Evidence Based Library and Information Practice

Federal Library Utilization of LibGuides to Disseminate COVID-19 Information

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Résumé de l'article

Objective – In winter 2019-2020, the world saw the emergence of coronavirus disease (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). More than a year later, the pandemic continues with the U.S. death toll surpassing 550,000. Over the last decade, librarians have increased their roles in infectious disease outbreak response. However, no existing literature exists on use of the widely-used library content management platform, LibGuides, to respond to infectious disease outbreaks. This research explores how Federal Libraries use LibGuides to distribute COVID-19 information throughout the ongoing COVID-19 pandemic.

Methods – Survey questions were created and peer-reviewed by colleagues. Survey questions first screened for participant eligibility and collected broad demographic information to assist in identifying duplicate responses from individual libraries, then examined the creation, curation, and maintenance of COVID-19 LibGuides. The survey was hosted in Max.gov, a Federal Government data collection and analysis tool. Invitations to participate in the survey were sent via email to colleagues and listservs and posted to personal social media accounts. The survey was made publicly available for three weeks. Collected data were exported into Excel to clean, quantify, and visualize results. Long form answers were manually reviewed and tagged thematically.

Results – Of the 78 eligible respondents, 42% (n = 33) reported that their library uses LibGuides to disseminate COVID-19 information; 45% of these respondents said they spent 10+ hours creating their COVID-19 LibGuide, and 60% of respondents spent <1 hour a week on maintenance and updates. Most LibGuides were created in early spring 2020 as the U.S. first saw an uptick in COVID-19 cases. For marketing purposes, respondents reported using web/internal announcements (75%) and email (50%) most frequently. All respondents reported inclusion of U.S. Government resources in their COVID-19 LibGuides, and a majority also included guidelines, international websites, and databases to inform their user communities.

Conclusion – Some Federal Libraries use LibGuides as a tool to share critical information, including as a tool for emergency response. Results show libraries tend to start from scratch and share the same resources, duplicating efforts. To improve efficiency in LibGuide curation and use of library staff time, one solution to consider is the creation of a LibGuides template that any Federal Library can use to quickly set up and adapt an emergency response LibGuide specifically for their users. Additionally, findings show that libraries are uncertain of archiving and preservation plans for their guides post-pandemic, suggesting a need for recommended best practices.

Evidence Based Library and Information Practice

Research Article

Federal Library Utilization of LibGuides to Disseminate COVID-19 Information

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Abstract

Objective – In winter 2019-2020, the world saw the emergence of coronavirus disease (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). More than a year later, the pandemic continues with the U.S. death toll surpassing 550,000. Over the last decade, librarians have increased their roles in infectious disease outbreak response. However, no existing literature exists on use of the widely-used library content management platform, LibGuides, to respond to infectious disease outbreaks. This research explores how Federal Libraries use LibGuides to distribute COVID-19 information throughout the ongoing COVID-19 pandemic.

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Conclusion – Some Federal Libraries use LibGuides as a tool to share critical information, including as a tool for emergency response. Results show libraries tend to start from scratch and share the same resources, duplicating efforts. To improve efficiency in LibGuide curation and use of library staff time, one solution to consider is the creation of a LibGuides template that any Federal Library can use to quickly set up and adapt an emergency response LibGuide specifically for their users. Additionally, findings show that libraries are uncertain of archiving and preservation plans for their guides post-pandemic, suggesting a need for recommended best practices.

Introduction

In the winter of 2019-2020, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) emerged, creating a new strain of coronavirus disease (COVID-19) (WHO, 2020). People infected with COVID-19 present varying symptoms and degrees of severity; common characteristics include coughing, difficulty breathing, fever, and loss of taste or smell (CDC, 2020a). COVID-19's rapid global spread and severity in impacted populations led the World Health Organization (WHO) to declare the first pandemic caused by

a coronavirus on March 11, 2020 (Adhanom Ghebreyesus, 2020). Early official reports of COVID-19 cases in the United States emerged in January 2020, and cases have exceeded 32.5 million as of May 12, 2021 (CDC, 2020b; Stein, 2020). Following examples set from previous management of respiratory disease outbreaks, such as Middle East respiratory syndrome (MERS, 2012) and severe acute respiratory syndrome (SARS, 2003), public health officials recommended frequent handwashing and avoiding close contact with infected individuals to reduce transmission rates (Lai et al., 2020). In the U.S., the Centers for Disease Control and Prevention (CDC) provided further guidance to slow virus transmission by limiting mass gatherings, closing schools and non-essential businesses, issuing stay-at-home orders, and wearing cloth face coverings in public areas (Schuchat, 2020). As COVID-19 cases continue in the U.S., mitigation and monitoring strategies remain priorities for many Government and public health professionals.

