Colorado Public Library
Health Program Survey Report

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EXECUTIVE SUMMARY

The Colorado Area Health Education Center (COAHEC), the Colorado State Library, and the STAR Library Network, released a survey on March 16, 2021 asking Colorado public library staff to provide information about their interest (and their community's interest) in a variety of health related concerns. It also ascertained their willingness to join a trusted network of health professionals that would disseminate health information and learning opportunities to all communities in Colorado. The goal of this learning network would be to address chronic health issues and emerging crises in medicine and public health. The survey was active for a 2-week period that ended on March 30, 2021. This report presents findings from the online survey completed by 64 library staff from public libraries in urban, suburban, and rural communities in Colorado. Key findings are listed below.

- The survey sample is representative of the community types across Colorado. When asked to define the type of community where their library is located, 52% identified their community as rural, suburban/rural, or resort. Urban, urban/suburban, and suburban communities totaled 43%.
- Most respondents (61%) identified themselves as a library director or manager. This category included associate directors, branch managers, digital services managers, and supervisors. The next largest group was adult services staff (19%) followed by youth services staff (13%).
- Survey responses reflect the burning need for communities to provide critical services (such as food, shelter, and healthcare) and programs for their underserved and underrepresented populations. Groups under-utilizing library services before and during the COVID-19 pandemic included: seniors, homeless populations, Spanish speaking adults, teens, working adults and families, and low-income members.
- There was broad interest across many health topics (21) that respondents felt would be important for their library and community to know more about. These included Access to Healthcare (83%), Health Insurance Information (68%), Health Literacy (70%), Aging (67%), Child Health (62%), Vaccinations (65%), Lifestyle (72%), Substance Abuse (68%), and Mental Health (90%).
- Libraries were interested in a variety of health program types (e.g., exhibits, screenings, kits, workshops) have high interest levels in the combined Interested/Very Interested categories. Those that are substantially greater than 50% include hands-on exhibits at 65% (such as Discover Health mentioned earlier); health fairs at 65%; health screenings at 71%; story time at 65%; hands-on workshops at 76%; circulating kits at 63%; and teen science cafes at 75%.
- Prior to the pandemic, 60% of the respondents said that their library offered health-related programs and activities. This survey found that a large percentage (81%) of the respondents were interested or very interested in providing health programs with partners such as public health organizations, hospitals, and K-12 schools. There was overwhelming support (92%) for libraries and their health organization partners to be able to quickly respond to new public health crises when they arise.

"A library outranks any other one thing a community can do to benefit its people."
~Andrew Carnegie

1. Overview

The [Colorado Area Health Education Centers](#) (COAHEC)/Anschutz Medical Campus, in partnership with the [Colorado State Library](#) and the [STAR Library Network](#), released a survey on March 16, 2021 asking Colorado public library staff to provide information about their interest (and their community's interest) in a variety of health related concerns. It also ascertained their willingness to join a trusted network of health professionals that would disseminate health information and learning opportunities to all communities in Colorado. The goal of this learning network would be to address chronic health issues and emerging crises in medicine and public health. The survey was open for a 2-week period that ended on March 30, 2021. This report presents findings from the online survey completed by 64 library staff from public libraries in urban, suburban, and rural communities in Colorado. The three organizations responsible for the survey and this report are described below.

As one of many state Area Health Education Centers (AHEC) in the U.S., COAHEC is affiliated with CU Anschutz Medical Campus (AMC). From its inception in 1977, COAHEC has established strong community and academic partnerships throughout Colorado. COAHEC provides oversight to 6 regional AHECs in Colorado to broadly service all communities (urban, rural, and frontier) with the triple aim to enhance diversity and distribution of a diverse healthcare workforce in Colorado and to support Colorado's healthcare system. In this capacity, as respected community members, regional AHECs are uniquely poised to facilitate partnerships with local libraries, schools, physicians and other advanced practice providers and organizations, to facilitate healthcare outreach, education, and reform.

The Colorado State Library (CSL) helps libraries, schools, museums, and other organizations improve services, making it easier for all Coloradans to access and use the materials and information they need for lifelong learning. They provide leadership and expertise in developing library-related policies, activities, and assistance for school, public, academic, and special libraries. A primary goal of their efforts is to improve the ability of libraries to provide quality services to all Coloradans.

For over 10 years, the [STAR Library Network](#) (*STAR Net*) has supported library professionals in building their science, technology, engineering, and math (STEM) skills by providing "science-technology activities and resources" (STAR) alongside training to use those resources. It is a hands-on learning network for libraries and their communities across the country. The *STAR Net* community has grown substantially, and currently includes over 8000 library and STEM professionals. This is consistent with an increase in interest in STEM by libraries, as communities across the country have urged their libraries to offer more STEM programming. Members can access webinars, monthly newsletters, blogs, partnership opportunities, facilitation guides, book recommendations and a variety of curated [STEM activities](#).

2. Public Libraries: Centers of STEAM Learning

Communities value their public library as a hub for community engagement and lifelong learning. As places that offer their services for free, public libraries have become the "public square" by providing a place where members of a community can gather for information, educational programming, and policy discussions (Pastore 2009; Miller et al., 2013; The Aspen Institute, 2014; Dusenbery 2014a; American Library Association, 2018). In 2019, there were 1.2 billion in-person visits to the 16,560 public libraries and 647 bookmobiles in the U.S. (Pelczar et al., 2021). See Figure 1 for a geographic distribution of public libraries in the U.S. This is equivalent of about 4 million visits each day. This is equivalent of about 4 million visits each day. Public programming expanded 17% since FY2012 (Reid, 2017); in 2019, public libraries offered 5.90 million programs across all age bands and on a variety of topics, which were attended by over 124.7 million people (Pelczar et al., 2021).

