



**Final Report & Recommendations:
Resource Access in the 21st Century,
RA21 Hospital Clinical Access Working
Group - June 4, 2019**

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TABLE OF CONTENTS

Acknowledgements.....	4
Background ~ RA21 Hospital Clinical Access Working Group	4
Introduction ~ RA21 Hospital Clinical Access Working Group	5
Objectives ~ RA21 Hospital Clinical Access Working Group	5
About ~ RA21 Hospital Clinical Access Working Group	6
Output ~ RA21 Hospital Clinical Access Working Group	6
Executive Summary ~ Methodology, Research and Highlights of Findings	6
Research Phase 1 Virtual Focus Groups	6
Research Phase 2 Market Survey of Hospital & Clinical Librarians About RA21	6
Survey Highlights	7
<u>RECOMMENDATIONS</u>	
Recommendations for RA21 for Hospital Clinical Access	9
Recommendation 1 – Partnership with HIMSS needed to facilitate	9
Recommendation 2 - Documentation needed for hospital IT use that covers the security of SSO solutions for library resources with federated identity management	9
Recommendation 3 – Case Study Success on successful SSO adoption for access to library resources in a hospital.....	9
Recommendation 4 – Hospital Librarian CE on authentication technologies	9
Recommendation 5 – Help hospital IT and hospital librarians build better relationships to facilitate RA21; create ‘best practices’ for hospital IT and hospital libraries, through further research and initiatives	9
Recommendation 6 – Hospital librarians needs a resource to inform and communicate about authentication technologies	10
Recommendation 7 – Further exploration of a SSO solution or within the EHR should be undertaken with the partnership of HIMSS, hospital librarians and NISO.	10
Recommendation 8 – Use a Story to Describe the Value Proposition of SSO for Hospital Libraries.....	10
Recommendation 9 – Improve transparency of the cost of SSO for hospital libraries; create business models with more options to control costs	11
Recommendation 10 - Further research is needed and pilot testing of technologies (for proof concept) that could enable seamless access to library resources in a clinical environment (hospital, healthcare system, and clinic).	11
Hospital Environment & Hospital Information Systems	12
Electronic health record (EHR).....	12
Citrix.....	14
DETAILED METHODOLOGY AND FINDINGS:	14
Virtual Focus Groups – DETAILED METHODOLOGY	14
Virtual Focus Groups – DETAILED FINDINGS – Seven Themes Identified from Virtual Focus Groups	15
<u>FOCUS GROUP THEMES</u>	
THEME #1 - Hospital librarians & technology challenges are front and center	15
THEME #2 - Hospital librarians AND LIBRARY resources are considered secondary to Hospital IT departments’ priorities.....	15
THEME #3 - It is a highly complex hospital organizational environment that is frequently or continuously changing.....	16

THEME #4 - Publishers and Vendors do not understand the hospital and healthcare system complexity to make access issues easier with licensing and login	16
THEME #5 - Clinical use of computers is different in a hospital	16
THEME #6 - Library resources, Federations and even OpenAthens are considered ‘Security Risks’ by some hospital IT	17
THEME #7 - Costs are Key	17
Survey of Hospital/Clinical Librarians Market Survey of Access to Hospital Library Resources – DETAILED METHODOLOGY	17
Survey of Hospital/Clinical Librarians Market Survey of Access to Hospital Library Resources – DETAILED FINDINGS	18
<u>DETAILED SURVEY FINDINGS</u>	
1. Clinical staff access to library resources on-site at the healthcare institution.	18
2. Devices clinical users use to access library resources.	19
3. Clinical staff access to library resources REMOTE off-site from the healthcare institution.	19
4. Would the hospital librarian change anything about the current authentication SYSTEM?	20
5. What is the ideal access for library users on-campus	21
6. What is the ideal access for library users off-campus.....	21
7. Description of issues with current access methods.	22
8. Rating of working relationship of library with hospital (clinic or system) IT department.	23
9. Description of the challenges in the working relationship with the library and the hospital (clinical or system) IT dept.	23
10. Current status of access of library resources from the institution’s EHR system(s).	25
11. Rating of the understanding of hospital librarian of ‘Identify Management Federations’ used to access licensed library resources.....	26
12. Hospital use of single-sign on (SSO) for clinical or operational systems at the healthcare institution.....	27
13. Has hospital considered single-sign on (SSO) for clinical access to library RESOURCES?	27
14. If not using single-sign on, what are the reasons for not implementing it for clinical access to library RESOURCES?	28
15. Opinion of the hospital librarian about the security of single-sign on (SSO) versus IP authentication.	29
16. How the library analyzes usage of library resources.....	29
17. Level of privacy that is important to the library and/or the institution related to analytics and library resource usage.	30
18. If the hospital librarian is not satisfied with library analyticS, what improvements are needed?.....	30
19. Opinion of the hospital librarian about RA21.	31
21. Survey Respondent Profile.....	32
20. Comments from hospital librarians about RA21 and hospital/clinical access were provided and are important to inform the RA21 Hospital Clinical Access Working Group and others.	33
Sources:.....	36
Appendix A Glossary	37
Appendix B Virtual Focus Group Invitation, Interview Script & Instructions	38
Appendix C Focus Group Transcript – November 2, 2019	40
Appendix D Focus Group Transcript – November 14, 2019	57
Appendix E Survey Questionnaire	76

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The time, effort and dedication of these medical information professionals informed the foundation of this report and was instrumental to the findings and recommendations. These health sciences librarians were frank in their assessment of RA21 for their hospitals and clinicians they serve. They were also earnest in their desire to learn more about RA21, to better consider the implications of this professional issue within their healthcare institution.

We are very grateful for practical wisdom, professionalism and dedication of these librarians to the clinicians they serve regarding the challenges and opportunities RA21 provides in a clinical setting.

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BACKGROUND ~ RA21 HOSPITAL CLINICAL ACCESS WORKING GROUP

Access to scholarly resources in this decade has become a frustrating, multi-step experience for scholars and clinicians for institutionally-provided resources. This is especially true when off-campus (working remotely from the institution) as well as on-campus. Even on-campus, many users of scholarly or clinical resources experience multiple access methods and different systems and can be hard-pressed to understand what method, password or system to utilize at the point of need.

In 2016, the International Association of STM Publishers (STM) and the National Information Standards Organization (NISO) brought together stakeholders from the publishing, library, software, and identified communities to form a broad initiative called Resource Access in the 21st Century (RA21) to address the issues. (1.)

Initially, due to the enormity of the issue and the research and pilot activities needed to move the RA21 initiative forward, the efforts focused on corporate institutions in the pharmaceutical industry via the Pharma Documentation Ring, which began work in 2015-2016 independent of RA21. This group joined forces with STM and together conducted research and pilot testing. Additionally, the RA21 initiative focused on a second large user segment, that of academic institutions, and privacy and security issues. Results of those efforts are available on the RA21 website, <https://ra21.org/index.php/results/>.

While hospital institutions were initially recognized by the STM RA21 Initiative as an important market segment RA21 would impact, it was also recognized as a highly complex environment. Thus, initial work with this segment was 'postponed.' Work proceeded with security and privacy and technical pilots with academic institutions.

Jean Shipman, Elsevier and Michelle Brewer, Wolters Kluwer, both health sciences librarians, delivered a paper during a panel at the Medical Library Association, 118th Annual Meeting and Exhibition on May 20, 2018 titled "*Leading Easy Access to Content: RA21 Pilots Transform Researcher Productivity and Privacy.*" (2.) Both Shipman and Brewer also co-wrote an article published by the Medical Library Association in *MLA News* titled "*What Is the STM/NISO RA21 Initiative? What Do You Need to Know?*" in August 2018. (3.)

These aforementioned communication efforts directed at hospital librarians likely brought the issues of RA21 to their attention, as commentary from hospital librarians started and only grew from April 2018 forward, on blogs, MEDLIB-L and other discussion lists. Thus the STM Steering committee determined this postponed market segment (e.g. hospital libraries/librarians) needed consideration. The “RA21 Hospital Clinical Access Working Group” was formed on June 19, 2018, with co-chairs Michelle Brewer, Librarian/Market Intelligence Manager, Wolters Kluwer Health, Learning Research & Practice, New York, NY and Don Hamparian, Senior Product Manager - Manager, Global Product Management, OCLC, Dublin, Ohio. Catherine Dixon, Product Manager, Wolters Kluwer Health, Learning Research & Practice, Norwood, Massachusetts joined the working group as co-chair August 24, 2018 based on her invaluable experience helping to implement SSO single-sign on, for a large hospital system in the United States.

The working group was asked to create a charter and conduct research, and develop content for an STM web page: <https://ra21.org/index.php/pilot-programs/hospital-clinical-access-working-group>. The Working Group determined their aim was two-fold.

- First, to provide a better understanding of the needs of clinicians’ access to institutionally provided resources in a hospital setting.
- Secondly, to make recommendations for using single sign-on using SAML-based federated authentication in this specialized setting.
- This unique market segment also includes clinicians with multiple affiliations, in hospital, research, government or university settings, with physicians, nurses, faculty etc. Thus outreach was expanded to include librarians serving clinicians in these settings and hereafter referred to collectively as ‘clinical librarians.’

INTRODUCTION ~ RA21 HOSPITAL CLINICAL ACCESS WORKING GROUP

Hospitals are indeed unlike any other institutional setting, especially academic and corporate institutions. Recommendations or best practices for corporates and academics cannot simply be transferred to a hospital without considering the unique institutional and clinical environment and its systems. Hospitals and institutionally provided resources differ dramatically not only technologically, but in terms of privacy, security, use case and workflow issues, as well as professional considerations and funding.

The co-chairs of the working group were aware of the many hospital challenges and issues that face hospitals and hospital librarians. In the end, it is recognized that everyone involved, including librarians, vendors and technologists had only a partial lens into the full scope of the challenges. Confounding the research were also misconceptions about RA21 that impacted opinions. Some time was needed during research to provide education about SSO and RA21, and the technology, so that implications could be better understood by all participants. These efforts did not include interaction with hospital IT staff however. See [recommendations](#) in this regard.

It is hoped therefore, that this report and recommendations present pragmatic steps forward towards solutions that need industry-wide acknowledgment. Also, this report should serve to support conversations by hospital librarians with their IT staff, library consortia and within hospital librarian professional organizations.

OBJECTIVES ~ RA21 HOSPITAL CLINICAL ACCESS WORKING GROUP

Thus it is within a complex hospital and information systems environment that RA21 is being introduced. Single-sign on is not a new idea for hospitals. Nonetheless, Identity Management Federations, OpenAthens and seamless access to library resources are new to many and not in the standard hospital IT toolbox.

Thus, the “RA21 Hospital Access Working Group” has several primary objectives. First to survey, identify and define the use cases/problems for accessing licensed resources from within a hospital/healthcare system that are involved with RA21 adoption. Secondly, to understand their challenges as they relate to RA21, regardless of the type of hospital user (student, intern, resident,

physician, nurse, pharmacist, other clinician, administrator, etc.). The focus of the objectives is access by any and all healthcare professionals to hospital library online resources (databases, books, journals, multi-media).

The reported cases/problems may be barriers or success factors for use cases/statements. The objective includes understanding the unique technology context of a hospital where RA21 would be used. The final report hopefully answers the following:

1. The problem statements/use cases in a hospital/system for RA21.
2. An explanation of the unique terminology and technology context of a hospital where RA21 would be deployed.
3. Next actions.

ABOUT ~ RA21 HOSPITAL CLINICAL ACCESS WORKING GROUP

The *RA21 Hospital Access Working Group* is a subcommittee of the STM RA21 Outreach Committee. It is a working group that started in July 2018 and will complete its work in 2019. This activity will therefore run in parallel with the academic / corporate work but is expected to inform a future update of the NISO recommended practice guidelines, rather than be included with the current process.

OUTPUT ~ RA21 HOSPITAL CLINICAL ACCESS WORKING GROUP

It is anticipated the Working Group will have a final report of problem statement /use cases for RA21 in June 2019.

The working group used several research methods and to achieve the following goals: 1) identify current and desired methods for accessing licensed resources from within a hospital/healthcare system; 2) identify unique issues/use cases for RA21 adoption & authentication; 3) describe hospital's unique technology context; and 4) make recommendations for future actions.

This report therefore represents these expected outputs. What follows are the Working Group's methodology, executive summary, key findings and details of this research, with 10 recommendations for further action.

EXECUTIVE SUMMARY ~ METHODOLOGY, RESEARCH AND HIGHLIGHTS OF FINDINGS

- The Working Group held weekly meetings from June 2018 through March 2019, and utilized a Google Docs website to manage the multiple planning documents.
- The Working Group developed the charter and the web site content.

RESEARCH PHASE 1 VIRTUAL FOCUS GROUPS: The Working Group developed a virtual focus group invitation list, focus group script, best practices and recruited participants and provided thank you notes and follow-up email to answer participant questions as needed. Two focus groups were held in November 2018 with 10 participants representing a cross-section of hospital and health system and clinical librarians serving clinicians in academia, from both governmental and non-governmental institutions.

- The audio of the focus groups was transcribed, reviewed by the Working Group and seven themes were identified:
 - 1) hospital librarians and technology challenges are front and center,
 - 2) Hospital librarians and library resources are considered secondary to hospital IT department's priorities,
 - 3) It is a highly complex hospital organizational environment that is continuously changing,
 - 4) publishers and vendors do not understand hospital and healthcare system complexity to make access issues easier for licensing and login,
 - 5) clinical use of computers is different in a hospital,
 - 6) library resources, Federations and even OpenAthens are considered 'security risks' by some hospital IT, and
 - **7) Costs are key.**

RESEARCH PHASE 2 MARKET SURVEY OF HOSPITAL & CLINICAL LIBRARIANS ABOUT RA21: The Working Group developed the survey instrument based on insights from the virtual focus groups. It was revised twice and reviewed by a survey

expert at Wolters Kluwer and feedback from the RA21 Outreach Committee. Participants were recruited via global mailing lists numbering approximately 5,000 emails.

- **The survey was conducted from February 12, through March 22, 2019. A total of 285 survey responses were received for a 6 percent response rate. Survey respondents represented all the major international markets with a majority coming from North America. Survey respondents were offered an optional incentive with a gift card raffle.**
- The survey results were reviewed by the Working Group. A total of 20 questions were asked with 3 additional parameter questions regarding geography, healthcare facility type and ownership. **When including optional comment sections in various questions, there were a total of 1,183 comments provided by respondents.** All comments were reviewed by at least one member of the Working Group.
- Additionally, survey highlights were presented at the MLA 2019 annual conference, May 6, Chicago, Illinois, titled: *“Leading Easy Access to Content: RA21’s Final Recommendations and Insights from the RA21 Hospital Clinical Access Working Group”* by Michelle Brewer and Catherine Dixon/ Wolters Kluwer, Jean Shipman/Elsevier and Don Hamparian/OCLC. (13.)

SURVEY HIGHLIGHTS:

- **On-site access:** The top three access methods are: 1) IP authentication (74%), user name and password (38%) and 3) IT authentication with a proxy server (30%). Other methods were OpenAthens (19%), single sign-on (15%), Shibboleth (6%), Multifactor (MFA) (3%), and single sign-on with radio frequency, proximity or smart card (1%). No respondent reported using biometrics. ‘Other’ methods (6%). Comments include using referral URL, desktop icon, floating IP, electronic health record, intranet, vendor URLs, Citrix, Proxy and LibLynx. *It is possible some technology terms were misunderstood by respondents and ‘Other’ was selected instead of another method listed.*
- **Devices:** Mobile devices are the predominant access method in a hospital. 86% of clinical users use smartphones and 80% using tablets. Because clinicians are mobile, moving between patients, they may use more than 100 workstations in one day, and 47% access library resources on computers on wheels (COWs) or workstations on wheels (WOWs).
- **Remote access:** 46% rely on user name and password as the top method for clinician access to library resources. 4.25% say there is NO offsite access for library resources. The second most common methods are VPN (34%), IP authentication and Citrix (both at 31%) and OpenAthens at 29%. Single-sign on was 12% and Shibboleth 6%.
- **Changes needed in current authentication system:** Slightly less than half of respondents would change their current authentication system (46%), while about a quarter say they would NOT change it (26%), and another quarter were unsure (27%). There were 143 comments offered about the changes needed with the following 4 themes. 1) Make it less difficult, to simplify; 2) A method for remote access for the many prohibited from using library resources remotely; 3) Make more resources accessible via VPN and Citrix and 4) Get OpenAthens, proxy access or some form of single-sign on for all hospital staff, but that cost was a barrier, and/or IT or hospital administration were not onboard with this need.
- **Ideal access:** On-campus, the over-riding method considered ideal was “IP” cited 105 times. Off-campus, the majority say single-sign on is the ideal, noting OpenAthens, LibLynx, Shibboleth, MyAthens, proxy or EZproxy, but noted VPN and Citrix are needed for security reasons.
- **Current issues with access methods:** More than 50% said IP address changes created issues, and not surprisingly it was noted there are too many user names and passwords for users to remember. Validating the themes identified in the virtual focus groups, 26% note different organizations in the institution require users to have different access methods and 24% note public access to library resources for patients and families is difficult to provide.
- **Working relationship of library and hospital IT and challenges:** The hospital library and IT generally have a “poor” relationship noted by 84% of the respondents, however, 15% say they have no challenges with their hospital IT. The 3 most critical issues identified are 1) 47% say IT does not take the library into account for strategic planning, 2) 47% say the library is a low priority by

IT and 3) 46% say IT does not understand library resources and HOW the library works to support clinical users. There were 65 additional comments indicating this is a real pain point.

- **Current status of library resources from the institution's electronic health record (EHR):** 46% of respondents have 1 or more library resources in an EHR, and 9% do not have an EHR online yet. For those without one library resource in the EHR, 3 reasons were cited: 8% do not want library resources in the EHR, 13% encountered technical issues currently preventing library resources to be added in the EHR and 12% say they are unable to get a conversation with IT to get the process started. More than 100 comments were received providing further insights into the barriers and challenges and focused on difficult processes, stewardship issues, outdated technology and EHRs, that links in EHRs are only to resources licensed by all facilities, and that there are limitations to who can see library resources. Importantly, Libraries say they are not part of the strategic planning in this area (and believe they should be).
- **Federations:** Nearly 80% have no knowledge of 'identity management federations' or do not understand them.
- **Single sign-on:** 51% use single-sign on for clinical systems. Of the 52% who are aware of the consideration of SSO for library resources by the hospital, results are evenly split into "possible" and "not possible" probabilities. 26% see no future for SSO and library resources, and another 26% see a future for SSO and library resources. Of the latter, 7% say the hospital considered SSO for library resources and is planning to implement it in the future.
- **Reasons for not using single-sign on:** 42% say the reason for not using SSO for library resources is unknown. Of the reasons noted the survey found: 28% echoed that the library is not an IT priority, with 20% citing cost, 17% noting time and resources make it unavailable and 29% say IT has not offered SSO to the library, with another 7% saying IT is reorganizing so SSO is not a priority, with 27% citing other reasons. ([See details for more information.](#))
- **Hospital librarians' opinions about the security of SSO versus IP authentication:** There is no common set of opinions held by hospital librarians regarding SSO. They range from the following: 12% believe IP authentication is more secure than SSO and 23% believe SSO is more secure. 13% believe IP is more privacy preserving and 7% believe SSO offers more privacy.
- **Library analytics:** Not surprisingly 82% use COUNTER, and 21% also use data from the proxy server. Another 21% also use data from the hospital network. Surprisingly, 9% do NOT analyze usage of library resources. Privacy is important to hospital librarians and 73% use anonymized data: 51% at the institutional level, 7% at the departmental level and 15% at the individual level. Again, 17% report they do not use data on library resource usage. For improvements with library analytics, many respondents indicated they need data at the departmental level, or with cohorts for user groups. Representative comments are provided in the details. In fact there were so many comments to this question it could easily be the topic of another report.
- **Opinion of hospital librarians about RA21:** 81% have never heard of RA21, similar to the 80% who never heard of 'federations for identity management.' 16% are in favor of RA21, with 9% believing it will improve library access and 7% think it could provide more security for library resources. 12% however are NOT in favor of RA21 and 7% believe RA21 will never work in a hospital environment.
- **Survey respondent profile:** The Survey was conducted globally. **76% of respondents came from North American and 24% came from outside of this region.** North America included the U.S. and Canada. Outside North America included Europe, Asia Pacific, South or Central America, Africa and the Middle-East. 41% are from government-owned or controlled institutions and 50% are from non-governmental organizations. 77% are from hospitals or healthcare systems (12% free-standing hospitals and 65% from healthcare systems) and 20% are from universities serving clinicians in hospitals. Another 7% came from research institutes and government agencies and other organization types.
- **Comments for committees working on RA21 regarding access to hospital library resources:** More than 60 comments were provided and their advice is especially important to recommendations. They include the following themes: Issues with the complex hospital environment, cost, technology concerns, issues related to publishers' licensing and pricing in regard to access and general comments.

RECOMMENDATIONS FOR RA21 FOR HOSPITAL CLINICAL ACCESS

RECOMMENDATION 1 – PARTNERSHIP WITH HIMSS, AAMC & OTHERS NEEDED TO FACILITATE

The NISO Committee for RA21 should consult with and/or partner with the HIMSS industry group that represents hospital IT professionals and with the Association of American Medical Colleges (AAMC) and others to 1) better understand how single sign-on can be facilitated in a hospital setting, 2) to get discussion with hospital IT about 'Federation Identity Management' in the scholarly arena, and 3) identify barriers and what may be needed to adopt NISO recommended practices.

RECOMMENDATION 2 – DOCUMENTATION NEEDED FOR HOSPITAL IT THAT COVERS THE SECURITY OF FEDERATED IDENTITY MANAGEMENT SOLUTIONS FOR LIBRARY RESOURCES

Clear documentation regarding security and privacy for RA21 technologies needs to be developed specifically for hospital IT staff covering the issues and risks that are needed for hospitals. It should be something that librarians AND hospital IT can use to also facilitate a strategic discussion regarding federated identity management for single-sign on for clinical access to library resources.
Use Case: Hospital IT staff.

RECOMMENDATION 3 – CASE STUDY SUCCESS ON SUCCESSFUL FEDERATED IDENTITY MANAGEMENT ADOPTION FOR ACCESS TO LIBRARY RESOURCES IN A HOSPITAL

RA21 needs at least two 'case studies' of a successful adoption and implementation of federated identity management for library resources that covers the why, how and value. The case studies should include a free-standing hospital and a healthcare system with multiple institutions and at least two different federated identity management systems, along with costs.

RECOMMENDATION 4 – HOSPITAL LIBRARIAN CE ON AUTHENTICATION TECHNOLOGIES

A continuing education (CE) course /tools, tutorial etc. on access technologies is needed for hospital librarians. CE is needed to help the librarians pursue strategies for resource access, conversations with IT technologists, and to do due diligence with vendors. Hospital librarians need tools to learn more about the topic. While CE is not a task for the RA21 Outreach Committee, there are others who could collaborate to create a CE, such as members of MLA, vendors, HIMSS and others.

RATIONALE for Recommendations 1, 2, 3 & 4: SSO technology & federated identity management is not understood by most hospital librarians. The latter is also potentially an area of security concern by hospital IT as reported by hospital librarians. Many clinical librarians are not knowledgeable with IT terminology and systems to facilitate the necessary transition to SSO and federated identity management. The lack of awareness and understanding by hospital librarians of SSO, authentication technologies and security and federation identity management are barriers to successful adoption of NISO best practices in a hospital/health system setting. Additionally, healthcare institutions and their information systems are very dynamic and complex organizations unlike those found in universities and corporate institutions. This intense complexity often presents further barriers to adopting SSO and Federated identity management for access to library resources. Cost is also a major barrier identified. The AAMC represents academic medical centers, some of which are connected with central campus IT *and their members' experiences with hospital IT could be very useful.*

RECOMMENDATION 5 – HELP HOSPITAL IT AND HOSPITAL LIBRARIANS BUILD BETTER RELATIONSHIPS TO FACILITATE RA21; CREATE 'BEST PRACTICES' FOR HOSPITAL IT AND HOSPITAL LIBRARIES, THROUGH FURTHER RESEARCH AND INITIATIVES

Hospital libraries should have a strategy to build a strong relationship with their IT department recognizing it is a long-term activity. *The actions to achieve this will need to be individualized based on context and culture of the institutions but could include working with the library committee, the library director's supervisor and the CMO, CTO or other key hospital executives. As a preliminary step, the 15% of libraries that reported good relationships should be identified and interviewed to determine if any of their strategies or practices with hospital IT could be developed into a document, published article or presentation that other hospital libraries could utilize for learning and strategy purposes.*

RATIONALE: IT and hospital library relationship is poor as reported by 85% of the survey respondents. There is a clear disconnect between the role, use and value of library resources in a library and IT's knowledge and support of the hospital library. Even a 'neutral' rating of the relationship is NOT good enough.