Literature Review

Over the last decade, libraries have increased their roles in infectious disease outbreak response. During the 2014-2016 Ebola outbreak, librarians were involved with providing information and website support to affected African countries (Jackson, 2014; Landgraf, 2014). At the U.S. Federal level, the Disaster Information Management Research Center (DIMRC) at the National Library of Medicine (NLM) created a special health topic page, "Ebola Outbreak 2014: Information Resources" (Love et al., 2015). DIMRC also curated pages for pandemic influenza, Zika, and the 2018 Ebola outbreak. Through the Medical Library Association (MLA), librarians can earn a Disaster Information Specialization, which provides knowledge of disaster preparedness and response structure at varying levels of Government and prepares them to assist in the response of various disasters, including infectious disease outbreaks (MLA). There is no existing literature focused on the use of the widely-used library content management and curation platform, LibGuides, to respond to information needs during infectious disease outbreaks. However, during the current COVID-19 pandemic, Springshare, the creator of LibGuides, highlighted several examples of COVID-19 specialty pages on their blog (Creech, 2020; Talia, 2020). A recently published paper examines the roles librarians fill in response to COVID-19 and determined there are three dimensions of librarian support: to promote consumer level information for preventive measures, support researchers and/or faculty in their varying needs, and maintain core-needs of patrons (Ali & Gatiti, 2020). LibGuides is an acceptable platform to meet these objectives.

LibGuides is an annually licensed product designed specifically for libraries. The purchased system serves as the primary web presence basis for many libraries, helping library staff curate knowledge, share information, and organize subject specific resources (Springshare, 2020b). As of May 2021, LibGuides were employed at 6,100 institutions across 82 countries, with nearly 800,000 guides created by more than 130,000 library staff (Springshare, 2021). Springshare is unable to provide a complete list or data regarding Federal Library customers (Ware, 2021). The platform is known for its ease of use and navigation, as well as its reusability for resources. It is mobile-optimized and available without institutional log-in. It provides automatic link checking and easily captures usage statistics for entire LibGuides or individual pages (Leibiger & Aldrich, 2013). Because of its ease of set-up and external access, libraries that use LibGuides can quickly add or pivot content to meet user demands without relying on intranet administrators, therefore removing lengthy wait times. However, some barriers may exist to those acquiring LibGuides, such as budget constraints, staffing, or IT concerns surrounding security.

The LibGuides Community allows for libraries to choose to share all or part of their guides for other libraries to reuse. Customizing a reused guide will not affect the original guide. When a library chooses to use this function, the original guide owner will be notified. Best practices call for obtaining permission

before copying a guide (Springshare 2020a). The system allows for private and hidden pages, which many use for content pages under development, or those with more sensitive information not intended for public audiences. Customization is important as it allows libraries to highlight licensed resources accessible to their patron base.

Aims

Multiple U.S. Federal Libraries utilize LibGuides, many of which are publicly available. With this in mind, we set out to understand how Federal Libraries use LibGuides to distribute COVID-19 information throughout the course of the pandemic. The decision to restrict the scope of research to Federal Libraries was inspired by the literature gap in Federal Library response to the COVID-19 pandemic. Currently published literature regarding library response to the pandemic was heavily focused on public and academic library response. Similarly, a gap in the literature exists with regards to Federal Library utilization of LibGuides. Due to security, some Federal Libraries must create and maintain their LibGuides privately to protect their organizational mission. Surveying this niche population begins a conversation surrounding which types of Federal Libraries utilize this tool. Learning more about the creation, curation, and maintenance of COVID-19 LibGuides will shed light on response effort capabilities within Federal Libraries and help determine future best practices for streamlining the urgent information-sharing process, should there be future pandemics or other emergencies.

Methods

Survey Design

In this qualitative study, we selected a written survey method for assessing the Federal Library sample population on their practices in utilizing LibGuides for distribution of COVID-19 information. Surveys are common in library research, and for our purposes, were utilized for conveniently and safely obtaining information from a sizable, wide-spread sample of Federal Libraries amid a global pandemic. They are especially useful in eliciting information about attitudes that "are otherwise difficult to measure using observational techniques" (Glasow, 2005). Survey questions were designed based on research objectives and demographic information of interest. The final survey included 20 questions. Two questions screened for participant eligibility for the study, and three questions collected broad demographic information used to identify duplicate responses from individual libraries. The remaining questions focused on the creation, curation and design, and engagement and preservation of COVID-related LibGuides in Federal Libraries. These topics were selected to obtain a comprehensive overview of the continuum of LibGuide activities related to the pandemic. Questions were externally reviewed by colleagues and key stakeholders and revised based on feedback. The survey was submitted for creation to MAX.gov, a Federal Government data collection and analysis tool, for hosting. MAX.gov administrators created the survey and made revisions before survey dissemination. MAX Survey allows for conditional logic and used a generic survey link. Survey questions can be viewed in Appendix A.