A recent Gallup poll (Gallup, 2019) found that "visiting the library remains the most common cultural activity Americans engage in," far surpassing going to a movie theater or live sporting events. The poll also found that women were almost twice as likely to visit a library than men and low-income Americans visited more often than those with higher incomes.
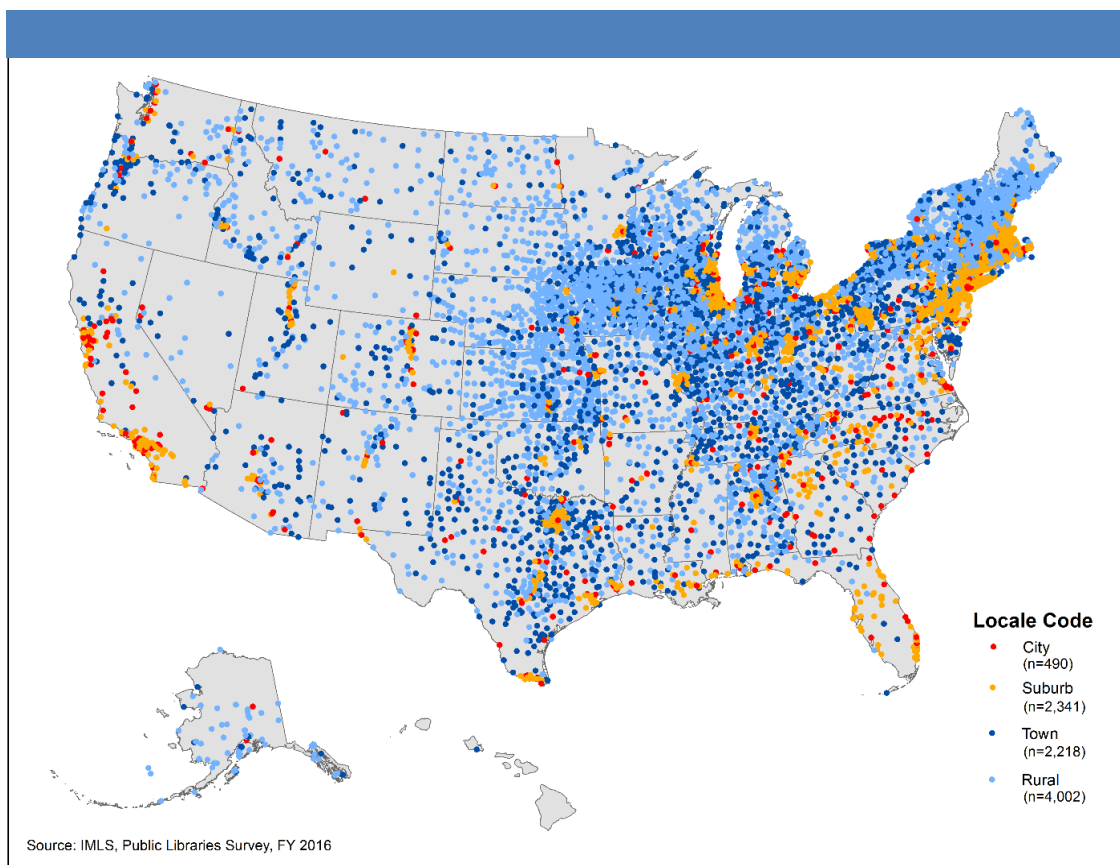

Fig. 1. Distribution of Public Libraries in the United States, Fiscal Year 2016. Credit: Public Library Association

STEM disciplines and careers are an increasing focus of public library programs and services (Baek, 2013; Hakala et al., 2016; LaConte & Dusenbery, 2016). Public libraries hold great promise for promoting STEM education and learning (Dusenbery, 2014a; Shtivelband et al., 2016; Gilbert et al., 2019). These informal, free-choice institutions (NRC, 2009) are creating makerspaces and hosting STEM exhibits. For example, the NIH-funded *Discover Health* exhibit (managed by COAHEC and *STAR Net*) was on a state wide tour of 10 Colorado libraries from 2015-2019 (see Figure 2). They also offer hands-on STEM programming (Dusenbery 2014b; IMLS, 2018; Dusenbery et al., 2021), both in-person and online (the latter was especially important during the COVID -19 pandemic). Libraries may provide STEM programs on their own, or in partnership with other libraries, museums, businesses, and schools to educate and engage the public in STEM topics (Koester, 2013; NRC, 2015).

Fig. 2. Young library patrons explore the human body at the *Discover Health* exhibit/ Anythink Brighton Library. Credit: Marina La Grave

The arts are often integrated into STEM (i.e., STEAM) to attract interest, especially for girls (Koester, 2013), and enhance creativity (Sousa & Pilecki, 2013). Art skills such as design thinking and visual literacy are valuable transdisciplinary skills that can improve STEM programs. These approaches align with critical 21st century skills of teamwork, problem-solving, and self-reflection (NRC, 2015) as well as the recently published *America's Strategy for STEM Education* (White House, 2018). Researchers on *STAR Net's* NSF-funded Phase 2 project found that many library staff prefer to use STEAM rather than STEM (Shtivelband and Jakubowski, 2018), and "STEAM" is the focal point for key educational efforts led by professional library associations and organizations. For example, the Young Adult Library Services Association (YALSA, a Division of ALA) developed a STEAM programming toolkit to help library practitioners successfully integrate STEAM into their programming and services (YALSA, 2016).

When the Space Science Institute initially surveyed libraries in 2008 (prior to *STAR Net*), many librarians did not feel comfortable conducting STEM programming, didn't know that STEM exhibit opportunities were available to them (they were far more comfortable with history and literature subjects), and did not feel like they had received any instruction on how to implement a hands-on STEM program (Dusenbery, 2014a). A more recent survey in 2015 from Jim Hakala at the University of Colorado (Hakala et al., 2016) showed dramatic changes: only 14% of respondents did not offer STEM-rich learning experiences. 69% of respondents had conducted hands-on investigations, 51% had done art-based STEM projects, and 34% host

informal STEM hubs known as makerspaces. Furthermore, 84% of respondents said that "science" would interest their library staff and patrons. In just a few years, libraries around the country have significantly shifted—and continue shifting—their practice towards STEM, which should not be surprising, as libraries have responded to community interest and needs that STEM learning can address. The latest *STAR Net* library survey, reported by Shtivelband et al. (2017), found that of the 717 responding libraries (49% of which were in rural/small communities), 75% offer STEM programming "more than once per month" or "monthly." Most libraries surveyed (91%) were extremely interested or interested in offering more STEM programming, and 69% felt "ready" to offer STEM programs and activities to their patrons.

