



# Working Group to Explore the Long-Term Impacts of COVID-19 on Federal Depository Library Access, Collections, and Services

*A Working Group of the Depository Library Council*

TO: Jen Kirk, Chair, Depository Library Council  
FROM: Susanne Caro, Chair, Working Group to Explore the Long-Term Impacts of COVID-19 on Federal Depository Library Access, Collections and Services  
SUBJECT: Working Group Report and Recommendations  
DATE: October 13, 2023

As Chair of the Working Group to Explore the Long-Term Impacts of COVID-19 on Federal Depository Library Access, Collections and Services, I am honored to transmit to you the report and recommendations of the Working Group.

The Working Group was established in July 2021 to examine questions and issues raised during the Spring 2021 Depository Library Council (DLC) [open forum discussion](#), and the Working Group is tasked with assessing the immediate and long-term impact of COVID-19 mitigation policies with Federal depository libraries.

This first report of the Working Group provides a very useful snapshot of how COVID-19 changed Federal depository library (FDL) operations between March 2020 and December 2021. Examination of the quantitative data from the 2021 *Biennial Survey of Depository Libraries* revealed that 917 (86.1%) respondents indicated changes were made to their policies and procedures during COVID-19. Of those, 51.8% indicated that changes had been reversed. The areas of library operation more commonly impacted by COVID-19 policies were Public Access (39% respondents), Reference Services (32%), and Instructional & Educational Services (32%). Analysis of the qualitative data provides much more insight. But a true understanding of the long-term impacts can only be achieved by continued data collection and analysis.

Therefore, in its report the Working Group offered the following recommendations for Council's consideration to transmit to the Government Publishing Office:

- Include a question about the impact of COVID-19 policies and practices in the Biennial Survey of Depository Libraries at least through the 2025 survey.
- Encourage the use of 2021 Biennial Survey Question 6 data for local needs and further exploration and study.

I wish to express my thanks to current and former members of the Working Group including Council, members of the depository library community, and GPO staff for their amazing efforts which resulted in this report and recommendations. Special thanks to the previous chair, Rick Mikulski who led this group from its inception and stayed on beyond his initial term on the DLC to continue working on this project and report.

*Susanne Caro*  
Susanne Caro

Attached: *First Report of the Depository Library Council's Working Group on the Long-Term Impacts of COVID-19 on Federal Depository Library Access, Collections, and Services*

**First Report of the Depository Library  
Council's Working Group on the Long-Term  
Impacts of COVID-19 on Federal Depository  
Library Access, Collections, and Services**

**October 13, 2023**

# Long-Term Impacts of COVID-19 on FDL Access, Collections, and Services Working Group Members

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## Acknowledgement

The Working Group on the Long-Term Impacts of COVID-19 on Federal Depository Library Access, Collections, and Services acknowledges and gives a special thanks to Sasan Faraj, College of William & Mary for providing R support and consultation.

## Executive Summary

The Depository Library Council's Working Group to Explore the Long-Term Impacts of COVID-19 on Federal Depository Library (FDL) Access, Collections, and Services (Working Group) was established in July 2021 to examine questions and issues raised during the Spring 2021 Depository Library Council (DLC) open forum discussion, [\*COVID-19 a Year Later: Returning to Normal? Or an Emerging New Normal?\*](#) The Working Group is tasked with assessing the immediate and long-term impact of COVID-19 mitigation policies and procedures in Federal depository libraries. From July 2021 through July 2023, the group collected and analyzed relevant data with seven core objectives:

- Begin a multi-year longitudinal study to understand the full impact that the COVID-19 pandemic had upon FDLs and the FDLP.
- Identify methods by which the necessary data and information could be collected that would allow the group to identify immediate and long-term trends and impacts upon FDLs.
- Execute the first of several longitudinal data gathering surveys to begin the process of examining the long-term impact of COVID-19 mitigation policies upon FDLs.
- Summarize initial findings from the first survey.
- Identify areas of future study.
- Provide suggestions to improve future iterations of the study.

Data used in this report were collected during the *2021 Biennial Survey of Depository Libraries*, which all Federal depository libraries (FDLs) are required to complete. Question 6 of the survey, which was drafted by this Working Group in Summer 2021, required libraries within the depository program to provide written feedback about the impact of COVID-19 policies upon the operations of their institutions and depositories. Examination of the data began in March 2022 when the U.S. Government Publishing Office (GPO) shared the survey results. There were 1,065 survey respondents, which represented a 96% return rate. The Working Group's survey question generated 24,495 qualitative and quantitative datapoints, which were analyzed.

Initial examination of the quantitative data revealed that 148 (13.9%) FDLs indicated no changes were made to their policies during COVID-19, while 917 (86.1%) indicated changes were made. There were 475 respondents (51.8% of institutions reporting changes; 44.6% of total respondents) that indicate changes made in response to COVID-19 had been reversed. As of December 2021, when the survey was submitted to GPO, 48% (442 of 917) reported that at least some of their COVID-19 mitigation policies were still in place. The areas of library operation more commonly impacted by COVID-19 policies were

Public Access (39% respondents), Reference Services (32%), and Instructional & Educational Services (32%). Areas of library operations least frequently identified as being impacted were Storage (2.4%), Item Selection (4%), “Other” [mostly physical modifications to the building] (6%), and Shelving (9%).

A qualitative study of written responses provided preliminary insights into the long-term impact of COVID-19 policies upon FDLs. At least 84 institutions plan to retain COVID-19 era policies related to Virtual Instruction/Reference, and 55 reported a continued impact on Virtual Outreach/Programming. Institutions that made physical changes to their spaces, such as an investment in curbside pickup, plan to retain those initial COVID-19 era services. Of the 419 institutions that reported limited Public Access due to the pandemic, only 11 (2.6% of this set) plan to maintain COVID access policies, though 21 report an expectation of changed hours, restricted access, or some limited public access (5%). Written responses indicated that areas most likely to remain impacted by COVID-19 policies into the near future are Instructional and Education Services, Reference Services, and Staffing.

The data presented in this report are merely a snapshot of the FDL community in December 2021, and can only provide insights into broad trends for the period between 2020 to the beginning of 2022. For this reason, the Working Group does not provide definitive predictions at this time as to the long-term impact of COVID-19 upon the FDL community.

This report concludes by reiterating the necessity for future data collection efforts, as this report is meant as only the first of several studies. Though the report provides information on how COVID-19 changed FDL operations between March 2020 and December 2021, a true understanding of the long-term impacts can only be achieved by continued data collection and analysis. The Working Group proposed that the Depository Library Council consider transmitting the following recommendations to the Government Publishing Office Director:

- Include a question about the impact of COVID-19 policies and practices in the Biennial Survey of Depository Libraries at least through the 2025 survey.
- Encourage the use of 2021 Biennial Survey Question 6 data for local needs and further exploration and study.

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## Introduction

The COVID-19 virus, which spread across the entire world throughout 2020 and 2021, forced institutions to implement policies and efforts to combat the spread of this global health risk. Mitigation efforts included local lockdowns, closure of physical facilities, travel restrictions, limiting or eliminating in-person services, and a move to telework. Federal depository libraries (FDLs), like many businesses and organizations, were impacted by these pandemic mitigation efforts. Many FDLs were closed to the public, ceased receiving shipments of depository materials, placed staff on furlough, or changed their collection management policies. These practices, which were implemented in the interest of public health, forced FDLs to find new ways to achieve their primary mission: provide free and open access to Federal Government information. As a result, FDLs and their staff found new and innovative ways to do this, despite limited physical access to library facilities and depository collections.

This Working Group examined the practices, policies, and procedures implemented by FDLs since March 2020 as they adapted to the COVID-19 pandemic, and it assessed the long-term impact of these efforts at the institutional and national level. It examined pandemic practices, policies, and procedures enacted by FDLs and the GPO relating to services, procedures, collections, staffing, etc., and it will assess whether such policies may or should continue into the post pandemic era.

On April 11, 2021, the Depository Library Council (DLC) held a virtual open forum entitled [\*COVID-19 a Year Later: Returning to Normal? Or an Emerging New Normal?\*](#) The session was an opportunity for Federal depository libraries (FDLs) to report long-term and potentially lasting policy changes their institutions had enacted due to the COVID-19 pandemic. At the end of the discussion, it was concluded that the GPO should undertake a systematic and longitudinal study of how the pandemic had reshaped institutional policies and operations with depository libraries, both immediately and into the foreseeable future.

In June 2021, at the recommendation of the DLC, GPO Director Halpern approved the creation of a new ad hoc working group to study the “Long-term impacts of COVID-19 on FDL access, collections, and services.” The Working Group charge is “to gain an immediate understanding of the impact COVID-19 had upon the Federal depository libraries, and to begin a longitudinal study that would allow Council to continue assessing this impact over time.” Upon formation, the Working Group set the following objectives:

- Create a question for the 2021 Biennial Survey of Depository Libraries that will solicit and record feedback from Federal depository libraries. The question should



produce both qualitative and quantitative data that can be used to explore the immediate and lasting impact of COVID-19 mitigation policies and practices upon libraries within the Federal Depository Library Program (FDLP).

- Examine the collected data to identify trends and important themes that may provide insight into the immediate and long-term impact COVID-19 policies have on Federal depository libraries.
- Establish the foundation for a multi-year longitudinal study that allows future groups to build upon this Working Group's preliminary findings.
- Produce a report examining the data from the 2021 Biennial Survey, with recommendations for future study.
- Provide the DLC and GPO recommendations on how to continue this study into the future.

The Working Group began meeting in July 2021, and worked with GPO staff to draft a question for the 2021 *Biennial Survey of Depository Libraries* (Biennial Survey). The approved question (#6), asked libraries to report any COVID-19 related policy or operational changes within their institutions. They were further asked which of these were still in place as of December 2021, and which (if any) of the changes they expected to remain in place into the immediate future.

Data analysis could not begin until the 2021 Biennial Survey was completed; the final data from the survey was provided to the Working Group in February 2022. While waiting for the data to be collected, the Working Group began identifying published scholarship that examined the impact of COVID-19 on library operations, to be used to create a literature review. The group also used this time to identify data analysis methods. The manner in which the data were analyzed is discussed in detail throughout this report, as are the Working Group's ultimate findings and recommendations for future study.