Survey Distribution

The written survey was distributed electronically. Email, forums, and social media were used to solicit responses from Federal librarians. Emails or forum posts were sent to Federal librarian groups, such as FEDLIB, a listserv moderated by the Library of Congress, and other Federal librarianship interest groups within national library associations, including the Medical Library Association, Special Libraries Association, and the American Library Association. These groups are commonly used to connect with

Federal librarians and are heavily utilized to recruit voluntary survey participants. The authors' personal social media accounts on Facebook and Twitter were also used to invite participants. Posts used the following hashtags to promote the study: #medlibs, #librarytwitter, #covidlibrary, #librarians, #LibGuides, and #federallibraries.

The initial timeframe for responses was two weeks, beginning September 23, 2020, and was extended an additional week until October 16, 2020. Three rounds of reminders were engaged to elicit voluntary survey participants.

At the beginning of the survey, respondents were asked a screener question gauging if they were a federal librarian. If they responded no, the survey would automatically end.

Data Collection, Cleaning, and Analysis

Survey responses were collected online and data was stored securely through Max.gov's MAX Survey. Survey results were exported in XLSX format view using MAX Analytics.

Results data were de-identified, cleaned, quantified, and visualized using Excel. Long form answers were manually reviewed and tagged based on consistent themes that appeared in responses; we reviewed these themes as a group. Themes are further explained in the Results and Discussion. The data that support the findings of this study are openly available in Open Source Framework (OSF) at https://doi.org/10.17605/OSF.IO/SWF34 (Clarke, Han, & Shohfi, 2021).

Results

Use and Creation

The survey had 96 library respondents. Eighteen respondents (19%) were immediately screened out for eligibility, as they selected that they did not work in a Federal Library. Based on the broad demographic responses provided, we did not identify a single library as having multiple staff respondents. Of the remaining 78 respondents, 33 (42%) reported that their library uses LibGuides. One-third (n=11) of respondents reporting LibGuide use had publicly viewable LibGuide pages, 7 (21%) had LibGuides set to private access, and 2 (6%) had a mix of both private and public pages.

When surveyed if their library utilized LibGuides to disseminate COVID-19 information, 20 (61%) respondents utilizing LibGuides stated yes, 12 (36%) stated no, and one was unsure. Ten respondents explained with free text why their institutions did not share COVID-19 information in their LibGuides. Of these, 80% of the respondents elucidated that this information was out of scope for their library's services, or the duty belonged to another department within their agency. The remaining respondents could not share COVID-19 information due to logistical reasons including staffing constraints.