Health literacy and the importance of public health are in the news practically every day because of the COVID-19 pandemic. It's important to understand the link between health literacy and science literacy. Health literacy and public health depend upon an understanding of science (e.g., anatomy, physiology, diseases) and the scientific process (including critical thinking and scientific uncertainty). There has been an astonishing amount of misinformation about vaccines and related health issues. Much of this misinformation comes back to a lack of understanding what science is and how scientific knowledge builds over time. The public's confusion about science is a fundamental challenge not only for addressing the current pandemic but future ones as well. Public libraries can play an important role by providing their communities with up-to-date and accurate information (and active learning programs) about relevant health topics that could range far beyond just the ones that focus on COVID-19.

There are several exemplary health resources that libraries may find valuable. The Public Library Association (PLA) contributed to the U.S. Department of Human Services report (2010) called the *National Action Plan to Improve Health Literacy*. This plan emphasized the importance of cross-sector collaboration between public libraries and community health organizations particularly to "support and expand local efforts to provide adult education, English language instruction, and culturally and linguistically appropriate health information services in the community." The Public Library Association published *Health Happens in Libraries Part 1: Libraries Promote Health Literacy* (2016) to draw attention to this important topic. OCLC's WebJunction offers a variety of health resources (such as webinars and infographics) that can assist libraries interested in building an effective health literacy program. See its *Health Happens in Libraries* initiative for help in getting started.

The Association of Science and Technology Centers (ASTC) leads an initiative called *Communities for Immunity*. It's a partnership with the Institute of Museum and Library Services, the American Alliance of Museums, and the Network of the National Library of Medicine, with support from the Centers for Disease Control and Prevention. Collaborators include the American Library Association, the Association of African American Museums, the Association of Children's Museums, the Association for Rural and Small Libraries, the Association of Tribal Archives, Libraries, and Museums, and the Urban Libraries Council. Its focus is on supporting the work of museums and libraries in engaging their communities in improving COVID-19 vaccine acceptance and confidence.

Finally, two recent published studies address how public libraries can play a critical role in improving community health awareness and disparities. The first is the *Libraries as Partners in Health* study funded by CDC (Whiteman et al., 2018). This study used a 100-question survey that was sent to all library directors in Pennsylvania to investigate the types of interactions between library workers and patrons. The report concluded that "the challenges library staff members experience in meeting their patrons' information needs suggest opportunities for public libraries to advance population health. Library staff members need additional training and resources and collaboration with public health and health care institutions to respond to community needs through effective, evidence-based public health programming."

The second study (Philbin et al., 2019) focused on the social determinants of health to examine the potential of libraries as a community-level resource to reduce health disparities. Social determinants of health inequality include factors such as transportation, addictions, food insecurity, and unemployment. For each determinant (10) they described how libraries could mitigate the inequality and offered several examples of past and ongoing services that U.S. public libraries are providing. The authors conclude that evaluation measures and resources need to be improved to really understand the outcomes of certain library interventions and to better understand the efficacy of library programs compared to those of other community-based institutions. They stated that "Collaborations between public health and libraries could also facilitate the expansion of health services within libraries. This could occur through embedding public health professionals within public libraries and through training existing library staff to support the implementation of public health interventions."

3. Methodology

The survey reported here consisted of 12 questions including 3 open-ended ones. See the Appendix for a copy of the survey instrument. It was developed based on prior library surveys known to the Colorado State Library and *STAR Net* (e.g., the Hakala and Shtivelband surveys mentioned above). It was administered by staff at the Colorado State Library using their Colorado library listserv. Only public library workers filled out the survey. It took about 5-10 minutes to complete using an enterprise level survey system called Alchemer. During the 2 weeks that the survey was open, a total of 64 completed surveys were received. Staff who worked in multi-branch library systems answered the questions for their specific library branch. The following section presents the results.

4. Results & Analysis

4a. Library Community Type

When asked to define the type of community where their library is located, 30 (45%) respondents identified their community as either rural or suburban/rural. Another rural category is resort (e.g., Aspen and Vail) though these communities are very different from other types of rural communities. They totaled 7%. Adding all the rural communities together

the result was 52%. This is very close to the Hakala survey results of 54% found in their national sample and the 49% from the Shtivelband survey. Urban, urban/suburban, and suburban communities totaled 43%. The "Other" category (4.7%) included libraries that served a mixed population: urban/suburban/rural. The following pie chart represents the total respondents' self-identified community types (n=64).
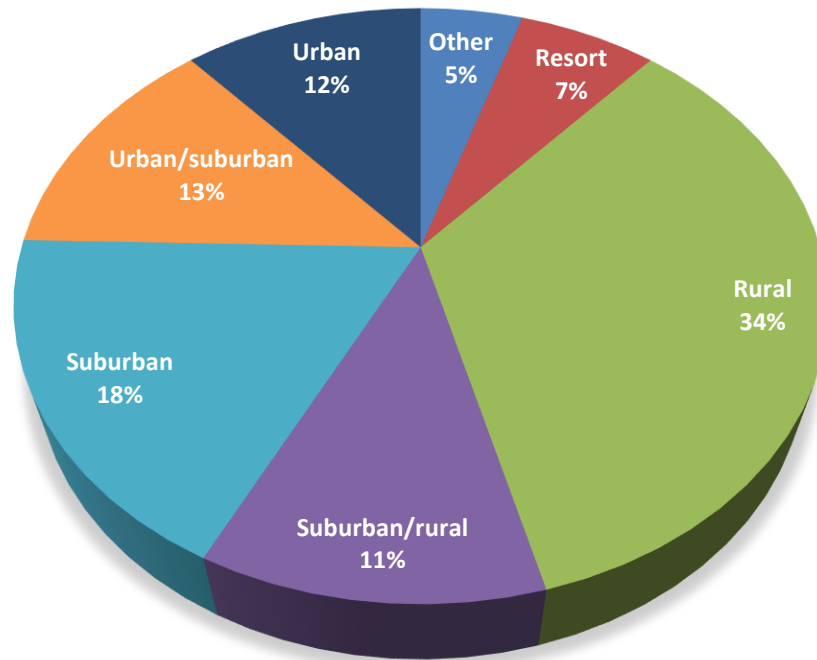

Fig. 3. Library Community Type

4b. What is your role in your library?