RECOMMENDATION 6 – HOSPITAL LIBRARIANS NEEDS A RESOURCE TO INFORM AND COMMUNICATE ABOUT AUTHENTICATION TECHNOLOGIES

Hospitals with library resources need to transition to single-sign on (SSO) technologies and federated identity management. *Support for mixed-mode authentication methods (i.e. continued support for IP / IP proxy) is important to maintain in the transition to any SSO-based solution.*

RATIONALE: A ‘resource’ is needed to support hospital librarians’ conversations with their IT department about SSO, the value of hospital resources, and the security of federated identity management. The resource needs to be in less technical language than something hospital IT staff would require. *The resource would be a companion document to Recommendation 2.*

Use Case: Educational resource for hospital librarian.

RECOMMENDATION 7 – FURTHER EXPLORATION OF A SSO / FEDERATED IDENTITY MANAGEMENT SOLUTION FOR HOSPITAL LIBRARIES WITHIN THE EHR SHOULD BE UNDERTAKEN WITH THE PARTNERSHIP OF HIMSS, HOSPITAL LIBRARIANS, NISO AND/OR OTHERS.

Convenience drives adoption. Physician access to *library* resources should be simple, seamless and not require logins/passwords. The technology available to hospital librarians and the infrastructure does NOT often support this need. Hospital libraries need SSO solutions that are cost-effective and convenient if clinical access to library resources is to be more widely embraced.

RATIONALE: Hospital librarians rely in large part on old technology, user name and password for clinical access to library resources (40 percent overall). It is not secure but getting a replacement for it is not easy for many.

Hospital library resources are accessed within a unique environment that poses some extreme and complex considerations (technical, legal, regulatory). Stakeholders may well be uninformed of the issues needed to make adequate and forward thinking decisions regarding seamless access, SSO/federated identity management for library resources. (e.g. hospital IT, administrators, CMO, CTO, legal).

Further, the majority of hospital librarians report library resources are not part of any strategic decision-making. Such resources are important to patient safety and evidence-based medicine and often point-of-care. The ability of the hospital library to have seamless access to library resources identified as an IT strategy is thus a risk and an opportunity for this market segment that should be further researched. More than 58% of hospital librarians do not use SSO for access to library resources and barriers include not only cost but technology and lack of the hospital’s strategic focus. Also, it may be generally unknown how federated identity management systems for library resources work within existing standards for electronic health records.

RECOMMENDATION 8 – USE A STORY TO DESCRIBE THE VALUE PROPOSITION OF FEDERATED IDENTITY MANAGEMENT AND SSO FOR HOSPITAL LIBRARIES

Hospital librarians need a resource to help them communicate the value of library resources within a federated identity management system like OpenAthens or other SSO systems. Marketing and promotional resources to describe SSO for clinical access should be either identified or developed *that tell a clinical story*, and speak to the value for the other decision makers in the hospital librarian’s value chain, including the hospital administrator and clinician. Cost should be clearly explained.

RATIONALE: Security preempts access for hospital library resources. **Without a clear value proposition, the use case cannot be made in a hospital environment for budget support for SSO with federated identity management.** Additionally, hospital library resources are often locked down and library access may be restricted to library computers, or anonymous access difficult for patients and families. This is partially driven by lack of understanding by IT of library resource, and library SSO options and hospital systems’ security requirements.

When library resource access and federations are considered a security risk by IT, the view is partially driven by a lack of understanding of the role and value of clinical access to library resources in patient care. **Use Case:** Marketing resource for hospital librarian to share with hospital stakeholder groups, and to support budget requests for federated identity management system.

RECOMMENDATION 9 – IMPROVE TRANSPARENCY OF THE COST OF SSO / FEDERATED IDENTITY MANAGEMENT FOR HOSPITAL LIBRARIES; CREATE BUSINESS MODELS WITH MORE OPTIONS TO CONTROL COSTS

Hospital librarians and hospital IT should request and receive clear cost analysis for using any SSO/federated identity management system. The cost issue has not been made transparent in the marketplace and should be provided with general estimates for this market segment. The value of the access to library resources may be best championed by the hospital CTO or CMO, but in the absence of that, a business case may need to be created. **Costs may be prohibitive in large healthcare systems and can create barriers to adoption of SSO/federated identity management for hospitals.**

RATIONALE: Cost is a huge factor in lack of uptake of SSO by hospitals and for federated identity management systems for library resources. Often anything \$5K or more becomes a capital item and requires a year in planning to become a budget item. Business models for SSO and federated identity management Systems may need to consider pricing by FTE use rather than number of institutions, as many hospital librarians report that large healthcare systems have many of the same staff traveling to multiple facilities. Moving to OpenAthens or using another identity management system like PingFederate has budget implications that hospital librarians find difficult to justify.

Thus, this recommendation lies outside the scope of RA21 per se. There is little competition for services to enable Federated Identify Management for libraries, and this may change if new vendors enter the marketplace, offering innovations and new business models, etc.

RECOMMENDATION 10 - FURTHER RESEARCH IS NEEDED AND PILOT TESTING OF TECHNOLOGIES (FOR PROOF CONCEPT) THAT COULD ENABLE SEAMLESS ACCESS TO LIBRARY RESOURCES IN A CLINICAL ENVIRONMENT (HOSPITAL, HEALTHCARE SYSTEM, AND CLINIC).

This strategy is outside the purview of the hospital library and probably RA21 and NISO. Nonetheless, a more seamless secure access method for library resources should ideally be part of the hospital's IT strategic planning. Thus, further exploration of biometrics, proximity cards or other technology solutions may be needed to simplify library access to resources in a clinical setting/hospital. Hospitals should explore whether automatic login to library resources is possible. Other technologies like OAuth2 protocol/framework, and/or Citrix solutions may be needed. Consultation with HIMSS, and industry experts, hospital IT, EHR vendors and hospital librarians is needed.

RATIONALE: All stakeholders should acknowledge that SSO and federated identity management are not the sole solutions for hospital library resource access. A hospital library's resources are accessed in an environment with different complexity and regulations than that of a corporate or academic access environment, for example, an EHR.

50% of libraries' resources reside in EHRs. Hospitals use of proximity badges are not widespread even though it would be more seamless for a clinician, and the technology for it has improved. (7.) Use of COW/WOW (workstation on wheels) is widespread--47%. There may be a disconnection between technologies that may require further research and the institution.

It may well be proximity badges are an 'interim technology' that will be replaced by biometrics or something else. Or, proximity badges may be a solution for seamless access to library resources, but testing and a pilot with a federated identity management system is needed. Or there could be other technology solutions that could be piloted for access to library resources.

These activities are outside the purview of the RA21 Outreach Committee. There are other unique issues of the hospital environment that impact access to hospital library resources that need better solutions, perhaps with technology or new best practices, and need further innovation, and include but are not limited to the following. ***If pilots and experiments do take place with hospitals and vendors in this regard, it is hoped this information is shared with the RA21 Outreach Committee.***

- Locked down resources
- Mail not accessible off-site
- Lack of printing or saving onsite on some or all computers, even in the library
- Not everyone can get access to all systems
- Higher security requirements
- Higher privacy requirements including HIPAA regulations in the U.S.
- Multiple access systems and logins, often between a hospital and the medical schools for faculty/clinicians
- Most physicians are not hospital staff and access rights vary
- Public access by family and patients need anonymous logins and may be at issue

HOSPITAL ENVIRONMENT & HOSPITAL INFORMATION SYSTEMS

Hospitals/healthcare systems use specialized technologies, have unique privacy considerations and are subject to legal, regulatory and compliance regulations that vary by country (HIPAA for example in the U.S.). The hospital authentication and information systems therefore differ substantially from academic and corporate environments.

The 21st century has fueled great change not only for hospitals but healthcare delivery and hospital information systems.

“Management guru Peter Drucker has called the hospital “the most complex human organization ever devised.” (14, 15.)

Hospitals are continuously adding or merging physician groups, clinics, personnel, health facilities, and affiliations with insurance, healthcare facilities and teaching institutions. These changes are in response to changes in the healthcare systems that impact growth and therefore hospitals are continuously pursuing strategies for capacity management and capital deployment. In addition, regulations impacting quality, reimbursement as well as technology transitions (such as ICD-9 to ICD-10) and more, require key IT investment prioritization. (6., 16.)

Thus, hospital IT systems are continuously enhanced and challenged to respond to shifting growth priorities and heightened competition. To serve these needs and strategies, hospital information systems are large and complex, and not only collect and store clinical data across care sites, but serve to facilitate coordination of care between providers, evaluate physician performance, practice patterns, support provider-decision making, track quality and cost trends and compare hospitals to their peers. (6.)

In short, Information systems within healthcare institutions can be patient-centered or business-centered. Many may think the hospital information system is the EHR (electronic health record), but in reality there are many systems and subsystems beyond the EHR in a hospital, and include complex architecture, communication and security provisions. Systems often span across multiple facilities and have a large mixture of overlapping identity needs, interoperability and non-interoperable components. (5.) Examples of the numerous systems in a hospital/system that may stand alone or be interoperable with various parts of an EHR include but are not limited to the following: computerized provider order entry and care plans (treatment plans and treatment protocols/order set), electronic prescribing, practice management software, master patient index, patient portals, telehealth systems, radiology system, laboratory systems, etc. (5., 7.)

ELECTRONIC HEALTH RECORD (EHR): When it comes to the EHR, everything begins with the patient. Any time a service is provided to the patient it's called an 'encounter' and entered as a transaction in the EHR. (8.) There are generally 4 main types of EHRs: inpatient, ambulatory (clinics, outpatient offices), trauma/emergency (ER) and surgery. There are two data types in the EHR, structured (discrete) standardized data at a specialty level and unstructured (non-discrete) free form text, like clinical notes for patient progress, surgery, discharge. (7.)

The screenshot displays a patient's electronic health record (EHR) interface. At the top, the patient's name is Cetestip, Adultone. Key demographic and clinical information includes MRN: 3502176, DOB: 08/26/1954, Age: 59 Yrs, F, and Allergies: Golden Rod (Solidago Canad... Insecticide. The interface is divided into several sections:

- Left Sidebar:** A navigation menu with options like Allergies, Immunizations, Medications, MMR, Flowsheets, Intake/Output, Notes, Communications, Manage Orders, Order Review, Procedure, Post-Op Floor, Admission, Rounding, Transfer, Consult, Discharge, Request Outsid..., Reconcile Outsi..., and NoteWriter.
- Main Content Area:**
 - STK 2: Antithrombotic at Discharge:** A table with columns for 'Given' (Not Given) and 'Risk for bleed- hematuria, ICH, low platelet, aortic dissection'. It lists 'Allergy/Adverse reaction/Side effect', 'Terminal illness or comfort measures', 'Surgery planned', and 'Patient/Family refusal'.
 - STK 5: Antithrombotic by Hospital Day 2:** A similar table with the same columns and categories.
 - STK 3: Anticoagulant at Discharge:** A table with columns for 'Given' (Not Given) and 'No active history of Afib/flutter-benefit vs. risk'. It lists 'Risk for bleed- hematuria, ICH, low platelet, aortic dissection' and 'Allergy/Adverse reaction/Side effect'.
 - IVPA:** A table with columns for 'Administered' and 'Not Administered'. It lists 'Outside IPA window', 'Stroke severity too mild', 'Risk of bleed', 'Hemodynamic instability', and 'MIA IPA administered at outside hospital'.
 - NIH Stroke Scale at Discharge:** A table with columns for 'Level of Consciousness (1a.)', 'LOC Questions (1b)', 'LOC Commands', 'Best Gaze (2.)', 'Visual (3.)', 'Facial Palsy (4.)', 'Motor Arm, Left (5a.)', 'Motor Arm Right (5b.)', 'Motor Leg Left, (5a.)', 'Motor Leg, Right (5b.)', and 'Limb Ataxia (7.)'. Each row has a set of radio buttons or checkboxes for scoring.

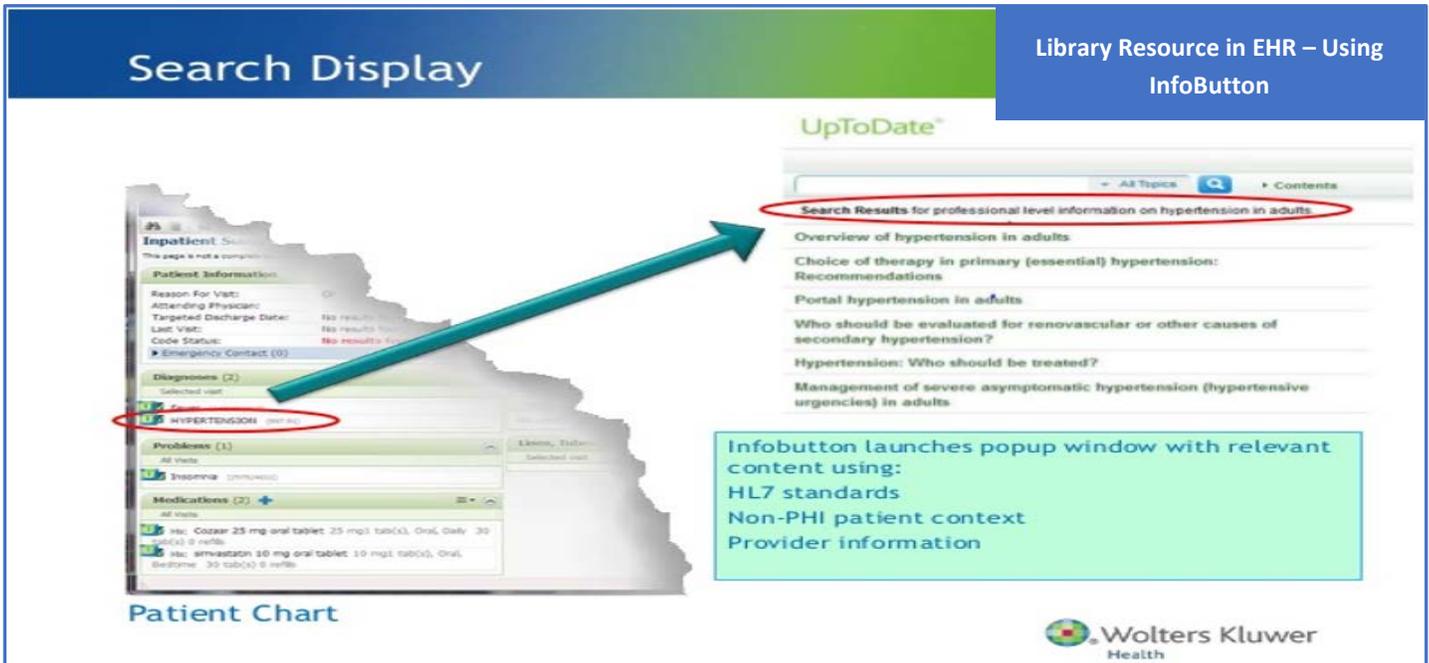
Additionally, there are enterprise EHRs and non-enterprise EHRs. In an enterprise EHR, all four EHR types are typically found and can form a patient's EHR chart, and would be interoperable. However, some healthcare institutions may only use one or two EHR types. And even if a hospital uses the same EHR vendor or type as another hospital, not two EHR systems will ever look the same because each are highly customized. (7.)

Also, levels of access to the electronic health record (EHR) are rigorously controlled. Almost everyone in a hospital from transport staff to clinicians have EHR access if they need to record or check patient encounter data. But it is the hospital's policy that controls the technology and the "access levels." However, not every person working in a hospital interacts with patients and thus some are excluded from EHR access, like the medical librarian. Though there are some medical librarians who do have EHR access, it is not the norm. In all instances only those with a need to know should access a patient record and staff can and have been discharged for unauthorized access, as every interaction within an EHR has an audit trail. (7.)

Within an enterprise EHR there are multiple modules for example, for oncology, cardiology, transplantation, infectious disease, etc. Also EHRs have components to request, receive and send treatment plans and information from other hospitals' health systems (even if they are not using the same EHR) (7.)

Lastly, EHRs use many third-party applications, terminologies & standards to enable interoperability such as 'HL7' and the 'Infobutton' standards. It is these standards that allow 'library resources' to be accessible within the EHR. The following is an example of an HL7 assisted free text search from within an EHR patient chart. It does not do anything 'actionable' to the patient record but does allow clinicians to access information at the point of need. (7.) Additionally, an EHR can use an Infobutton to access library resources, via a diagnosis list, problem list, diagnostic results list, a medication list or a custom list. See the following illustration. (7.) (Graphics - Source 9.)

The screenshot displays a patient management interface for Michael Jones, MD. The patient's name is John Q. Smith, 38 years old, male, born 1/25/1970. The interface shows various tabs like 'ADMISSION', 'ORDERS', 'CONSULT', 'HISTORY', and 'UPTO DATE'. A search box in the 'UPTO DATE' section is highlighted with a red circle and contains the text 'adult hypertension'. A blue callout box at the bottom left states 'Library Resource in EHR-using HL7'. A red text overlay on the right side of the image reads 'HL7 assisted free text search in patient chart'.



CITRIX: In the Focus Groups and the Survey, respondents mentioned ‘Citrix’ for remote access to the hospital EHR or hospital library resources. Citrix is a digital workspace platform used by more than 100 million users in 400,000 organizations, with solutions for healthcare, government, education and others. ‘Citrix Receiver’ was noted by respondents and it is defined as ‘client software’ that allows universal access to virtual applications and desktops, including the EHR. Citrix has other products that relate to desktops for Windows and non-Windows applications for a hospital. If an application is not compatible with Windows 10 for example, Citrix allows the hospital to virtualize that application on a Windows Server and deliver that application to virtual desktop users with the Citrix Workspace app.

Citrix can work with a VPN, and from which a user first logs in to their VPN and then logs in *again* to Citrix, to access their desktop remotely. Citrix also allows a hospital to be specific about what desktop icons to deploy to various user groups, across thousands of workstations. For clinicians, Citrix solutions are widely used by hospitals, enable secure access to patient information on any device, meet audit requirements for ‘protected health information’ (patient) and simplify access to the EHR. (10, 11, 12.) The ability to have this type of remote access is definitely *limited* within the hospital by individual and user group. (7.)

DETAILED METHODOLOGY AND FINDINGS:

- 1) Virtual Focus Groups and
 - 2) Survey of Hospital/Clinical Librarians Market Survey of Access to Hospital Library Resources
- Focus group and survey results and comments presented here were edited for readability. Focus group transcripts were also edited to preserve respondents’ anonymity. Raw survey data is available but excluded here due to the size of the reports, and may be available on request for non-commercial purposes: (michelle.brewer @ wolterskluwer.com).*

VIRTUAL FOCUS GROUPS – DETAILED METHODOLOGY:

Participants were recruited from an initial mailing list of 42 hospital librarians. A total of 13 hospital/clinical librarians accepted the virtual focus group invitation, with a total of 10 final participants. The focus group participants represented the following demographics:

Role	Institution
7 Library directors, managers, heads	4 Hospital systems, teaching institutions
3 Health sciences librarians	4 Hospitals
	2 Medical colleges service clinicians in the hospital

Two focus groups conducted:

- Focus Group #1, November 2, 2018 for 62 minutes
- Focus Group #2, November 14, 2018 for 74 minutes.

Recruitment: The Virtual Focus Group invitation was sent to a hospital/clinical access “interest list” compiled by the RA21 co-chairs, from librarians in contact with the RA21 STM staff and the STM RA21 mailing list, and from a list volunteered by Elizabeth Leonard, Seton Hall University Libraries as a result of a 2018 MEDLIB discussion.

The purpose of the two virtual focus groups was two-fold:

- First, to inform the co-chairs of perceptions and descriptions of the hospital library and the hospital IT environment as described by the hospital or academic librarians serving clinicians in the hospital. It also provided an overview of the SSO technology and issues within a hospital.
- Secondly, the focus groups served to inform the development of the questions for the Working Group’s survey instrument.

VIRTUAL FOCUS GROUPS – DETAILED FINDINGS – SEVEN THEMES IDENTIFIED FROM VIRTUAL FOCUS GROUPS:**THEME #1 - HOSPITAL LIBRARIANS & TECHNOLOGY CHALLENGES ARE FRONT AND CENTER**

- Lack of awareness and understanding of ‘single sign-on’ generally, and the specific technologies/vendors in particular.
- Hospital librarians have real reasons for not wanting to make physicians log-in multiple times, convenience, time and patient care are core reasons.
- Hospital librarians are not trained in IT overall and terminology. A need was expressed for a CE course on technology-related issues in a hospital environment. (*INTERVIEWER NOTE: This need could have a relationship with the length of time since the librarian received their degree. Newer graduates may have more exposure to coding, APIs, etc.*)
- A hospital library would be overwhelmed if it needed to perform any identify management activities.
- Hospital librarians need granular access/use data and really do not have it with current systems. They don’t need names but do need categories/roles, for example: Attending, resident, student, nurse.

THEME #2 - HOSPITAL LIBRARIANS AND LIBRARY RESOURCES ARE CONSIDERED SECONDARY TO HOSPITAL IT DEPARTMENTS’ PRIORITIES

- There is a lack of a good relationship between the hospital library and IT for at least 90% of this market. Bad and neutral relationships are not enough, they have to be good. (*INTERVIEWER NOTE: Only 1 librarian out of 10 cited a good relationship*).
- Reliance on user name and password for authentication is still huge. Around 40% was an estimate.
- Hospital IT departments focus on non-library systems, with EHR/EMR and financial systems paramount.
- IT departments can be outsourced and do not know library issues. Some internal IT departments have more familiarity but overall, the experiences related by participants are negative.

- Security and identity management decision making is at a high level without ANY consideration for the library.

THEME #3 - IT IS A HIGHLY COMPLEX HOSPITAL ORGANIZATIONAL ENVIRONMENT THAT IS FREQUENTLY OR CONTINUOUSLY CHANGING

- Clinicians have multiple systems and logins between their university faculty status and hospital privileges, many have a hospital network login and a library login.
- Multiple identity providers within healthcare systems.
- Large university hospital systems are not ready for “Identity Provider Management” due to the complexity and change.
- Healthcare institutions are in constant change with personnel and with acquisition of hospitals into systems, with mergers, with the addition of physician group practices, and continuing care facilities like home health agencies, and long term care institutions.

THEME #4 - PUBLISHERS AND VENDORS DO NOT UNDERSTAND THE HOSPITAL AND HEALTHCARE SYSTEM COMPLEXITY TO MAKE ACCESS ISSUES EASIER WITH LICENSING AND LOGIN

- Content providers very poorly informed about the various types of people on a hospital campus: For example who is or is not “staffing” the hospital versus employees, with the complexity of licensing, credentialing and privileging, and what that means contractually for a hospital.
- Lack of understanding of “affiliated clinician” for licensing and access issues.
- Lack of understanding that medical students need to use hospital library resources as they rotate in/or of a hospital because they are serving patients when they are IN the hospital.
- Identity management in a hospital is incredibly complicated.

THEME #5 - CLINICAL USE OF COMPUTERS IS DIFFERENT IN A HOSPITAL

- A physician could use a 100 different computers during the course of one day.
- For access to clinical and library systems the access on-campus is usually seamless.
- Clinical workstations are locked down and do not have access to some or all library resources.
- Most hospital clinicians do not know they can access library resources off-campus because it is so difficult to get to and use the resources off-campus.
- For access remotely, IT has to enable remote access to a clinical desktop and most times this is just for clinicians and some hospitals do not offer, others don't advertise they can do it.
- If a clinician can get to their library resources remotely, they must still download to a hospital drive and then access it when they are in the hospital.

- Due to the complexity of accessing resources off-campus by going through the hospital, many librarians feel they have to provide passwords to access library resources off-campus.
- Some library resources are accessed through an EHR/EMR, but not many, typically point-of-care only, and such limited library resource access is also not something every hospital offers either.

THEME #6 - LIBRARY RESOURCES, FEDERATIONS AND EVEN OPENATHENS ARE CONSIDERED ‘SECURITY RISKS’ BY SOME HOSPITAL IT

- Library access considered a security risk by hospital IT generally. This correlated with the lack of understanding between IT and the library.
- Federations are one reason hospital IT has considered OA is a security risk. This may be from a lack of understanding by hospital IT of what Federations are and how they operate.
- Remote access to hospital library resources severely limited because of security risks, for example many do not allow printing or saving remotely.
- Off-campus (home) remote access to a hospital email account is generally prevented for clinicians

THEME #7 - COSTS ARE KEY

- Cost is a huge factor for all of hospital librarians for any new technology. SAML/SSO costs were thus a huge concern, and pricing by institution was considered a disincentive to move off of EZproxy.
- Those with OpenAthens manage passwords to assure they are given to those clinicians who use them and remove them for non-use to help contain costs.
- Many prefer a business model where the cost is by person and not by site, because within a healthcare system a large number of clinicians who need access serve at multiple locations.

SURVEY OF HOSPITAL/CLINICAL LIBRARIANS MARKET SURVEY OF ACCESS TO HOSPITAL LIBRARY RESOURCES – DETAILED METHODOLOGY:

An online survey instrument was drafted in 2019 by the co-chairs of the working group. The instrument was reviewed by a market research expert, the Director, Market Insights Department, Wolters Kluwer, to assure the questions were unbiased. Feedback was obtained from the RA21 Outreach Committee too.