## **GPO Response to the Pandemic**

The U.S. Government Publishing Office (GPO) was noteworthy for its early response to the problems facing libraries in the Federal Depository Library Program. On March 17, 2020, the Government Publishing Office suspended shipments of tangible items to all FDLs. The Depository Library Council's Spring 2020 Virtual Meeting was one of the first large gatherings of library staff during the early days of the pandemic. GPO's early and continued response to the FDLP community provided much needed support. The FDLP community shared appreciation for GPO's efforts during the Spring 2020 DLC Virtual Meeting. GPO continued to respond with more support, more information, and more

opportunities for the community to gather and share their experiences. The early experiences of depository librarians were captured in chat discussions that took place at the Fall and Spring DLC meetings in 2020 and 2021. The concerns, access innovations, changes in services, and work conditions that were reported to GPO formed the basis for the questions developed by the COVID-19 Working Group, in collaboration with GPO's Federal Depository Support Services (FDSS) unit charged with administering the 2021 *Biennial Survey of Depository Libraries*. Reviewing the literature that subsequently emerged from the broader community shows that these questions could provide insights into conditions at all libraries in the United States, not just FDLs.

In response to the pandemic, GPO immediately began holding open forums, sharing toolkits, and circulating guidance documents to aid members of FDL community. These GPO efforts to share COVID-19 information with the depository libraries included the [COVID-19 Toolkit for FDLs](#) (April 13, 2020), the [Depository Libraries in a Time of Stay-at-Home Orders](#) open forum (April 22, 2020), a letter from the Superintendent of Documents to Regional Coordinators with service updates (May 12, 2020), and a guidance document for managing FDLP collections safely during the pandemic (June 17, 2020; updated March 2021). At the Spring 2021 meeting of the DLC, the GPO held the open forum [COVID-19 a Year Later: Returning to Normal? Or an Emerging New Normal?](#), which directly lead to the creation of this Working Group, and the subsequent inclusion of COVID-19 questions on the 2021 Biennial Survey. These early publications, forums, and studies reflect efforts by GPO and the DLC to spread information about the impact of COVID-19 upon FDLs early in the pandemic.

## Literature Review

A great deal of scholarship studying the impact of COVID-19 upon libraries has been produced since the onset of the pandemic three years ago, and subsequently, this literature review section is meant to be neither exhaustive nor complete. Instead, this section addresses broad trends and themes to provide context for the overall project. It does not seek to identify every article within these trends, instead the review highlights publications that exemplify a trend or theme. In addition to providing context, another goal of the review was to offer a starting point for members of the FDL community who seek to expand upon the preliminary research of this report.

Early literature studying libraries and the COVID-19 pandemic emphasized the ways institutions responded to the sudden disruption to services (Morton-Owens, 2020). These early studies also explored the impact the pandemic had upon staffing, collections, and

public services, with suggestions on how libraries might adapt to continue serving their communities (Aldrich, 2020; Hyde, 2020). Articles from April 2020 addressed larger societal issues (Schwartz, 2020), the shift to digital resources, the need for staff to quickly adapt to an evolving situation (Chase, 2020), and misinformation surrounding the pandemic (Massey, 2020; Freudenberger, 2020). From April 23 to May 5, 2020, *School Library Journal* conducted the “Youth Services in Public Libraries COVID-19 Response Survey,” which collected early data about how the COVID-19 crisis impacted public libraries and their services for teens and children (SLJ Staff, 2020). In April 2020, the Institute of Museum and Library Studies (IMLS) announced a partnership with OCLC to investigate the safe handling of library and museum collections. The [ReOpening Libraries and Museums project](#) was an early attempt to provide science-based advice about safely working with circulating collections and many libraries utilized its best-practices when little was known about the transmission of the COVID-19 virus and its variants ([REopening Archives, Libraries and Museums \(REALM\)](#)).

Throughout late 2020, additional pandemic related articles were published and free resources were created, collected, and made available for all types of libraries and library workers. Library services ran the gamut, from those offered at libraries that never closed, to those that reopened after only a few weeks or months of being closed, to those that remained closed to the public for a year or more. Library staff likewise saw a range in shifts of responsibilities and duties, including those who saw their work shifted to tasks like curbside pickups, or contact tracing and other social services, to those that worked remotely on tasks very similar to the work they performed before the pandemic. Conflicts over limited services, masks, vaccines, new duties, and remote work took place within the library community in ways that reflected larger societal patterns. The articles published and resources created reflect this broad range of local conditions, experiences, and responses.

By 2021, the number of publications examining the nuanced impact of COVID-19 upon the library profession grew significantly. Some were using large collections of survey samples (Guernsey, 2021; De Groote, 2021; De Groote & Scoulas, 2021; Todorinova, 2021), while others were qualitative articles that closely examined individual experiences to provide insight into lessons learned (Shumaker, 2021; Carroll, 2021; King, 2021; Huwe, 2021). Other articles examined the impact of COVID-19 on library associations (Rice, 2021), reopening (An, Coppola & Kisby, 2021; Hervieux, 2021), library leadership (Newman, 2021), disaster planning (Kehnemuyi, 2021), collections (Moody & Best, 2021; França, 2021; Zastrow, 2021; Gentry, 2021; Ćirić & Ćirić, 2021), websites (Mnzava & Katabalwa, 2021), access (Zirotianis, 2021; Tolppanen, 2021; Vogus, 2021; Koos et al., 2021),

reference (Cohn & Hyams, 2021), teaching (Martzoukou, 2021), technology (Free, 2021; Altman, 2021), and staffing (Hosoi, 2021). It is notable that many of the themes in these articles, which are not specifically focusing on FDLs, are the same issues and concerns raised by depository libraries in GPO and GODORT forums during 2021. After 2022, the body of LIS literature examining the impact of COVID-19 upon libraries become vast and difficult to easily and succinctly summarize. Many approaches took a comprehensive look at the impact on library workers and patrons, services, and working conditions (Charbonneau & Vardell, 2022; White & White, 2022; and Altman, 2022).

In 2020 publications were experiential and focused on policies and practices at individual institutions. By 2021, publications were reflective and focused on assessment of policies that had been implemented in the previous year. Beginning in 2022, studies broadened their scope beyond individual institutions to explore the impact of COVID-19 upon the entire field of librarianship. By late 2022, significant longitudinal data was collected to begin produced detailed reports about the overall impact of COVID-19 upon the entire library profession.

By 2023, there was sufficient data to begin large field-wide examinations, as exemplified by the Liu and Lewis study of how 151 libraries expanded mobile access to reference, circulation, and databases as a result of the pandemic (Liu and Lewis, 2023). Other studies of 2023 examined how instructors used the library during the shift to exclusively online services and collections (McClure, 2023) and new research by *American Libraries* (2023) explored the impact on school librarians during the COVID-19 pandemic. Studies also showed that curbside pickup and WIFI access are two pandemic related services that are likely to continue at many locales, while virtual programming has its strong supporters and an equal number of patrons who are happy to see in-person programming continue (Dankowski, 2023). *American Libraries* released “Three Years Later: How the pandemic has reshaped libraries” on March 1 and this article documents the early adaptations and innovations that stuck, the long-lasting changes to fundraising and advocacy, and the devastating challenges of many communities that dealt with natural disaster and COVID-19 (2023).

## Methodology

Data for this study was collected through the 2021 *Biennial Survey of Depository Libraries*. The survey was sent to the 1,113 Federal depository libraries. The dataset contains 1,065 responses, for a 96% return rate.

The Working Group developed Question 6, a two-part question, which sought to identify changes implemented between 2019 and 2021 in response to the COVID-19 pandemic. In the first part of the question, Q06 [1], depository library coordinators were asked, “In which areas, if any, has your institution implemented new policies and/or procedural changes as a result of COVID-19?” Respondents selected from thirteen fields and were invited to provide descriptive responses for each. The categories were: Collection Maintenance and Weeding; Instructional and Educational Services; Interlibrary Loan Services; Item Selection / FDLP selection Profile; Outreach Services; Processing; Public Access; Reference Services; Shelving; Staffing; Storage; Other. Respondents could select all applicable options.

Part two of the question, Q06 [2], then asked, “Which of these implemented changes, if any, do you anticipate will remain part of your normal operations?” The purpose of this follow-up question was to determine which of the COVID-19 policy changes might remain in place into the near future.

### Qualitative and Quantitative Data Collected

In February 2022, GPO provided the Working Group an Excel file of 2021 Biannual Survey data for Question 6. The file has twenty-three columns of identifying attributes and 1,065 respondent rows, resulting in 24,495 datapoints, of which 12,780 were the open-ended written responses. The remaining fields represent information about each institution, including: Cataloging Record Distribution Program (CRDP) participation status; partnership agreement status; state; depository type; library type; library size; and depository number. This unaltered data, [2021 Biennial Survey Data Sheet](#), can be downloaded and viewed by the public.

The qualitative data included the written answers provided by respondents. Analysis of this data involved a close reading and coding of responses in an effort to identify important themes, ideas, and specific policy changes. The quantitative data included the compiled statistical figures from the respondents, which, when analyzed, provided a broad overview of trends in policy adoption and retention throughout the FDLP.

The boxes checked to indicate which library services were impacted by COVID-19, and the written descriptions provided by the respondents resulted in 24,495 qualitative and quantitative data points of information, 52% of which were from the open-ended written responses. They alone generated large amounts of qualitative data – visualize 42,000 words or 84 single-spaced typed pages of text.

Subgroups examined the written responses for their assigned category, keeping track of important themes or surprising responses. They used coded terms and controlled language to better track the trends within the replies. As an example, members of the subgroup studying “Reference Services” noted that respondents used the synonymous expressions “virtual reference,” “online reference,” and “chat reference” to describe the same service. In this case, all three responses were coded as “virtual reference.”

## Processing and Analysis of Qualitative Data

After the qualitative data from Q06 [1] was analyzed and summarized, examination began of written replies to Q06 [2]. To determine which COVID-19 policies that were still in place as of December 2021, the same subgroups were assigned to examine responses by category, and again utilized a coding method to avoid repetition. They identified themes and noted COVID-19 policies that were still in place. The subgroups also compared each institution’s responses to both Q06 [1] and Q06 [2] to better understand which policies implemented during COVID-19 remained in place in December 2021.

## Processing and Analysis of Quantitative Data

The Working Group created a machine-readable Excel file of the data. The file, which can be viewed as a standalone Excel file or through analysis software, will allow members of the community to compose, explore, and answer important questions for themselves. The Working Group elected to use RStudio for its own analysis, however any software can be used by the community.

To make a machine readable datafile, written responses were replaced in the Excel file with an “X” and blank responses were kept as empty cells. Written negative responses such as “no changes,” “NA,” “N/A,” and “Null” were changed to blank cells. This [cleaned file](#), which was used for the quantitative data analysis section of the study, is publicly accessible.