Most respondents (61%) listed themselves as a library director or manager. This category included associate directors, branch managers, digital services managers, and supervisors. The next largest group was adult services staff (19%) followed by youth services staff (13%). The "Other" category (8%) included a librarian generalist, a librarian, library aide, and staff working in collections and outreach. The large percentage of directors/managers responding to the survey may be a consequence of the listserv used by Colorado State Library and the key purpose of the survey (health learning opportunities for Colorado libraries). The unusual size of the adult services staff (19%) could also be due to health information/resource focus of this study. For general STEM programs, there are often more youth services staff represented.
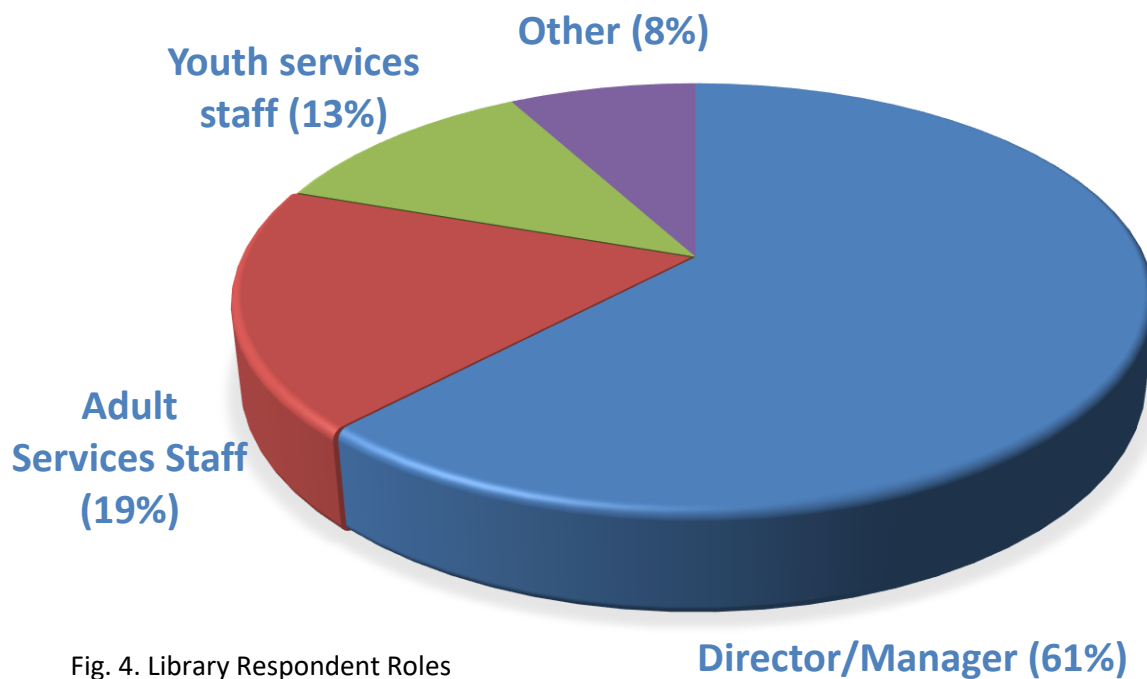
Fig. 4. Library Respondent Roles

4c. Who are the community members you feel are under-utilizing your services?

This is the first of three open ended questions that help us understand what community members/patrons were under-utilizing library services from the respondents' perspective. This captures the populations that libraries feel are underserved. Selected responses are below. The two following results will address under-utilization because of the COVID pandemic.

Table 1: Community Members Under-utilizing Library Services

"More outreach to our homeless population"
"Our seniors, Latinx community, and homeless community"
"Low-income families"
"Some young families/20-30 somethings"
"Town Council! Teens"
"Domestic violence victims, people with mental illness issues, also regular community members who mistakenly still think we're simply warehousing books."
"Patrons for whom language, technology, and transportation are barriers."
"Disabled Spanish speakers, immigrants, poor"
"The very well-resourced that feel like they don't "need" our services"
"Working parents"

"People who speak multiple languages and/or non-English speakers"
"Immigrant, refugees, teens"
"Spanish speakers, teens, and young adults (college aged)"
"Teens and school-age children; Seniors with Covid-related concerns"
"Everyone. Since the library had to shut down due to the pandemic our patronage has not totally picked back up to what it was."
"Parents/middle-aged people"
"The elderly and teens."
"Minorities, non-English speakers, more affluent community members"
"Men primarily"
"Those who feel libraries are a dying breed"
"Spanish speaking adults, teens, working adults, and families"
"Those who are full-time employed, and teens between 15 and 19."
"Males in their 20s-30s; Parents of High School Students; Business Owners; Working Professionals"

There were two longer responses that were more in depth:

"17% of our community, as measured by the US Census Bureau, lives in poverty. With socio-economic challenges come barriers to access services whether by lack of transportation, knowledge, internet, and other resources. Currently this group, senior adults, as well as those who are reluctant to gather in public places due to COVID-19 are currently not using the library's resources."

"The poor members of our community. Those who do not have access to reliable transportation, as there is no public transportation available to our locations. Because of our currently limited hours many are unable to visit our locations because of work schedules. Those who don't know that there is a library in their community, or what we have to offer."

Survey responses reflect the burning need for communities to provide critical services (such as food, shelter, and healthcare) and programs for their underserved and underrepresented populations. Public libraires are particularly ideal for reaching community members in need of these services. They are re-envisioning their mission and role in the community to

Equity, diversity, and inclusion are core values of our associations. We believe that as a profession we must continue to support efforts in building a more equitable, diverse, and inclusive society. As professional organizations, we strive to advance the capacity to identify and remove barriers to equity, diversity, and inclusion relative to all members and patrons with a broad spectrum of best practices, tools, and resources. Libraries serve as the cornerstone of our society. Regardless of the type of library, constituency, or region, we stand together to support the efforts of libraries to provide equitable access for all through inclusive collections, resources, services, and programs.

American Library Association, 2019

be more inclusive and sustainable. In 2013, the Pew Research Center conducted a survey of over 6,200 Americans to learn about how people utilized public library services. The Pew survey found that 91% of Americans ages 16 and older say public libraries are important to their communities and are an important education resource, and 76% say libraries are important to them and their families. African Americans (60%) and Hispanics (55%) are more likely to say that libraries are "very important" to them and their families compared to Caucasian families (41%). Study findings indicated that Americans view public libraries as places that help improve literacy and the quality of life by providing resources, services, access to materials, and youth programming. Women, African Americans, Hispanics, and individuals of low socioeconomic status were more likely to rate these library services as very important (Pew Research Center, 2013).