An initial invitation with the survey link, requested participation of hospital librarians and academic librarians serving clinicians in hospitals. **The final survey was hosted by Wolters Kluwer on Survey Monkey and ran from February 12, 2019 through March 22, 2019.**

Survey distribution included the following email and discussion lists:

- CANADA CHLA/ABSC
- EAHIL and others in Europe
- Four Wolters Kluwer contacts and their email groups in India and New Zealand
- JAMA / JAMA Network Library Advisory Board

- MEDLIB – Medical Libraries Discussion List (international)
- MLA – Federal Libraries Section
- MLA – HLS Hospital Libraries Section
- MLA – ICS International Cooperation Section
- MLA – NAHRS Nursing & Allied Health Resources Section
- MLA – Research Section
- NY & NJ: NY-NJ Chapter MLA and Health Sciences Library Association of NJ
- SURFnet

The distribution included a general request to forward to others as appropriate. Approximately 5,000 survey invitations were issued with a total of 285 survey responses, for a 6 percent (6%) response rate. Survey respondents represented all the major international markets with a majority coming from North America. Survey respondents were offered an optional incentive with a gift card raffle.

SURVEY OF HOSPITAL/CLINICAL LIBRARIANS MARKET SURVEY OF ACCESS TO HOSPITAL LIBRARY RESOURCES – DETAILED FINDINGS:

The survey provided an understanding, insights and definitions of the use cases, problems and challenges for accessing licensed resources from within a hospital/healthcare system by clinicians. The survey sought to understand the unique challenges of this institutional environment and obtain feedback related to access and authentication so that a current state-of-the-landscape could be developed. It examined hospital libraries, hospital librarians and their experiences with clinicians' access to hospital library resources, or clinical resources accessed from the hospital from a medical school serving clinicians with multiple affiliations.

The survey instrument was developed from the insights obtained from two focus groups of the target survey population held in the prior three months. This research was undertaken by the *RA21 Hospital Clinical Outreach Working Group* to inform the *RA21 Outreach Committee* and the *RA21 Steering, Outreach & Advisory Committee*.

Approximately 5,000 survey invitations were issued with a total of 285 survey responses, for a 6 percent (6%) response rate. **The final survey was hosted by Wolters Kluwer on Survey Monkey and ran from February 12, 2019 through March 22, 2019.** Survey respondents represented all the major international markets with a majority coming from North America. Survey respondents were offered an optional incentive with a gift card raffle.

What follows are the key findings of this survey research.

1. CLINICAL STAFF ACCESS TO LIBRARY RESOURCES ON-SITE AT THE HEALTHCARE INSTITUTION.

- **The top 3 access methods are:** 1) IP authentication (74%), user name and password (38%) and 3) IP authentication from a proxy server (30%).
- Other methods include: OpenAthens (19%), single sign-on (15%), Shibboleth (6%), Multifactor MFA (3%), single sign-on with radio frequency, proximity or smart card (1%) and 'Other' methods (6%). It is possible some technology terms were misunderstood by respondents and 'Other' was selected instead of another method listed.
- **No respondent reported using Biometrics (0%).**
- **The Working Group regrets that there was an omission in methods listed for this question and "Referrer URL" should have been included.** Additionally it is a known issue in that the "on-site" URL gets blocked by IT security policies. 'Referral URL' did appear in written comments.

- Comments include using: Eduroam, Desktop Icon, Referrer URL, Library resources are linked off a SharePoint page which requires institutional logon, connect directly to the digital library using username and password, floating IP so some resources are access via IP and some are accessed username / password, EMR/EHR, move to OpenAthens shortly, icon on the desktop, Library resources are available via the intranet, Unique vendor URLs linked on Library's intranet pages, Army facility must have a CAC [military Common Access Card technology] in order to sign into any computer, Citrix ENTRUST software for authentication then log-in in with username/password, Medical Library page on Hospital Intranet, library users ask the library staff to get into resource for them, Proxy if academic library-licensed, if hospital corporation-licensed, then intranet, LibLynx, Citrix, IP on site; EZproxy remote.

2. DEVICES CLINICAL USERS USE TO ACCESS LIBRARY RESOURCES.

- **Mobile is the predominant access method in a hospital; 86% of clinical users use smartphones and 80% use tablets.**
- 100% of clinicians had desktops and laptops to use to access library resources
- Because clinicians are mobile moving between patients they may use many desktops in the course of a day. There is a unique device in the healthcare institution used by **47% of the institutions to access library resources (and other clinical systems), and is called either computers on wheels (COWs) or workstations on wheels, (WOWs).**

3. CLINICAL STAFF ACCESS TO LIBRARY RESOURCES REMOTE OFF-SITE FROM THE HEALTHCARE INSTITUTION.

- **Surprisingly, 46% of respondents rely on user name and password as the top method for clinicians to access library resources off-campus.**
- **Importantly 4.25 % say there is NO off-site access allowed to library resources**
- **The second common methods for remote access to library resources include VPN, IP authentication, Citrix and Open Athens:**
 - VPN 34%
 - IP authentication and Citrix, both at 31%
 - Open Athens at 29%.
- **Uncommon remote access methods are:**
 - SSO Single-sign on 12%
 - Shibboleth 6%
 - Other methods mentioned include: EMR/HER, Simplified Remote Access (SRA), VMWare, LibLynx, EZproxy*, Hospital intranet, Okta (SSO for EHRs), Eduroam, Proxive (proxy service).
 - ***NOTE: The Working Group suspects that EZproxy is used in some part of the IP authentication process, based on our expert opinion, so we believe the usage of EZproxy is likely “not uncommon” at all. If we had specified IP Authentication with EZproxy we believe this number would be higher and become one of the most common access methods identified.**
- **Two respondents noted they were moving another access method: 1) moving toward SSO with MFA, and 2) slowly trying to get Open Athens or SSO.**
- **Comments regarding remote access to library resources emphasize the challenges and difficulties for clinicians’ off-campus use of hospital library resources:**

- For most remote users, access to library resources is blocked, as we have no proxy or SSO
- We've tried to get Open Athens, but IT says it poses a security risk, but never gave any further explanation.
- Some people have remote access/must be IT approved
- Only 3 products have offsite access
- They do not access remotely
- Non-Exempt caregivers do not have off site access -- this includes most nurses. Exempt caregivers have off site access but they need to use multi factor authentication which is confusing. Also OpenAthens access is based on the company directory, also confusing and hard to manage.
- We have one subscription that does not work via proxy or Citrix

4. WOULD THE HOSPITAL LIBRARIAN CHANGE ANYTHING ABOUT THE CURRENT AUTHENTICATION SYSTEM?

- **Slightly less than half of respondents would change their current authentication system (46%), slightly more than one quarter say they would NOT change anything (26%) and slightly more than that were unsure if change is needed (27%).**
- **There were 143 comments offered about the changes needed to the current authentication system for library resources. *Many noted the following 4 themes.***
 - **First, to make it less difficult**, to simplify, make it less confusing and easier—as a general statement or also noting the system(s) that needed this improvement.
 - **Secondly, comments concerned just having a method for remote access** for the many prohibited from using library resources remotely.
 - **Third, it was noted that not all resources were accessible via VPN and Citrix.**
 - **Many comments expressed a desire to get OpenAthens, proxy access or some form of single-sign on** for all hospital staff, but that cost, and/or IT or hospital administration were not onboard with this strategy.
- **Illustrative comments:**

Cost:

 - **License OpenAthens or Shibboleth. Unfortunately we cannot get hospital leadership/IT onboard with implementing.**
 - **Get proxy or SSO access. Funding has always been the issue**
 - **OpenAthens is costly and we are limited in allowing access. There is also time involved in set up and administration. It's a lot for a solo librarian to handle along with everything else.**

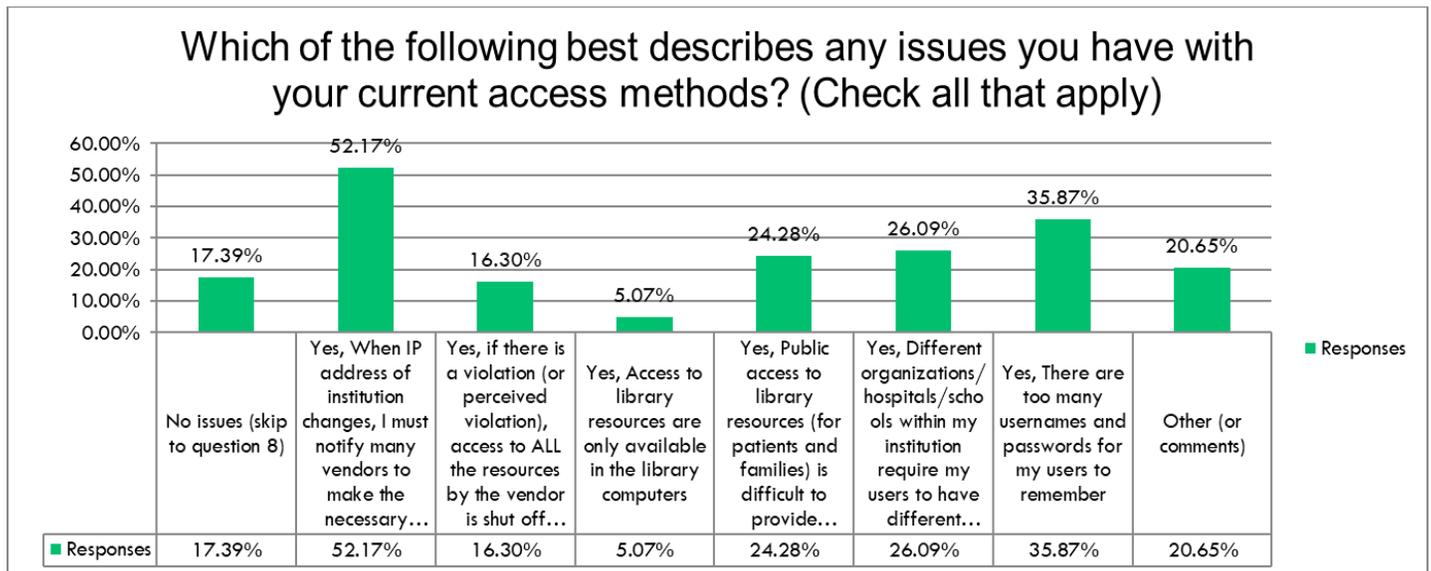
Access:

 - I want more of our subscriptions to be accessible off-site.
 - **Most non-physician clinicians do not have access to the VPN or to the on-network Wi-Fi**, meaning that they need to use OpenAthens, which involves multiple clicks, is difficult to navigate, and does not always offer access to all our resources. In addition, the list of verified users is kept manually, involving a lot of date entry to add and delete users
 - We are moving toward adopting Open Athens single-sign on due our horrific IP authentication issues onsite and off
 - We really need a proxy server and SSO
 - Eliminate the need for a proxy and authenticate directly via ADFS / active directory
 - I would switch remote access to SAML/OpenAthens and phase out EZproxy

Mobile:

 - Easier access for on-campus tablets and smart phones that are not going through IP Authentication for different reasons.
 - No easy access for mobile devices at this stage except for log-in

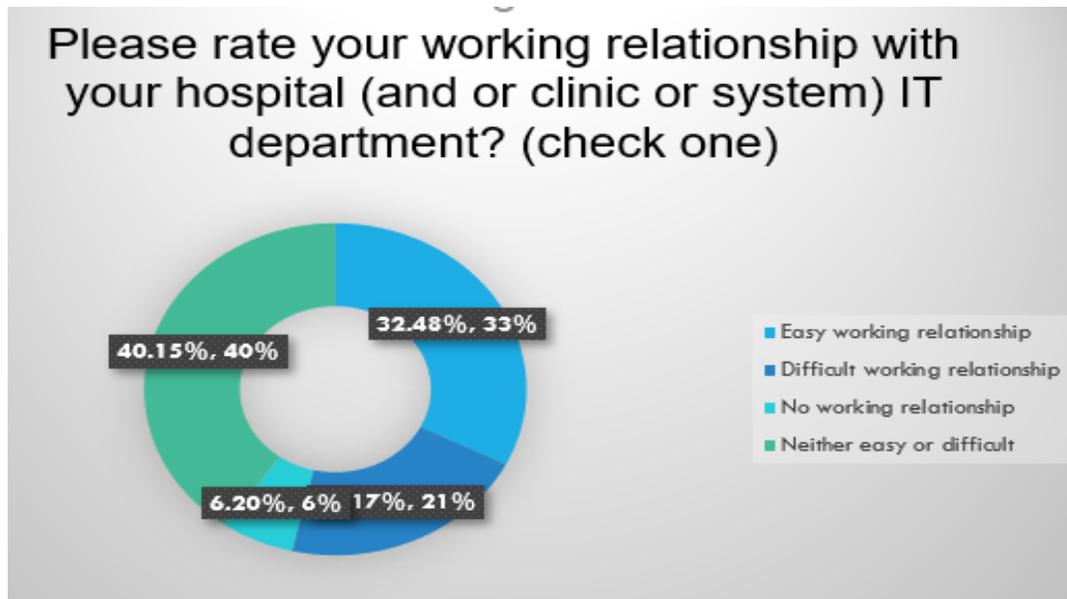
7. DESCRIPTION OF ISSUES WITH CURRENT ACCESS METHODS.



- **Not surprisingly, more than 50% of the responses indicated that IP address changes of the institution created issues.**
- **Also not surprisingly, the second most common issue respondents identified was too many user names and passwords for users to remember.**
- **Validating the themes identified in the focus groups:**
 - 26% note that different organizations and schools within the institution require users to have different access methods.
 - 24% said that public access to library resources for patients and families is difficult to provide
- **21% indicated other issues, with 57 comments including the following highlights that are representative of common issues with current access to library resources:**
 - Inability to link Library products with EMRs
 - Every publisher / platform looks different, difficult for users to find Athens login page
 - There is not a streamlined process for access for offsite, and for personal devices onsite; which leads to confusion and frustration when attempting to access resources, along with the (incorrect) assumption that we do not have said needed resources.
 - OpenAthens is deceiving as it only works for what we pay for not everything like people assume.
 - IP access doesn't allow for useful usage statistics
 - Multifactor authentication. Institutional barriers to library resources off site
 - Lack of clarity, understanding, and prioritization of our online resources settings by our young IT Department personnel which is also undergoing constant turnover. Our IT now controls all access whereas previously the librarian with IT Systems experience previously did all the systems work.
 - Proxy isn't always reliable off-site. Users can't 100% of the time get to full-text
 - Our large health system across three states shares an external IP range making IP authentication unsecure because the library does not support all locations
 - Network security issues mean that nothing stays fixed
 - Institutional security blocking issues
 - Hospital IT does not support access to library resources. Setting up intranet access has been time consuming.

- Clinics are on a virtual network, not "the" network, so their IP is not registered with the vendors, even though so far as they are concerned they are "on the network."
- Our health system continues to grow and until we are funded to be a system library we have to block access to the legacy sites that are covered under the contracts
- Perhaps the most emotional and reflective of all the comments: "Yes, Sense of impending doom."

8. RATING OF WORKING RELATIONSHIP OF LIBRARY WITH HOSPITAL (CLINIC OR SYSTEM) IT DEPARTMENT; AND 9. DESCRIPTION OF THE CHALLENGES IN THE WORKING RELATIONSHIP WITH THE LIBRARY AND THE HOSPITAL (CLINICAL OR SYSTEM) IT DEPARTMENT.



- A satisfactory working relationship with the hospital library and the IT department is the minimum for prioritizing and managing challenges for clinicians' resource access. An excellent working relationships is obviously preferred.
- ***The survey validated the focus group finding that the hospital library and IT relationship is generally regarded by librarians as "poor" and needs attention, with much room for improvement.***
- **85% of hospital librarians had issues with their working relationship with hospital IT, while 15% had no challenges there.**
- **Of the hospital or academic libraries that have good working relationships with hospital IT departments, they said:**
 - We have a very good relationship with Desktop Support
 - I have one systems librarian who takes care of hardware/software, has excellent working relationships with central IT/IS
 - A few of these things may have been true briefly, but our IT people generally don't treat us any differently from other departments. They try to help as much as they are able (while protecting the firewalls, patient info, etc.).
 - For the most part our IT department does understand library resources. Sometimes we have to explain some wrinkle, but they listen and try to make it work.
 - Our IT is amazingly responsive to any issues we have.
- **The 3 most critical issues identified:**
 - **47% state "IT does not take the library into account in strategic planning for SSO or other technology changes"**
 - **47% said the library is a low priority for IT**
 - **46% said that "IT does not understand library resources and HOW the library works and supports clinical users."**

- **Other important issues regarding the working relationship of the library with hospital IT concerned:**
 - IT physically in a different location than the library
 - IT does not understand library resources and does not categorize the severity of access issues
 - IT does not understand the library's clinical resources and why the library supports these resources and users
 - IT has complicated request process for seeking help

Answer Choices	Responses	
No challenges (skip to question 10)	14.96%	41
We have our own library IT and do not work much with the hospital and/or system IT department	9.49%	26
IT physically in a different location than the library	43.07%	118
IT ignores the library	10.95%	30
Library is low priority for IT	47.08%	129
IT is changing organizationally and/or merging multiple IT departments and that poses challenges	17.52%	48
IT doesn't understand the library resources – does not categorize the severity of access issues	41.24%	113
IT doesn't understand the library resources - HOW the library works and supports these resources/clinical users	46.72%	128
IT doesn't understand the library's clinical resources – WHY the library works and supports these resources/clinical users	37.96%	104
IT has a complicated request process for library to get help from them	25.91%	71
IT doesn't prioritize building relationships with the library	28.10%	77
IT doesn't take library into account in strategic planning for SSO or other technology changes	47.45%	130
IT only helps the library if we provide cookies	2.55%	7
Other (or comments)	23.72%	65
	Answered	274
	Skipped	11

- **There were 65 additional comments provided by respondents about IT and the hospital library, thus illustrating that this question really focused on a key pain point.**
 - **Both questions 8 & 9 are difficult to answer fully and accurately, as our relationship with IT runs the gamut from extremely easy to extremely difficult to non-existent depending on the person, their position and their location. It is not a monolithic department, but rather hundreds of individuals in many locations and jobs.**

Lack of IT understanding of Hospital Library & its needs, including OpenAthens

- **I can't figure out why our IT would not approve Open Athens when the VA, and multiple academic institutions (with medical centers) already use it in the US. I don't think they really understand what we have, or how people use it.**
- IT is concerned that the Library will somehow compromise security. If a library resource requires an upgraded system, before implementing it has to check whether other clinical systems will work on the upgraded system. In such instances, Library is understandably low priority.
- IT is slow to update internet options (still on IE) and will not allow access to Chrome, Firefox, etc. and does not provide support for Safari (or Macs in general)
- Each of the URLs for our electronic resources has to be whitelisted or people on kiosk PCs (PCs with Intranet access only) cannot access them as Internet is blocked on these PCs.
- Would love to bypass the profanity censor when searching for GYN topics and others
- Hospital filters very restrictive; we lose access to more and more websites and downloads

IT understaffed and or very large and cumbersome to work with

- **IT is overworked and has little staff bandwidth for issues which are not patient-centered**
- Insufficient staff in IT to deal with any issues as quickly as we need them to
- IT department is very large, you have to communicate with various departments to get things done.
- IT is understaffed and their org structure is confusing.

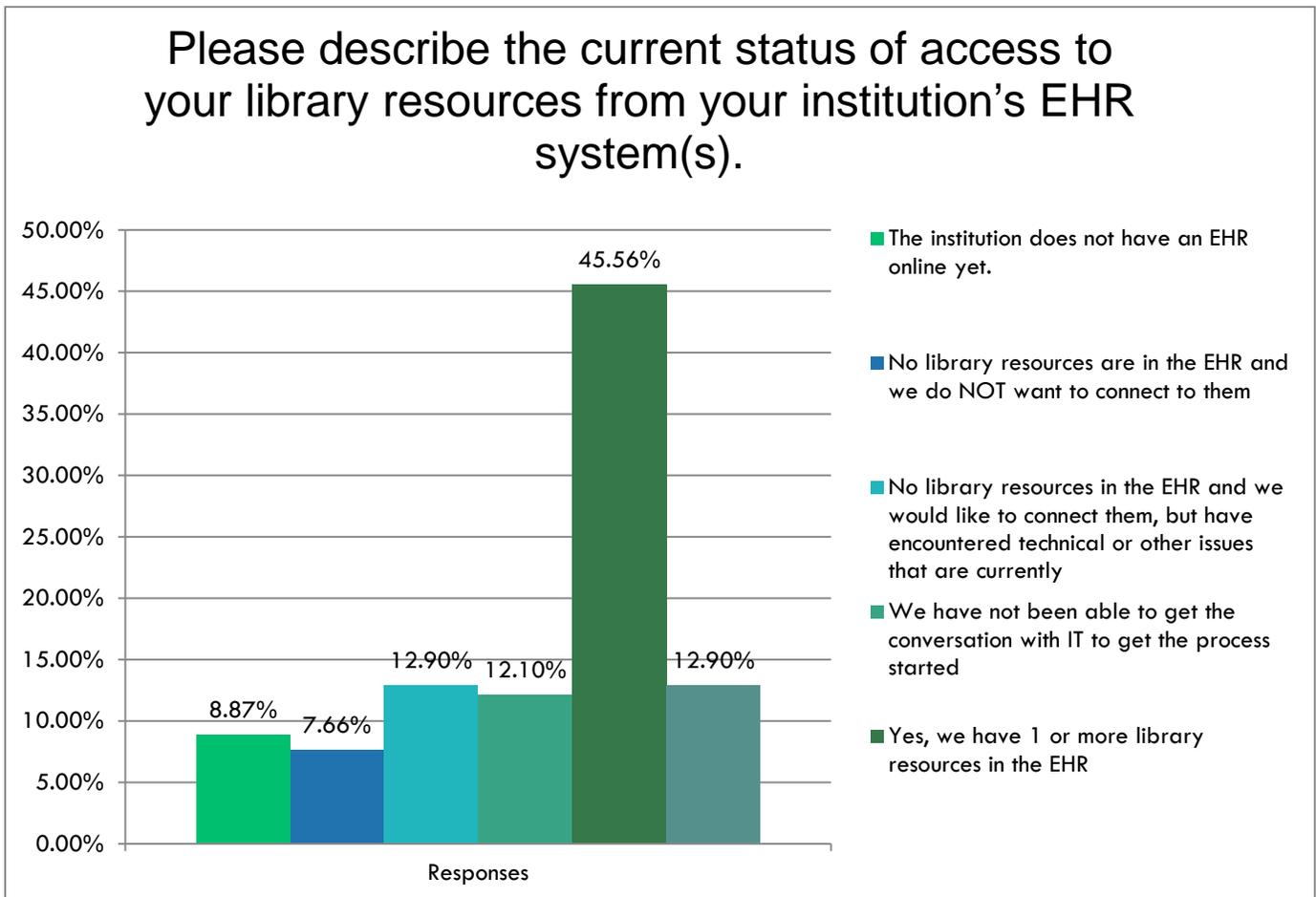
- Limited capacity in the IT team, poor infrastructure, very secure network adds a level of difficulty to accessing on-line resources
- Constant turnover and role changes with our IT personnel. IT Director not understanding nor prioritizing our needs unless I tell physicians to contact her.

Priority for hospital IT is not on library resources:

- IT understands the library resources and priorities but it has different priorities...
- IT is focused on EMR support primarily

10. CURRENT STATUS OF ACCESS OF LIBRARY RESOURCES FROM THE INSTITUTION’S EHR SYSTEM(S).

- **46% of respondents have 1 or more library resources in the EHR and 9% of institutions are without an EHR online (yet)**
- **For those without at least one library resource in the EHR, 3 reasons were cited**, with 13% unaware of why library resources are not part of the EHR:
 - 8% do not want library resources in the EHR
 - 13% would like library resources in the EHR but encountered technical or other issues currently preventing that
 - 12% are unable to get a conversation with IT to get the process started



- **More than 100 comments were provided for this question. The comments provide further insights into the barriers and challenges of providing library licensed information resources to clinicians within the EHR.** Comments include long difficult processes, stewardship issues, outdated technology, EHRs in healthcare systems link only to resources licensed by all, limitations on who can see library resources, librarians without EHR access and libraries that are not part of the strategic conversation about clinician needs for library resources in the EHR.

- **A representative sample of comments follow regarding EHRs and licensed library resources:**

Difficult process & stewardship issues

- It was a very difficult and long process.
- Direct links to UpToDate, Lippincott, Lexicomp are still considered library resources but didn't get into the EHR reference list until IT became owner of the Wolters Kluwer contract and made getting the integrated links a priority after many years of not wanting to connect them.
- Corporate does not understand the role of the librarian in organizing and integrating clinical decision support resources. Corporate does not understand the importance of providing EHR access to all library resources.

Licensing & other limitations

- The EHR is shared with another campus. Therefore, we can only include library resources that are licensed by both libraries.
- Currently, only the residents see any library resources on EHR; would like others to be include
- Many library resources are available through the EHR, but we have zero control over it and rarely use it. Thus we don't really know if the EHR access is complying with our licensing.

