemic as the libraries were preparing to support a new academic year that promised to be unconventional and unpredictable. When asked about their experiences, almost all stated that they were already mainly functioning online and the crisis reinforced that their libraries are indeed virtual. They stressed the need to

¹⁰ The Network of the National Library of Medicine (NNLM) aims to support the progress of medicine and improve the public health by providing equal access to biomedical information to enable the public to make informed decisions about their health. It is coordinated by the National Library of Medicine and implemented through a nationwide network of health science libraries and information centers Coordinated by the National Library of Medicine, and carried out through a nationwide network of health science libraries and information centers. Additional information is available at <https://nnlm.gov/>.

improve the staff capacity, skills, and knowledge of online instruction pedagogies and platforms. As one library director stated, “we got some headspace to shift our gaze on the horizon to see where education and teaching will be in the future.” Interestingly, some wondered if making a case for library space in the future would be more challenging as they were already competing for limited space within their facilities.

The informants of this study shared valuable insights in addition to surfacing additional research questions. There were numerous references to the difference between a branch and a special library. This question was beyond the scope of this study; however, it should be followed up to explore the difference in means of staffing and functions and pros and cons of these two models. Also, it would be valuable to further articulate how and why AHSL clients have different needs and cultures and the role of organizational structures in enabling or inhibiting service provision. As libraries continue to consider different service models in support of expanding their services and contain costs, one of the outstanding questions is how they will strike a balance between maintaining cohesiveness as a library system and being visible attending to the needs of specific user communities.

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Appendix A: Interview Guide

Ithaca S+R: AHSL Semi-Structured Interview Guide

category	stakeholder	questions/themes	probes
intro	AHSL/UL	What is your title (to verify)?	
		How long have you been in your current position?	
		How long have you been at the current institution?	
org structure	AHSL	Whom do you report to (to verify)?	Would you specify the college, division, unit?
org structure	AHSL	What is the position title of the person to whom you report?	Distinguish between who you report to formally vs anyone else who provides day to day management for your work
org structure	AHSL/UL	If and how did reporting structures changed?	What were the impetus and circumstances?
org structure	AHSL/UL	How is the AHSL's budget structured?	Where does your budget come from? Who sets it? And how if at all has this changed?
services	AHSL/UL	Who provides core library services for the AHSL?	tech services, preservation, archiving, special collections, IT, etc. services for the AHSL
services	AHSL/UL	Who provides core administrative services for the AHSL?	Who provides HR, accounting, communication, development etc. services for the AHSL?
collections	AHSL	Would you tell me about your collection development program?	How (if at all) do you collaborate with the main UL or AHSL to share decision-making and budget for major shared collections/licenses?
impact	AHSL/UL	How have the staff responded to the change?	If there were recent organizational changes: Were there any formal or informal surveys to gather staff feedback?
impact	AHSL/UL	How have the library users responded to the change?	If there were recent organizational changes: Were there any formal or informal surveys to gather staff feedback?
impact		What are your thoughts on the current org structure?	What are the advantages and disadvantages of the current reporting structure?
vision	AHSL/UL	What are the current program priorities for the AHSL?	How do you see AHSL programs/priorities change during the next 5 years? How do they relate to or differ from the main library?
conclusion	AHSL/UL	Anything else you'd like to tell us?	Current situation, implications, projections, recommendations, any questions you've expected that I did not ask, etc.