Diversity, Equity, Inclusion, and Accessibility (DEIA) are key factors in designing and implementing public library programs. In fact, DEIA is a core value of librarianship (ALA, 2019). See call-out box above for more information. At the association level, ALA's Office for Diversity, Literacy and Outreach Services (ODLOS) supports library workers in creating responsible and all-inclusive spaces that serve and represent the entire community.

Besides DEIA challenges, there were some other interesting responses to this question. One respondent said, "Town Council." There may be other library staff in Colorado who feel that those responsible for managing library operations (councils, city managers, boards, etc.) may not really know how libraries are changing to meet the needs of their communities. They may also be able to do a better job at working with library management and staff to best meet community needs. Other responses focused on certain age groups such as teens, parents, and older adults.

4d. Before the pandemic, what community members were not able to access good health information and resources?

This and the following question are very broad and ask respondents to provide their perspective about community access to health information and resources prior to the pandemic and during the pandemic. These responses are through the public library lens.

Table 2: Lack of Access Prior to the Pandemic

"Latinx; homeless community"
"Those in a lower income bracket."
"Under privileged elderly poor"
"Those without transportation and digital access."
"Patrons for whom language, technology, and transportation are barriers."
"I think good health information and resources have always been a struggle to find. The healthcare system in the US can be complicated and daunting."

"Non-native English speakers, folks with a low literacy level"
"Homeless population"
"Some senior adults and ESL community & migrant workers"
"People without reliable transportation or internet service; people who don't know all the resources libraries offer, people with language barriers"
"Our transient patrons, senior citizens and multi lingual immigrants"
"People experiencing homelessness, immigrants, refugees, working poor "
"Seniors, lower income families/people"
"I think all could benefit from access to good health information."
"Community members without the skills to assess medical information sources"
"This is an affluent community; people have access to health information."
"We have a somewhat poor community and some don't have access to the resources they need."
"Many, across all demographics, have difficulty accessing information due to lack of internet access at home and/or ability to navigate online resources."
"Most of them. We are a very underserved community with high unemployment and members living below the poverty line. Many simply do not know where to turn for reliable, affordable information and resources."
"Anyone with limited access to digital information"
"I think too many people rely on Dr. Google, and don't come and ask us for help with health research. We are working on training our staff in consumer health, and on the top diseases/illness in the United States."

There were several longer responses that provided important perspectives:

"Those who have no access to the internet and a computer at home. Those who do not have a smart phone. People who have no insurance or who cannot afford to access health care. The most economically disadvantaged members of our community.   Individuals experiencing homelessness. Patrons experiencing serious mental health issues who do not have access to needed care."

"Everyone. Outside online databases, local health - especially mental health providers remain reluctant to get the professionals needed for the public: i.e. no psychiatrist in a county with one of the highest suicide /addiction / depression rates in U.S. (unless you have an orthopedic issue, like to see the standard carried to other health needs, especially mental health)"

"Elderly. So much is online and they are either not tech savvy, or, do not own computers or have reliable internet services. Foreign language speakers experience the same. No in-person health info in their own language provided by a trusted, 'like me', staff member who is familiar with language, culture, health taboos."

Answers to this question fell into several consistent themes:

- Reaching underserved populations (e.g., Latinx; homeless)
- Access to reliable health information and services (e.g., transportation barriers; internet access; language barriers)
- Lack of training and the "ability to navigate online resources."

The focus for this question was about access to health resources but similar answers would likely occur for other community related needs. Note that these issues existed prior to the pandemic. COIVID-19 only made matters worse and, in some cases, substantially worse. Access to health resources during the pandemic is the focus of the following section.

4e. During the pandemic, what community members were not able to access good health information and resources?

Table 3: Lack of Access During the Pandemic

"Everyone."
"The pandemic really disrupted services though things are getting better now. There doesn't seem to be much appetite for wearing a mask."
"Seniors, Latinx, and homeless community"
"Those in a lower income bracket."
"Under-privileged older poor"
"Members without internet service or who are not tech savvy. Sometimes we were open so even people who normally used the library couldn't access the most recent information."
"Patrons for whom language and technology are barriers."
"Spanish speakers, immigrants, poor lower-middle class"
"People with limited internet access or internet literacy, non-native English speakers"
"Those without internet at home"
"People who are housebound and now without the resources that social contacts provide"
"Our transient patrons, senior citizens, single parent families, multi-lingual immigrants."
"People experiencing homelessness, immigrants, refugees, working poor"
"Those that didn't have access to internet or computer access. Low income, Latinx populations."
"Older adults with accessibility challenges and those individuals who had COVID-related concerns regarding leaving their homes. Individuals who are challenged by access to online resources."
"Seemingly everyone due to the overabundance of 'pop science' articles."
"We did receive a *Help Colorado Now* grant and did purchase many medical books in various areas, and these books have been checked out by many of our patrons."
"This is an affluent community; people have access to health information."

> "Those without internet and other electronic resources and devices have experienced barriers in accessing library services during the pandemic while library building use has been limited."

> "All of the community were unable to access good health information as the town was shut down."

> "People without reliable Internet access. People who could not afford Cell Phone Data Plans."

There were several longer responses that provided important perspectives:

"Digital efforts were increased for all patrons and community users during pandemic. Internet access became essential and those who relied on the library Wi-Fi needed to be in range (just outside or inside when library opened)."

"That is hard to say, probably the uninsured, or underinsured. I think seniors face barriers because of transportation. Being able to do more tele-medicine would be helpful for that age group."

"COVID-19 limits made it harder for people to access online and in-person help. Our social worker is no longer onsite or offering drop-in hours. The level of commitment and organization required to access services is sometimes prohibitive to the very communities that could use the most help. This is basically true for every community need."

"Those who have no access to the internet and a computer at home. Those who do not have a smart phone. The patrons who used our location for internet and computer access as we were closed for a period. People who have no insurance or cannot afford to access health care. The most economically disadvantaged members of our community. Individuals experiencing homelessness. Patrons experiencing serious mental health issues who do not have access to needed care."