Librarian access the EHR

- I was not invited to train on EPIC (EHR/vendor) nor was the library invited to add any of its resources.
- We are going live with the new EPIC. I am going to basic EPIC training as manager. Library Services was NOT involved in ANY way.
- We have no visual or actual access to the EHR ourselves
- We have resources in the EMR, or so we're told, but we don't know what they are or how users get to them.

Technology

- We want to integrate more, especially context-specific via HL7
- [Library] Resources are not HL7 enabled.
- We changed from DynaMed to DynaMed Plus and reliance on old versions of Intranet Explorer made this impossible to embed.
- Outdated EHR with limited functionality for library resources

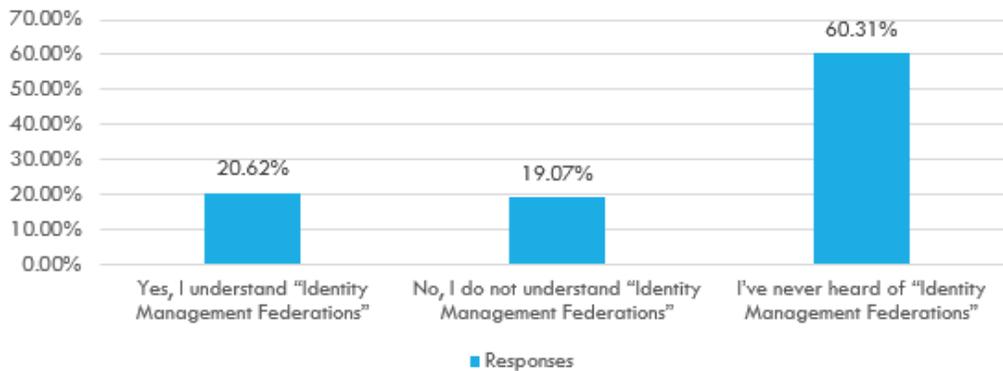
Library Resource Access Enabled in EHR Successfully

- We have a link to our library website, but not individual resources.
- There is not a standard EHR system across the campus but we have selectively embedded specific products where we can
- Have a tab with link to Library SharePoint page and HL7 integration for DynaMed Plus and possibly Nursing Reference Center.

11. RATING OF THE UNDERSTANDING OF HOSPITAL LIBRARIAN OF 'IDENTIFY MANAGEMENT FEDERATIONS' USED TO ACCESS LICENSED LIBRARY RESOURCES.

- **Nearly 80% of hospital librarians or academic librarians serving clinicians in hospitals – (the majority) have no knowledge of "Identity Management Federations." 60% never heard of them, another 19% have heard but do not understand them.**

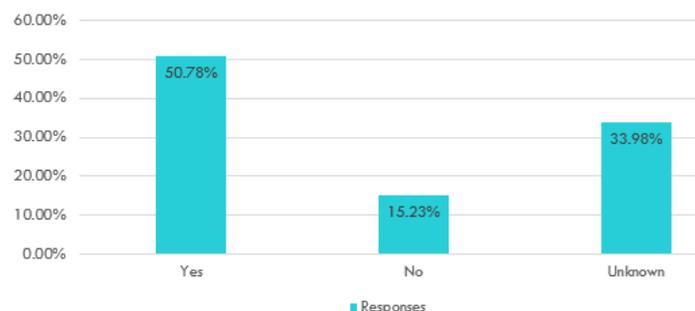
Please rate your understanding of
 “Identity Management Federations” used
 to access licensed library resources?
 (check one)



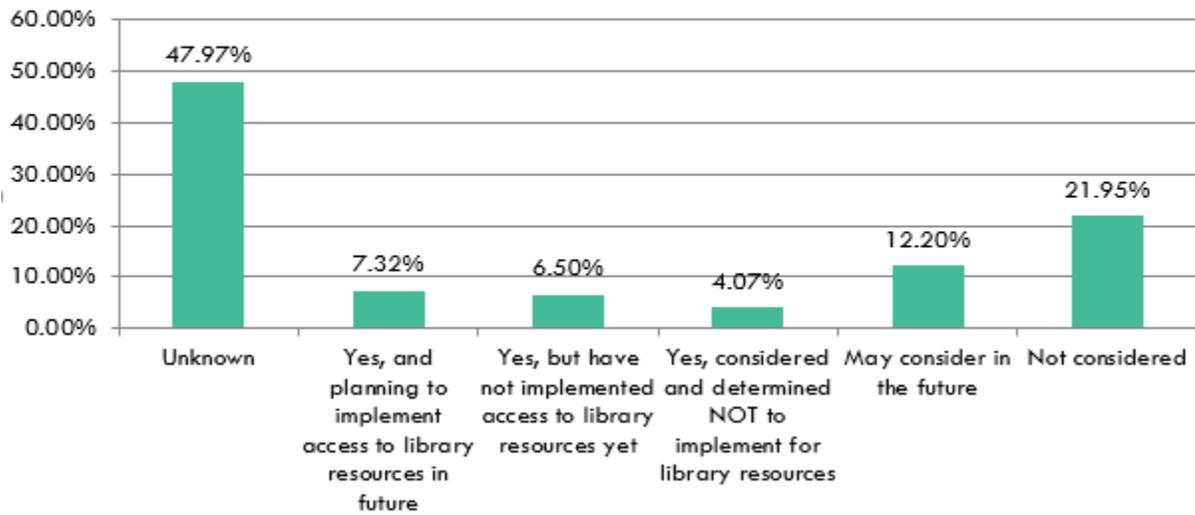
12. HOSPITAL USE OF SINGLE-SIGN ON (SSO) FOR CLINICAL OR OPERATIONAL SYSTEMS AT THE HEALTHCARE INSTITUTION; AND 13. HAS HOSPITAL CONSIDERED SINGLE-SIGN ON (SSO) FOR CLINICAL ACCESS TO LIBRARY RESOURCES?

- **SSO for CLINICAL RESOURCES:** 51% indicate the hospital uses single-sign on (SSO) for clinical systems, 15% say SSO is not used, with 34% do not know.
- **SSO for LIBRARY RESOURCES:** 48% do not know if the hospital has considered it.
- **Of the 52% who are aware of the consideration of SSO for library resources by the hospital, the results are evenly split into “possible” and “not possible” probabilities.**
 - **26% see NO future for SSO for library resources:** 4% say SSO was considered and it was determined NOT to implement it, another 22% say SSO has not been considered.
- **26% see a future SSO for the library resources possible:** 7% say the hospital considered SSO for clinical access to library resources and is planning to implement it in the future; 7% say SSO was considered but not implemented YET, with another 12% saying SSO for library resources may be considered in the future.

Does your hospital use single-sign on
 (SSO) for clinical or operational systems
 in the institution? (check one)



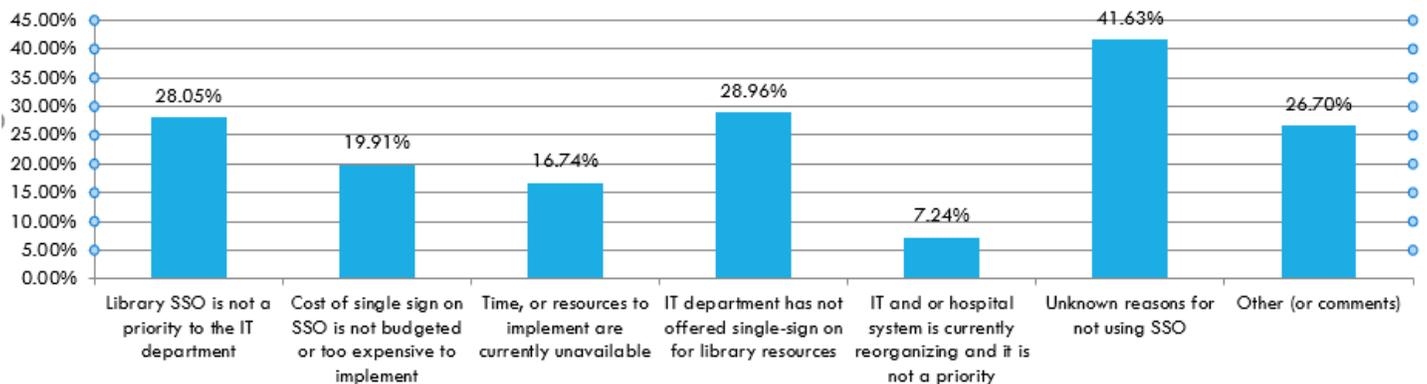
Has your hospital considered single-sign on (SSO) for clinical access to library resources? (check one)



14. IF NOT USING SINGLE-SIGN ON, WHAT ARE THE REASONS FOR NOT IMPLEMENTING IT FOR CLINICAL ACCESS TO LIBRARY RESOURCES?

- **42% say reasons for not using SSO for library resources are unknown**
- Of the 58% who commented on reasons why there was no SSO for clinicians’ access to library resources, many echoed earlier identified issues:
 - **28% Library SSO not an IT priority**
 - **20% Cost**
 - **17% Time/Resources needed make it unavailable**
 - **29% IT has not offered SSO for library resources**
 - **7% IT / hospital reorganizing and SSO not a priority**
 - **27% cited other reasons (which included 90 comments) for example:**
 - IT said Open Athens would be a security risk.
 - Security concerns on the part of IT (concerns about patient information being compromised)
 - Since everything is IP authenticated, I see no reason.
 - SSO too expensive and security concerns

If you are not using single-sign on, what are the reasons for not implementing single-sign on (SSO) for clinical access to library resources? (check all the apply)



15. OPINION OF THE HOSPITAL LIBRARIAN ABOUT THE SECURITY OF SINGLE-SIGN ON (SSO) VERSUS IP AUTHENTICATION.

Data and comments from the survey indicate that hospital IT sees security issues with SSO for library resources. What do hospital librarians think? Compared to IP authentication, the majority of hospital librarians responded that they do not know, e.g. 53%. In terms of security and privacy, hospital librarian opinions are a mixed bag. It is clear the technologies are not well understood.

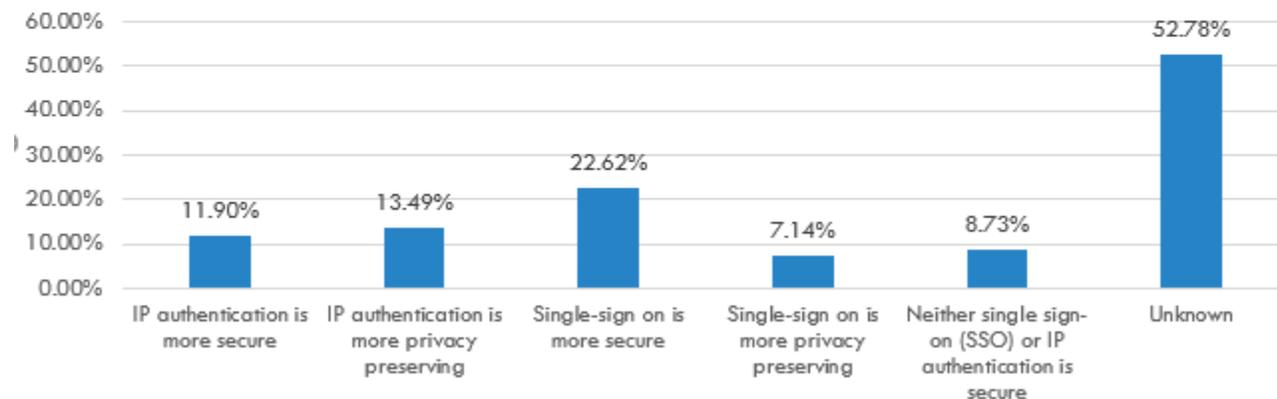
Security opinion

- 12% believe IP authentication is more secure than SSO
- 23% believe SSO is more secure
- 9% believe neither IP authentication nor SSO is more secure

Privacy opinion

- 13% believe IP authentication is more privacy preserving
- 7% believe SSO is more privacy preserving

What is your opinion about the security of single sign-on (SSO) on versus IP authentication? (check all that apply)



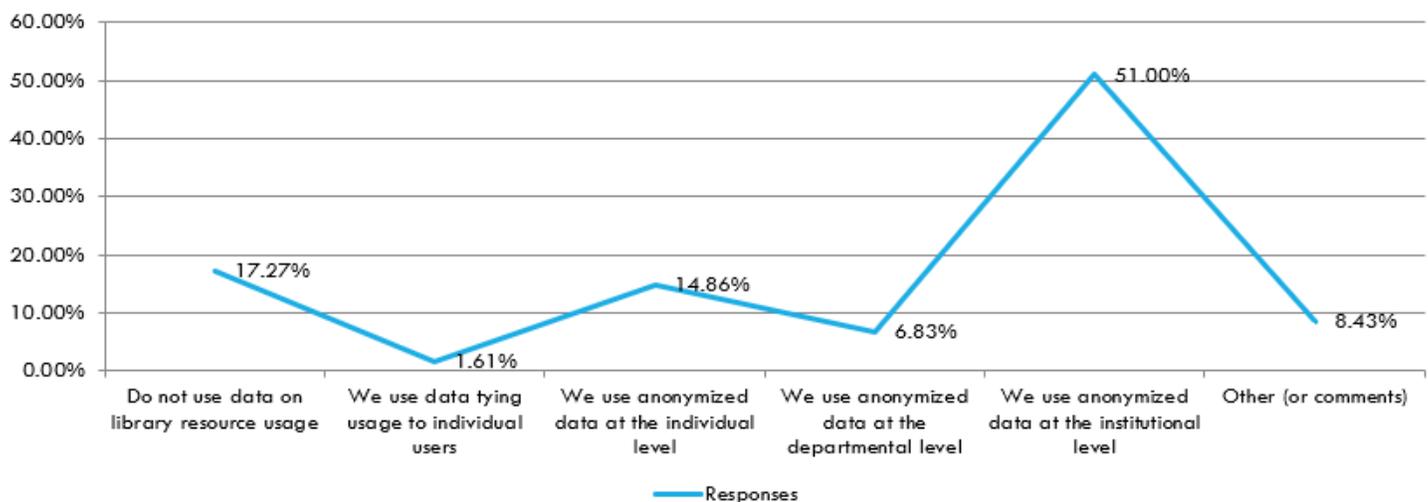
16. HOW THE LIBRARY ANALYZES USAGE OF LIBRARY RESOURCES.

- Statistics regarding library usage are directly tied to how library resources are accessed. In the current environment, with IP authentication and login/password, it is not surprising that COUNTER is the predominate data used to analyze usage (82%). However, data from the proxy server (21%) and data from the hospital network (21%) are also used.
- Surprisingly, 9% do not analyze usage of library resources.
- 12% used other methods to analyze usage of library resources, with the following representative comments:
 - Consortium library analyzes usage data for the library
 - Analysis done manually
 - Library surveys
 - Inability to drill down deeply enough for data to be meaningful
 - Reports from vendors, RedLink, Discovery Services, OpenAthens, Link Resolver, LibLynx, Google Analytics, Shibboleth IdP server logs
 - Heat map visualizations

17. THE LEVEL OF PRIVACY THAT IS IMPORTANT TO THE LIBRARY AND/OR THE INSTITUTION RELATED TO ANALYTICS AND LIBRARY RESOURCE USAGE.

- Privacy is important to hospital librarians for usage data, however it was indicated that the ability to analyze data by cohort was important.
 - 73% use anonymized data: 51% at institutional level, 7% at the departmental level and 15% at individual level.
- Only 2% tie data to individual users.
- Again, a large segment, 17%, report they do NOT use data on library resource usage.

Related to analytics and library resource usage, what level of user privacy is important to your library and/or institution?



- 8% indicated “other” and of these, at least 7 respondents did not know the level of privacy of their data. Other comments noted department level data would be useful.
 - Knowing department is useful. Individual level is great to know, we are very careful to preserve privacy when using it.
 - None of our stats are linked to individuals due to technical setup but would like data by department for sure.
 - We mostly use anonymized data at the institutional level, but sometimes look at department usage, seldom at an individual level. Generally we look a lot at user behavior and trends and analyze whatever is needed to get the picture
 - Use anonymized data that falls in other categories.
 - We have to comply with the GDPR.
 - We are planning to use data tying usage to individuals.

18. IF THE HOSPITAL LIBRARIAN IS NOT SATISFIED WITH LIBRARY ANALYTICS, WHAT IMPROVEMENTS ARE NEEDED?

- The 90 responses (32%) could be the subject of an entire other report in order to fully consider their depth and scope. 195 respondents did skip this question. Overall, many comments noted the need for data at the departmental level, echoing prior questions. The following are representative comments regarding improvements needed for library analytics:
 - Statistics [needed] from institution network devices.
 - I don't think [library analytics] are reflective of actual usage. There are too many ways to access resources & not sure if numbers reflect patron usage. I want to know what we are using, how we are using it (all ways), and when.

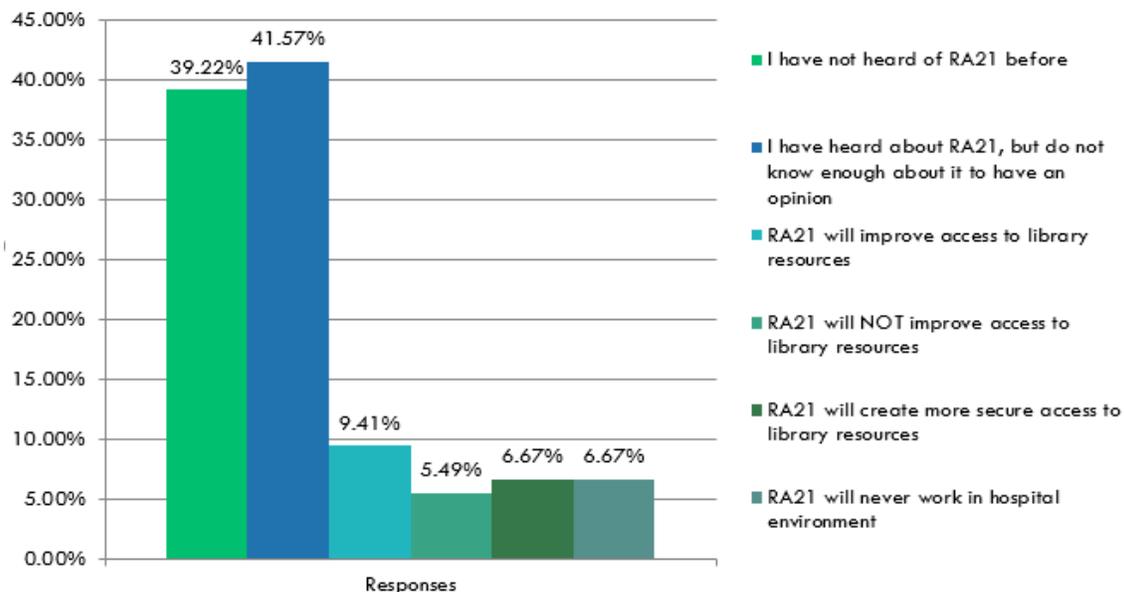
- I'd love to be able to analyze data by department/role, but that's not possible with IP Authentication.
- Would like to capture data at the facility level (currently have 5 facilities and 20+ clinics all rolled into one).
- Usage by all titles; not all vendors make that available.
- Capturing data regarding usage of e-journals that is reliable reflects actual usage is almost impossible, especially across multiple publishers.
- I would like to improve library analytics but time is a major issue.
- Mobile usage, many vendors don't tell us that
- It would be great if we could capture usage for all resources in one place rather than going to publisher websites.
- Capture user's role, department, field or research, - as much as we can to identify who is using us and why
- Would be helpful to have more granular data—e.g. deeper than institutional level. But do have some concerns about individual privacy.
- What route was taken to arrive at the resource e.g. linked from PubMed?
- Capturing the department/professional role of users for specific resources/databases.
- What type of person is using our content (Nurses, Physicians, etc?)
- Which e-resources are the most popular, which sites are the greatest users (so we can target the lesser ones).

19. OPINION OF THE HOSPITAL LIBRARIAN ABOUT RA21.

- **Similar to question 11 about Federations (80% never heard of them or so not know enough about them), the survey finds the same unknowns. 81% of respondents have not heard of RA21 or do not know enough about it.**
- **Belief and disbelief:**
 - **16% are in favor of RA21**, as 9% of this total believe RA21 will improve access to library resources and 7% believe RA21 will provide more secure access to library resources.
 - **12% are not in favor of RA21**, as 5% of this total do not believe RA21 will improve access, and 7% believe RA21 will never work in a hospital environment.

These data indicate a great deal of education is needed for this market segment about single-sign on and SAML. Even if their hospital will not move to the technology in the short term, this technology and recommended NISO practice will have significant impact in the future on clinicians and the patrons the hospital and clinical librarians serve.

What is your opinion about RA21? (check all that apply)

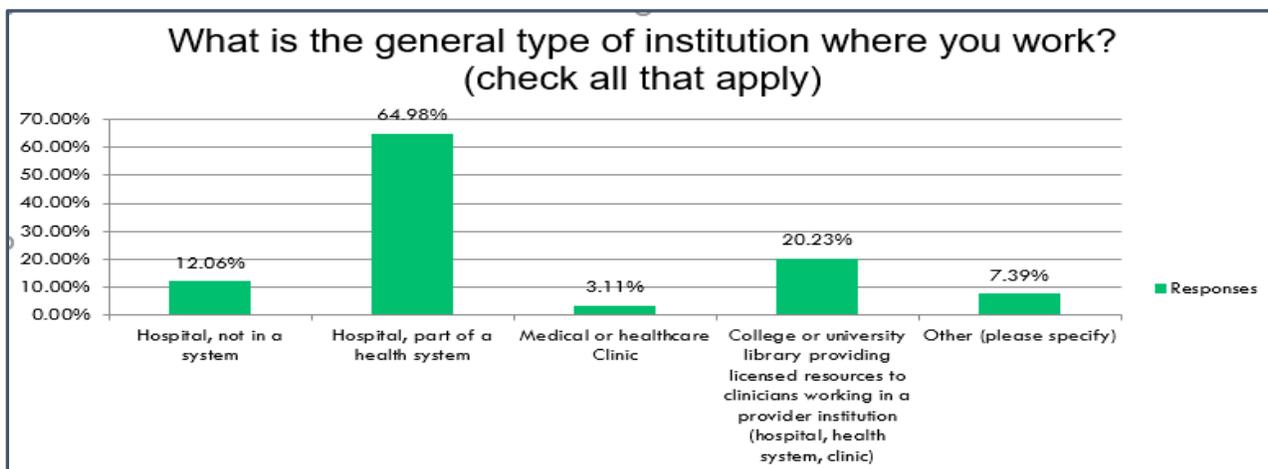


21. SURVEY RESPONDENT PROFILE

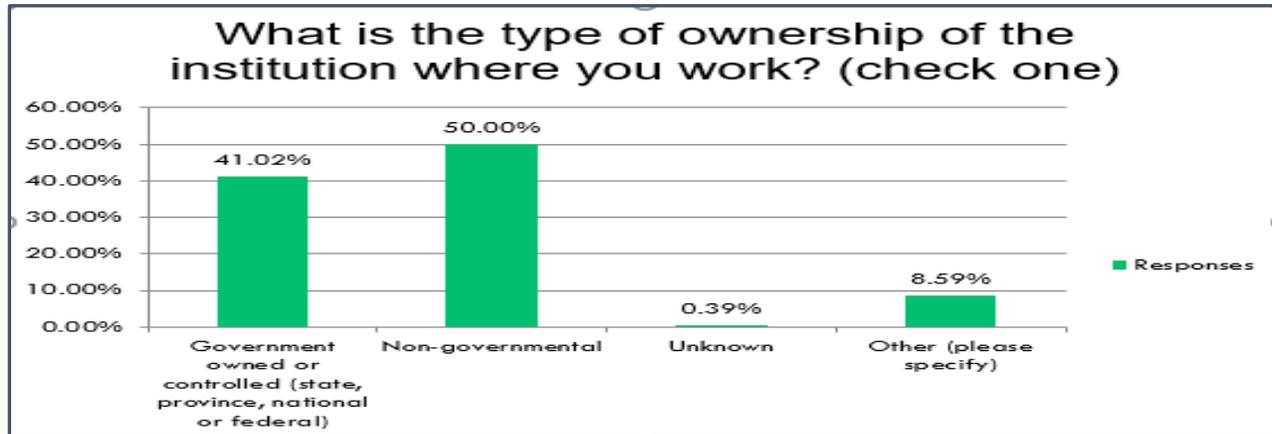
- **DEMOGRAPHICS:** Questions about age and professional role were excluded at the end of the questionnaire to help lessen survey fatigue.
- **GEOGRAPHY:** The Survey was conducted globally. **76% of respondents were from North America (U.S. and Canada) and 24% were from outside North America** (e.g. Europe, Asia Pacific, South or Central America, Africa and the Middle-East).