Thirteen respondents had primary responsibility over their library's COVID-19 LibGuide page(s), while five shared responsibility. 2 respondents did not have responsibility over their library's COVID-19 LibGuide page(s) but were able to provide details about what their guides contained.
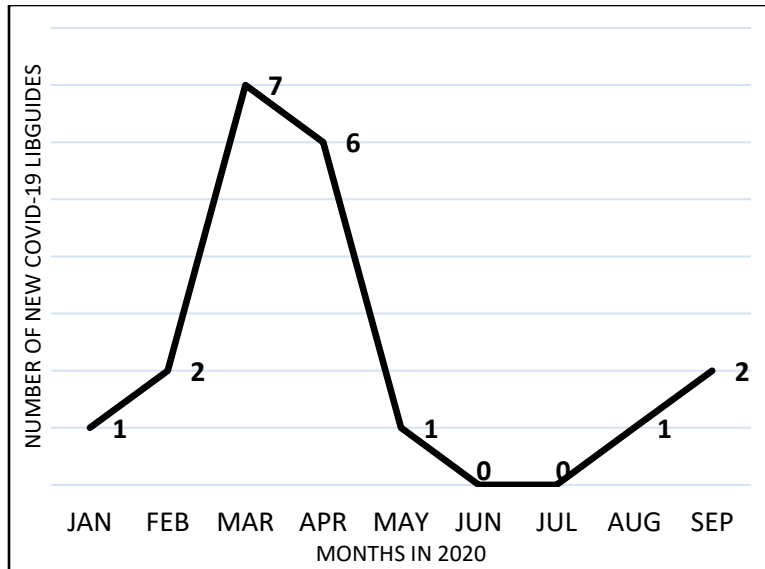
Figure 1
Months which respondents reported creation of their COVID-19 LibGuides in Federal Libraries.
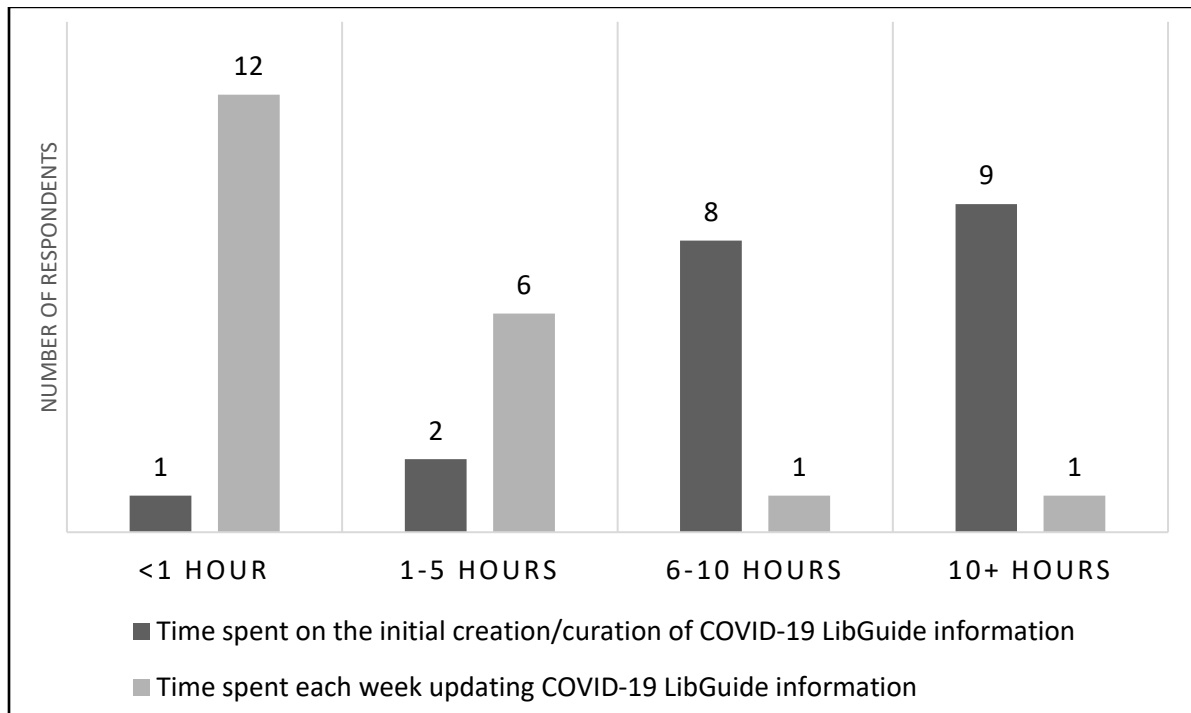

Figure 2
Reported time spent on initial content curation and ongoing weekly maintenance.

According to responses, the earliest Federal COVID-19 LibGuide was created in January 2020 (Figure 1). 7 COVID-19 LibGuides were created in March 2020, making it the most popular month for creation. COVID-19 LibGuides creation continued during data collection for this study, which began in September 2020.

The estimated initial time spent on the creation/curation of COVID-19 LibGuide information varied amongst respondents (Figure 2). While one respondent spent under an hour and two spent 1-5 hours on initial LibGuide creation, the majority of respondents spent either 6-10 hours (40%) or more than ten hours (45%). After the initial set-up and curation of resources, respondents reported less time investment engaging in weekly updates and maintenance. Twelve respondents estimated they spent under an hour each week updating COVID-19 LibGuide information, and six respondents spent an estimate of 1-5 hours. One respondent spent between 6-10 hours, and one respondent spent over ten hours.

Respondents using LibGuides had varied audiences for COVID-19 information. The number of respondents who selected specific audiences (count and %) are represented in Table 1. Respondents were able to select more than one audience type for their COVID-19 LibGuide while responding to this question on the survey. Responses indicated many had overlapping or multiple audiences.

Table 1
Intended Audiences for COVID-19 LibGuides as Selected by Respondents (N = 20)