## Quantitative Data Analysis

When asked in the 2021 Biennial Survey, “In which areas, if any, has your institution implemented new policies and/or procedural changes as a result of COVID-19?” The 1,065 respondent libraries reported the following:

RESPONSE	# OF FDLs
<i>Changes were made due to COVID-19 but now back to pre-COVID policies</i>	475
<i>Public Access</i>	419
<i>Instructional and Educational Services</i>	344
<i>Reference Services</i>	344
<i>Staffing</i>	239
<i>Outreach Services</i>	230
<i>Interlibrary Loan Services</i>	172
<i>No new policies or procedures implemented</i>	148
<i>Collection Maintenance and Weeding</i>	118
<i>Processing</i>	114
<i>Shelving</i>	94
<i>Other</i>	69
<i>Item Selection / FDLP Selection Profile</i>	44
<i>Storage</i>	26

Of the 1,065 respondent institutions, only 148 (13.9%) indicated no changes were made during COVID-19 while 917 (86.1%) indicate changes were made. When the 2021 Biennial Survey was submitted, 475 respondents (51.8% of institutions reporting changes; 44.6% of total respondents) indicated that changes made in response to COVID-19 had been reversed. The areas of public access and services saw the most significant changes with restricted building access, limited interaction with users, and an increase in virtual services.

## Qualitative Data Analysis

The qualitative examination of written responses to questions Q06 [1] and Q06 [2] from the 2021 Biennial Survey addresses identified changes their institutions implemented due to the COVID-19 pandemic. The respondents were asked to provide specific examples of changes at their institutions (Q06 [1]) and to indicate which of these changes were expected to remain in place into the immediate future (Q06 [2]).

Responses to Q06 [1] indicate COVID-19 had significant effects on how library staff interacted with the public, materials, and colleagues. Of the 1,065 libraries surveyed 86.1% indicated changes were instituted. Many libraries experienced some alteration to



policies, they were wide-ranging from buildings being completely closed to requiring patrons to wear masks. Efforts to continue to provide services to users include 161 libraries adopting virtual or hybrid instruction, 12 libraries listed a preference for requesting electronic materials through ILL, and 74 increased virtual reference. To continue to provide physical materials to users 13 libraries adopted curbside pickup. Modifications to processing materials included 34 libraries suspending or slowing shipments. Of those surveyed 148 (13.9%) indicated there were no changes to policy.

Q06 [2] Asked a follow-up to each question about changes at FDLs, respondents were asked to indicate if the changes would become part of regular library or depository operations. A side-by-side comparison of responses to each part of Q06 was analyzed. Eighty-six libraries planned to continue the expanded or newly created virtual instruction, reference, and programming options they put in place during COVID-19. Sixteen specifically mentioned continuing virtual outreach. A smaller number (6) indicated they might continue mail access and seven indicated a continuation of curbside services. Questions Q06 [1][a]-[l] provide greater detail for each response as submitters were asked to explain what the changes were and if they would continue after COVID-19 restrictions were lifted.

Q06 [2]- Which of these implemented changes, if any, do you anticipate will remain part of your normal operations?					
Virtual Instruction/Reference	84	Unclear/Uncertain	18	Mail Delivery	8
Virtual Outreach/Programming	55	Digital Delivery/ILL Options	16	Phone/Chat Reference	6
None	34	Expand/Prefer Digital Materials	14	Limited capacity	2
All Changes Will Remain	18	Curbside Pickup	12		

What follows are explanations provided for the areas of change that had the highest respondents, as shown in the quantitative data analysis table on page 8. The quantitative analysis in its entirety is in [Appendix II: Qualitative Examination of Written Responses](#).

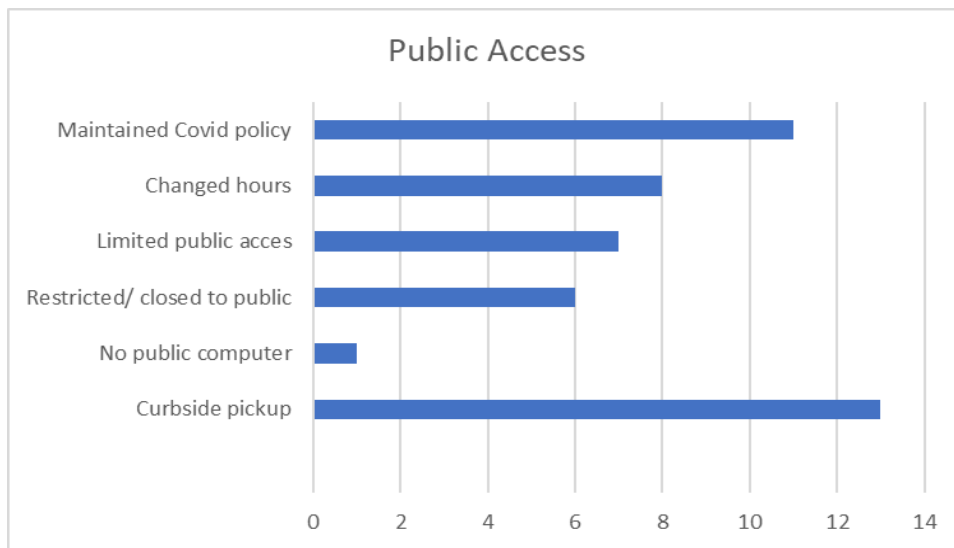
**Q06 [1][g]- If “Public access” please explain:**

Libraries reported significant changes to Public Access during the COVID-19 pandemic, including reduced hours, closed stacks, no or limited public access, restricted building access, and the introduction of security stations. Libraries focused on remote or online services, implemented curbside pickup services, and some closed entirely without any services provided. When opened, masks were required at many libraries, proof of



vaccination and appointments were required at some libraries, and some services, like printing, were suspended.

As of December 2021, the overwhelming majority of libraries report plans to resume normal public access hours. Thirteen will retain curbside pickup access, one will no longer provide public computer access, two remain closed to the public, four are restricted to members of their own organization, seven have limited public access, eight report changes to access hours, and 11 have retained COVID-19 policies to access and are unsure when they will be revised.

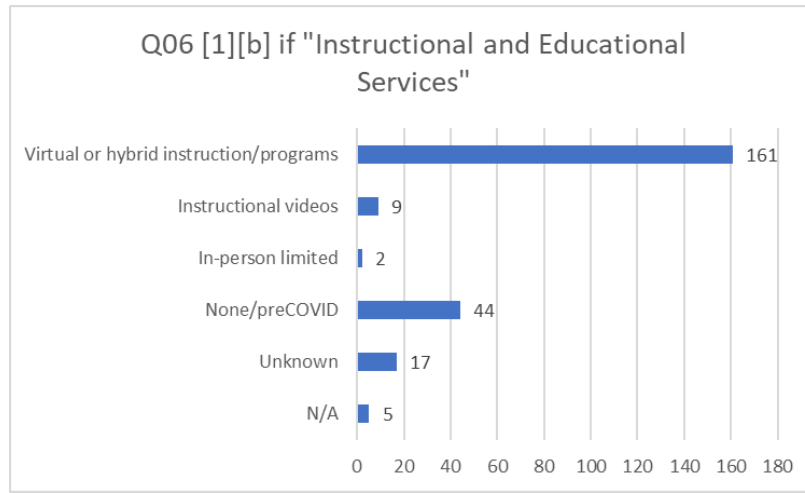


**Q06 [1][b]- If “Instructional and Educational Services” please explain:**

When asked to outline changes made to Instruction and Educational Services, a number of broad themes emerged. These included a shift toward asynchronous instruction, online consultations, virtual public programming, and virtual reference. Respondents reported that courses moved online and included webinars, distance learning instruction, and recorded or live class sessions. When instruction was in person, hybrid solutions with limited attendance or advanced registration were preferred, and mask mandates were often in place.

Of 348 responses, 161 (46.3%) indicated an intention to continue offering virtual or hybrid instruction and programming. Respondents reported that online instruction and programming increased access, met needs of remote learners, and the service was expected. One library indicated that the service was an option but that there was not great interest from faculty. Nine libraries reported creating videos as part of their instructional

materials. Two libraries will continue to limit class sizes, and 44 indicated a return to pre-COVID practices.



### Q06 [1][h]- If “Reference Services” please explain:

Many respondents (344) indicate that virtual Reference was a significant change brought about by COVID-19 in this service area. In most cases virtual reference was already taking place, existing services were expanded, and most report plans to keep these services in place. The respondents reported changes to methods of providing reference, including changing the service points or requiring appointments. Physical barriers, COVID-19 safety measures, building closures and changed hours also effected reference practices. When asked which of these policies were still in place as of December 2021, and which would stay in place into the future, a major trend that emerged was libraries planning to continue the expanded COVID-19 era virtual reference services (135 of 344 libraries, 39%). One of the most introduced services was chat reference. Another trend noted was a move to greater use or emphasis on virtual appointments or consultations for reference (23 libraries). Increased virtual services led to more hybrid work opportunities for library staff.

Other COVID-19 related changes:

- Moving or consolidating the reference desk location or reassessing staffing and hours (8 libraries)
- Added staff to provide more reference (1 library)
- Reduced paper reference collection (1 library)
- More limited reference staff and services (1 library)

Of 344 libraries who indicated changes to reference services, 172 libraries (50%) indicated the some changed services –staffing, virtual reference, changed hours or limit services – would likely remain post-pandemic.

### Q06 [1][j]- If “Staffing” please explain:

A significant number of respondents (239) report changes to staffing as a result of the COVID-19 pandemic, most notably a shift to remote and flex work, position reassignments, and the addition of new duties. Retirements, unfilled vacancies, hiring freezes, staff reductions, and furloughs further complicated staffing.

When asked to identify COVID-19 policies still in place in Dec 2021, and to speculate which policies would remain in place into the future, the continuation of hybrid (including teleworking/hybrid/remote work) work schedules was the primary theme. Forty-six libraries (19%) noted that some form of hybrid work would continue at their institutions. The second most prominent change, noted by thirteen libraries (5%), was to reduced staff moving forward. Only one library noted a staff increase, and one library noted that staff duties underwent changes.

### Q06[1][e]- If “Outreach Services” please explain:

An initial overview analysis of reported changes to Outreach Services revealed common themes including the suspension, scaling back, and alternation of in-person activities; facility closures; the adoption or increase of virtual instruction, outreach, and programing; and the realignment of staff duties. Less common changes included the addition of curbside pickups; home and mail deliveries; an increase in the use of email and social media for outreach; and new digital delivery options.