Access to affordable and reliable internet service was a major barrier not only for Colorado communities but for many communities nationwide. It was mentioned many times in answers to this question (see Table 3). The digital divide is real and has many deleterious impacts on a community's ability to function in our ever-increasing technological world. The digital divide is the lack of internet access in homes and/or the lack of computer access; it also includes lack of knowledge in using computer technology and the internet. Predominately seen in lower income, marginalized, and rural communities, the lack of internet access has many negative consequences in education, income disparities, and healthcare. Bridging these gaps are essential aspects of social inclusion for just, fair, and equitable access to resources and opportunities to achieve a higher quality of life and well-being (van Deursen & van Dijk, 2014). This challenge goes way beyond not having access to reliable broadband. It also includes access to computers and effective training. During the pandemic many services went to an online mode of operation including education classes for our youth, ordering groceries and meals,

tele-medicine, Zoom meetings, and workshops. Many rural communities were not able to take advantage of this changing landscape. The pandemic elevated the long-standing digital divide as an equity issue in the public's eye (see Section 4e).

The COVID-19 pandemic has transformed libraries and their communities. Library staff have had to learn how to deliver essential assistance safely, while also pivoting their in-person programming to online delivery. As discussed in *Libraries Respond to COVID: Part 1* (Vierow-Fields et al, 2020), the beginning of the pandemic impacted library operations severely between furloughs, closings, and the need to engage with at-risk communities in a safe and healthy way. These changes will likely have impacts far beyond the period when COVID-19 is a threat, resulting in libraries and other organizations achieving some sort of new normal.

4f. What health topics are most important to your library and community?
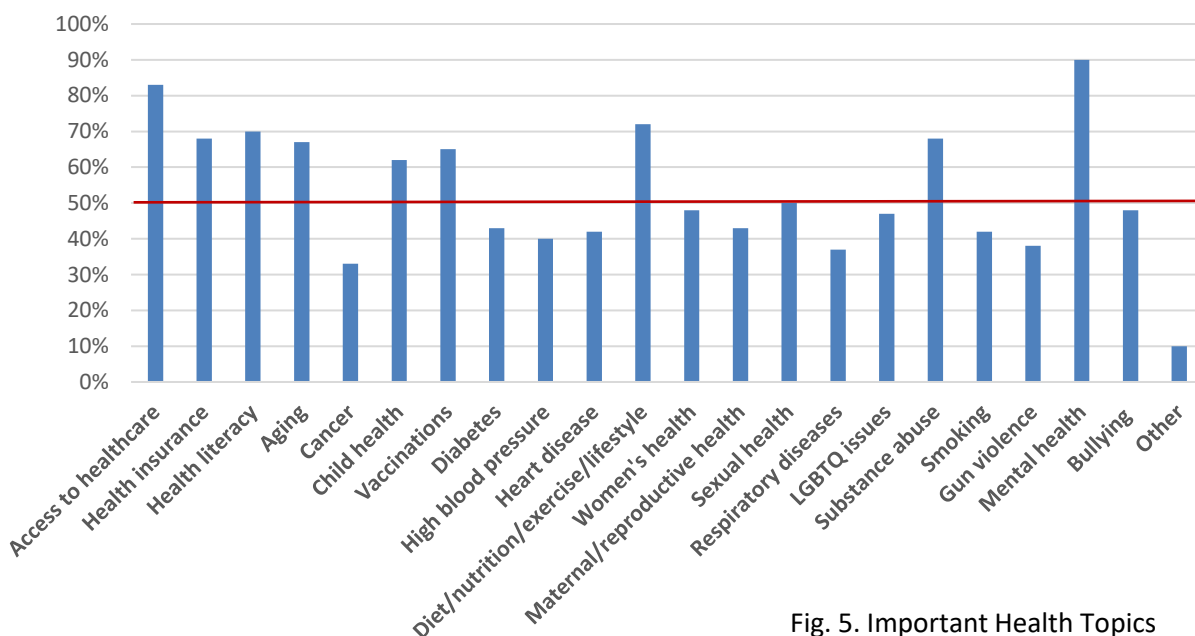

Fig. 5. Important Health Topics

There was broad interest across many health topics as shown in the figure above. A rust-colored line was placed at the 50% level to make it easier to see which topics were rated particularly high. These included Access to Healthcare, Health Insurance Information, Health Literacy, Aging, Child Health, Vaccinations, Lifestyle, Substance Abuse, and Mental Health. Notice that there were many topic areas near the 40% level. With the increase of air quality concerns due to pollution and wildfires, respiratory diseases (e.g., asthma, COPD, emphysema) will likely become more important in the future. The Other category was small (10%) but included some interesting perspectives. One respondent said that "Housing is considered a public health (crisis) issue in our community." Housing is related to homelessness and other socio-economic factors. Several respondents mentioned that "information and resources for children that are on the autism spectrum" would be beneficial. Another mentioned "health

information in languages other than English (particularly Spanish in my community)." And finally, one said that "generally, access and awareness and opportunity for ANY type of health needs" would be important for their community.

Building interest in health topics and programs needs to begin with the library and its staff. This issue is examined more deeply in Sections 4i and 4j.

4g. Prior to the pandemic, did your library offer health-related activities or programs?
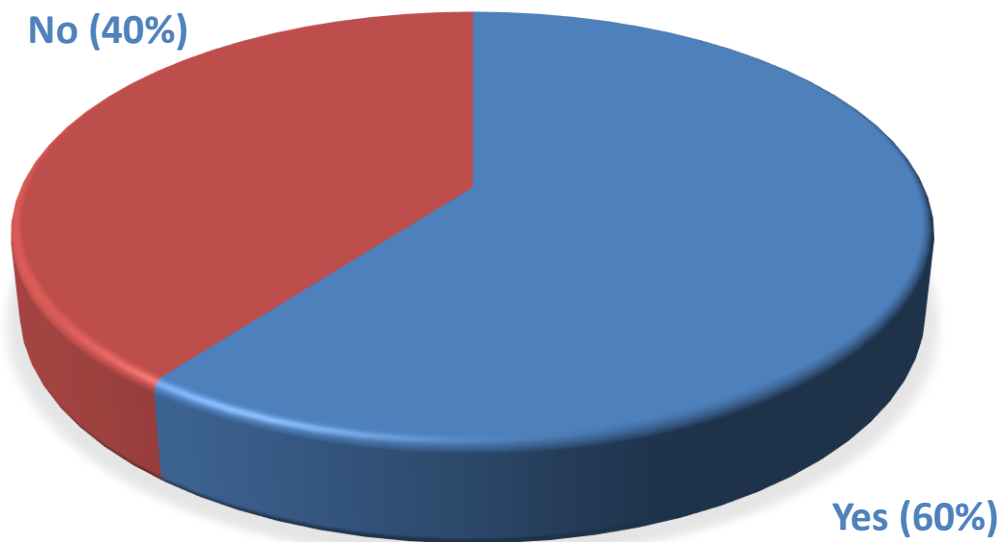
No (40%)