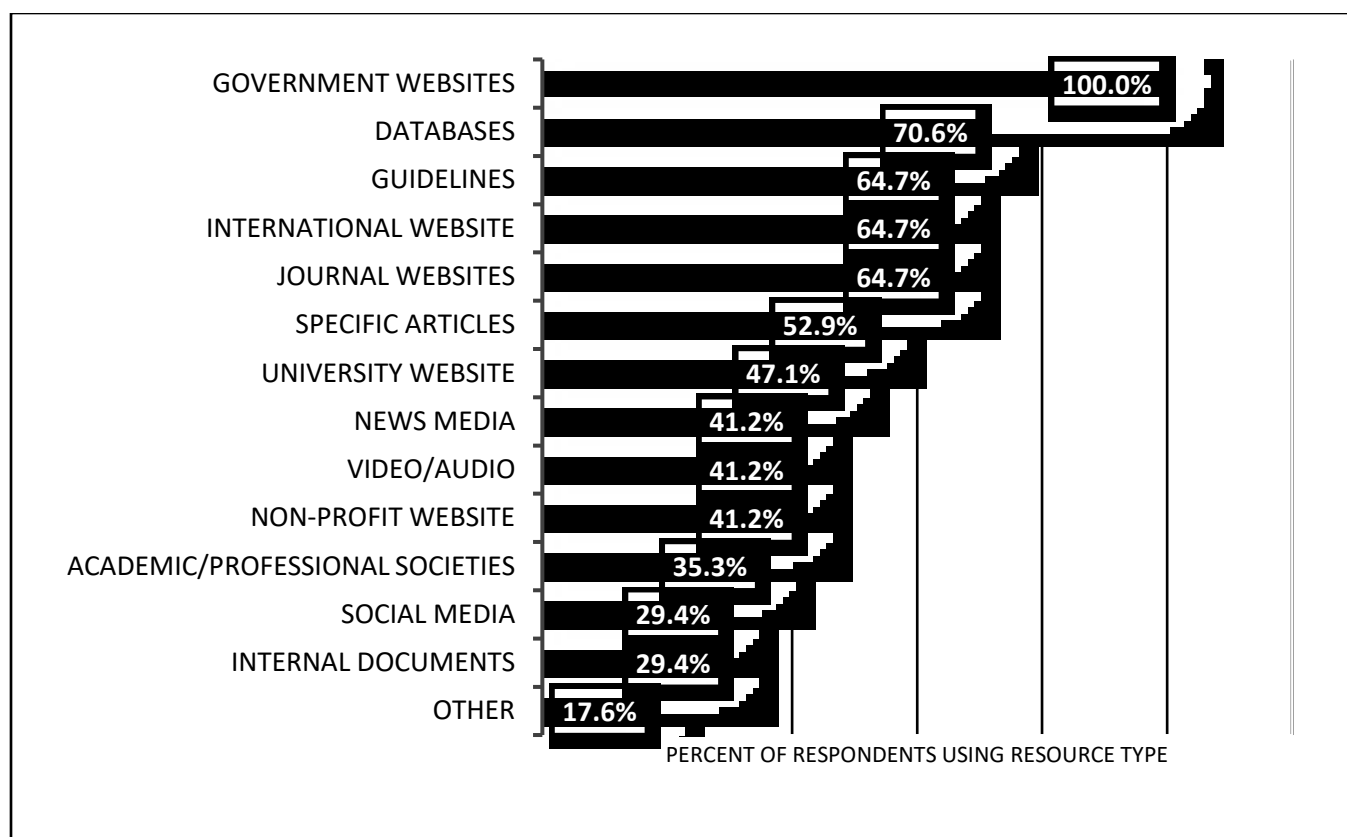| Intended Audience	Number of Respondents Included (N = 20)	% of Respondents Included
Health Professionals	9	18.8%
Military	7	14.6%
Government	7	14.6%
Library Staff	6	12.5%
Researchers	5	10.4%
Students	5	10.4%
Administration	4	8.3%
Other	3	6.3%
Public	1	2.1%
Patients	1	2.1%

Figure 3

Types of resources used in COVID-19 LibGuides as reported by respondents.

Curation, Organization, and Marketing

As seen in Figure 3, respondents shared a wide variety of resources on their LibGuides. Government websites were included in all Federal LibGuides, and databases, guidelines, international websites, journal websites, and specific articles were included in more than half of respondents' COVID-19 LibGuides. Less than a third of respondents indicated they included social media or internal documents on their LibGuides.

Regarding reuse, only 3 respondents reused all or part of another library's COVID-19 LibGuide. Thirteen respondents did not reuse all or part of another library's COVID-19 LibGuide, instead creating and curating their content from scratch. 1 respondent granted reuse permission to multiple libraries to reuse their COVID-19 LibGuide, 4 did not grant reuse permission to other libraries from requests received, and 10 were not asked for their LibGuide to be reused.

There were 12 free-text responses on how libraries determined sources most applicable and appropriate for their COVID-19 LibGuides. To determine which sources were most appropriate for a LibGuide, respondents reported consideration of the following: quality (7 responses), user feedback/focus (5), what others were doing (4), convenience (2), access/availability (2), and current topics (1).

One respondent reported great freedom and latitude in decision making, focusing content curation and resources based on conversations and feedback with their patron base and communication from leadership. They also were able to respond to needs based on common questions or ongoing topics of conversation within their organization. Another respondent sought authoritative information based on recommendations from healthcare professionals.

According to free-text responses, some respondents (greater than four) looked primarily at user feedback, or focused on their user base, while others looked more toward what other libraries were doing to guide decision-making in source curation. Both groups sought to have current topics and up-to-date information. In several instances, respondents looked to other individual information professionals' pages, such as other Federal Health Libraries, or to institutions that took a lead in information curation during the early part of the pandemic (e.g., Johns Hopkins University) to guide their content curation. Some respondents sought broad information, rather than in-house content, while others specifically tried to tailor their pages to local resources and internal guidance.