Of note is the overlap in the responses that indicated changes to “virtual outreach” and “virtual reference and instruction.” These seemed to be used interchangeably by respondents – and in ways that were not always obvious. Responses were separated in all cases where the language was clearer, even if the meaning was not. Sometimes the answer provided in Q06 [1][e] illuminated the meaning in answers from Q06 [2] and vice versa.

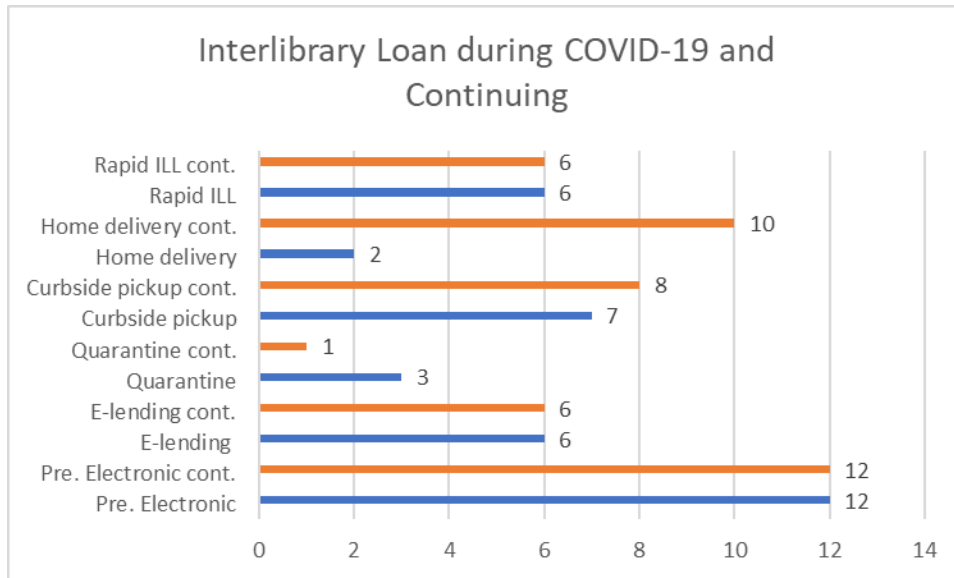
Q06[1][e]- If “Outreach Services,” please explain:	
Increase Virtual Instruction & Reference	74
Closed to Public; Suspended or Curtailed In-Person Outreach	64
Email, Newsletters, Social Media, Digital Displays, Guides	28

Q06[1][e]- If “Outreach Services,” please explain:	
Shifted to Virtual Outreach	27
Unclear	15
Limited Capacity	9
Added Curbside Pickup	8
Grab & Go Kits	2
New Technology	2
No Changes	2

**Q06 [1][c]- If “Interlibrary Loan Services” please explain:**

Respondents identified several ways in which Interlibrary Loan (ILL) services were changed during the first two years of the pandemic. Broad themes included: temporary suspension of physical ILL services (34 respondents), or limited services (16), with a significant increase in electronic loans and e-book lending (12). Rapid ILL services were also implemented (6 respondents), fines were waived (1), and curbside pickup/delivery (9) solutions were used. There was an overall decline in ILL requests per user, yet overall volume of requests increased. As in other areas of librarianship, staffing levels (14) and building closures were an issue (10).

When asked which of these policies remained in place as of December 2021, most libraries that reported suspended ILL services have resumed. Nearly every library offering curbside services (8) will continue the service, possibly because of the investment in equipment. Ten will continue home shipping, and a large number will continue a preference for digital/electronic formats over sharing physical items. Libraries that instituted contactless pick-up options are retaining the service, again likely because the processes are in place. Of the responding libraries, 47 indicated an interruption to services. Responses make it unclear how libraries suspending or stopping services may have impacted the ILL system as a whole.



## Further Study Needed

To study the long-term effect of COVID-19 on policies, access, collections, and services in FDLs, as was the COVID-19 Working Group’s charge, a truly longitudinal study is required. Data analysis should be expanded to compare responses by library type, size, and National Collection Service Area. For trends to be appropriately identified and examined, data collection must will be conducted during at least three Biennial Surveys (2021, 2023, 2025). The Working Group will collaborate with GPO staff to determine the question(s) to be asked to ensure consistent data collection over the course of the study.

In addition to data collection through future Biennial Surveys, the Working Group should also consider collecting information during the intermediary years of the Biennial Survey through other methods, including: focus groups, interviews, other published studies on related topics, or smaller surveys conducted with sample groups.

The Working Group collaborated with GPO staff to draft a revised version of the question for the recently-released 2023 Biennial Survey. Based on the experiences of this Working Group, the new variant of the question contains one field for written feedback, compared to fourteen on the 2021 Survey. The new format of the question, in which respondents will check boxes rather than provide written replies, will also make the data immediately machine readable, removing the need for time-consuming data clean-up.

## Recommendations

When viewed collectively, the Biennial Survey analyzed responses demonstrate the significant-yet-varied impact that COVID-19 mitigation policies had upon FDL operations. These initial findings also hint at potential long-term trends that will continue shaping the FDLP landscape for years. To better understand these trends, however, additional data will need to be collected in future biennial surveys for more thorough longitudinal studies.

With this in mind, the Working Group to Explore the Long-Term Impacts of COVID-19 on Federal Depository Library Access, Collections, and Services has two recommendations for Council's consideration to transmit to GPO:

- Include a question about the impact of COVID-19 policies and practices in the Biennial Survey of Depository Libraries at least through the 2025 survey.
- Encourage the use of 2021 Biennial Survey Question 6 data for local needs and further exploration and study.

# Appendix I

## 2021 Biennial Survey Questions 6[a] and 6[b]

Q6(a). In which areas, if any, has your institution implemented new library-wide policies and/or procedural changes as a result of COVID-19. Select all that apply. \*

- Collection maintenance and weeding
- Instructional and Educational Services
- Interlibrary Loan Services
- Item selection / FDLP selection profile
- Outreach Services
- Processing
- Public access
- Reference services
- Shelving
- Staffing
- Storage
- Other:
- Changes were made due to COVID-19 but now back to pre-COVID policies
- No new policies or procedures implemented.

Q6(b). Which of these implemented changes, if any, do you anticipate will remain part of your normal operations? \*

## Appendix II

### Qualitative Examination of Written Responses

This section provides a qualitative examination of written responses to questions Q06 [1] and Q06 [2] from the 2021 Biennial Survey, in which respondents were asked to identify changes their institutions implemented in response to the COVID-19 pandemic. The respondents were asked to provide specific examples of changes at their institutions (Q06 [1]) and to indicate which of these changes were expected to remain in place into the immediate future (Q06 [2]). Responses to Q06 [1] indicate COVID-19 had significant effects on how library staff interacted with the public, materials, and colleagues. Of the 1,065 libraries surveyed 86.1% indicated changes were instituted. Although many libraries experienced some alteration to policies these range from buildings being completely closed to requiring patrons to wear masks. Efforts to continue to provide services to users include 161 libraries adopting virtual or hybrid instruction, 12 libraries listed a preference for requesting electronic materials through ILL, and 74 increased virtual reference. To continue to provide physical materials to users 13 libraries adopted curbside pickup. Modifications to processing materials included 34 libraries suspending or slowing shipments. Of those surveyed 148 (13.9%) indicated there were no changes to policy.

Q06 [2] Asked a follow-up to each question about changes at FDLs, respondents were asked to indicate if the changes would become part of regular library or depository operations. A side-by-side comparison of responses to each part of Q06 was analyzed. Eighty-six libraries planned to continue the expanded or newly created virtual instruction, reference, and programming options they put in place during COVID-19. Sixteen specifically mentioned continuing virtual outreach. A smaller number (6) indicated they might continue mail access and seven indicated a continuation of curbside services. Questions Q06 [1][a]-[l] provide greater detail for each response as submitters were asked to explain what the changes were and if they would continue after COVID-19 restrictions were lifted.

<b>Q06 [2]- Which of these implemented changes, if any, do you anticipate will remain part of your normal operations?</b>	
Limited capacity	2
Phone/Chat Reference	6
Mail Delivery	8
Curbside Pickup	12
Expand/Prefer Digital Materials	14



<b>Q06 [2]- Which of these implemented changes, if any, do you anticipate will remain part of your normal operations?</b>	
Digital Delivery/ILL Options	16
Unclear/Uncertain	18
All Changes Will Remain	18
None	34
Virtual Outreach/Programming	55
Virtual Instruction/Reference	84

**Q06 [1][a]- If “Collection maintenance and weeding” please explain:**

Responses to the 2021 Biennial Survey indicate that the pandemic, and the related closures in some cases, spurred libraries to both launch and prioritize weeding projects, and conversely, to suspend or halt collection maintenance projects. In addition, pandemic closures, facility access and hours changes, and other impacts led to collection development policy changes. These changes included an increased focus on e-resources, providing social distance for staff working onsite, and streamlining acquisitions for tangible materials that allowed for quarantining materials.

Respondents were asked if these pandemic policies and procedures were still in place when they were submitting their responses. Since this question was asked with a free-text response field, the responses were coded to correspond to: yes, COVID-19 polices/procedures were still in effect (54 respondents); no, COVID-19 policies/procedures not in effect (also 54 respondents); and uncertain if these COVID-19 policies/procedures are in effect (10).

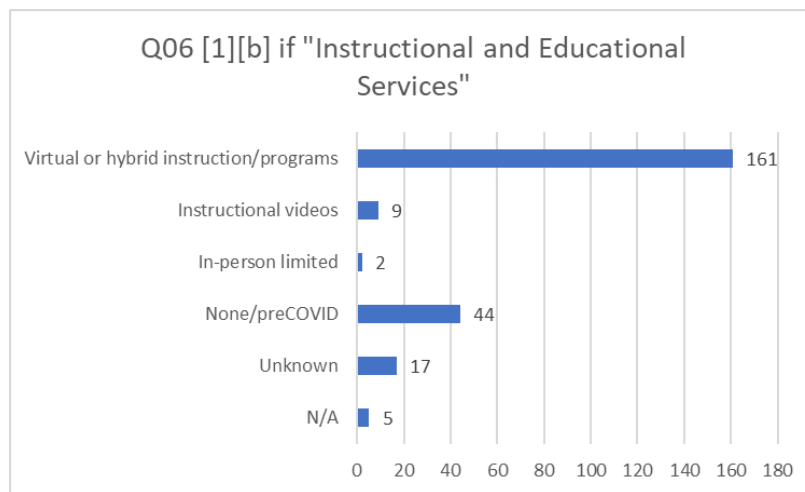
When asked if changes to collection management policies and procedures would remain part of normal operations, responses indicated that those libraries that shifted their collection develop practices to a digital preference would continue to favor digital resources over tangible formats. Nineteen respondents stated they did not believe pandemic changes to collection management strategies would remain in place, while eleven respondents were uncertain.