Answer Choices	Responses	
United States	72.76%	187
Canada	3.11%	8
United Kingdom	4.28%	11
Europe	8.95%	23
Asia Pacific	10.12%	26
South or Central America	0.00%	0
Africa	0.39%	1
Middle-East	0.39%	1
	Answered	257
	Skipped	28

- **INSTITUTION TYPE:**
 - **77% of respondents are from hospitals or healthcare systems (12% freestanding hospitals and significantly 65% are from healthcare systems (with multiple hospitals and/or clinics and continuing care facilities like long term care etc.))**
 - **20% of respondents are from colleges/university libraries providing licensed resources to clinicians working in a provider institution (hospital, healthcare system, clinic etc.)**
 - **3% of respondents are from a clinic**
 - **7% of respondents are from other types of institutions serving clinicians such as research institutes, a community/mental health trust, an independent academic medical center, and government agencies like a department of health, a federal agency or the [U.S.] Army Medical Library.**



- **OWNERSHIP:** **41% of respondents are from government-owned or controlled institutions and 50% are from non-governmental institutions, 9% indicated 'other' for ownership with .4 % as unknown.** In the 'other' category, 22 respondents listed their institution as either non-profit, a private company, university-owned, or the NHS Foundation Trust for example. Most non-profit 'ownership' is non-governmental (4.) thus it is likely that at least 4% more of the respondents are non-governmental, for a 54% total. More detailed questions about ownership were deemed unwarranted in the survey, *such as non-profit status, investor-owned or if there was a religious affiliation.*



20. COMMENTS FROM HOSPITAL LIBRARIANS ABOUT RA21 AND HOSPITAL/CLINICAL ACCESS WERE PROVIDED AND ARE IMPORTANT TO INFORM THE RA21 HOSPITAL CLINICAL ACCESS WORKING GROUP AND OTHERS.

Most of the 60 comments follow, sorted by theme. These hospital/system librarians (and other librarian serving clinicians) took the time to provide their sentiments, opinions and frank advice to those involved with RA21, especially in regard to the hospital environment. Their voices point to the need for further education, while others speak to the need to communicate better about SSO, SAML, RA21 and NISO Recommended Practice. There is a great deal of misunderstanding in the marketplace. Additionally, hospital IT is an essential component of that conversation and to date has not been involved in the conversations, and should be made aware of the NISO recommended practices, on an industry level.

Hospital environment issues

- **Senior IT leadership and ISSOs must be convinced RA21 is secure. Clinicians must be the driving force behind this; ease of access to resources to improve patient care/outcomes.**
- **It is important to be mindful of the hurdles for hospitals to implement this technology, in budgetary, skills, and security concerns. Although I would personally like to offer SSO access to my users, this has not been a productive conversation with IT due to those issues**
- **While I believe it will be more secure, we don't know yet if it will actually work in the very restricted hospital network environment**
- Not at all familiar with this but it sounds like something that might create a breach to patient information.
- I have heard that there would be problems with hospitals/healthcare using RA21 as opposed to academia, but I don't know the specifics of what those problems are.
- **I noted the "never" in the list above as I don't think hospitals are ready to make the jump to something like that. They are cautious with institutional identity (rightfully so), but it would be great if hospital admin/corporate owners could be sold on RA21 or something similar**
- Check [that] solutions work on hospital desktops/kit not academic
- **I have serious questions about whether our medical center would ever prioritize RA21. I also believe, perhaps cynically, that our hospital administrators do not want us looking over their shoulders while they abuse our licenses.**
- RA21 will not work in the clinical environment and seriously compromises user privacy.
- RA21 is not robust enough to handle the access needs of large, complex institutions and in a clinical setting users want immediate access to resources without logging in

- We have much concern about it working in our hospital - but don't want to say it will never work.
- The best way to access library resources in a hospital setting is by any means that will allow the bypassing of hospital IT altogether
- I have hopes that this will work, but there is hospital IT & security to convince
- **It's OK to survey librarians about RA21, but in the hospital we are almost powerless to affect IT changes. It would be better to start talking with IT groups to get their input and buy in.** Many hospitals with libraries are solo operations. Adding another technology layer with added administration is a burden.
- Logging in every time for a library resource is a problem at a clinical level
- **Glad to hear there's a working group--there are LOTS of issues & many "flavors" of hospital/clinical access.**
- From what I've read about RA21, when/if implemented, it will cause a lot of grief to hospital library users wanting to gain access to resources. Maybe library vendors can be more involved in this process to make it easier for access.
- Unless hospital IT department gets on-board with it, it will be a tremendous hurdle. We had a hard enough time making resources available off-site using more basic proxy & username/password systems.

Cost

- **Concerned that it will create a significant expense (needing an SSO solution), may be problematic from a hospital cyber security perspective, curious about implications if Library resources are integrated into the EHR (HIPAA), and wondering how we could still offer access to anonymous in person visitors**
- **Whatever you plan for access, it has to be secure and cost-effective**
- **It will be painful and costly and still won't stop Doctor Smith from sharing his username and password or [stop] phishing**

Technology

- RA21 may be blocked by Hospital firewalls
- Our IT will probably assess RA21 as a security risk. They are overly cautious
- RA21 will make the resources access complicated
- **SSO working very well for us, so I expect that the full-fledged RA21 will be even better**
- Hopefully it will be using LDAP or SAML rather than requiring user to set-up yet another login account with another password to remember
- IP authentication doesn't work well at my institution right now because resources cannot be adequately "locked down" to licensed users with IP. My institution already has multiple sign-ins for resources (granted the same username/pw is required for all of them) but we are continually signing in to resources on campus so I don't feel RA21 will impact us
- Security is huge. I'm a solo, and struggle to keep up w/ it all. The more you can make it easy for me - and easy to "market" to IT, etc. the better
- RA21 could potentially be a useful tool for remote access, but in addition to existing systems, including IP and VPN. It is not a replacement for either
- Is this something that can be implemented by libraries/librarians who have no administrative control of IT or resources unless the resource allows you an admin login? If not, it is a no go
- Wondering if/how RA21 may affect things like link resolvers

Publishers, Licensing, Pricing, Privacy

- We need to be able to limit access to specific resources by specific individuals or user groups. That could impact pricing
- If you make it so people have to log in to access even one single thing we pay for they won't use it, and then we will have to cut it because it wasn't used. Eventually there will be nothing, and you will have killed the hospital

market for all your resources just because you are convinced that everyone who uses your stuff just wants to steal it all

- **Please consider the privacy of your end users (researchers). I see that the RA21 Steering Committee is comprised of publishers. I do not trust them to maintain the privacy of users (e.g. search histories; article views, downloads) in response to requests, demands, purchases by third party vendors and the government. Publishers are in the business of data analytics (where the data is the researcher him/herself) as much as the business of scholarly communication.**

General comments

- Authenticating specific resources to a specific campus has been difficult after a hospital merger. Would like to see if the RA21 would provide resources to help with access to a specific hospital campus
- We need this yesterday.
- Please continue to report RA21 activities in medical library publications
- Thank you for conducting this survey on this important topic.
- Some of what I've heard about RA21 gives me some concern.
- Need more basic information
- Looking forward to learning more and getting information on how it can help my Library/institution.
- Will read up on this
- I hope that our IT gets involved so that as we start to hear more about RA21, they will be on board
- People on Twitter seem to think it is a terrible thing
- **It's important to have IT administrators or leaders in communication with library leaders to discuss access issues**
- It seems to me that RA21 would provide easier access to the library users: they only have to remember one user name and password, and that works whether they are onsite or off site. Users do not seem to care much about whether their journal reading is tracked; in fact, they voluntarily track it, with identifying information attached, to get CE credit
- From what I've heard it sounds appealing but I think we may be far away from implementing something like that here.
- I'd like to actually take a look at implementing RA21 for my institution, but I'm not sure whether it's ready for this kind of trialing. I am interested in following RA21 developments, because I think my user environment might benefit from it.
- Users will not like entering username/password and libraries will get blamed
- **Not sure how this will benefit hospital libraries**
- **Hospital librarians need more information on RA21.**

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APPENDIX A GLOSSARY

- **SAML:** Security Assertion Markup Language. An open standard. It is a data format for exchanging authentication and authorization information. There are many “flavors” of SAML. Shibboleth is one of those flavors. Institutions use SAML because it eliminates the need for multiple Web application passwords by enabling a token-based authentication exchange that takes place inside the IdP firewall between the IdP (who holds the user credentials) and the SP. SAML’s first iteration was released in 2002. Learn more: Oracle. Demystifying SAML. GIGYA. Basics of SAML. (2.)
 - **Single sign-on (SSO):** It is a “property” of access control of multiple related, yet independent, software systems. SSO allows a user to sign on with one set of credentials and gain access to multiple applications and services. SSO increases security and provides a better user experience by reducing the number of required accounts and passwords and provides simpler access to all the apps and services needed. **Why is single sign-on important? How many apps do you access every day?** No one can remember logins and passwords to most and write them down. That is not secure. With SSO, a user logs in with a single ID and password to gain access to a connected system or systems without using different usernames or passwords. (2.)
 - **Attributes:** Also called metadata. This metadata is information about an individual user maintained by the IdP. Such as: Name, User Id, Affiliation, email. Importantly, these attributes can be anonymously provided to the Protected Resource, so privacy is maintained. A hexadecimal can be used in lieu of identifiable information. (2.)
 - **Authentication:** The process of an entity (the Principal) proving its identity to another entity (the System). (2.)
 - **Federated Identity Management (FIM):** A type of SSO where the actors span multiple organizations and security domains. (2.) Federated identity management is an arrangement that can be made between multiple enterprises to let subscribers use the same identification data to obtain access to the networks of all the enterprises in the group.
 - **Federation:** A federation is a group of providers that agree upon a standard of operations, interactions, frameworks and goals. Federations are sometimes used in SSO. (2.)
 - **HL7: Health Level Seven International** is a set of standards, formats and definitions for exchanging and developing electronic health records (EHRs). HL7 standards, developed and promulgated by the healthcare IT standard-setting authority HL7 International are the de facto standards in healthcare IT.
 - **Identity Provider (IdP):** IdP authenticates the user. The server and software that verifies the login for a user, and passes attributes about that user back to the Service Providers. An IdP can be built and maintained by an institution or it can be provided as a service that the institution purchases. Most institutions use an IdP. (2.)
- Infobutton:** “A clinical decision support tool embedded within electronic health record (EHR) systems. It is enabled within EHR systems through a Web service known as infobutton manager. An infobutton manager is an application accessible from within EHR systems that provides EHR users with context-specific links (CSLs) to external knowledge resources when an EHR user clicks on an infobutton in a particular clinical context. An infobutton manager uses a knowledge base to manage all CSLs.” (17.)
- **LDAP: Lightweight Directory Access Protocol:** An Internet protocol that email and other programs use to look up information from a server. SAML uses LDAP. (2.)
 - **Protected Resource:** This is content on a website. It can be a directory of files, or a web application. Resources licensed by the library, other 3rd party solutions used by the institution or corporation. (2.)
 - **Service Provider (SP):** Performs the single sign-on for the user. The software that runs on each protected website. The SP collects the login and attribute statements from the IdP and shares them with the website or protected resource. (2.)
 - **Shibboleth:** A single sign-on application. Shibboleth works the same as every other web-based single sign-on (SSO) system. What distinguishes Shibboleth from other products is its adherence to standards and its ability to provide SSO support to services outside of a user’s organization while still protecting their privacy. See: Shibboleth Consortium <https://www.shibboleth.net/index/basic/>. (2.)

Additional Glossary Sources: Gracion Software; Shibboleth Consortium; University of Pennsylvania. “Shibboleth Authentication,” [presentation]; GIGYA “Basics of SAML,” Oracle. “Demystifying SAML”; Ping Identity. “SAML: How it Works”; OASIS, SAML XML.org ; NC State University “How Shibboleth Logins Work”; Sheldon, Nathan. How It Works: MyAccess, SAML and Shibboleth,” [wiki] last updated March 8, 2018. ; Broeckelmann, Robert. “Authentication vs. Federation vs. SSO. Medium” [blog]. Sept. 24, 2017; SearchSecurity website; consultation between Catherine Dixon and Michelle Brewer, May 10, 2018 [unpublished].

APPENDIX B VIRTUAL FOCUS GROUP INVITATION, INTERVIEW SCRIPT & INSTRUCTIONS

Introductions for us (Michelle, Don and Catherine) and participants' introductions, with/without icebreaker.

What we're looking to do?

- **Better understand**
 - Your perception of "RA21"
 - How hospital staff access library resources, and what (if anything) makes it different or the same as access of resources in other types of libraries
 - What your library or your hospital is doing (or not) with OpenAthens, and SSO single sign-on and why
 - Your relationship with your hospital IT department, how easy or hard is it to work with them and access for library resources
 - Your understanding of using a Federation for access, and security issues with IP versus SSO
- **Get an initial reaction to a concept of using RA21 for hospital access to library resources**

Questions:

- What do you think when you hear the terms RA21 or SSO
- Do you currently have experience with working on access issues with your IT department holdings?
- What would your ideal 'access' be for your library users on campus, off-hospital campus
- How does your hospital staff access library resources now?
- What (if anything) makes it different or the same as access of resources in other types of libraries?
- What is your library or your hospital doing (or not) with OpenAthens, and SSO single sign-on and why?
- What is your relationship with your hospital IT department, how easy or hard is it to work with them and access for library resources?
- What is your understanding of using a Federations for access?
- What do you think or know of security issues with IP versus SSO

Describe RA21

- Questions on this description?
- Is there any value in RA21 for library access for your hospital outcome metrics like this to you and your institution?
- Is there anything you would like to ask us about RA21?
- What would you need to know or have to go forward with RA21 in your hospital?
- Could you use RA21 to make a case for the value of library resources and the security of access, could it help you in other words with your IT department and multiple campuses?

We are interested in your thoughts on "RA21" We know there are a lot of anecdotal information and bloggers out there. What 3rd party information have you heard prior to this focus group that informed your views?

VIRTUAL FOCUS GROUP INSTRUCTIONS

- **Roles:**
 - Michelle is the moderator and will do the introduction and wrap-up
 - Don and Catherine will conduct the interviews with you.
 - I encourage you to be totally open and honest with your thoughts and opinions.
- **Ground rules and disclosures**
 - OK to talk with others about your participation in this study, including what activities we did, but who said what stays in this room.
 - Anonymous input – your name will not be used in conjunction with any direct comments; rather input of all is combined.

- We are recording to help us remember all that is said here today. Therefore, please speak in a voice as loud as my own, talk one at a time, and no side conversations. All of these things affect sound quality. We will remove any names from the transcripts
- Need to hear from everyone – self-monitor how much you are contributing to ensure it is not too little OR too much!
- Don't be swayed by the group – stick to your own opinions.
- No wrong ideas, no stupid answers.
- No scheduled bathroom breaks, re-join us just as quickly as can.
- Turn off phone/pagers
- Introductions
 - Please introduce yourself to the group by giving your name, where you are from-

APPENDIX C FOCUS GROUP TRANSCRIPT – NOVEMBER 2, 2019

Focus groups and comments presented here were edited for readability. Focus group transcripts were also edited to preserve respondents' anonymity.

**STM RA21 Hospital Clinical Access Working Group – Transcript -
minutes****Focus Group #1, November 2, 2019 for 62**

- Speaker 1: [00:00:02](#) Thank you. Okay. Um, so we all may, may or may not understand that authorizing access to content based on IP, no longer works in the distributed world. And the [inaudible] project resolved some fundamental barriers to moving to federated identity in place of IP address with an occasion and the whole project had a multi-stakeholder um, group of people involved via STM and NISO. So it's safe to say I think there were more than 50 different groups, including many librarians, libraries, vendors, publishers, federations. Um, the goal was to determine best practices and our recommendations will be delivering seamless, authentic, access to users as a recommendation. So as users move from online resources, they'll preserve their anonymity and the best practices that are RA21 is recommending should be independent of the workflow of the location. It should also enhanced security. It should support customizations and provide for better usage analytics.
- Speaker 1: [00:01:13](#) Now RA21 came from CNI, the coalition of networked information, 2016 report. So for the last three years. Therefore, from that point, the STM Association and NISO though have convened conversations and focused on how to improve this user experience and their work involved pilots with many different people and a lot of final reports with recommendations. They're not all done, but they're nearing completion. When [inaudible] went ends, there should be a recommendation for how to get to more seamless access with privacy and the next phase of it is then to hand the recommendations over the NISO so it can enter the NISO recommended practices process. So far the pilots and the workstreams have accomplished the following. They've worked with a group of pharmaceutical libraries that have completed the RA21 corporate pilot final report. They've also worked with a whole team of security experts.
- Speaker 1: [00:02:22](#) I'm looking at what they call WAYF - where are you from cloud another pilot, and P3W. They've provided some security and privacy final recommendations in their report and then a group of academic libraries also participated in the pilot of the technical evaluation nature and they have a final report. All of this is available to you on the RA21 site. If you don't have that link, we certainly can send it later. So very high level decision-making. The key findings from all of that was how to improve user login at the publisher's sites, how to get more granular usage statistics, how to set up and maintain single sign on with multiple publishers so that your users can move between them seamlessly without having to log on all the time. It was a thorough evaluation. The technical architecture was prototyped by the pilots.

- Speaker 1: [00:03:26](#) So what's critical to know is that our recommendations are for single sign on and federated access, but access will exist in a hybrid environment. Publishers and vendors are not throwing out IP access and we're not dictating. This project is not dictating what vendors and publishers should offer as access methods. So a new system is not being imposed on anyone, much less hospital libraries. So RA21 acknowledges we've got gaps in the system and there are best practices and ways to fix them, but not all institutions may be ready or may want to embrace it. So it's a paradigm change, just like migrating to an online card catalog or from print journals or how your hospital is migrating to an electronic health record. So what we want to know is hospital clinical access. We know it's different.
- Speaker 1: [00:04:24](#) We want to learn and better understand from you. So we're going to ask: how your hospital staff accesses to resources? What, if anything makes it different in terms of how they're accessing resources off campus and on campus access? Um, is there any particular access problems you want to solve? What your library or your hospital is doing or not doing with open Athens and single sign on and why? Um, what's your understanding of identity management terms such as federation? Um, security issues? IP access? Single sign on? Your relationship with your IT department? We're really interested to hear about that too. How easy or hard it is to work with them? Especially for the library resources? And we want to get your initial reaction, you know, about RA21 in the hospital world. So those are our general goals.
- Speaker 1: [00:05:22](#) Don and Catherine are going to go over very specific questions with you for that. So the rules of the road for the focus group, we're interested in your thoughts, your questions and what challenges you have. So I encourage you to be totally open and honest with your thoughts and opinions. It's okay to talk with others about your participation in this study. Um, but it's um, who said what stays in the virtual room. So let's not put names to statements. So for us it's anonymous input. Your name will not be used in conjunction with any comments here. It'll all be combined and aggregated were recording to help us remember and go back and do highlights. So please speak loudly and one at a time. And um, we need to hear from everyone. So self monitor how much you're contributing and don't be swayed by the group.
- Speaker 1: [00:06:13](#) Stick to your own opinion. That's what we want to hear. And there's no wrong answers, there's no stupid answers and we don't, we didn't schedule any bathroom breaks so you have to break. Just go and if he can turn off your phones or pagers. So that's it. That's my intro and I can't believe it took that long. My apologies. So let's introduce yourself. Give me your name, your title and role at your institution and maybe it's an icebreaker, what costume you wear for Halloween or if you decorated your library for the holidays. So I'm going to turn to Speaker 1 to get us started.
- Speaker 2: [00:06:51](#) Hi Michelle. I didn't get that PowerPoint.

- Speaker 1: [00:06:55](#) Okay. I will send them writing it down.
- Speaker 2: [00:06:58](#) Um, Speaker 1 and the director of the Medical Library at **REMOVED**, which is a very large teaching hospital in **REMOVED**. Um, and I didn't do Halloween this year. I'm sorry, Michelle.
- Speaker 1: [00:07:14](#) Thank you, Barbara. Okay, Speaker 2.
- Speaker 3: [00:07:20](#) Good morning everyone. I'm Speaker 2 [inaudible]. I'm the director of the medical library continuing education and research at **REMOVED** in **REMOVED**. We are our hospital's part of the largest healthcare system in **REMOVED**. There are other 11 campuses total. Um, I'm our support staff for the most part is virtual. So in putting in our tickets and whatnot, it's challenging, but that's another story. Um, as for Halloween, I did not get dressed up. I did where I did bring a witch's hat during our Halloween costume contest here. So that was my contribution to Halloween and had plenty of candy in the, in the department, that's for sure. So that's my contribution.
- Speaker 1: [00:08:19](#) And I'm going to turn to Speaker 3.
- Speaker 2: [00:08:24](#) I'm Speaker 3 from a **REMOVED** regional health in **REMOVED**. Um, I am the director of the medical library at one of the hospitals that makeup, um, this ever growing health system in. One of our challenges right now is to provide access to our e-resources. I'm in a continually growing environment. Um, Halloween. We did decorate in the library. We have a skeleton that we decorate and he was very generous and handing out candy.
- Hi everyone. I'm, Speaker 4. I'm the collection, access and support services librarian at **REMOVED** college of medicine and the **REMOVED** Medical Center. And I was inviting for Halloween. Oh cool. So was my husband great. Good choice.
- Well, thank you for joining Speaker 1, Speaker 2, Speaker 3, Speaker 4. And I'm going to turn it over to Don and Catherine will start to focus group.
- Speaker 4: [00:09:37](#) Hello, this is Don here and I hope we have a distance, sort of a conversational approach and I definitely am looking forward to hearing from everyone. Uh, and we'll, we'll start right in. And uh, my first question is sort of a survey question. How does your hospital staff access library resources today? Anyone want to jump on with that one?
- Speaker 2: [00:10:11](#) The type of authentication that they use?
- Speaker 4: [00:10:14](#) Yes. So it would it be, or do you use a program, a proxy, a temporary cold type of authentication? Yeah, so that's what we'd be interested in.

- Speaker 5: [00:10:30](#) Okay.
- Speaker 2: [00:10:33](#) That would also be the case at **REMOVED**. This is **REMOVED**. We use IP authentication for people who are on campus on the network for those who are off campus or trying to access from their own device. We use a combination of either [?Azure] or Citrix Receiver, both of which everyone hates. Okay.
- Speaker 3: [00:11:05](#) Hi. Um, we have, um, IP authentication here on campus like that. **REMOVED** has an offsite is through Open Athens, which is, um, something that I inherited and we're continuing to use.
- Speaker 4: [00:11:23](#) Okay. Thank you.
- Speaker 2: [00:11:32](#) I think we did. Don,
- Speaker 4: [00:11:37](#) what would be your ideal access if you were just dreaming, how will it be? What would be the ideal access method for your library users? What would they have to do or what the little would they have to do to have access?
- Speaker 2: [00:11:56](#) The reality is when they are on site, people rarely go to the actual library website. I'm googling things and they come across them and then wonder why they can't get to them. And so right now, not all, um, it, depending on how you, you licensed your journals, you can't necessarily get to them through IP access. So that's one thing. I'm remote I don't, I really don't have an answer. I would be open to hearing some ideas
- Speaker 6: [00:12:30](#) Here at **REMOVED** one of **our biggest issues is multiple logins**. Um, and that's because of how um, we have our resources set up so we're on a completely different network from the university, the College of Medicine and the medical center or in a completely different part of **REMOVED** and the main campus, but we share a lot of library resources which require the university log on, but if they're resources that we've purchased only for individuals here to have access to and they have to use their medical center log on and it's very confusing having two different logins and we see a lot of problems with that.
- Speaker 5: [00:13:07](#) Okay.
- Speaker 2: [00:13:09](#) Unable to access content. Is that the normally reported problem? I'm trying to get somewhere and I logged in. I still can't see it.
- Speaker 6: [00:13:16](#) Um, no, it's more like people on the medical center side are unaware that they even have a login for **REMOVED** university that's different from the log in they use every day to get on computers. And so just that awareness you have to have of this second log online and you need to set up a password for it. It's very confusing.

- Speaker 2: [00:13:39](#) Do you have to integrate the two or has that been something you've approached?
- Speaker 6: [00:13:49](#) Little bit. Um, and I know you're going to ask this question later, but the university started looking at, um, open Athens, which they were kind of hoping would solve some of our problems down here, but it probably won't.
- Speaker 6: [00:14:05](#) I think there are some other problems going on there which we can talk about later. Um, but if the current way it's set up, we have two versions of EZproxy. So the university libraries, they have their EZproxy for all the resources they manage that are available to all of Penn state, which includes our medical center. And then for the resources that we have only available for the people here at the medical center, I manage a separate EZproxy and it's just the nature of it, which is two different [?]. And there's really no way to kind of fix that at the moment.
- Speaker 2: [00:14:44](#) I mentioned earlier that, you know, on campus from a hospital machine we have IP authentication and to be honest, you know, most people like that are happy with it. We do work very, very hard to get them to funnel through, um, the library site so that they're going to where we have access. So for example, um, you know, we'd rather than the LWW individual sites, um, our other two solutions, I already mentioned the open Athens and Citrix server that everybody hates have different issues. So Citrix server is its VPN solution and people really like the way it works except for one thing because we're a hospital and security is paramount. If you access via Citrix server and you attempt to download or print anything, it downloads to your hospital desktop or print to a hospital computer. So they're using Citrix in order to give them access from some other location but they can't get, they can only read on the screen and then, you know, they come to the office the next day and it's sitting there printing.
- Speaker 2: [00:16:16](#) **And the reason that it set up that way, it's to prevent people from printing patient information inappropriately and that escaping the hospital and that will never change that, you know, HIPAA to prevent identity theft. There's a lot of reasons that works that way and that is non-negotiable.** That's why we have Athens as an additional solution. Um, however, um, no one thinks Athens is not kludgy they do not like to use. It is a workflow that the user goes through to authenticate or what part of it. Yeah. You know, um, it's hard for them to understand moving from one resource to another and things like that. I mean they do like being able to then print at home or download something to their own device. They do not like that. It's an additional login and password and something that may be individual to here.
- Speaker 2: [00:17:28](#) But I suspect not, **we only have a couple of hundred Athens passwords. So we give it only to people who are really interested. And if they don't use it, we don't let them keep it. And that's because, I mean, not if they don't use it every day, but like two years go by and they haven't used it, we take it back so**

we don't have to purchase more passwords because in an institution this size, what it would cost us to have Athens for the entire institution is not something the library can do. We can just barely do what we're doing. Um, you're welcome.