At least two respondents mentioned convenience, access, and availability of resources being a deciding factor. Some of these were resources sent to them by their agency or easily copied or downloaded from another Federal Agency. Others used resources that were open access, or their content curation was driven by what vendors were providing through their license agreements.

Across the board, respondents agreed quality of information was critical in their source curation. Peer-reviewed and authoritative sources, such as Federal Government agencies (e.g., CDC and NLM) were cited often. There was also a focus on finding non-biased coverage of information and looking to leading institutions in the pandemic for clear direction.

Twelve respondents reported four different ways of organizing their content within their LibGuides, which included: by content (7), resource type (6), audience (4), and chronologically (1). Content included references to specific information provided by resources. While most mentions of content were specific to the spread and response to COVID-19 ("disease tracking" and "Local Information"), at least one respondent also included information on teleworking ("teleworking during COVID tips"). Resource type included mentions of different publication formats, although only two respondents provided specifics ("special reports, peer-reviewed literature, preprints"; "databases, and then other research tools"). Several respondents mentioned creating resource pages for specific users, particularly for medical staff ("nurses, physicians") and patients. Only one respondent mentioned ordering information chronologically so the most current information would precede older information.

Sixteen respondents provided free text answers regarding marketing their new COVID-19 LibGuide pages. To market these guides, respondents implemented the following: web/internal announcements (12), email (9), social media (2), targeted audience messaging (3), and word of mouth (1). All but one free-text response relied on electronic means of marketing. Most respondents noted using a combination of two marketing practices (9), and one respondent utilized a combination of three. Included in the web/internal announcements category were agency intranets, web notices, newsletters, webpage announcements, blogs, or online message boards. Social media platforms mentioned in the responses included Facebook, Twitter, Instagram, and a more general "social media channels." Targeted audience messaging referred to marketing towards leadership, relevant department heads, or specific students. While the question referred to the marketing of new LibGuide pages, one respondent provided that they had not "been diligent about updates."

Engagement, Quality, and Future Plans

Eleven respondents provided free text responses discussing how they measure engagement, including feedback, of their COVID-19 LibGuide page(s). Eight respondents (73%) utilized Springshare's integrated LibGuide web analytics, five respondents (45%) engaged patrons for feedback directly, and one library reported not currently measuring engagement. Respondents using LibGuide's web analytics mentioned usage statistics or page view statistics, or more broadly referenced Springshare statistics. One respondent noted that "for a few months [the COVID-19 LibGuide] was our most visited LibGuide page." Personal feedback included responses such as e-mails, phone calls, narratives, direct contact, and patron engagement. One respondent shared that their library tries "to engage our patrons and encourage them to submit relevant content/resources. If they provide any input, it is discussed and responded to."

To measure the quality of COVID-19 LibGuides, respondents relied on patron feedback (15%), analytics (7.7%), and peer/self-review (38%). Three (23%) respondents were unsure or did not implement any quality measures. Several respondents specifically mention taking audience needs and expectations into consideration, and one respondent mentioned directly responding to input if provided. Peer/self-review described by free-text responses explicitly mentioned personal expectations or group curation efforts to produce a quality LibGuide ("personal high standard"; "curated by a team"). Only one respondent mentioned continuous review of information in order to remove "incorrect or outdated links." One respondent also used analytics, such as site visits, as a measure for quality.

A final question asked respondents to describe their plans for the COVID-19 LibGuide once the pandemic ends. Post-pandemic, six respondents planned to maintain and regularly update their COVID-19 LibGuides, three planned to keep the guides viewable but no longer update, one planned to archive the page, and seven were unsure or had no plans at the time of the survey.

Discussion

Our findings show that, of the Federal Library respondents who used LibGuides, over half (61%) were using LibGuides to share COVID-19-related information. This value indicates that LibGuides were actively being used to disseminate critical public health information in a timely manner. It is important to note that of the respondents who used LibGuides, those who did not use them to disseminate COVID-19 information were often constrained by job responsibilities or another agency department having authority over COVID-19 information dissemination.

At the beginning of the pandemic, the Wellcome Trust initiated a statement calling on funders, researchers, and publishers to ensure that relevant data is openly accessible to ensure a prompt health response globally (Trust, 2020). Because of this collaborative statement, many major publishers or journals created open access COVID-19 resources and marketed them to their library customers. Such resources were often used (64.7%) in Federal Library COVID-19 LibGuides. Such a statement ensures broad access to crucial information regardless of existing licenses. More libraries, regardless of their purchased content or operating budget, were able to share timely articles on COVID-19.

There was heterogeneity with respect to the degree to which Federal Libraries had control over their content and where the responsibility lay for disseminating pandemic information. Respondents varied in accessibility to page viewing, time spent curating and updating information, best practices for measuring quality of the information provided, and plans for archiving the information post-pandemic.