**Q06 [1][b]- If “Instructional and Educational Services” please explain:**

When asked to outline changes made to Instruction and Educational Services, a number of broad themes emerged. These included a shift toward asynchronous instruction, online consultations, virtual public programming, and virtual reference. Respondents reported

that courses moved online and included webinars, distance learning instruction, and recorded or live class sessions. When instruction was in person, hybrid solutions with limited attendance or advanced registration were preferred, and mask mandates were often in place.

Of 348 responses, 161 (46.3%) indicated an intention to continue offering virtual or hybrid instruction and programming. Respondents reported that online instruction and programming increased access, met needs of remote learners, and the service was expected. One library indicated that the service was an option but that there was not great interest from faculty. Nine libraries reported creating instructional videos as part of their instructional materials. Two libraries will continue to limit class sizes, and 44 indicated a return to pre-COVID practices.

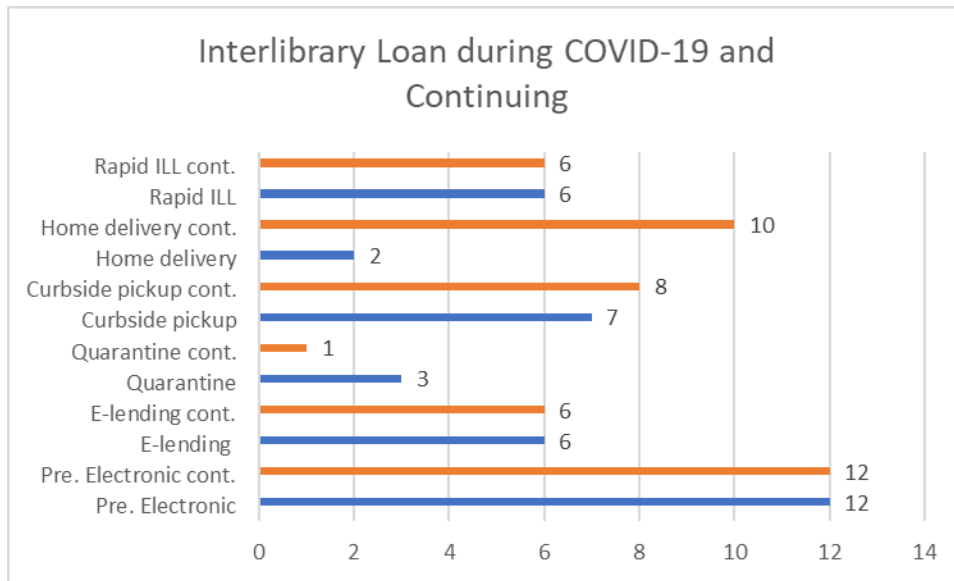


### Q06 [1][c]- If “Interlibrary Loan Services” please explain:

Respondents identified several ways in which Interlibrary Loan (ILL) services were changed during the first two years of the pandemic. Broad themes included: temporary suspension of physical ILL services (34 respondents), or limited services (16), with a significant increase in electronic loans and e-book lending (12). Rapid ILL services were also implemented (6 respondents), fines were waived (1), and curbside pickup/delivery (9) solutions were used. There was an overall decline in ILL requests per users, yet overall volume of requests increased. As in other areas of librarianship, staffing levels (14) and building closures were an issue (10).

When asked which of these policies remained in place as of December 2021, most libraries that reported suspension of ILL services have resumed. Nearly every library offering curbside services (8) will continue the service, possibly because of the investment in

equipment. Ten 10 will continue home shipping, and a large number will continue preferencing digital/electronic formats over sharing physical items. Libraries that instituted contactless pick-up options are retaining the service, again likely because the processes are in place. Of the responding libraries, 47 indicated an interruption to services. Responses make it unclear how libraries suspending or stopping services may have impacted the ILL system as a whole.



**Q06 [1][d]- If “Item selection / FDLP selection profile” please explain:**

Respondents reporting changes to their selection profiles between 2020 and 2021 indicated increased focus on digital selections or a changed focus to prioritize electronic publications. This involved a deselection of print, in part due to building closures. Others reported an end to print selection. Of the respondents, five reported they are no longer selecting materials, eight report a move toward digital only selection, fifteen report a shift toward a primarily electronic selection, eleven increased electronic selection, and two reduced their profiles.

When asked whether respondents plan to keep these changes permanently, 15 report plans to increase focus on digital selection, 15 want to move to digital selection only, one was unsure of future changes, one is leaving program, three have significantly limited all selections, and one used this as an opportunity to join the MARCIVE Cataloging Record Distribution Program (CRDP). Finally, one has changed its profile to non-tangible only but plans to return to pre-COVID selection. Unsurprisingly, the majority of libraries have a greater emphasis on digital selection, and have plans to go all-digital if possible. It is

unclear how many will outright discard tangibles in their collections, or how many plan to receive no additional print materials.

**Q06[1][e]- If “Outreach Services” please explain:**

An initial overview analysis of reported changes to Outreach Services revealed common themes including the suspension, scaling back, and alternation of in-person activities; facility closures; the adoption or increase of virtual instruction, outreach, and programing; and the realignment of staff duties. Less common changes included the addition of curbside pickups; home and mail deliveries; an increase in the use of email and social media for outreach; and new digital delivery options.

Of note is the overlap in the responses that indicated changes to “virtual outreach” and “virtual reference and instruction.” These seemed to be used interchangeably by respondents -and in ways that were not always clear. Responses were separated in all cases where the language was clearer, even if the meaning was not. Sometimes the answer provided in Q06 [1][e] illuminated the meaning in answers from Q06 [2] and vice versa.

<b>Q06[1][e]- If "Outreach Services," please explain:</b>	
No Changes	2
New Technology	2
Grab & Go Kits	2
Added Curbside Pickup	8
Limited Capacity	9
Unclear	15
Shifted to Virtual Outreach	27
Email, Newsletters, Social Media, Digital Displays, Guides	28
Closed to Public; Suspended or Curtailed In-Person Outreach	64
Increase Virtual Instruction & Reference	74

**Q06 [1][f]- If "Processing" please explain:**

Respondents report implementing COVID-19 heath protocols that involved quarantines of items, physical distancing between staff, cleaning, and limited staff on site. There were also stoppages to shipments and physical processing, with some processing moved off-

site through work-at-home arrangements. Work-from-home duties included records maintenance and updates to workflows. There were, in some cases, updates or changes to physical processing spaces. Closures and lack of staffing resulted in backlogs and workflow changes. A preference for e-materials, which predates the pandemic, continued to grow.

Materials cleaned/quarantined	Social Distancing / other measures	Suspended or slowed shipments/ receiving/ processing	Changed selection/ e-preference	Building closed	Virtual work/ from home	Fewer staff	Self-checkout	Changed process	No change
21	5	34	9	10	16	20	1	13	1
						1 staff added			

Of the 114 institutions that reported changes to processing due to COVID-19, 57 libraries (50%) indicated that no changes to processing would remain in place. Responses from the remaining 57 libraries varied. Nineteen libraries indicated a continued preference for digital materials. By inference, this change reduces the amount of time spent processing tangible items. The changes made to processing workflows were substantial during the initial phases of the pandemic due to building closures, staffing issues, ceased GPO shipments, and an emphasis on health and safety. However, almost all of these changes were suspended once more regular operations resumed. Ten libraries also reported that all of changes made due to COVID-19 would remain, but did not indicate how these would impact their processing procedures.

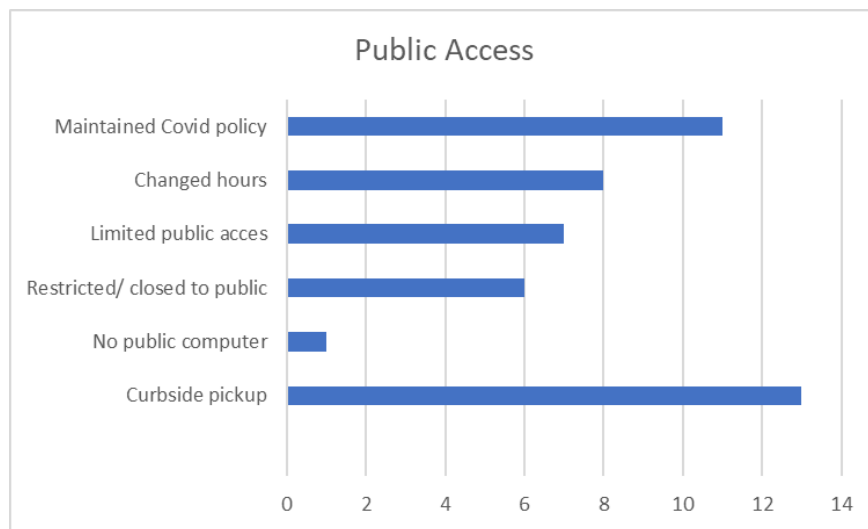
Nothing related to processing will remain in place	Updated processing workflows	Shift to digital items	Deselection of print	Shift to remote work, including processing	Replace rather than repair	Fewer staff processing items	Increased sanitary considerations/ procedures
57	4	15	9	1	1	2	1

Will changes be continued			Changes to continue				
Yes	No	Maybe	Process	Workflow	Remote	E-resources	No in-house repair
39	16	18	16	3	9	20	2

### Q06 [1][g]- If "Public access" please explain:

Libraries reported significant changes to Public Access during the COVID-19 pandemic, including reduced hours, closed stacks, no or limited public access, restricted building access, and the introduction of security stations. Libraries focused on remote or online services, implemented curbside pickup services, and some closed entirely without any services provided. When opened, masks were required at many libraries, proof of vaccination and appointments were required at some libraries, and some services, like printing, were suspended.

As of December 2021, the overwhelming majority of libraries report plans to resume normal public access hours. Thirteen will retain curbside pickup access, one will no longer provide public computer access, two remain closed to the public, four are restricted to members of their own organization, seven have limited public access, eight report changed to access hours, and 11 have retained COVID-19 policies to access and are unsure when they will be revised.