Yes (60%)

Fig. 6. Health activities prior to the pandemic

This result shows that Colorado libraries had already been providing some level of health information and activities. Compare this result to what library respondents said they planned to do regarding health-related activities in the future. See Section 4i. What a specific library would offer depends on many factors: commitment of library leadership, community needs, availability of resources, and access to strategic partners.

4h. What general age levels do (or would) you target with health-related programming?
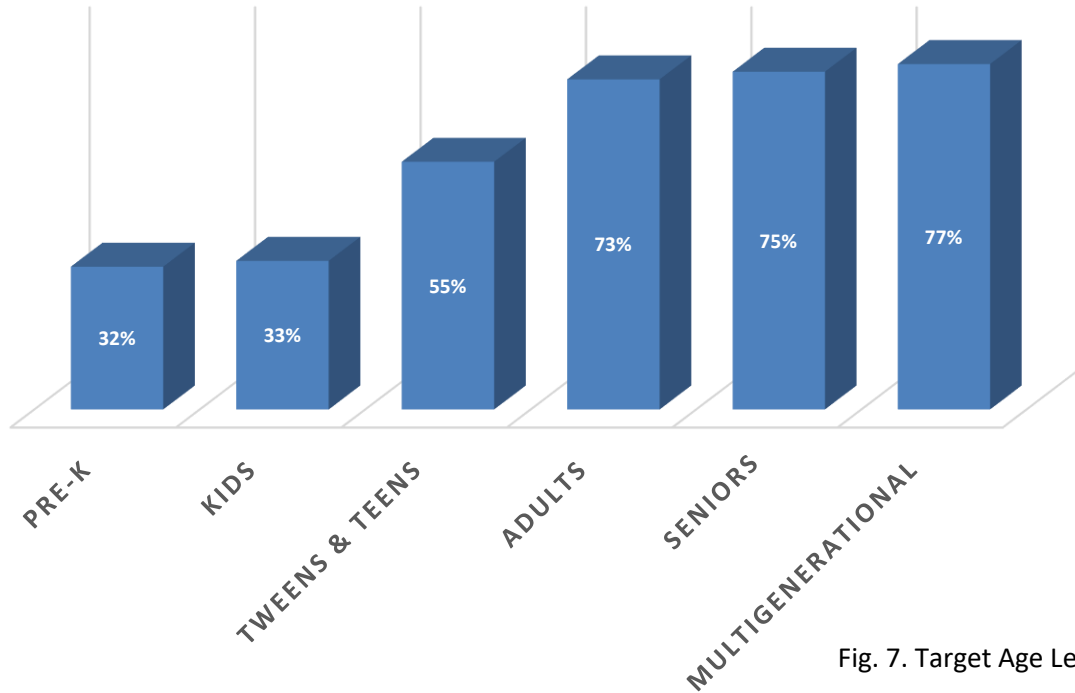

Fig. 7. Target Age Levels

In the Hakala survey, Pre-K, elementary and middle school-aged children were the primary targets for programs. Because of the health topic focus of this survey, the target age bands skew to older patrons: tweens/teens, adults, seniors, and multigenerational groups. This result is consistent with the responses tabulated in Tables 1-3, where health needs are a serious concern for all ages and library staff feel that this topic would be of particular interest to older patrons. The large percentage for the tweens and teens category is particularly noteworthy. Respondents felt that library health literacy programs could be an effective way to engage this hard-to-reach demographic.

4i. During and after the pandemic, how interested are you in offering health-related programs at your library, with support from health organization partners?
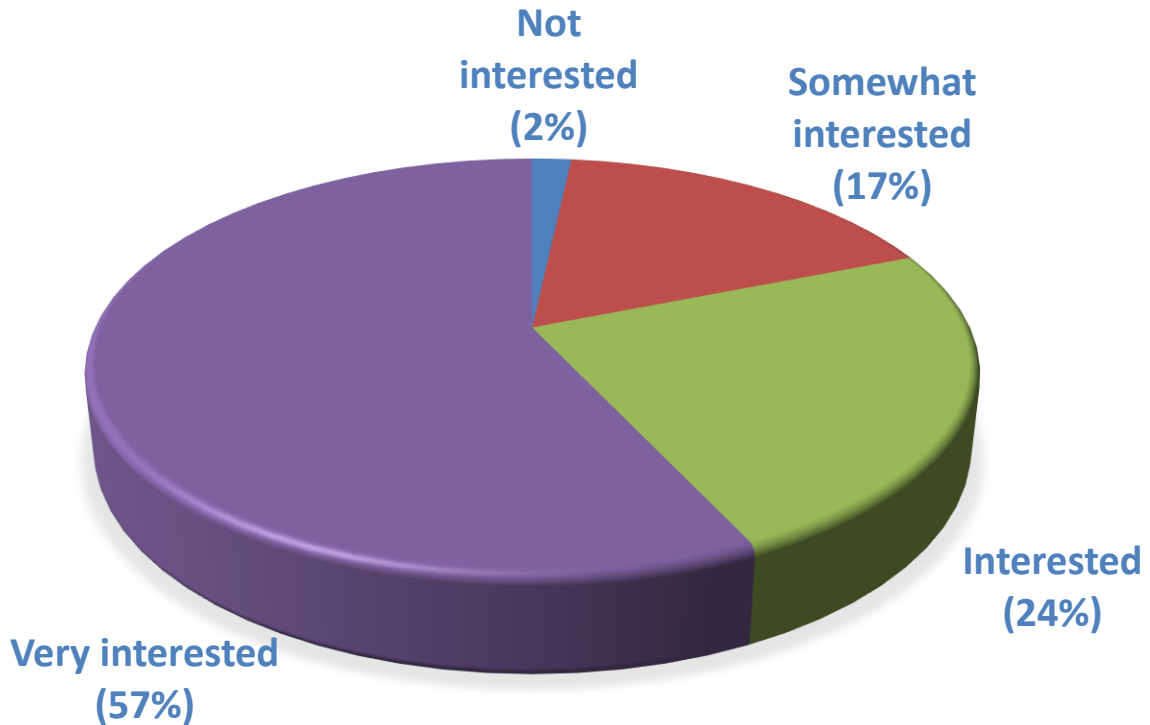