To market COVID-19 LibGuides, respondents used a variety of techniques throughout the pandemic. Most utilized internal or web announcements or email to reach their target audiences, whereas some sent targeted messages to their audiences or had to rely on word of mouth. Of note, at the beginning of the pandemic, many libraries transitioned to virtual services, at least temporarily (American Library Association, 2020), and some lost access to their normal avenues for marketing in this transition. While some libraries were able to continue with marketing on agency intranet sites, others may have needed to rely more heavily on email communication to the agency at large or to smaller specific audiences to spread information. Additionally, libraries may have relied more heavily on word of mouth or non-traditional platforms such as social media sites to inform their customer base, given the widespread access limitations the Federal workforce experienced during the work-from-home transition for non-essential personnel in the early months of the pandemic.

The number of COVID-19 LibGuides created over time appears to reflect the early spread of the disease and widespread uncertainty beginning in spring 2020. For example, the highest number of COVID-19 LibGuides were created in March (7) and April (6), correlating with mass telework options made available to Government agencies via the Office of Personnel Management (Office of Personnel Management, 2021). As the pandemic continued, respondents were still creating new COVID-19 LibGuides in fall 2020. It is unclear as to why respondents specifically created LibGuides six months or more into the pandemic, as the survey did not ask for respondents to provide rationale for creation.

Researching, reviewing, compiling, building, organizing, and formatting a new LibGuide on an emergent topic from scratch can be daunting and time-consuming; 40% of respondents spent 6-10 hours and 45% spent more than ten hours on LibGuide creation. Survey results, paired with free text responses from respondents about their curation process, suggest that the bulk of the curation and creation time was spent reviewing and selecting resources. To reduce the time burden and labor of this task, three respondents reused all or part of another library's COVID-19 LibGuides. And while audience types varied widely, types of resources included in a COVID-19 LibGuide had evident overlap. For example, Government websites were present in all respondent LibGuides, acting as a baseline resource across varying audience types. In future pandemics or public health crises, libraries with similar audience bases can save time and effort perhaps by collaborating to create a LibGuide with standard information as a starting point to share with one another.

Creating such a collaborative effort would involve proactively locating similarly scoped libraries, contacting them for interest, and creating a collaborative plan for domain of responsibility. Depending on how many libraries are participating, tasks like researching, reviewing, and compiling resources at the broadest level appropriate could be assigned. Furthermore, libraries or librarians with the greatest collective expertise could build, organize, and format the content in LibGuides. All libraries participating in this collaborative effort could have permission to reuse and edit the LibGuide as they saw fit for their individual library. Benefits of taking part in such a collaboration include saved time and effort of library staff, both of which can impact personnel budgets. The LibGuide could also be peer-reviewed, as multiple library staff with different levels and areas of expertise could work collaboratively while engaging in constructive feedback. An additional benefit could be giving back to the library science field and allowing these LibGuides to be available for reuse by libraries outside of the Federal Government who may not have the staff or means to create their own.

Best practices in LibGuide design for specific audiences cannot be determined from this survey, as most respondents serve a wide variety of military, civilian, internal, and/or external audiences. However, general guidelines for where to start finding relevant public health information for the broadest audience

could be informed by the most common resources used by respondents, to include government websites, databases, guidelines, international organizations, and journal websites. Knowing where to start reviewing resources to curate could then potentially reduce the initial time and resource burden to create these guides.

Limitations

Due to the narrow scope of our research question and audience, addressing the use of LibGuides for COVID-19 information in only Federal Libraries, we may have missed other findings from the general or specialized library populations (medical, academic, public, research, law, etc.) that also contribute to best practices for disseminating information. Additionally, we only explored the use of LibGuides, and we recognize that while this is a broadly-used platform, many Federal Libraries do not use it and may be providing curated content and library services related to the pandemic in other ways. While this focus was chosen purposefully given the dramatically different relationships that exist between Federal Libraries and the populations they serve, and the broader library community and their patrons, it may still have excluded important findings. With these limitations in mind, this study can serve as a springboard for future inquiries into the literature and studies in the library community for pandemic planning, preparedness, and response.

Conclusion

The ability to quickly disseminate information is imperative during a public health crisis, let alone a global pandemic. The emergence of COVID-19 put the U.S. health response to the test as organizations at every level scrambled to provide answers to an ever-growing list of questions. Federal Libraries found themselves in a unique position of providing services remotely while also attempting to curate and provide quality COVID-19 resources for their diverse patrons. This research surveyed how Federal Libraries used LibGuides to distribute COVID-19 information throughout the course of the pandemic. Federal Libraries began publishing their COVID-19 LibGuides as early as January 2020, when the U.S. announced the first case, with a spike in their creation in March 2020 as states began issuing guidance on lockdowns. Creating a LibGuide is a time consuming process, and creating one on an ever-changing and rapidly growing topic requires dedicated time for consistent maintenance as information evolves. Tracking engagement, eliciting and considering feedback, and determining quality of resources all helped shape COVID-19 LibGuide content. Results highlight the potential for future collaborative opportunities to streamline Federal Library public health response. This study provides valuable insight into the information-sharing process, which will help reduce the burden and save time for future libraries should there be another public health emergency.