### Q06 [1][h]- If "Reference Services" please explain:

Many respondents (344) indicate that virtual Reference was a significant change brought about by COVID-19 in this service area. In most cases virtual reference was already taking place, existing services were expanded, and most report plans to keep these services in place. The respondents reported changes to methods of providing reference, including changing the service points or requiring appointments. Physical barriers, COVID-19 safety measures, building closures and changed hours also effected reference practices. When asked which of these policies were still in place as of December 2021, and which would

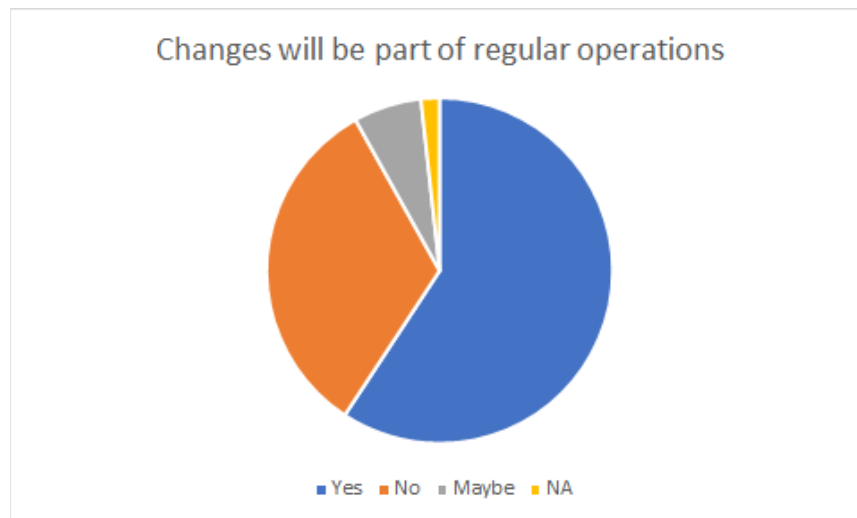
stay in place into the future, a major trend that emerged was libraries planning to continue the expanded COVID-19 era virtual reference services (135 of 344 libraries, 39%). One of the most introduced services was chat reference. Another trend noted was a move to greater use or emphasis on virtual appointments or consultations for reference (23 libraries). Increased virtual services led to more hybrid work opportunities for library staff.

Other COVID-19 related changes:

- Moving or consolidating the reference desk location or reassessing staffing and hours (8 libraries)
- Added staff to provide more reference (1 library)
- Reduced paper reference collection (1 library)
- More limited reference staff and services (1 library)

Of 344 libraries who indicated changes to reference services, 172 libraries (50%) indicated the some changed services – staffing, virtual reference, changed hours or limit services – would likely remain post-pandemic.

Changes remain	Changes discontinued	Changes might remain	Not applicable
205	113	22	6



**Q06 [1][i]- If "Shelving" please explain:**

According to the 2021 Biennial Survey, Shelving (as a work process) was impacted by staff limitations, facility closures, remote work, and new procedures to deal with potential

COVID-19 contamination, which included the use of masks and gloves, and wiping down materials before shelving. Shelving (as a facility resource) was impacted by facility closures, space reallocation in library facilities, and the need to quarantine materials in a separate area before re-shelving. In total, 94 libraries reported COVID-19 policies that affected shelving practices.

When asked which of these policies or changes will potentially remain in place into the foreseeable future, only eight libraries (8.5%) noted the continuation of changed shelving practices. This included the continued use of increased sanitation methods (1 library) as well as continued quarantine periods for returned items (2 libraries). Additionally, several libraries noted changes in shelving locations (3 libraries), upgraded shelving (1 library), as well as the downsizing of the shelving area to make larger study spaces (1 library).

#### **Q06 [1][j]- If "Staffing" please explain:**

A significant number of respondents (239) report changes to staffing as a result of the COVID-19 pandemic, most notably a shift to remote and flex work, position reassignments, and the addition of new duties. Retirements, unfilled vacancies, hiring freezes, staff reductions, and furloughs further complicated staffing.

When asked to identify COVID-19 policies still in place in Dec 2021, and to speculate which policies would remain in place into the future, the continuation of hybrid (including teleworking/hybrid/remote work) work schedules was the main theme. Forty-six libraries (19%) noted that some form of hybrid work would continue at their institutions. The second most prominent change, noted by thirteen libraries (5%), was a move to reduced staff moving forward. Only one library noted a staff increase, and one library noted that staff duties underwent changes.

#### **Q06 [1][k]- If "Storage" please explain:**

Only 26 respondents reported that the COVID-19 pandemic caused interruptions to access of offsite storage facilities. Storage facilities were also reallocated away from storage of publications toward other uses, such as storage areas repurposed for use as student/user work/study areas and more socially-distanced staff work areas. Quarantine procedures impacted storage space due to the need for a dedicated area for holding materials before re-shelving.

When asked which of these policies were still in place as of December 2021, and which policies libraries expected to retain into the future, the overwhelming trend was continued



purchasing e-materials, and selecting e-materials through the FDLP. Eleven (42%) anticipated a continuation of COVID-19 related policies, with Five (19%) reporting continued shift to digital collections. As of the survey, eleven still had COVID-19 policies in place with relation to storage, fourteen (54%) had returned to normal storage arrangements, and one response was unclear.

### Q06 [1][1]- If "Other" please explain:

Respondents of the 2021 Biennial Survey had the option of “other” when describing the impact of COVID-19 policies on their libraries. Many of the responses were duplicated in other questions, however five major trends emerged: physical changes to the library; use of new technologies like mobile hotspots, pick-up lockers, new checkout tools; fines were waived and abandoned; extended lending periods; health-checks as a structured part of managing processes.

When asked which of these policies the respondents expect to stay in place into the near future, nine of the 69 (13%) respondents reported plan to undo the changes, all of which are pandemic specific (ex. quarantine, mask requirements, cleaning, closed access). In instances where libraries report a continuation of policies, it is because large procedural or structural changes were put into place: ex plexiglass dividers, curbside pick-up lockers, workflows for scanning and digital delivery. Services that were popular during COVID-19 will also continue, including virtual reference, home delivery, remote work / remote instruction. Changes to physical space, like distanced computers or plexiglass, are staying in place.

When viewed collectively, the responses analyzed in this section demonstrate the significant-yet-varied impact that COVID-19 mitigation policies had upon FDL operations. These initial findings also hint at potential long-term trends that will continue shaping the FDLP landscape for years. To better understand these trends, however, additional data will need to be collected in future biennial surveys for more thorough longitudinal studies.

## Appendix III

### Potential Inconsistencies, Errors, and Unexpected Results

The data used in this project originates from user-supplied information gathered during the 2021 Biennial Survey. As is true of all survey data, there will be a margin of error, which the GPO staff and the Working Group have attempted to identify, minimize, and correct.

#### Quantitative Data

The most prominent difficulty in the data analysis process was contradictory responses. As an example, 11 institutions (~1% of total respondents) checked the box to indicate that no changes were made at their institutions during COVID-19, yet these same institutions also provide specific examples of changes that were made at their institution during the pandemic. In these cases, the working group did not change their answers; they were statistically counted as institutions in which “respondents *indicated* no changes were made.” If a respondent reported no changes in policy, but also reports changes to a specific catalog they were included in the statistics for that field as well. As an example, if an institution checked the “no changes” box and also reported changes to Reference Services, they were included in both sets of statistics. Their written responses were still analyzed in the qualitative section of the report.

Another difficulty during the data cleaning phase were respondents who wrote “no,” “n/a,” “no changes” instead of leaving reply boxes blank. These null responses were originally counted as affirmative “yes” responses because the field was not left blank. Since the field was not blank, they were counted as positive replies. For this reason, initial counts for policy changes were slightly higher than the actual number. As an example, an initial report of the data indicated that 121 libraries reported changes to “Collection Maintenance and Weeding,” and this was the figure given to the public during the 2022 Fall DLC update. After cleaning the data and removing the Null responses, the actual figure was actually 118. To account for this issue, the data was examined more thoroughly and null values were standardized for a more accurate machine-read tabulation of responses. The [final research data used](#) in this project reflects the cleaned and most accurate data the Working Group and GPO could create.

A minor difficulty also developed from the late selection of RStudio as an automated data analysis solution. RStudio was not selected for this purpose until late 2022, after the datafile was created and finalized in March 2022. As a result, the naming conventions in the file are not ideal for R. As an example, lengthy column names in the datafile (Ex.

“Changes were made due to COVID-19 but now back to pre-COVID policies”) must be searched exactly as written in RStudio. This does not have an effect upon RStudio operations, but it is not best naming practice. Similarly, some of the column and asset names include characters that are also Boolean functions in R. For example, responses in the “Library Type” and “Library Size” columns include parentheses, which are a Boolean command in R. This does not affect the operations of R because these characters are within quotation marks and thus recognized as characters not commands, but this can nevertheless cause confusion for first-time R users. These formatting issues do not prevent RStudio from operating correctly, but are not best practice.

## Qualitative Data

There were occasional inconsistencies in the written responses. In multiple instances, a respondent may have excluded mention of a specific policy change in their response to Q06 [1], while later identifying retention of the same previously-unmentioned policy as a long-term outcome of the pandemic in Q06 [2]. As an example, an institution may have reported no changes to staffing in Q06 [1], but later identified reduced staffing as a long-term impact of COVID-19 policies in Q06 [2]. In these instances, the working group did not retroactively alter or change Q06 [1] responses to match on contradictory Q06 [2] responses, and the data was analyzed as submitted. As a result, slight inconsistencies occur; for example, the number of institutions identifying “curbside pickup” a long-term COVID-19 policy in Q06 [2] is slightly higher than the number of institutions that reported implementing curbside pickup as a policy in Q06 [1].

Another inconsistency stemmed from the manner in which respondents classified policy changes that affect multiple categories. For example, the introduction of curbside pickup lockers may have impacted multiple areas of operations (ex. Public Access, Interlibrary Loan, Staffing, etc.) but a respondent might have only listed it as a change to Public Access. Similarly, some institutions identify “home delivery” of books as policy change to Public Access alone, while other respondents also listed it as a policy change relating to Interlibrary Loan and/or other categories. In these cases, the working group examines the data as presented without changing responses, using the respondents’ original classifications. While this yields some minor inconsistencies, the working group was reluctant to retroactively change respondents’ written answers.