Speaker 3: [00:18:18](#) Hi, it's Speaker 3. I used EZproxy in my previous position. It was easy for us because everybody was one hospital system and everybody had the same email domain. So when someone left the organization, their access was eliminated. So that made it easier. Here at this position, um, EZproxy is not an option since everyone in the entire system has the same domain. So, which is why Open Athens works for us the upside. The downside with Open Athens is that there's this account creation and a password and whatnot, as Speaker 2 was alluding to. It's another thing to remember, um, and again, you know, coming from taking on, inheriting open APIs and seeing what our account look like previously, there was an opportunity to kind of, to remind people that, hey, if you haven't used your account, we're going to delete it just to kind of just from our perspective or whether have, you know 20 active accounts, than 200 inactive ones. Open Athens is that they can create an account using their personal email account and not their hospital one.

Speaker 3: [00:19:31](#) **So it was something that I can make it easier for them because in some sense staff for the most part cannot access their work email from home. So if they want a password reset and the password reset instructions are sent to their, to their work account, they won't be able to get it until they come into work. And that's open Athens. So we welcomed the opportunity to give them the option of using a personal. But that also means extra work on the library staff to make sure that these people haven't left the hospital six months ago and they're accessing these resources pretty much for free.** So I don't think there's a cut and dry option, um, but I do remember from the EZproxy, um, experience that the accountability to **download documents was very, um, was very discouraging and frustrating. So basically we're telling our patrons you can look at the article but you can't but you can't do anything with.** It's like here's a cupcake but you can't eat it. So. And it goes back to, and it's a customer service issue too because you're trying to make it as easy for people to use their resources. And as we all know, if one patron gets mad, they tell 20 people if they they're received services, that's great. They'll tell no one. So I'm just trying to make it easy for the staff and for the patients as possible without losing our minds.

Speaker 2: [00:20:45](#) **I'm Speaker 2. I'm sorry, go ahead. I just want to say some of those issues that Speaker 3 mentioned are also true here with outside emails versus their email here. Physicians can access their hospital email from off campus via Citrix server. Most other people can't access it at all unless, unless, yeah, that becomes an issue also. Right?**

Speaker 4: [00:21:24](#) Did we get everyone?

- Speaker 5: [00:21:31](#) Um,
- Speaker 2: [00:21:32](#) okay. Oh, go ahead.
- Speaker 5: [00:21:38](#) Um,
- Speaker 4: [00:21:40](#) so I think we were asking what your issues problems are with your current access methods. I think many of you have already described those, but, uh, if there's any other issues or problems you have with your current access methods will take uh, a time here if you have anything else to describe.
- Speaker 6: [00:22:01](#) The **REMOVED** Medical Center is the difference between like a regular workstation and a clinical workstation, **so ours are locked down, our clinical workstations** so that if you're in the clinic, unless we white listed one of our, you know, thousands of resources that **REMOVED** they're not going to be able to get to anything on those clinical workstations. Um, so that's, that's **definitely a challenge because we obviously provide resources that are meant for the point of care.** Um, and they can't do certain things. Um, **but they do have the ability to embed some resources in the EMR.** We have done that with our resources. So
- Speaker 4: [00:22:54](#) any other comments on problems or issues? So switching topics just a little bit to the relationship you all have with your IT department.
- Speaker 2: [00:23:13](#) Um, and
- Speaker 4: [00:23:16](#) yeah, there's a, there's a combination of things when you talk about it because you have legal requirements and privacy requirements and everything. So I'm sure curious, uh, um, about your experiences with working on access issues with IT do you tend to partner with them or do you try to work it out yourself or is it a blend of those two things?
- Speaker 6: [00:23:43](#) Hi, Speaker 6. It's a blend.
- Speaker 3: [00:23:46](#) I try and troubleshoot as much as I can. Um, like I said earlier, I have to call in every uh, or email every ticket that we submit. I cannot speak to someone in person so they may have to make sure that whatever I communicate is um, as, as descriptive as possible, especially if I'm sending an email. So, um, because there are other libraries in my system who may have done the same steps that I need to take, it makes it a little easier. Um, so I've, you know, I've referenced that in some tickets that I've submitted. Um, **but getting back to the other white listing of websites, you know, making sure that the IP range is, is correct for our campus.** Um, it, it's not, the process doesn't take a long time. It's just the submission of the tickets and you know, you're looking at a, a massive call center for 11 campuses.

- Speaker 3: [00:24:41](#) It's not as if I've got someone from IT committed to my library you know, which I had in the past and I treasured that. I didn't realize how great I had it until I left. So I think because we're such a tech technology driven industry, it makes it a lot easier to get the answers that you need and there's a lot more people that have a working knowledge with, from my perspective here, they have a working knowledge of what our needs are and I've learned to also put it in plain language. That way they're not hearing the library, the library verbiage, IT is hearing the IT verbiage just to make it easier for everybody involved. You're welcome.
- Speaker 2: [00:25:27](#) Speaker 2. So hard a question to answer. We have things here changing fairly rapidly around here in terms of it because we've in recent years become a system and then become a bigger system and then a bigger system, um, at one point in time we had in house people here who we work very closely with who understood our needs. Um, many of them have left and our **help desk is a contracted out. They're not even hospital employees. They don't know nor care what our needs are** because we're such a small department compared to some of the other things they deal with. Um, sometimes if it's an issue of like an, some, IP address problem or something like that, we actually know the network people fairly well and if it's something that they can get away with taking care of without us putting in a ticket, they'll let us just call them and fix it for us.
- Speaker 2: [00:26:36](#) If it's a bigger thing and will take more time. They can't do that because that's a problem for them. Um, and what, what's happening now because things are so influx with the network. We have a new CIO, we have new VPs of IT. **Um, is that it's very, very difficult to figure out who you would go to and how to get something done that more than just a help this sets ticket kind of issue.** So for example, if we wanted to initiate some kind of **federated ID system, I'm not even sure how to do it, I would talk to and I need to work with something like that on and our priority would be extremely low, um, compared to all the clinical applications and financial applications could literally take a year to get done.** Okay.
- Speaker 6: [00:27:49](#) This is Speaker 6. I really just want to say Ditto to everything that Speaker 2 just said we should talk off offline. **REMOVED** is very similar. Um, I guess I would just add that because we had so little support from IT. Um, **several years ago I pretty much self-taught myself a lot of things about EZproxy, um, and we try to just do it ourselves as much as we can.**
- Speaker 2: [00:28:19](#) Thank you.
- Speaker 6: [00:28:22](#) So this is Speaker 6 at **REMOVED**, so you've kind of a mixed relationship with it. Um, **I think sometimes they make decisions and forget the multimillion dollar implications it has for the library,** but I think they're getting a little better at that. Um, so we do work with them in the respect that **we host our own version**

of EZproxy here. OCLC doesn't host it, so I'm with it to do that. Um, and they helped us when we need to set up the user text file for that. Um, we also were growing, um, so with IP authentication, I'm kind of the way it is now is when we take on a new entity. So we recently bought a hospital, um, but we're not giving them access to library resources unless they would pay for a portion of a portion of those library resources. So we need to figure out how to manage that with IP ranges.

- Speaker 6: [00:29:27](#) **We ended up splitting some IP ranges and excluding a range and putting that hospital on that excluded range so he had to work with it to figure out solutions for how to do that and how to do it moving forward as we add new hospitals and new sites.** Um, so, you know, doing this whole IP authentication, how do we make that work to exclude people, **so that's kind of how we solved that problem and we worked really closely with IT, um, to do that, but I think the bigger problem is when you get higher up to it and cybersecurity and identity management and some of the higher ups at the institution within those areas, um, and they're making really big decisions as far as identity management and things like that that have really big implications for us that I think we have yet to see how that's going to pan out** and how we're going to handle that. But I'm sure we'll be working with it a lot more to try and figure that out as the institution grows.
- Speaker 5: [00:30:30](#) Okay. Thank you.
- Speaker 4: [00:30:34](#) Did we get everyone okay? I'm sort of a related question. When there are discussions about identity management and the approaches of identity management, is the library involved in the higher level sort of planning and strategic discussions and many of your institutions?
- Speaker 2: [00:30:57](#) Yeah. This is Speaker 2 - **we were not only not involved in higher level, we're not involved at all.** It's another one of those issues where they don't think about the ramifications for other groups or departments until they break something and we complain.
- Speaker 5: [00:31:13](#) Okay. Anyone else?
- Speaker 2: [00:31:19](#) This is Speaker 2. We are also.
- Speaker 5: [00:31:22](#) Okay.
- Speaker 2: [00:31:24](#) Alright. I wish I had a different answer but I agree with everybody.
- Speaker 5: [00:31:28](#) Okay. Thank you. Okay.

- Speaker 4: [00:31:39](#) How many, I know, ask one other question before I turn it over to Catherine. How many of your IT departments are actually on your, uh, on the campus? Like in the building are very close to you.
- Speaker 5: [00:31:57](#) Go ahead.
- Speaker 6: [00:32:01](#) Oh, sorry. Go ahead.
- Speaker 2: [00:32:02](#) Uh, this is Speaker 2-- because we are a five hospital system and the major portion of it is offsite, although they do have some people on site here as well. Okay, thanks. That's the same at **REMOVED** state as well. This is Speaker 2. It's a hybrid here too, but I'm not sure how that, how that will change over time. We have a handful. **I'm using maybe four IT**
- Speaker 3: [00:32:40](#) **or five people on campus to address desktop issues.** Will laptop issues. Um, but every ticket has to go through the help desk first and then they're distributed accordingly. And I believe that's right, that's how it will be very welcome
- Speaker 6: [00:32:59](#) state again. Um, we do have an IT help desk right here in the library. I should add that. Um, so we do have an IT person here, but they're not, I guess I shouldn't say they're not really the decision makers. They're more just like the easy troubleshooting, you know, set up your email on your iPhone type of people, I'm sure.
- Speaker 5: [00:33:20](#) Okay.
- Speaker 4: [00:33:22](#) Do they have knowledge of library access issues or is it more the basic accounts sort of stuff?
- Speaker 6: [00:33:27](#) Uh, it's more basic accounts sort of stuff. So if it is about library, access to a library database, they'll just refer them to us. So. But again, they don't think they have a decision making, um, or anything like that. **And I don't think they're really aware of a lot of the library issues. They're more just here doing troubleshooting for people.**
- Speaker 5: [00:33:52](#) Okay.
- Speaker 4: [00:33:55](#) Any other comments?
- Speaker 5: [00:33:57](#) that.
- Speaker 4: [00:34:02](#) Okay, well thank you. Turn over to Catherine for her set of questions. So my first question is, I know some of you are using, what is your sort of understanding of using a federation for access?

- Speaker 6: [00:34:27](#) I'm sorry, my understanding is that um, these different publishers have to set up a relationship with open Athens in order for the authentication to their specific resources to work. This is Speaker 6. I can't honestly say that I'm very familiar with it. **We looked at open Athens way back when we first had this and we found EZproxy to be much simpler and less expensive.**
- Speaker 5: [00:35:11](#) Okay.
- Speaker 4: [00:35:16](#) Any other comments in general? Okay.
- Speaker 6: [00:35:25](#) You're probably going to ask questions about this, but my comment about this in particular when we were exploring that here, **the biggest problem that we saw was that a lot**
- Speaker 2: [00:35:38](#) **of the medical publishers, um, and in medical vendors, um, we're not part of Open Athens.** That was the biggest issue, um, on our end. So my next question is, what do you think or know about security issues with IP access versus single sign on? Um, versus direct sort of personal? Yeah. Or international usernames and passwords. I'm at the content provider site.
- Speaker 3: [00:36:23](#) Hi. For Our IP, we have, I have to make sure that the products that I licensed, um, our school says to our campus so that way other campuses don't receive access if they do not pay for the username and the password is, is it just a nuisance? I think in every aspect of our jobs these days. **So it's not like it's the only password that they have to remember. It's one of many. So which is why when we have Open Athens we give them the opportunity to create their own account. That way if they use the same password for everything, well more power to you.** I'm just, it's just one extra step, one less step we have to take. Um, but the testing everything out from, from my non computer is huge for us because that way if there's a problem we can troubleshoot it immediately as opposed to waiting until someone tries to access it on a Sunday. And then we come into work on Monday and we hear about it. So I hope that answers your question.
- Speaker 2: [00:37:31](#) This is Speaker 2, to be honest, I'm not 100 percent sure that I heard the whole question, **but one thing, um, about this idea of single sign on that I think I'm the other Speaker alluded to is that there won't be a single sign on because it's highly unlikely that our, IT departments in hospitals will allow people to use their network user IDs and passwords to access these outside applications. So it actually means them having, yes, a single sign on for all library resources, but that's not going to be the same as their network log in and password.** Any other thoughts on. So in terms of security, how would you rank the different types of, um, of access? Do you have a sense for that?
- Speaker 6: [00:38:54](#) **REMOVED** From my understanding, I'm not extremely sure. Um, and obviously the single sign on if it's supposed to be more secure, um, but I think the problem

with single sign on though that at least we would have here is I think just the identity management portion of it. So yes, we see how it will be more secure. We see like all the benefits it's supposed to have, but when you're looking at an organization like **REMOVED university** and now **REMOVED Hospital system**, it is **just the complexity of the system. We don't see how identity management is even close to being able to, to work on this project. It's very complex. A lot of decisions still need made that haven't been made and I think that's going to be the biggest problem moving forward is just identity management is not ready at some of these large university hospital systems.** It's just so complex and until everything is very clearly defined, making a move to yes, a more secure supposedly system, it's just going to be a mess.

Speaker 2: [00:40:12](#) What's sort of the origin of that sort of thing?

Speaker 6: [00:40:20](#) as far as identity management, I just think we're just growing so rapidly. Um, and you know, we have a lot of, you know, we have a university, we have the **REMOVED Medical Center** and we now have another hospital. We're now bringing on other clinics and these are decisions, a lot of decisions being made by others for identity management. They're all making decisions, but nothing's really concrete and until identity management is ready to make a move like that, it can't happen.

Speaker 2: [00:40:57](#) **People who don't work in these types of organizations really have no understanding of how complex they are and the one perfect example I can think of is oftentimes when we're going to license something will be asked if we're affiliated with a medical school and my answer sometimes will be. It depends what's your definition of affiliated and none of the people who are asking me that question can ever define it.** So that could at a hospital range from. There's three residents in one program at a hospital that only has one teaching program to a hospital and a medical school that are almost entirely. I'm totally overlapping and I'm owned by the same company and in between there's a thousand variations. Same thing with our network. We now have 13 or 14 hospitals in the network and some of them are connected it different corporate levels, so trying to write a license agreement is [difficult].

Speaker 2: [00:42:08](#) **Right now it is again, almost impossible because the legal people on the resource side don't understand why we're putting in language that says different things for different hospitals, so all of those things are also true of how people are connected to the network and to the institutions. There is not an understanding often times that a "voluntary attending" is not a hospital employee. You know, that's a huge issue that I have literally spent probably 100 hours trying to explain to people on the resource end. So all of those things really complicated identity management.** You know, you're talking about full time employees, you're talking about "voluntary attendings" that might have an administrative appointment, but that's part time. You're talking about voluntary attendings who have no financial relationship with the hospital. **You**

were talking about students from 20 schools, you're talking about residency programs that might be from multiple different medical schools.

- Speaker 5: [00:43:27](#) Hmm.
- Speaker 2: [00:43:34](#) Okay. That's very helpful. Alright, so it sounds like single sign on is one you are understanding is more secure, and IP is less secure. Any thoughts on direct personal passwords or institutional passwords and it sounds like you all use either IP or, or a single sign on. So.
- Speaker 5: [00:44:22](#) Okay.
- Speaker 2: [00:44:25](#) All right. So how, how does your hospital library staff gather usage statistics related to library resources. Are there gaps, certain strengths that you see in the usage statistics gathering now? Um, I see gaps or people who don't now I'm forgetting the standard. Sorry. Yes, thank you. You know, we have resources that don't use COUNTER and although we could discuss what's good about COUNTER and what isn't and the drawbacks and things like that at least COUNTER allows us to compare from one resource to another on some, you know, reasonably similar basis versus you know, certain resources that have their own scheme and we don't know how that compares.
- Speaker 5: [00:45:32](#) [inaudible]
- Speaker 2: [00:45:41](#) **are there certain sorts of reports that, you know, people in the executive level are asking for anything like that that doesn't get covered.** That's what you have right now. They always want benchmarking data, not so much a resource type data. What I find with you. Alright. Any other thoughts on gaps or strength? I agree with the comment about counter
- Speaker 3: [00:46:33](#) nice Speaker 2 I agree with the other Speaker regarding, um, the, the large onion gets peeled when it comes to securing a license. I don't think that from my perspective, the vendors have enough knowledge of each of their complete accounts and the people that are involved, to have to have the opportunity, I should say to use a librarian in who is on campus and who's not. **It's just, and it's not a dialogue from the vendors as well. So say, look, tell me about your campus. Tell me who's there, who's not there. So that makes it harder because we're taking time that only to explain this to, to, uh, to, uh, an industry where they should have some insight on this to begin with.** So we have to explain that to justify ourselves yet again. And then, you know, kind of alludes to always 100 hours of, I guess want to sign the contract and move on. Like I need to get this going before it's another three months and
- Speaker 6: [00:47:30](#) I'm not getting, you know, it's another, it's another obstacle. Hand. Okay. Thank you.

- Speaker 5: [00:47:39](#) Thank you.
- Speaker 2: [00:47:47](#) Any other thoughts? So I'm going to throw this in and just a little bit of a tangent, but in a lot of ways it's not. Um, and Michelle is aware of that. We recently signed a new license agreement. We have it in with your legal department, insisted that there'll be a clause in the contract about medical students only being able to use hospital resources for hospital work and that they had to use the medical school resources for medical school work. And it seems odd that an organization that's signing onto something like RA21, which is in theory going to give 24 /7 access to them to whatever resources that they can access. Basically saying, nope, they can't do that [inaudible]. There was no understanding and weeks of discussion of what I was trying to say and why it made no sense. **Um, and how the resources that we were licensing for the hospital were different from what they would need for their medical school work anyway.** Um, but again, it seems kind of odd that an organization is signing onto something **and then insisting that what it will enable is not allowed.** Interesting. Thank you for sharing that. It's infuriating. Tell you
- Speaker 6: [00:49:33](#) just like to add, **even if the students are using the hospital resources, they're still students still for education benefits to help learn about a patient's condition. They're still learning. So I don't understand that distinction. I just want to say that.**
- Speaker 2: [00:49:55](#) Okay. Yeah. I just, a couple other things that, you know, I think people mentioned, but just to make sure is **the issue of walkup users.** So a student who's on our campus for a couple of days and doesn't get a network log in or something like that. I'm the man power that it would take library staff to maintain some kind of federated system because it would not do it if it was a library specific thing. And again, there they're unlikely to allow us to use our network usernames and passwords for something like this. **Um, another thing that people may not be aware of is clinicians do not have a computer that they use all day. They might use a 100 different computers during the day, so that would mean they'd have to log in and out 100 times if they need something.** They don't know for sure how all of this would work through the EMR. It's not something I'm familiar with, but it's definitely an issue that we would need to deal with if they do ultimately have to log in and out all day long instead of just being able to sit down and access via IP. It's going to be lower, drastically lower our usage statistics and then our ability to renew things based on the cost
- Speaker 5: [00:51:31](#) [inaudible]
- Speaker 2: [00:51:35](#) I think that's everything.
- Speaker 6: [00:51:39](#) In the type of environment really that we are involved in, and the type of people and something as simple as getting to a page where they have to log-on and have one problem and I don't think people understand. Vendors understand

how much of a problem that is, and I mean the patron probably will just move on. You know, they're not going to take the time to figure out what the password was and this and that. They're just going to move on and not go in and figure out that type of environment that is. And people I don't think understand that.

Speaker 5: [00:52:13](#)

Right.

Speaker 2: [00:52:16](#)

Okay. Thank you. Right. We also wanted to know sort of what have you heard about RA21? Um, so far? Well, I was at um, Michelle and Jean's presentations at MLA. That's where I learned the most about it, um, to be honest, until I went to those presentations. Um, I had a lot more questions and a lot more objections. I'm at that. I think they cleared up some of them and I think that up until then there was an extraordinarily bad job of communications going on.

Speaker 2: [00:53:21](#)

What kinds of things in particular, just so people understand that I'm not blaming anybody. This happens here too. What ends up happening a lot is people who try to communicate these things are the people who know the most about it and they don't run those communications by people who don't know anything to see how it comes off and what's understood. So they think they're doing a great job communicating and it turns out that the people who are reading it or seeing it or hearing it, totally misunderstand it or have 100 questions or um, it doesn't address the real issues and that's what was happening until all of the crazy stuff on MEDLIB... and the presentations that MLA had helped clear it up

Speaker 5: [00:54:14](#)

Got It.

Speaker 2: [00:54:19](#)

Any other thoughts?

Speaker 3: [00:54:23](#)

Hi, SPEAKER 3. I also attended the presentation that Michelle and Jean gave at the Medical Library Association conference in Atlanta. So between that and what I read online, that was my only, um, education on the topic and I'm a, I'm a member of other organizations as well and I hadn't heard from them. I haven't heard as much as I had through the MLA outreach opportunities.

Speaker 5: [00:55:05](#)

Anybody else?

Speaker 2: [00:55:13](#)

Okay. Any other comments or anything that you'd like to,

Speaker 5: [00:55:18](#)

um,

Speaker 2: [00:55:20](#)

About RA21 other questions that we've had so far? Alright. Um, I'm going to turn this over to Michelle. She's going to talk a little bit about RA 21. That's all. I just want to thank Don and Catherine for the interviews and especially all of you, your voices, Speaker 1, Speaker 2, Speaker 3, Speaker 4. We're really, really

appreciated you sharing your frank comments, opinions, experiences, and all of the insight into the challenges and the very unique access landscape that you have for resources. Um, and I think I can agree with like everything everyone said and um, I really appreciate your time today. And

Speaker 1: [00:56:24](#) I guess my question is to you if you have questions or need more about RA21,

Speaker 2: [00:56:33](#) um,

Speaker 1: [00:56:34](#) if you want to let me know those now. If you want to email us afterwards, we'd certainly like to follow up with you. And what questions do you have for us? We may not be able to answer them now, but you know, maybe we can answer them later.

Speaker 2: [00:56:54](#) I don't know that I have a question. What I will say is that if you, mean the bigger group really wants this to work for us in our environment that **it is absolutely imperative that you get hospital IT people involved and understand the issues and introduce them to these ideas. Um, preferably through some kind of association or something like that so that news can get out and people know more about it or when it's introduced, it's going to be a nightmare, not just cybersecurity people, HR people. I think they all need to be a part of this discussion because it's so incredibly complex and it goes way beyond influenced that librarians haven't any of these institutions.** Good point. Good point. This is Speaker 2. I would agree with that and I would also say those of us in hospital libraries see this **current trend of hospitals buying each other up and becoming very large systems and becoming larger and larger and larger requires flexibility because it's an ever changing environment.** Yeah.

Speaker 1: [00:58:30](#) Any other questions for us or anything we can do for you at this point about RA21 or the focus group? I was also wondering if there was something you just wanted to say but we didn't have a question for it. If there's.

Speaker 5: [00:58:50](#) Yeah.

Speaker 1: [00:59:06](#) Okay. I'm trying to be neutral here and just take notes, but I will definitely say that the issue of talking to the IT industry through HIMSS the health information management system society is on my hit list, so never fear. We do hope to produce a summary, an aggregate of key points needs to accurately document your challenges and your recommendations. So I hope as we draft that we can share with you some of that for your input so that we're not misstating anything. So if any of you can do any of that when we're ready, that would be appreciated. And to also let you know that we're having more focus groups and we will be conducting a survey. So your focus group IS helping us with some of the questions that we're going to put in the survey of the hospital librarians. So we do see that survey, right? DON? It's getting done sometime over the winter. So those would be the other steps. So the three of us, Don, Catherine, and I, we

still have a lot more work to do and we help you. We, um, we hope that, um, you can continue to help us with your opinions and your voices because they're very valuable and your insights are, you know, definitely just what we need to hear. Thank you.