Disclaimer

The research protocol and online survey used in this study were approved by the Walter Reed National Military Medical Center (WRNMMC) Institutional Review Board (IRB): WRNMMC-EDO-2020-0535, 927350; and the Defense Health Agency: Department of Defense (DoD) Survey License Exemption (#9)-Exempt #0053.

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The views expressed are those of the authors and do not reflect the official policy of the Department of the Army/Navy/Air Force, Department of Defense, or U.S. Government.

Author Contributions

Sarah Clarke: Conceptualization (equal), Formal analysis (supporting), Investigation (equal), Methodology (equal), Project administration (lead), Visualization (supporting), Writing – original draft (equal), Writing – review & editing (equal) **Emily Shohfi:** Conceptualization (equal), Formal analysis (supporting), Investigation (equal), Methodology (equal), Project administration (supporting), Visualization (lead), Writing – original draft (equal), Writing – review & editing (equal) **Sharon Han:** Conceptualization (equal), Formal analysis (lead), Investigation (equal), Methodology (equal), Project administration (supporting), Visualization (supporting), Writing – original draft (equal), Writing – review & editing (equal)

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Appendix A
Survey Questions

Section 1. LibGuide Creation
1. Does your library use LibGuides?
   o Yes
   o No
2. Are your LibGuides publicly viewable?
   o Yes
   o No
   o Some pages
3. Has your library used LibGuides to disseminate COVID-19 information?
   o Yes
   o No
   o Unsure
4. If no to Question 3, why not?
   o [Free text]
5. Do you have primary responsibility over COVID-19 content on your LibGuides?
   o Yes
   o No
   o Shared
6. What month did your library begin curating COVID-19 information on your LibGuide?
   o December 2019
   o January 2020
   o February 2020
   o March 2020
   o April 2020
   o May 2020
   o June 2020
   o Unsure
7. Who is the intended audience(s) for your COVID-19 LibGuide. Please select all that apply.
   o General Public
   o Health Professionals
   o Military
   o Researchers
   o Administrators
   o Government
   o Patients
   o Students
   o Library staff
   o Other: [free text]
8. Estimate how much time (in hours) was spent on the initial creation/curation of COVID-19 LibGuide information?
   o <1 hour
   o 1-5 hours
   o 6-10 hours
   o 10+ hours

9. Estimate how much time (in hours) is spent each week updating COVID-19 LibGuide information?
    o   <1 hour
    o   1-5 hours
    o   6-10 hours
    o   10+ hours

Section 2. LibGuide Curation and Design

10. Which of the following information resource types are linked to or included in your LibGuides? Please select all that apply.
    o   Databases
    o   Journal Websites
    o   Specific Articles
    o   Government Websites
    o   International Websites
    o   Non-profit Websites
    o   University Websites
    o   Video/Audio
    o   Internal Documents
    o   Guidelines
    o   Academic/Professional Societies
    o   News Media
    o   Social Media
    o   Other: [free text]
11. How did you determine which sources were most appropriate for your LibGuide?
    o   [Free text]
12. Describe how you organized the content within your COVID-19 LibGuide.
    o   [Free text]
13. Did your library reuse any part of another library's existing COVID-19 related LibGuide?
    o   Yes - Reused all or part of another library's COVID-19 LibGuide
    o   No - Did not reuse another library's COVID-19 LibGuide
    o   Unsure
14. Did your library grant permission to another library to reuse your COVID-19 related LibGuide?
    o   Yes – We granted reuse permission
    o   No – We did not grant reuse permission
    o   N/A – No library asked permission for reuse
    o   Unsure

Section 3. LibGuide Engagement and Preservation

15. How does your library market new LibGuide pages (related to COVID-19) to patrons?
    o   [Free text]
16. How do you measure engagement, such as feedback, of your COVID-19 LibGuide?
    o   [Free text]
17. How do you measure quality of your COVID-19 LibGuide?
    o   [Free text]
18. Currently, what are your plans for this page post-pandemic?
    o   Maintain/update regularly
    o   Viewable, but no longer updated

- o   Archive it (offline or as a hidden/unpublished page)
- o   Not sure/no plans
- o   Other: [free text]

Section 4. Demographic Questions
19. Which federal government agency/department/division does your library serve?
- o   [Free text]
20. What is the name of your library? (This information will not be shared – it's to ensure we don't record duplicate information)
- o   [Free text]
21. What is your library's zip code? (This information will not be shared – it's to ensure we don't record duplicate information)
- o   [Free text]