Finally, analysis of qualitative data was dependent upon the amount of data provided by respondents. Many responses were thorough, though written as bullet points or sentence fragments. Other responses were vague or provided limited detail. One respondent

answered every question “I have no prepared answer” without additional detail. Some responses, as noted above, were contradictory. In some instances, respondents responded with “no,” “N/A” or “0” rather than leaving fields blank. The working group ultimately accepted the provided data as presented without changing or revising the meaning of the written data; whatever minor inconsistencies this approach introduced into the qualitative analysis, the working group accepted the written responses from the community at face value.

## Appendix IV

### Encouraging Use of the Data Collected

The expansive amount of data collected from Q06 of the 2021 Biennial Survey, coupled with the inclusion of data fields from the [Federal Depository Library Directory](#), provides numerous possibilities for comparing and contrasting responses beyond what the Working Group reported. The ability to generate findings by state, library type, and library size, provides opportunities to create reports of local interest.

The Working Group decided to provide a means for the FDL community to explore the data to create and answer questions for their needs, and to use this data as the foundation of detailed future studies. To this end, an Excel file of the Q06 data in which the qualitative written responses were converted into a machine-readable format is available. The Working Group, with invaluable assistance from William & Mary student Mr. Sasan Faraj, also created R code that allows comprehensive examination of the data.

A software solution was identified that would allow members of the community to directly analyze the data file themselves. R and RStudio were selected because they are open-source software, comparatively easy to use, they provide a range of search options, and there is a large amount of free online training and support from the R community. Mr. Faraj wrote an R code and provided technical support. In addition to creating the code that loads the Excel file into R, he also created a detailed read.me file that provides directions on using RStudio. The Excel data file and instructions on using Rstudio are freely accessible from the Working Group's [data analysis files](#) on FDL.gov.

### Overview of the Data and Instructions

This section provides instruction on accessing, manipulating, and examining the quantitative data collected from Question 6 of the 2021 Biennial Survey. This study produced two important sets of data, which the Working Group hopes the FDL community will explore and use in their own research. The first set includes the unaltered qualitative responses for Q6[1] and Q6[2], which can be found in the [2021 Biennial Survey Data Sheet](#), tabs "Q61P" and "Q62." This includes the exact text of respondents' written answers to Q6[1] and Q6[2]. The [second set](#) contains the same data in a machine-readable Excel file, in which the written responses have been replaced with "X" affirmative fields and "[blank]" null fields. The latter set was created for use in analytical software, in which users can ask for results based on specific parameters (Ex. "Libraries from New York that are Selective Depositories that reported changes to Interlibrary Loan Services but no changes to Public Access").

The FDL community is encouraged to use any software or language with which they are familiar, and can use the Data Filter feature in Microsoft Excel to create some rudimentary searches. As a starting point, the Working Group also created R code, combined with the tutorial below, for those who are not familiar with analytical software or are unsure where to start. Members of the community do not need to use R to examine the data, nor is it the recommended or preferred method of analysis, it is simply the starting point used by the Working Group.

## Limited Tutorial

This is a very general overview of how to use RStudio and is meant to give readers enough understanding to run searches for this specific dataset. Model search templates are included so members of the FDL community without R experience can formulate basic searches. For a more detailed introduction to R and RStudio, consider these training resources: <https://education.rstudio.com/learn/beginner/>  
[https://www.jcu.edu.au/\\_data/assets/pdf\\_file/0004/1188310/R-Studio-Basics.pdf](https://www.jcu.edu.au/_data/assets/pdf_file/0004/1188310/R-Studio-Basics.pdf)

Please note that directions for viewing this Excel file are also included in the R code itself and are displayed in the bottom left box upon loading the code.

## Downloading the Necessary Software

To view and analyze this dataset, download R and RStudio. Both are free and can be downloaded at <https://www.r-project.org/> and <https://posit.co/products/open-source/rstudio/>. Install R first, and then install RStudio.

Users will also need to open the [StartupCode.txt file](#), which is located on the [FDLP webpage](#).

## Downloading the Data

### Downloading the R-Readable Excel File

You will need to download [DLC-COVID19WG-2021-biennial-survey-q6-2023](#), which is the cleaned, machine-readable version of the 2021 Q6 data. This file is hosted on the [FDLP webpage](#). Note: if you change the name of the Excel file, the code provided below no longer works correctly and you will need to use the `read_xlsx()` command to re-identify the Excel file. Renaming the Excel file is not recommended for users who are unfamiliar with R.

Importantly, be sure to download and save the Excel file into a new and permanent folder or directory. You can name the folder or directory whatever you wish, so long as the file stays in that location. If the file is moved to a new folder later, users will need to go back and identify the new folder/directory location in the code. As an illustration, this walkthrough will use “Test” as the folder/directory name.

## Introducing the Code into RStudio

### Getting Started: Loading the Start-up Code

To get started, open RStudio. If the software recommends updates, be sure to download the newest version. When RStudio is ready, the leftmost panel will have information about the current R software version, below which will be a command line prompt being with >

Open the file StartupCode.txt, located on the [FDLP website](#). This file includes code users will need to copy-and-paste into RStudio. The code will instruct RStudio where to find the Excel file and will provide RStudio with instructions on how to examine the data.

After pasting the code from StartupCode.txt into the RStudio prompt screen, do not hit enter yet. First, users must assign a pathway, or give the location in which the Excel file is stored on their computer. In RStudio, this will be the line:

```
filepath = 'INPUT FILE LOCATION HERE'
```

The filepath is the file location on your computer and it tells RStudio where to locate the datafile. The name of the file itself already in the R code, so it will just need the location (eg. the folder/directory name).

**For Mac Users:** outside of RStudio, open the folder in which the Excel file is located. Look at the properties of the Excel file to see the directory path. The directory path is listed as “where” in the Mac properties box. In our example, it would look like:

```
/users/govinfouser/Desktop/Test.
```

Copy and paste this into line 12 so the line reads:

```
filepath= '/users/govinfouser/Desktop/Test'
```

Once this is step is completed, hit Enter. This will load the Excel file into RStudio. The bottom left box will display the Excel data being unloading into RStudio.

**For PC Users:** outside of RStudio, open the folder in which the Excel file is located. Look at the properties of the file to see the directory path. The directory path is listed as “Location” in the PC properties box. In our example case, it would look like:

C:\Users\govinfouser\Desktop\Test

Copy and paste this into line 12 so the command reads:

```
filepath= 'C:/Users/govinfouser/Desktop/Test'
```

**Important Note:** You will need to manually change the backslashes (\) to forward slashes (/).

Once this step is completed, hit Enter. This will load the Excel file into RStudio. The bottom left box will display the Excel data being loading into RStudio.

### Navigating RStudio

#### What are the four boxes/displays in RStudio?

After inputting the R code, there will be four boxes on the screen in RStudio.

**The upper left** screen is the display or “Source Editor” that will show the results of saved searches.

**The bottom left** screen is the console where commands are typed.

**The upper right** is where past searches are saved. Note that it already has several searches saved. Searches “a” “b” “c” “d” “e” are preloaded sample searches, and “df” is the full dataset of all 1065 institutional responses.

**The bottom right** screen shows the files in the folder/directory. This is where exported and saved Excel files will appear.

### Panels

<b>Source Editor Panel</b>	<b>Environment Panel</b>
<p>This screen will display saved searches from the Environment Panel. It will also show the R Script that was loaded when first opening the program.</p> <p>You typically will not type commands into this panel, with one notable exception: you will change the file path line after copy-and-pasting the initial code.</p> <p>This panel is where saved searches and tables will be loaded. Example: If you click preloaded sample search “d” in the Environmental Panel to the right, the results from that will be listed in this panel.</p>	<p>This is where saved searches are kept. When running a search in the <b>Console Panel</b>, assign a letter or letters (Ex. b =) to your search. The search will be saved here. Click on it to see the full results to the left. The R code has several examples of saved searches preloaded, which will already be here when you start the file</p>



<p><b>Console Panel</b> This is where you will type your search commands.</p> <p>To execute a command, hit Enter.</p> <p>When you run a search, the immediate but incomplete search results will be displayed in this panel. To see the full results of a search, click the saved search in the <b>Environmental Panel</b> and it will be displayed in full above.</p>	<p><b>Files Panel</b> This shows files in the directory, and is where saved files will be located.</p>
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Please note that this is a very general and simplified summary.

### Commands in RStudio

After the R code is installed, all commands and searches will be typed in the bottom left box. Execute commands by hitting Enter. RStudio uses Boolean operators. These include:

ACTION / FUNCTION	R COMMAND
AND	&
OR	
EQUAL TO	==
NOT EQUAL TO	!=
GREATER THAN	>
LESS THAN	<
GREATER OR EQUAL	>=
LESS THAN OR EQUAL	<=
GROUPING [same as parentheticals in Boolean)	()

RStudio uses commands and functions to run searches. Below are a few key functions:

ACTION / FUNCTION	R COMMAND
IN [looks for specific value within a selected column or field]	%in%
Is Null [no value]	is.na()

NOTE: "is.na" is used only for yes/no questions. The "!=" command above is used for excluding specific answers. To run a search to find institutions that reported "no" to a question, use "is.na" and to run a search in which a specific answer to a question is exclude (ex. exclude institutions from NJ) use !=NJ See examples at end of section.	
Display results that meet specific criteria	which
Search multiple variables at once	cbind

There also are commands that will tell users which fields and viables they can search. Below are the most useful commands:

Action / Function	R Command	Example
List the possible search fields or topics.	names	Lists the search fields, including: state, depository type, library size, etc
List the possible answers within each field or topic	unique(df\$)	unique(df\$'Depository Type') shows that respondents could have selected "selective" or "regional"
View a previous list of search results	View()	View(df) shows the full list of respondents and all their answers in the upper left box.  View(a) shows the results for demo search a, which shows every library that made changes to outreach services.
Remove old search from history / "environment"	Remove()	Remove(a) will remove & delete an old search "a" saved in the "Environment" box in the upper right side.

Export saved search as Excel File	<code>write_xlsx(##,#.xlsx')</code>	<code>write_xlsx(c,'c.xlsx')</code> will save search c as an Excel file. Files are saved to the same folder/directy as everything else.
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Example searches are included at the end of this section, which users may use as templates when creating their own searches.

### What data can I search?

RStudio will allow users to search all data included in the Excel sheet, including all the response data from the 1,065 respondent databases. The “searchable fields” are the categories in which respondents could note a change in procedure due to COVID-19. The searchable fields also include general information about each library, including size, depository type, CRDP status, etc. The searchable fields, which can also be viewed in RStudio with the **names** command, are below. Possible responses to each section, which can be also viewed in RStudio for every field using the `unique(df$)` command, are also listed below.