Speaker 4: [01:00:41](#) Thank you for participating. And I will say I've learned some good things and then new things from you all today.

Speaker 1: [01:00:53](#) Absolutely.

Speaker 5: [01:00:56](#) Okay.

Speaker 1: [01:00:57](#) I think it's fair to say that our organizations are participating in all of this. That doesn't mean that these organizations are necessarily moving forward with some of this. So don't mistake the committee work with what may or may not be going on within the institution as well. So I think it's fair to say that the conversations that need to happen with all of those people that you mentioned within and outside of our hospital are also those conversations still need to happen at each publisher and vendor site as well. So I don't think we're alone. I don't think the hospital libraries are alone. I think every organization has to have those larger conversations. Alright, well I'm going to say thank you. And everyone's got, you know, almost an hour back blocked off time. So you can have a party. Right. Thank you. Thank you very much everyone, and I'll send you a follow-up email, send the PowerPoint slide out again, and have a lovely weekend everyone. Thank you. Yeah. Okay.

APPENDIX D FOCUS GROUP TRANSCRIPT – NOVEMBER 14, 2019

STM RA21 Hospital Clinical Access Working Group – Transcript - Focus Group #2, November 14, 2019 for 74 minutes

Focus groups and comments presented here were edited for readability. Focus group transcripts were also edited to preserve respondents' anonymity.

- Speaker 1: [00:00:02](#) And your institution and, um, just a little bit about maybe why you like being a librarian. So I'm going to ask Speaker 1 to get started. Hi, I'm Speaker 1 from the medical college **REMOVED** libraries. Um, we, we are an academic medical center, **but there are two hospitals that we provide resources for** and um, I like being a librarian because I get to learn something every day. Cool. And I'm Speaker 2. I'm the manager of the **REMOVED** health system. I'm **REMOVED** Medical Library and in all honesty, I'm on a track to retirement and **REMOVED** being a solo librarian right now. Um, I need to learning about these things. Second, pass it onto my successor.
- Speaker 1: [00:01:02](#) Excellent. **REMOVED** and I had a remarkable career. Yes, wonderful to hear that. And Speaker 3, welcome. I'm Speaker 3. I'm the library director for the **REMOVED** health system. We have three facilities here in **REMOVED**. I have been here for decades. Actually won't tell you what decade I'm in right now, but I'm. Michelle does know what that is. Um, I have had a fabulous career here, very well supported many years by both my administrations. And we're up to the fifth administration now and other medical staff, and I always say to people is, um, every day is different, so when you walk in the door, you never know what the task is going today. And it really keeps us sharp and passionate. I'm very fortunate.
- Speaker 1: [00:01:55](#) Well, we're very fortunate you joined us and is there anyone else that was able to join the call today who have not? I heard. Hi. I don't. Can you hear me? Yes, yes, go. Okay. Can't seem to get the WebEx to work with. So my name is Speaker 4 I'm library assistant at university hospitals of **REMOVED** and we actually have a health system. **We're the library for, believe it or not, I'm 12, 12 hospitals.** Um, and there's actually 10 of them are fully integrated into our system right now and we're going to be adding two more over the next year. So we have about 24,000 users technically who could access our resources. So it's kind of terrifying most of the time, but that's what we're dealing with. I've been here 22 years. So through all the changes you could join me now. Anyone
- Speaker 2: [00:03:00](#) else done? I just wondered what,
- Speaker 3: [00:03:03](#) so that person could repeat that it got jumbled on my phone. **Speaker 4** Thank you.

- Speaker 2: [00:03:13](#) Okay, you're welcome. Thank you for joining as well, Speaker 4. And is there anyone else that has joined the group that we did not hear from Don? Going to turn it over to you?
- Speaker 3: [00:03:30](#) So starting with the first set of questions, trying to get some context of usage and so on at your particular institution. Um, so I guess the first question is really a broad based question, which is how does your hospital staff access library resources today? And given that you have a pretty complex environment, this question is always interesting to me. So feel free to take a minute or two to describe the INS and outs of that type of access. Could you repeat the question? Sure. Access library resources today. What methods and tools and processes?
- Speaker 2: [00:04:19](#) do you want to just jump in? Are you going to call on? People can jump in. This is, this is Speaker 2. Um, so our library, uh, again we're in, we're an academic medical center, so our hospital staff, they have the same opportunity to log into the resources on campus which is IP authentication or if they are off campus they can use our proxy server and we do use EZproxy if they are going through EZproxy. Um, there's two different. We have two different authentication systems, so the medical college of **REMOVED** Hospital and children's hospital are all separate institutions, **but they're all provided resources by our library. So they are separate institutions. They have separate it departments and they have separate identity management systems.** So we have EZproxy authenticated for Medical College of people through an active directory, but we can't get that. The authentication of resources, I guess I don't know what you want to call it, you know, **we would not be able to access the active directory from the hospitals.**
- Speaker 2: [00:05:42](#) **They would never let us do that. So hospital staff, if they want access to the resources when they are not at work, then they um, they can get an account through the library.** We use WMS, OCLC, WMS. Hi Don, we have, yeah, we will set them up with an account and then they can authenticate using Shibboleth with WMS. So we basically have two ways that you can get in and when you get to our proxy server login page, if your medical college, **REMOVED**, you log in on the left side, if you're anybody else, you log in on the right side. So, um, but primarily what we find is that um, the hospital users pretty much or are using IP authentication, **I don't even think that a lot of them really know that they can get the resources from off campus and that's a problem.** Um, it is possible also that there may be people in [some institutions] that can get in through, through something like Citrix. **So if their IT departments allow them remote access to their desktops, for instance, or they allowed that would enable them to access the resources. But we are not really aware of what the hospitals are doing and we don't really know what the rules are as far as can nurses get that?** Probably not. You know who, who can all get that. But those are the methods that they could get to the resources.
- Speaker 2: [00:07:19](#) The next person. I'll go. Can you hear me okay?

- Speaker 4: [00:07:26](#) Okay. So this is Speaker 4 from the university hospitals of **REMOVED**. Um, so we have, like I said, we have 12 hospitals, um, and [many] people. But the main hospital is here in **REMOVED** and then the people can, some people can use university resources, but most of them can't. And that's a separate system, a separate network. **So we just, we basically pretend it doesn't exist most of the time because most people here can't use it. Only the doctors can.** And that's only if they go through some elaborate VPN thing because we're on a separate network. So basically everything here on the network is IP access. **And so people just sit down and they can access everything we have with all they have to do is log into the network.** But I'm very concerned about losing that seamlessness while they're here. **Our off site, they have to use either VDI or My App, which is a Citrix.**
- Speaker 4: [00:08:36](#) And if, if they're using one of those, the hospital IT department is happy because they're all, the whole network is secure and they can't do anything that would compromise patient data because that's the main focus of the IT department here is not having problems with patient data being spread outside the system. Right? **Right there sitting there on their home computer with VDI or My App, they can download the articles, they can actually save it to their computer. They have to like save it to their P drive on the hospital network and then email it to themselves.** So this cuts down on usage a lot. Um, I think, yeah, so there's a few people have VPN, but most of them just do to VDI or the, My Apps and some of them are happy with it. **And we also have, we have ClinicalKey and AccessMedicine and have it and sit on all those have offsite logins so people can go into it, the one that they use a lot and get their things that way.**
- Speaker 4: [00:09:46](#) Then they're not on the VDI. So there they can save things or whatever. **But it's kind of a mishmash of what they have to remember to do when they want something,** but we do the best we can. And, and again, there's, **there's so many people that I, we don't have any way to keep track of everybody.** So the idea of having to like have a, have user ID and stuff that we have to control in the library is, is kind of overwhelming because there's only three of us. So yeah. Okay. So that's, that's our situation.
- Speaker 1: [00:10:26](#) Thank you.
- Speaker 4: [00:10:28](#) Well,
- Speaker 1: [00:10:32](#) I'll jump in. So our situation here at **REMOVED** is similar to how Speaker 4 just described it. **People can have access, uh, seamlessly when they're in the house regardless of where that is and where our, uh, where, where they are on campus at all our campuses, however, remotely they need to use Citrix and they have to have it downloaded onto their device in order to use it.** And that's become a little bit easier to get access to. Years ago it wasn't, but we are flushing out needs, people's needs, nursing, other healthcare professionals, people going into school. **Our IT department does try to help with that, but**

again, I wouldn't say it's seamless. Um, and we also have their own sign on for **REMOVED**, for example, in AccessMedicine, same kind of thing as Speaker 4 said. So the situation here is very similar. **People try to access while they're here because it's so easy, is no thought involved.** They just have to sit down, go right to our web or webpage and get access to library resources. Um, but just has worked for us and as I said, it has become a little easier to gain access remotely to our site [?through it for our ?]

Speaker 1: [00:11:56](#) Okay. This is Speaker 1 in **REMOVED**, so, so we provide resources statewide as **REMOVED**, has hospitals and clinics on all of the major **REMOVED**, and even on the smaller ones and it has not been a problem or an issue at all for, on campus. Um, serious IP access and EZproxy for remote access. Another method of access is for those who have permission, they could log into or access the **REMOVED**, remote access log in and then once they're in it, it is as if there are on campus. So that's basically it. Um, our IT department is very supportive. We're actually outside of the hospital firewall, at least one the primary layers and it's because we provide access to the public. So, um, so the library pretty much, um, manages its platforms, access to me, sources and the only support it provides. For example, if we need to upgrade EZproxy configure, EZproxy, but other than that, the library managers and everything. Did I answer the question?

Speaker 2: [00:13:22](#) Yes. That's very good. I appreciate all the answers then. **No, just the four of you answering that already demonstrates the variety, the way things work across institutions.** The second question is sort of a, uh, put your thinking cap on sort of question. If you could have, how would you, how would you define a[n] ideal access for your library system and staff? Is it similar to what you have today? Or if you could do a few things to change it, what would make it ideal?

Speaker 1: [00:14:02](#) This is Speaker 1.

Speaker 2: [00:14:03](#) When you say, are you saying from the user's perspective or how we'd like the libraries access. Well that's great. Great. Then, you know, maybe a, a little bit of both. Maybe talking now from both perspectives. Okay. Well certainly the, the users, they've actually elucidated this **in a visioning program that we had, they want seamless access to the resources. They find it very frustrating that, you know, like they have their phones and there's so much nowadays no one really knows who they are, but yet when they go to the library resources they have to authenticate in.** And so there's, there's, you know, a lot of frustration on the part of the users that why, why do I need to log in again, this thing knows who I am, but you know, it's not exactly how, you know, it doesn't really work like that.

Speaker 2: [00:15:04](#) They're, they're looking at security systems that we have and things, you know, the security system knows that I'm am **REMOVED**, person, so why doesn't. It just led me into those resources and of course it doesn't work like that. So they want things that are more seamless. That's, that's for sure. **From the library's**

perspective. Ideally we want a system that will give us the granular data that we need. The big thing that we are lacking is information about who's using which resources. So because it's largely IP authentication and we cannot really get at the data about what, what the person, you know, who the person is on whichever IP number it is. We can't figure out who's using what. And that is a big deal for us. We've been asked for this information many, many times. Um, we're actually working on something right now that I believe is going to have an impact on some financial implications that financial basically that see they're trying to base it on who's using the library resources. And of course we get really great data. We can try to analyze our proxy server logs are EZproxy server logs, but we believe that data is skewed because of the fact that some of the accesses is IP controlled, some of it is through Citrix. And so we believe that who's using EZproxy is not a good sample representation of our entire usage. Um, so that's, that's a big thing for us.

- Speaker 2: [00:17:02](#) When you say [ideal access] we are challenged. I think it is. I think a lot of it, um, you know, I actually think of IP authentication is very seamless because they don't even have to use our discovery tools. They don't have to come through the library, they can find something through Google, they can get a link in an email and if you're on campus and you go to this, you're just, you're going to get to this stuff and they don't know that they're using the library, which is another challenge for us because they don't understand that they're using the library even though they are. Um, but that certainly is very seamless for them. It's when they're not that it's not seamless. Um, yeah.
- Speaker 1: [00:17:54](#) But then with the usage statistics at the individual level, or is it more at a department level about who's using what type of resources?
- Speaker 2: [00:18:05](#) **An individual level that we need, we literally need to know, we don't really care about the person's name, what we really care about is their status** in some respects. There have been times through the years where we've been asked for information about departments and I believe the way that that information was intended to be used as they wanted to bill back to departments, **they wanted to figure out a way to say, well, you know, this is a centrally funded a resource we're going to have to tax the departments and how are we going to decide that? But for the most part they want to know is it faculty using this? Is it Grad students? Is that staff, is it postdocs? That's what they want to know. Thank primarily status.** Okay, thank you.
- Speaker 1: [00:19:03](#) Okay, this is Speaker 1. And how do we actually do not receive any complaints about having just two requirements to log in for remote access and it's explained to them and it's basically it is what it is and be accepted. Um, the issue we have really is that EZproxy, um, because of the limited staffing, um, you don't really have the time to have mandatory resources oversee it, um, as we should. And what happens is as you can see, the standards always meet the vision. Um, or you know, I don't understand a lot of it, but, um, that is an issue

that we have to go in and play with the configuration. So the answer to that is probably hosted EZproxy. But um, otherwise, um, we're doing well here.

Speaker 2: [00:20:00](#) Thank you. I'm just going to go ahead. Sure. **Okay. So, um, as far as ideal access, I guess we would like it to be like it is when they're sitting here. Like the first person whose name I forgot because I'm good at names.** When they're here, like she was saying, they don't have, some of them, have even any idea what they're actually using, our resources because they just go to google or something and they find the article and it opens up from jamming and you know, sometimes they think ?gm is for you, whatever, but it would be great. **It would be great if when they were home they could just log in without having**

Speaker 4: [00:20:48](#) **to, to have some special software that limited them to being inside our network that allowed them to sign in to some, to some place that would authenticate them basically and not require them to be on our network.** Exactly. But it, it would work like VIP access. That would be my ideal vision. I know people come to us and they say, well this isn't like where I was before I was at a university and everything just works. Well first of all, we don't have subscriptions to everything but. So we tried but allow them the same access as far as us on the librarian. It would be very nice if we knew how many people were like from different areas of like different hospitals. At least we're using our resources. **We're all on the same network and so we can't even really tell who is using our resources at different hospitals.** We just know, you know, x number of people use *New England Journal of Medicine* this month, but we don't know even from where. So that's a problem. We would like to remedy

Speaker 1: [00:22:11](#) patty from **REMOVED**, I would say that most of the employees here would like to have one sign on to all the systems that they need to access. For example, not even talking about clinical resources or clinical systems at this point, but more like our health stream, which is our online learning system. **PAYSTUB information which is another system with another ID and password are policy medical, which is our policy and procedures. All of these things have their own, their own ID and password and I would think that most employees would like to have a single sign on for all of these resources and to access. And I agree, we don't get really complaints because people just accept the situation when they're remote and they try to get access to Citrix and they do the best they can with that.** Um, but I think that would be what I would like to see both from our point of view here in the library and our user's point of view. Um, and I've not asked for statistics at all. We used to be years ago, but in this current administration we're not, but I would have to say **I would like to see also a little bit more in depth numbers of who's using what.**

Speaker 3: [00:23:30](#) Okay. A couple of follow-up questions for you. Considering any sort of consolidation or single sign on system, is that something you've heard or are they, is that something you've heard?

- Speaker 1: [00:23:44](#) Yes, it is something I've
- Speaker 2: [00:23:46](#) heard. However, we just had rolled out our new Cerner [EHR] product, so that's where we're concerned with right now. And that's probably going to be at least another year. But the sign on, yes, that has come up in the, um, in like list of projects. Okay.
- Speaker 3: [00:24:11](#) Either status or organization level statistics.
- Speaker 1: [00:24:15](#) Um, I really don't, I don't need anything right now and like I forget who said too about, um, you know, **they just click and they don't realize where they're getting it, that we're spending thousands of dollars so they can have access to REMOVED, for the *New England Journal of Medicine*.** We get those numbers obviously from **REMOVED**, and the companies. Um, but I think it would help in planning and collection development to have the detail. Again, I don't need to in the individual, **it would just be what the broad, uh, work that they do here. Nursing and attending physicians, residents, students.** That would be helpful.
- Speaker 3: [00:24:55](#) Okay. We talked a little bit already, but if you would like to name couple issues or problems because we've heard a few of those already, but if you wanted to name a couple issues or problems and then sort of a follow on, I'm curious on how uh, how close and how um, uh, how, how close do you work with your it organization? How well do they know the problems specific to, uh, access to this type of content?
- Speaker 2: [00:25:34](#) Hi, this is Speaker 2. I'm so, yeah, I did already talk about some of the problems that we have who's using what issue is a, is a big problem for us because it just keeps coming up over and over and over again. Uh, but, but um, you know, I also feel that I have problems with the management of the resources and I'm not sure how. I'm not sure how this would be in the world in that it's very difficult for us to maintain the records of what we have access to. Um, you know, electronic resources are kind of a moving target. And I'll give you an example. We have one vendor that we have our holdings. Theoretically they come from the vendor, they go directly into our knowledge base and we don't even, we shouldn't even have to do anything with it, but there's a, there's a particular journal and important journal that just kind of dropped off the list.
- Speaker 2: [00:26:41](#) We have access it, but it's not in the holdings anymore. And users can get back to the journal because we have IP authentication. The vendor is, they have, we have the normal [journal] or whatever the indicator is, but it's not in the holdings anymore. And so that is a problem. And the reason why I bring this up in the context of this discussion is because if you don't have the IP authentication that I don't understand necessarily how, um, you know, what happens when you have those problems with your records, what happens? Because you know, the EZproxy world, it's somewhat helpful in that you authenticate, you put in a stanza that's kind of general for a publisher, but you

don't have a proxied link unless you've got that information in your system someplace. People have to take a proxy link. They don't just log into EZproxy and then get complete IP authentication. You have to have a Proxy link and I don't really. **Yeah, I don't understand how if we go to something like RA21, what happens if you don't have your electronic resource records? If you don't have your knowledge base up to date, then can your users get things? I don't understand that. I consider that to be a problem.**

Speaker 1: [00:28:32](#) Hi. Okay. So, you know, we're not actually very concerned about usage stats and where the users are coming from and who they are. Um, because basically our collection decisions are based upon number one, the publisher vendor you said stats which reflect how much resources you use and the collection is based upon supporting the specialties as opposed to, um, usage. So I'm not very complicated here. Um, the complicated aspect of providing and managing accesses. For example, we use, we use ProQuest and the find it very cumbersome, um, our EZproxy link is embedded into our, into our library profile, so it's automatic so we don't need to worry about that, but you know, it's, you know, things change and you don't know whether it's at the end of the EZproxy. And so, um, **maintenance and troubleshooting can be very complicated and I wish that could be made a whole lot more seamless.**

Speaker 1: [00:29:45](#) Okay. Thank you. I just have something to add about it. This is Speaker 1. Our [exec], thank goodness, is very supportive with the library. We've been very fortunate with our CIO, um, over the years, our CIO is over the years, however, we feel like we have a fairly aggressive tech security software in place right now and it has changed over time, but that can be a problem because we'll try to get to a journal, fine, we have no issue and then all of a sudden we get stopped and that we really have great customer service here and we try our hardest to get the person what they need immediately without having them to wait. But sometimes I do have to call the help desk. It helped us to get that opened up again. I do know this, the IT security person in it and sometimes they just call him directly or send the information that we need to have it fixed by him directly. But I wish that could be a little bit [better]. That's like a wish list of mine on my wish list. You have a good relationship with it. There's some areas that can be polished up. This is what you're saying.

Speaker 4: [00:30:54](#) Um, I have some, um, uh, this is Speaker 4 from **REMOVED**, . Um, I have some issues too. Um, one is that, you know, there's **like a money issue, always been libraries. Um, for instance, we don't really use anything else. We don't use EZproxy, we don't use Athens or anything else.** We have an intranet and then we have our journals and a very nice list that, that we can update ourselves that it has made for us and um, but we don't have any other interface for our journals. So we have to. People need to go to our internal page to find the [list] or else we have link out in PubMed, but if it wasn't IP access also we have a catalog, the online catalog from Cyber Tools and the links are in there as well. Um, but without the IP access is if the link wasn't there, people aren't going

through one of our methods of access, which we try to get them to use that they don't always use, um, if they're just using Google or something and, and IP access wasn't in place. Again, it's like, um, I think it was Speaker 1 or Speaker 2 was saying, I don't know how they would, it would get to it. And so that's a concern and then **we don't really have a lot of extra money to be buying something new that we need to have in order to interface with RA21.** So

Speaker 1: [00:32:37](#) got issues potentially with

Speaker 2: [00:32:41](#) your users would discover and access content, do the way, especially external users. Right. Um, and then, uh, then the **money issue**, which is certainly when you talk about econ[omy and] content, that definitely comes up. Right. Okay. That's good. Thank you. Are there any other comments or along those lines that are around problems, access, dreams have access, uh, uh, and uh, the way you work with your IT department? The IT department. Um, so, so again, **we're basically providing library resources and services for three different institutions, all of whom have their own it departments and in the, um, the, you know, academic institution, we have a very good relationship with the IT department. Um, the hospitals, it's not so much because of someone else had had talked about the purpose for the departments in the hospitals is very different.** Um, they're pretty much there for, you know, for basically for HIPAA reasons.

Speaker 2: [00:33:59](#) They're there for the EHR and they don't care so much about the rest of that. So what I find about the hospitals is that like the resources not necessarily even work all the time in the hospitals because of the way the, you know, **the library vendors, they're very up to date. Um, you know, they've changed their platforms to the point where you cannot use an outdated browser to access them and the hospitals are not necessarily doing that because they're going to keep, they're going to keep all of their client computers dumbed down to whatever is needed for the electronic health record And if you can't upgrade to the new version, the new edition of, of Internet Explorer, that's too bad. They don't care. It only matters if you can access the EHR.** And so that's, it's very difficult sometimes working with the IT departments in the hospital. Okay. And, and try to summarize the three it organizations they ever worked together on particular initiatives or they really completely separate.

Speaker 2: [00:35:17](#) They do communicate with one another. Not probably not as much all three together, but like the adult care hospital will communicate with the school, so medical college and then the children's hospital will communicate with the medical college, maybe not all three because the adult care hospital in the pediatric hospital might not have as much to do with one another, so they do and um, but it's not always that effective. For example, up to us a few years back the children's hospital, the pediatric hospital intended to change their IP ranges and this was something that they did communicate to the other departments, but they communicated in a very low level. So of course we didn't

hear about it even though we have a good relationship with the medical college of **REMOVED**, it [another] department and somebody there knew about it, the people that knew about it didn't know enough that that was going to have a big impact on library resources.

Speaker 2: [00:36:29](#) So the day that they changed the IP numbers, all of a sudden the calls start rolling in from the hospital. We can't get, we can't get to that. What's going on? And we figured out they changed their IP numbers, then all of a sudden it's been around to contact the vendors to say, update the IPs on the system for our, our account. Um, and that's, **that's a good example of something where, yeah, they communicated with one another but it didn't filter through to the people who needed to know about it. And the people that knew about it didn't have an understanding of what that really meant. You know, when we, when we call them up and said, hey, you should have told us that. They said, well, you got all this stuff hosted right here on campus. And we're like, no, it's not. How can you think of journal articles and databases? They [think] the [resources] are all here on campus.** Yeah, right. You know? Yeah. That, that's a situation where a big huge change had a big impact on the library and theoretical, the RA21 world. Something like that wouldn't happen to you.

Speaker 2: [00:37:45](#) Um, do any of the other people on the call have the same issue as mentioned here about browsers or other technologies being out of date for content says, hi, this is Speaker 2. I'm here. We don't **because I have managed to have the library identified as on mission critical to the health system. So therefore there's a very immediate response to any request** unless it's something that, you know, it's not, um, it's not an immediate need for users. So we have a very good relationship. Well in, yeah, in, in **REMOVED, we actually had that same thing happen where I am at and one day nothing and it**

Speaker 4: [00:38:35](#) **turned out because they changed the IP address for the firewall and nobody thought to tell the library.** And so that was a couple of days. Um, but yeah, um, and we, **we did have issues for a while with, they wouldn't get rid of Internet Explorer, I think it was eight or seven because of a legacy software that had to do with, with patient related things. And we're still on Windows Seven,** but it's working okay. Because we have, we have Internet explorer 11 at least now, right?