It is important to note that R is case sensitive, so inquiries must match the exact style used in the Excel sheet and R code. For example, the command `unique(df$ `Partnership Agreement`)` will work but `unique(df$ `partnership agreement`)` will not. Similarly, using the abbreviation “Va” or “va” will not work, but “VA” will.

Below is a table of every search field, paired with all possible values. When writing your searches, be sure to match the exact style, including capitalization, below.

Field	Possible Responses/Values
CRDP Participant	NA, Yes, Former
Partnership Agreement	NA, Yes, Former
State	AL, AK, AZ, AR, CA, CO, CT, DE, DC, MD, FL, GA, HI, GU, ID, IL, IN, IA, KS, KY, LA, ME, MA, MI, FM, MN, MS, MO, MT, NE, NV, NH, NJ, NM, NY, NC, ND, OH, OK, OR, PA, SD, PR, RI, SC, TN, TX, UT, VT, VI, VA, WA, WV, WI, WY
NCSA	South, West, Northeast, Midwest
Depository Type	Selective, Regional
Library Type	Highest State Court Library (SC), Academic General, Federal Agency Library (FA), Public Library (PU), Academic, Law Library (AL)", Academic, Community College (AC), State Library (SL), Special Library (SP), Federal Court Library (FC), Service Academy (SA)

Library Size	Small (less than 250,000 volumes in the library), Large (more than 1,000,000 volumes in the library), Medium (250,000 - 1,000,000 volumes in the library)
Library Number	Contains depository number of every respondent institution
Changes were made due to COVID-19 but now back to pre-COVID policies	NA, X [NOTE: X notes that this box was checked by the respondent library, indicating that this change was made. To see a list of institutions that selected this option, search for value X ; for institutions that did not mark this option, search NA]
Collection Maintenance and Weeding	NA, X
Instructional and Educational Services	NA, X
Interlibrary Loan Services	NA, X
Item Selection / FDLP Selection Profile	NA, X
No new policies or procedures implemented	NA, X
Other	NA, X
Outreach Services	NA, X
Processing	NA, X
Public Access	NA, X
Reference Services	NA, X
Shelving	NA, X
Staffing	NA, X
Storage	NA, X
Grand Total [Note: number of fields the institution marked as areas of change	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11

## Running a Search: Basics

This is an extremely basic primer meant to provide an entry point into composing basic searches in R.

To run a search, first assign a letter or series of letters.

Example: `k = df[which(df$'Outreach Services' == 'X'),]`

After hitting enter, `k` will appear in the Environment Panel in the upper right. Clicking it will show the full table of results.

For additional examples, the R code comes pre-loaded with searches a,b,c,d,e. These search examples are:

Sample Command	What the system was asked
<code>a = df[which(df\$'Outreach Services' == 'X'),]</code>	Which libraries made changes to Outreach Services?
<code>b = df[which((df\$'State' %in% cbind('VA','AL')) &amp; df\$'Outreach Services' == 'X'),]</code>	Which libraries in Virginia and Alabama made changes to Outreach Services?
<code>c = df[which((df\$'Library Size' == 'Small (less than 250,000 volumes in the library)') &amp; (df\$'Staffing' == 'X'   df\$'Reference Services' == 'X'))],]</code>	Which libraries that are Small made changes to both Staffing and Reference Services?
<code>d = df[which((df\$'Library Type' == 'Academic, Law Library (AL)') &amp; (df\$'No new policies or procedures implemented' == 'X'))],]</code>	Which libraries that identified as Academic Law Libraries reported no policies or procedures implemented?
<code>e = df[which(((df\$'Depository Type' == 'Selective') &amp; (df\$'Collection Maintenance and Weeding' == 'X')) &amp; (is.na(df\$'Instructional and Educational Services'))),]</code>	Which Selectives made changes to Collection Maintenance and Weeding but did Not make changes to Instruction and Educational Services?

These searches are preloaded into the R code, and are listed in the top right panel. When selected from the top right, the results will be listed as a table in the upper left panel in RStudio.

## Some Fundamental Aspects of Searches

- All search variables need to be contained within the `df[]` expression, because you are containing your search within the data frame(df), or full list of results within the Excel File.
  - Example: `a = df[which(df$'Outreach Services' == 'X'),]`
  - This search is asked which results, within the df, meet this requirement.

- Every individual variable you search for within the df[] will be contained within parentheses.
  - Example: `d = df[which((df$'Library Type' == 'Academic, Law Library (AL)') & (df$'No new policies or procedures implemented' == 'X'))]`
  - This is a Boolean search asking which libraries in the df are **academic** libraries AND **indicated no changes to policies**. Each search criteria is in its own parentheses.
- There should always be the same number of open and closed parenthesis, like in a Boolean search.
  - Example: `d = df[which((df$'Library Type' == 'Academic, Law Library (AL)') & (df$'No new policies or procedures implemented' == 'X'))]`
    - This is a tricky example because the (AL) is part of the variable name, not part of the search command, which is why these parentheses are inside the quotation marks. This does not change the rule that parenthesis must be evenly matched.
- Individual variables are in quotation marks. They can be single (') or double ("), provided it is consistent across the entire search.
  - Example: `d = df[which((df$'Library Type' == 'Academic, Law Library (AL)') & (df$'No new policies or procedures implemented' == 'X'))]`
    - All variables from an Excel cell, such as 'Library Type' or 'X', need to be within quotation marks.
  - In the case of Library Type and Library Size, parentheses are included within quotation marks because it is part of a variable name. When inside quotation marks, parentheses are just normal characters, not Boolean commands.
    - Example: `df[which(df$'Library Type' == 'Academic, Law Library (AL)')]`
- Capitalization matters, so search *exactly* as presented in the *names* and *unique(df\$)* menus. Search exactly as the words are styled in the Excel sheet.
  - Example, a search for “Outreach services” will return an error because the column is listed as “Outreach Services.”
- Each saved search needs to be assigned its own letter(s) identifiers. As an example, a-e are already being used. Any combination of letters can be used to name/save a search. As an example, `dlc = df[which(df$'Outreach Services' == 'X')]` is an acceptable name for a search. A search called dlc will appear in the top right panel after hitting enter.
- All searches will end `,]` with the comma included.

- Punctuation matters. One space between characters is not the same as two spaces between characters; the latter will yield errors.

### Saving and Exporting Searches into Excel Files

To save and export your searches, you will need to name them in RStudio. As an example, search “a” is already loaded as a sample:

```
a = df[which(df$'Outreach Services' == 'X'),]
```

For your own searches, assign a letter or series of letters to a search. Example:

```
Fdlp = df[which((df$'State' %in% cbind('NY')) & (df$'Other' == 'X')),]
```

Note: you can run searches without saving them, in which case simply exclude everything before the first d df[which((df\$'State' %in f. Example:

```
% cbind('NY')) & (df$'Other' == 'X')),]
```

To save a search as an Excel file, use the command:

```
write_xlsx(,#,#.xlsx')
```

In this case, # is the name of the search. In the case of the Fdlp search, the save command is:

```
write_xlsx(Fdlp,'Fdlp.xlsx')
```

The file will save in the folder/directory, and will appear in the lower right panel. You can also save your ongoing work and search history in RStudio itself. When exiting the software, you will be asked to save the .RData file and the R code. If you save these, your previous searches will be saved the next time you open RStudio.

### Additional Sample Searches

The examples below are meant to illustrate how the system works, and to show how elements and commands can be added or substituted to run searches. To fully utilize the functions of R, which allow users to run detailed and nuanced searches, users are encouraged to review free R tutorials elsewhere. This is meant to get users started.

Search	What the system is being asked
df[which(df\$'Item Selection / FDLP Selection Profile' == 'X'),]	Which libraries indicated they made changes to “Item selection / FDLP Selection Profile”
df[which(df\$'Other' == 'X'),]	Which libraries indicated they made changes to “Other”?

df[which(df\$'Depository Type' == 'Selective'),]	Which libraries in the data frame (“df”) identified as a selective?
df[which((df\$'State' %in% cbind('NY')) & (df\$'Other' == 'X')),]	Which libraries in the state of NY made changes to Other?
df[which((df\$'State' %in% cbind('VA','AL')) & (df\$'Outreach Services' == 'X')),]	Which libraries in the states of VA and AL made changes to Outreach Services?
df[which((df\$'Depository Type' == 'Selective') & (df\$'Collection Maintenance and Weeding' == 'X')),]	Which libraries that identify as selectives made changes to collection maintenance and weeding?
df[which(((df\$'Depository Type'=='Selective') & (df\$'Collection Maintenance and Weeding'=='X')) & (is.na(df\$'Instructional and Educational Services'))),]	Which libraries that identified as Selectives made changes to Collection Maintenance and Weeding but did NOT make changes to Instructional and Education Services?
df[which(((df\$'Depository Type'=='Selective') & (df\$'Collection Maintenance and Weeding'=='X')) & (df\$'Instructional and Educational Services'=='X')),]	Which libraries are Selectives and made changes to Collection Maintenance and Weeding and to Instructional and Educational Services
df[which((df\$'NCSA'=='Northeast') & (df\$'Instructional and Educational Services'=='X') & (is.na(df\$'Interlibrary Loan Services'))),]	Which libraries in the Northeast service area made changes to Instructional and Educational Services but NOT to Interlibrary Loan Services
df[which((df\$'NCSA'=='Northeast') & (df\$'State!='NY') & (df\$'Instructional and Educational Services'=='X') & (is.na(df\$'Interlibrary Loan Services'))),]	Which libraries in the Northeast service area, excluding NY libraries, made changes to Instructional and Educational Services but NOT to Interlibrary Loan Services

### Additional Help and Resources

In addition to this short summary, there are usage directions built into the R code itself. These directions will be displayed immediately after the file is downloaded and opened in the bottom left RStudio Box. Also, technical documentation can be found in a [readme file](#). For users who are uncomfortable using R and RStudio, the Excel file itself can be used to emulate some of the searches above by using “filter” option under “Data.”

### Final Note about RStudio

This section is an extremely basic summary of RStudio’s most rudimentary features and functions. It does not touch upon RStudio’s ability to create graphs or maps, nor the ability



for RStudio to upload multiple R Files or Excel files for purposes of cross-referencing. The working group encourages members of the FDL community with greater experience using R will use this data to ask unanticipated and important questions and will use this foundation to generate new data and visualizations.

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