Speaker 1: [00:39:18](#) **Again, not that I need, I'm not adding anything, I'm just saying I've had both those situations happened to us here,** but the IP addresses that was a new manager in it that I hadn't met yet. **[They] had no idea about the library unfortunately. And then we'll also with Chrome versus Internet Explorer, we've had that.** We've been pretty good with it recently. I wouldn't say it's going to happen again maybe sometime in the future, but right now we're better. Let's say that other questions. Alright. **So I'm sort of wanted to get a feel for what your understanding is of using federation for access.**

- Speaker 4: [00:40:16](#) **When you say federation, you mean federated identity?**
- Speaker 1: [00:40:21](#) Right. So, you know, sort of the basic structure, you know, how open um, Shibboleth and those sorts of um, Federation's work. This is Speaker 1 and that's going to say **we did look into Open Athens. We're not sure what we're doing with that, but we have looked into what we thought it might be a solution for us, but right now it's tabled.**
- Speaker 4: [00:40:53](#) Okay. Thank you. **Started to look into the solutions to and we weren't sure that they would fly with our cybersecurity department.**
- Speaker 1: [00:41:02](#) **Then we would have to have a separate login, some that we couldn't maintain, pressed the issue of cost.** And so as soon as I learned how costly it would be over EZproxy, then all of that was not even considered.
- Speaker 4: [00:41:24](#) **Yeah. Yeah. It's cost and also I'm really, I'm not entirely sure how it all would work, but I'm pretty sure that our it department would not like everybody's user name and password for the REMOVED, network here to be also stored elsewhere** because it's also have everybody gets into the EMR and um, so it's really probabl[amatic]. **I haven't asked them, but I'm pretty sure they're going to be kind of upset if the idea of the whole copy of everything is somewhere else.** How does that makes sense? But
- Speaker 2: [00:42:16](#) **questions of security, of cost ...**
- Speaker 5: [00:42:22](#) Yeah.
- Speaker 2: [00:42:24](#) Just basically how does it work in general. Right. Okay. Any other comments **that we can't afford to license it for everybody that used to access library resources in our system.**
- Speaker 5: [00:42:40](#) Got It.
- Speaker 2: [00:42:41](#) Okay. Can I interrupt for a second because I heard a ding? Did someone else join the call? I just wanted to welcome you and get your name. Was there as there anyone new on the call that didn't announce their name?
- I'm Speaker X I had to come late.** Okay. Who is that now? Speaker X? Yeah, that's okay Speaker X you're from **REMOVED**, Well, welcome. We're in the second half of the questions. We're being recorded but it's just for transcription purposes. We will delete that later and we're glad to have you on board. And I'm going to turn this back over to Catherine. She's asking questions and we're just getting your opinions. So thank you for joining. The question is about accessing. I use live links but just for journals for offsite access. Uh, it's not tied to anything.

- Speaker 5: [00:43:45](#) Okay. Thank you.
- Speaker 2: [00:43:48](#) This is Speaker 2. I'm so, yeah, we've, we've kind of looked at LibLynx links a little bit, but I think um, where we kind of are right now is what we don't understand is a, how it can be used as a hybrid situation because the on campus IP authentication is, is still somewhat valued probably by our users. **That's challenging for us because again, we can't get at that user specific data that we need.** Um, but yet, you know, LibLynx is something that, that, uh, LibLynx or opening up a system like that is something that we, we are kind of kicking around. **We to also have that same concern. I mean it's a huge amount of money compared to something like EZproxy.** And I think, um, I think one of the questions we have about it is whether or not, I mean on one hand it might be better for us as far as like statistics purposes and we'd have less, less headaches and less time.
- Speaker 2: [00:44:59](#) I think I was trying to analyze statistics out of one of those systems rather than trying to pull out EZproxy logs and deal with those, but we got to wonder whether or not the management of identities is something that we would then be paying for on the front end because once again, I think that we would have no problem with working with our **REMOVED IT** department for to get something sent, some kind of hooked up with active directory with, um, with this department, but the hospital departments I dealt that we would ever be able to get access to their identity management system, so we would **probably have to have another kind of situation where the library would have to manage the identities of anybody that would want to be able to access resources when they're there going to use something like Lib Lynx.**
- Speaker 2: [00:45:58](#) **I'm glad you mentioned the hospital identity management system. Do your hospitals have a single sign on service that they used for other applications?**
- I think that they do, but I'm not even sure. Okay. The hospitals probably do. I was just going to say our issue is even our librarians in the hospitals, they are not hospital employees. They work for the academic, they worked for medical college **REMOVED**, so we're not privy to everything that goes on in the hospitals despite the fact that we've got somebody to sit there [in the hospital] and they're there to serve the people in the hospitals, so that's somewhat challenging for us. Got It.
- Anyone else? Have you ever talked to the IT department about single sign on, like accessing things through that? Have they responded, you know, have they responded if you have?
- I don't think we've talked to them about single sign on. Yeah, if you're talking about, have **we talked to them about something like open access links to the answer's no there and we asked about it and if there was anything we could hook**

- Speaker 1: [00:47:30](#) **into and there's not, but I know there's a single sign on for some of us have limited number of programs that we use or employee**
- Speaker 5: [00:47:39](#) purpose.
- Speaker 1: [00:47:44](#) Anyone else? Alright. So my next question is, what do you think or know of security issues with the different types of access of authentication that we have in place? Um, you know, the authentic security issues with IP versus a federation verses directly username and Password, um, and that sort of thing.
- Speaker 2: [00:48:15](#) So security wise, um, I know that they can do things like spoof IP numbers. I'm not really sure that [was] our problem in the past, our problem with something like hacking has been basically people getting a hold of a password for either an active directory password or the password that we have given for them to authenticate through our other system. I'm getting ahold of that. So it's um, **so then they have some evil entity out there, has access to EZproxy then can get into our resources. That's really the problem that we've had in the past and we think that we might have it somewhat lifted, at least in that we've kind of raised or lowered the bar I guess on how much people can download before they get cut off from using EZproxy.** That's the biggest security problem that we've had with library resources in the past. Um, I don't think I'm real familiar with any other security issues. I'm sure there are, but I don't know about them.
- Speaker 1: [00:49:27](#) Hi, this is Speaker 1 again. I did mention about the security of our software and having to talk to my friend about it about some of the websites, but the other thing I know is uh, we cannot. **Sometimes our students from various universities cannot access their own email addresses from the hospital and that can be an issue because we'll send articles to them to their eyes, their university email addresses and they can't access them.** So as soon as anyone comes on the campus here in the hospital, they do get a **REMOVED** email address, but as you can imagine, most of us do manage more than one email address and you sort of have a favorite. Um, and a lot of times it is the university email. So that has been frustrating for our users. **This is, and I would say HIPAA. Um, there's for that same reason, we'll certain emails or blogs, resources are blocked. A local email that's not an institutional email has been blocked. I'm downloading, certain sites have been blocked. I'm downloading even our own some sites I have to ask it again, download for me. So, um, yeah, there's a lot of things. Yeah. And closed off it just goes, they're being that cautious.**
- Speaker 1: [00:51:07](#) Hi. He, I know it sounds like it's very simplistic here in **REMOVED** but I think the reason the library just not experienced any issues because we have our own server and as I mentioned really outside of the **REMOVED** network. So therefore our access is controlled by the library, does not impact, it, does not require access, um, through the firewall. So regarding HIPAA and all that, we are not a threat at all. So I think this is why it works well here. It's just to me it has, um,

designed how and where the library would operate and provide access to resources. Right. Any other comments on that question?

Okay. Next question is, how does your library, your library staff gather and use you should statistics related to the library resources and then what gaps and strengths do you see in your current usage statistics?

Um, portal access easily for some journals like *New England Journal of Medicine*, are easy to get, like for consortium based statistics, but other journals it's, it's hard to find on their website where to find it, how to get to it and how to access it. So sometimes I don't get that for every single journal.

Speaker 5: [00:53:07](#)

So

Speaker 1: [00:53:14](#)

this is Speaker 1 **REMOVED**. Um, so we have a number of packages which gives us pretty nice statistics like the ? and ClinicalKey and have it.

Speaker 4: [00:53:26](#)

Um, but for the individual journals, some of them do have very nice statistics. Some of them are good, like trying to figure out what they've changed this year so I had to get into it, but eventually we do find a number and we basically only look at the, the um, article access because we don't really have a way to compare anything else. Um, and some things presently high usage and some things is disappointing and we have to cut something seems like every year. So that's it. Basically,

Speaker 2: [00:54:06](#)

I can't really offer anything with the statistics. This is Speaker 2 at **REMOVED**. We're pretty good with what we have. We probably could always use additional numbers, but right now we're not really asked for anything specific numbers.

Speaker 2: [00:54:22](#)

So this is Speaker 2 at the **REMOVED** college in **REMOVED**. We, we were trying to use a couple of different products for **gathering Sushi data. Um, that isn't going real well. None of them seem to do it real well. Um, so for a lot of it we're still relying on the old, you've got to log in and download the stats that you want and analyze them by hand. Um, so we certainly, uh, would value getting something better than that. The big challenge I've already said, which is, you know, they don't just want to know how many times it's used, they want to know who's using it, the library.** And you know, what's on time. I have like four staff of course, because of budget space eliminated staffing, but um, we used to collect usage data on a monthly basis and it was such a tedious and labor intensive task because we don't have anything to manage or you know, our data. **So being alone, I don't gather today and basically if you need them I'll ask for a favor from my account rep to send the stuff to me.** Thank you. Anyone else?

Speaker 2: [00:56:11](#)

Okay. Right. Um, next question is, what have you heard about RA21 news, rumors, positive and negative, uh, any,

- Speaker 4: [00:56:24](#) um,
- Speaker 2: [00:56:32](#) what I heard, and I don't know if this true of all it is, it sounds like each user would have to have maintained their own username and password, each journal which sounds like a nightmare. So. Well, what I heard was
- Speaker 4: [00:56:53](#) that, and what I heard, you know, rumors thing, um, that **basically if RA21 came into being, you both would no longer have seamless access from inside the hospital. They would have to log in that it wouldn't be a log in for each journal per se. Like they could use the same log in and maybe it would be the same as their hospital log in, but they'd have to log in each time.** Like if they sat down and they went to any journal they'd have to log in and then they went to JAMA they'd have to log in. It would be the same username and password that they constantly be logging in. Or maybe if there was some way a browser remembered their information, they would be able to, login that session and it would be recognized, **but if they went through a different computer, they wouldn't have the cookies that they got from that first session. And so Doctor [inaudible] and constantly from one computer to another throughout their day in the hospital. And so as far as we're concerned, it sounds like some kind of nightmare** where people are going to be constantly complaining about how they no longer can use resources without logging in constantly. And they'll be mad at us. So library because they understand that something else happened, then it's not our fault.
- Speaker 4: [00:58:17](#) That's what I heard.
- Speaker 2: [00:58:21](#) No logging in from on campus. Um, information to, and we were worried about that for the clinicians, how that might impact their work.
- Speaker 5: [00:58:30](#) Hello.
- Speaker 2: [00:58:35](#) So I've, I've, I brought up pages about RA21 to read about it. Um, and I don't understand anything yet, I guess you know, the alarming kind of rumor mill kind of things that I've heard is that, um, that somehow or another people would have to do like what they're doing with dark line. You have to have a Gmail account, you have to have a Google account in order to authenticate and um, that's a problem for hospitals because um, everybody can't log into Google when they're in their hospital. That's, that's kind of what I've heard. I don't know that. I believe that that's what I've heard.
- Speaker 1: [00:59:23](#) It will be a user nightmare to maintain logins for each publisher vendor. Really difficult to explain to them why this change has happened.
- Speaker 5: [00:59:43](#) Got It.

- Speaker 1: [00:59:50](#) There's no other comments on that question. I'm going to hand it over to Michelle. Thank you, Katherine.
- I can't thank you enough for your candor and your comments and your insights and I can tell you it's been incredibly valuable. And, you had shared some new information we had not heard before and some of what you're saying validates what we've heard elsewhere. So I think it's very useful for us and we really do appreciate your time and I just want to assure everyone that all the crazy rumors that you've heard about RA21 that's all wrong. We can be safe and say that having to have separate credentials for each publisher-- that's not anticipated. So that one I can say is not a true statement. It is on the publisher to make implementation easier. Um, so that the purpose. The user does not have to keep logging in again and they wouldn't need an email account or anything like that.
- Speaker 1: [01:01:17](#) So, you know, it remains to be seen when RA2 goes to the NISO process. But Federated identity management access is really widely embraced in many other countries. The US is probably the country that's farthest behind. I think that's probably why people are so unfamiliar with it and why the rumors are flying all over the place.
- What I was going to ask you is if you needed anything about RA21 and it seems that perhaps at the very least I can send you a link to a video that would simulate a part of how the RA21 process would work. So that you could get a better idea about it. I certainly don't expect you to read the technical specs and you know, all those reports, we don't have a lot of time to be reading extra reports. So, um, is there anything else that might help you, that I can offer, send you as a follow-up for the focus group about RA21?
- Speaker 2: [01:02:23](#) Um, well maybe can we ask a question? Sure. Of what you understand. One of the questions I have about this is what happens to the walk in users?
- I understand that the RA21 could work as a hybrid along with IP authentication, so assuming that IP authentication would be out and you're doing authentication solely on the person, how do you deal with walk-in users, whereas is the thing of the past and you're, you know, we can't invite patients to come into the hospital and use the resources to be quite frank.
- RA21 has not really dealt with the walk-in user. We do know for libraries, you know, that's part of their mission, many of them to serve the public in that capacity and we do understand that each institution has a different way of dealing with walk-in users especially in the hospital environment. Often the library computers for walk-ins are off the network entirely, that kind of thing. I think it's fair to say it Don, there's no RA21 recommendations so far for walk-in users?

- Speaker 3: [01:03:37](#) We know it's an issue that we have to solve, but we don't have an approach yet.
- Speaker 2: [01:03:44](#) Not at all. Yeah. And, um, if anything, we just heard a presentation by one of the NIH librarians last week and that was acknowledged. So, you know, we're not speaking out of turn here. Did you have any questions?
- Speaker 3: [01:04:07](#) The one other thought is that IP will be around for quite a while and yeah, certainly the walk-in users. Seamlessness of on campus access will take a while to get the user interfaces done for RA21 and for people to get comfortable with that type of access. So I anticipated a lot of learning, a lot of tweaking things as we go forward for some time here.
- Speaker 2: [01:04:50](#) It sounds like there needs to be some sort of education or some sort of more learning tools to be provided? Would that be a fair statement? Yeah. Yes. Okay. I definitely think that, I mean what, what my library is currently talking about, what we should be moving towards something like Open Athens, LibLynx and moving away from something like EZproxy. I don't know, maybe this is something I can ask here -- is do you think EZproxy and that type of access will actually go away on its own? I think it will.
- Speaker 3: [01:05:43](#) Yeah. I don't know who's talking about how many years are left on it [EZproxy] I don't think it's going to be around for another 20 years. I'm pretty sure that I wrote IP and EZproxy and other services that provide access... But for the variety of ways to support the evolving technology that will come out, I'm sure there will be a service called EZproxy for RA21 at that point.
- Speaker 2: [01:06:37](#) Gotcha. We've heard that before. **There's a cost issue with some of that and certainly a lot of you identified that as well. So that was the other thing I was aware of. We were talking about single sign on and hospitals** may have that for some of their systems, for some clinicians.
- Do any of you have proximity badges or anything like that with single sign on to make it easier?**
- Yes. Yes. You do. At the new sign-on with our new Cerner system. This is Speaker 1 at REMOVED. Yes there are. And they have included some of that.** I've got hardware in the library for the library's computers and we're right next to the on call rooms for the residents and they've done the same with the computers and these rooms.
- You don't have the proximity badges for your library resources? No. No.**
- Speaker 5: [01:07:36](#) Okay.
- Speaker 2: [01:07:39](#) I have a couple of questions **So, um, one thing this idea of cost and one of the problems we run into is because we have 12 sites, everybody wants to charge**

us by site and, and also there's a lot of like a health centers that aren't hospitals and they include those in their list and then the price just goes so high for everything when really there's a lot of the same people are going around from place to place like there at one hospital to another hospital another day. And

Speaker 4: [01:08:15](#) **so anything that involves costs we, we wish it was by person or by user. And then anything that involves like library staff time to set up IDs is, is going to be excruciating because we don't have any time now. So that's something that I wish you guys would keep in mind. Um, and then could you explain, I mean, you mentioned people all over the world use federated IDs in the US backwards, but what, what do you mean by Federated Id?** Exactly. Can you explain that a little more? I am going to punt to Don and Catherine. I'm not the technologist and I don't want to misspeak

Speaker 3: [01:09:09](#) Federated ID, our user IDs that are in, uh, a local list of identities like a, like a hospital or a university, and then those, that, a set of identities are in are called an "identity provider." Those are the information about where the identity providers are in an identity federation, how various publishers, for example in this context can register with that federation and then understand how to make the whole single sign on connection work. So it's sort of a fabric between identity providers, like universities, hospitals, healthcare systems and service providers like publishers and other internal providers. So maybe our PeopleSoft system participates. So essentially it is a way to have a consistent approach to how information about how to access these various systems can be done in a trustworthy manner. Um, most countries, in fact, the US has to have an Identity Federation for academic institutions, but I don't think the healthcare side least in the US has much involvement with that yet.

Speaker 3: [01:10:38](#) I can't speak to European countries about whether or not healthcare providers are inter-related with the federations that exist, like in UK, the UK access federation, but, um, I know that many or most the European countries, there's a higher percentage of academic institutions that are involved with federated identity, partially because they have funding from the government and when you get that funding that way the government also specifies some stricter standards, but how you would authenticate and it allows them to have more consistent approaches.

In the US, of course, it's not that way directly, especially the healthcare industry. Uh, you know, it amazes me every time we do one of these sessions because everyone's a little different. **There's a student who could be at an academic institution, there could be multiple hospitals that could be more academic institutions or it could be all sorts of combinations. And so your worlds are even more complex than a classical academic institutions. And so there's some other types of technology and trust hurdles. So they have to be sort of talked**

through it all. It really could work well. Sorry, sort of a long answer to a short question. Yeah.

Speaker 1: [01:12:02](#) Here in the US, it is called InCommon, if you want to look at them online that might help you. That's the name and it, it's really a trust relationship between the vendors, providers, and um, the federation and your then joining that federation and, and they're doing most of the heavy lifting for you. So you wouldn't have to. We're talking about maintaining use. Right, right.

I just don't feel like the hospital IT departments are going to be interested in sharing ideas that we've heard here. Comments about needing some input from the IT industry in the healthcare side of this. Certainly scholarly is, but not anything else, their focus is HIPAA, EHRs you know.

Speaker 1: [01:13:16](#) **Yeah. That's, I think that's the other leg of the stool of this issue and not getting fined by the government.** Yeah, yeah, exactly.

Did you have any other questions or thoughts that you wanted to share with us for the focus group? Everybody gets to voice their opinion. Everyone's good. Okay.

Then I'm going to say thank you to Katherine and Don and I'm going to say thank you to Speaker 1, Speaker 2, Speaker 3, Speaker 4, Speaker 5, Speaker 6. We really, really appreciate your time and I'll send a follow-up Email with some links. Yes you have any thoughts later as you're thinking about this or comments, don't hesitate to email us. We'd certainly like to

Speaker 2: [01:14:12](#) hear from you at any time and we really appreciate all the effort that you put into this today. Thank you. Thank you so much.

APPENDIX E SURVEY QUESTIONNAIRE**2019 Survey of Hospital/System Librarians Regarding Hospital/Clinical Access and RA21**

This survey is intended to study the opinions and knowledge of librarians about authentication and access of licensed library resources in hospitals, health systems and institutions providing patient care. All data will be reported in aggregate and individuals and institutions will NOT be identified. This information will inform a report of the STM RA21 Hospital/Clinical Access Working Group and the STM/NISO RA21 Outreach Committee. For questions please email: michelle.brewer@wolterskluwer.com

We will raffle off four \$50 American Express gift certificates as a way of thanking you for your assistance. We will hold the random drawing at the conclusion of this survey, February 22, 2019.

Sincerely,

STM RA21 Hospital/Clinical Access Working Group

Michelle Volesko Brewer and Catherine Dixon, Wolters Kluwer

Don Hamparian, OCLC

1. How does your clinical staff access library resources currently from “on-site at your institution”? (check all that apply)

- OpenAthens
- SSO Single Sign-on
- Shibboleth
- IP Authentication
- IP Authentication /w proxy server
- Username/ password
- Multifactor (MFA)
- Biometrics
- SSO RF/Proximity Card, Smart Card
- Other SSO, please specify
- Other, please specify: _____

2. How does your clinical staff access library resources REMOTELY “off-site from your institution”? (check all that apply)

- VPN
- Citrix
- OpenAthens
- SSO Single Sign-on
- Shibboleth
- IP Authentication /with proxy server
- Username/ password
- No off site access allowed
- Multifactor (MFA)
- Biometrics
- SSO RF/Proximity Card, Smart Card
- Other: please specify: _____

3. If you could change anything about your current authentication system, would you? (check one)

- Yes
- No
- Not sure

Please explain: _____

4. **What is your 'ideal access' for your library users *on-campus*?**

- Please describe:

5. **What is your 'ideal access' for your library users *off-campus*?**

- Please describe:

6. **Which of the following best describe any issues you have with your current access methods? (Check all that apply)**

- No issues (skip to question 7)
- Yes, When IP address of institution changes, I must notify many vendors to make the necessary changes
- Yes, if there is a violation (or perceived violation), access to ALL the resources by the vendor is shut off for all users.
- Yes, Access to library resources are only available in the library computers
- Yes, Public access to library resources (for patients and families) is difficult to provide because of hospital security requirements
- Yes, Different organizations/hospitals/schools within my institution require my users to have different access methods
- Yes, There are too many usernames and passwords for my users to remember
- Yes, Other, please describe: _____

7. **Please rate your working relationship with your hospital (and or clinic or system) IT department? (check one)**

- Easy working relationship
- Difficult working relationship
- No working relationship
- Neither easy or difficult

8. **Which of the following best describe the challenges. Please identify any challenges in your working relationship with your hospital (and or clinic or system) IT department? (check all that apply)**

- No challenges (skip to question 9)
- We have our own library IT and do not work much with the hospital and/or system IT department
- IT physically in a different location than the library
- IT ignores the library
- Library is low priority for IT
- IT is changing organizationally and/or merging multiple IT departments and that poses challenges
- IT doesn't understand the library resources – does not categorize the severity of access issues
- IT doesn't understand the library resources - how the library works and supports these resources/clinical users
- IT doesn't understand the library's clinical resources – why the library works and supports these resources/clinical users
- IT has a complicated request process for library to get help from them
- IT doesn't prioritize building relationships with the library
- IT doesn't take library into account in strategic planning for SSO or other technology changes
- IT only helps the library if we provide cookies
- Other, please describe: _____

- 9. Please rate your understanding of “Identity Management Federations” used to access licensed library resources? (check one)**
- Yes, I understand “Identity Management Federations”
 - No, I do not understand “Identity Management Federations”
 - I’ve never heard of “Identity Management Federations”
- 10. Does your hospital use single-sign on (SSO) for *clinical or operational systems* in the institution? (check one)**
- Yes
 - No
 - Unknown
- 11. Has your hospital considered single-sign on (SSO) for clinical access to *library* resources? (check one)**
- Unknown
 - Not considered
 - Yes, but have not implemented access to library resources yet
 - Yes, and planning to implement access to library resources in future
 - Yes, considered and determined NOT to implement for library resources
 - May consider in the future
- 12. If you are not using single-sign on, what are the reasons for not implementing single-sign on (SSO) for clinical access to library resources? (check all the apply)**
- Library SSO is not a priority to the IT department
 - Cost of single sign on SSO is not budgeted or too expensive to implement
 - Time, or resources to implement are currently unavailable
 - IT department has not offered single-sign on for library resources
 - IT and or hospital system is currently reorganizing and it is not a priority
 - Other, please specify: _____
 - Unknown reasons for not using SSO
- 13. What is your opinion about the security of single sign-(SSO) on versus IP authentication? (check all that apply)**
- IP authentication is more secure
 - IP authentication is more privacy preserving
 - Single-sign on is more secure
 - Single-sign on is more privacy preserving
 - Neither single sign-on (SSO) or IP authentication is secure
 - Unknown
- 14. How do you analyze usage of your library resources? (check all that apply)**
- COUNTER reports from publishers
 - Statistics from institution network devices
 - Statistics from proxy server
 - Other methods, please specify: _____
 - We don’t analyze usage of library resources
 - Unknown
- 15. What is your opinion about RA21? (check all that apply)**
- RA21 will improve access to library resources
 - RA21 will NOT improve access to library resources

- I have heard about RA21, but do not know enough about it to have an opinion
- RA21 will create more secure access to library resources
- RA21 will never work in hospital environment

16. **Optional: Please provide any other comments about RA21 and hospital/clinical access that you feel are important to inform the RA21 Hospital/Clinical Access Working Group:**

Demographic questions:

17. **How long have you worked in a hospital library? (check one)**

- Less than 5 years
- 5 to 10 years
- Greater than 10 years

18. **What region are you located? (check one)**

- United States
- Canada
- United Kingdom
- Europe
- Asia Pacific
- South or Central America
- Africa
- Middle-East
- Other, please specify _____

19. **What is the general type of institution where you work? (check one)**

- Hospital, not in a system
- Hospital, part of a health system
- Medical or healthcare Clinic
- College or university library providing licensed resources to clinicians working in a provider institution (hospital, health system, clinic)
- Other, please specify: -----

20. **What is the type of ownership of the institution where you work? (check one)**

- Government owned or controlled (state, province, national or federal)
- Non-governmental
- Unknown
- Other, please specify: _____

21. **Optional: Please provide your name, email, telephone and institution to be entered into the drawing for . You must complete the entire survey to be eligible.**

Name:

Email:

Institution:

Thank you