Fig. 8. Interest in offering health programs

Interest development is a key aspect of learning and is tied to other concepts such as motivation, engagement, identity, and attitude. These learning constructs are important when considering how to design learning environments and programs that can have deep impact upon library's patrons and community. They all include various elements of affective, cognitive, and social/cultural interactions. This survey found that a large percentage (81%) of the respondents were interested or very interested in providing health programs with health organization partners (see Section 4l for more information about partnerships). Interest in specific programs is examined in the following section.

4j. What types of health programs is your library most interested in providing?
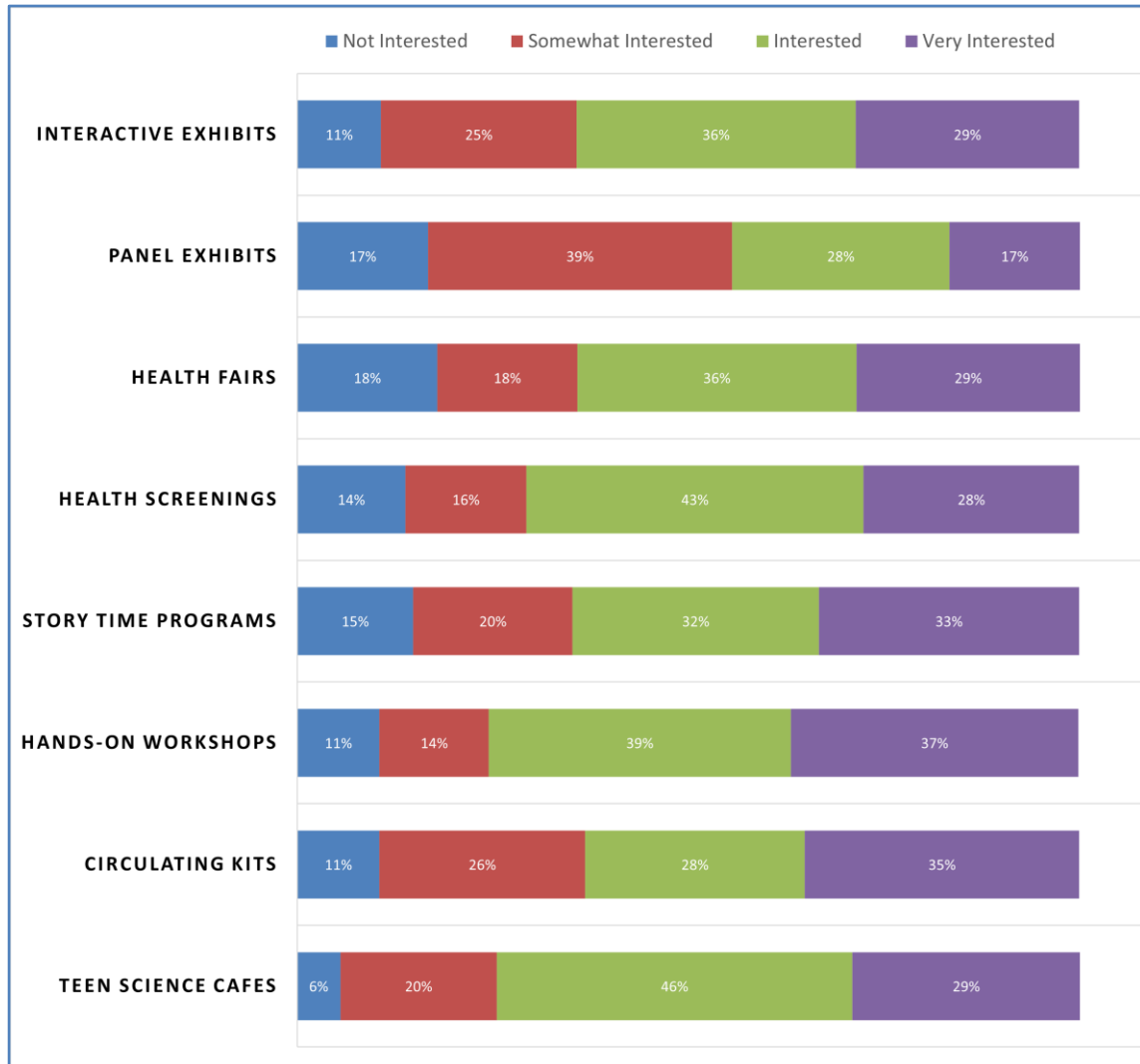

Fig. 9. Interest in specific health program types

The results shown in Figure 9 demonstrate that many health program types (e.g., exhibits, screenings, kits, workshops) have high interest levels in the combined Interested/Very Interested categories. Those that are substantially greater than 50% include hands-on exhibits at 65% (such as *Discover Health* mentioned earlier); health fairs at 65%; health screenings at 71%; story time at 65%; hands-on workshops at 76%; circulating kits at 63%; and teen science cafes at 75%. The latter result is very surprising and exciting because it shows that public libraries feel that programs like this could attract tweens and teens, a challenging demographic for many libraries to reach (YALSA, 2016). Learn more about Teen Science Cafes here. Interest in health-related story time programs was strong (65%) and would be appropriate for children birth-six. For adults, interest in health screenings and hands-on workshops is very high (>70%).

These results clearly show that library staff feel that health programs could be an effective strategy to engage their whole community!

4k. Is your library interested in providing on-going health education about chronic disease, mental health, as well as quick response education and information to new public health crises as they arise, with support from health organization partners?
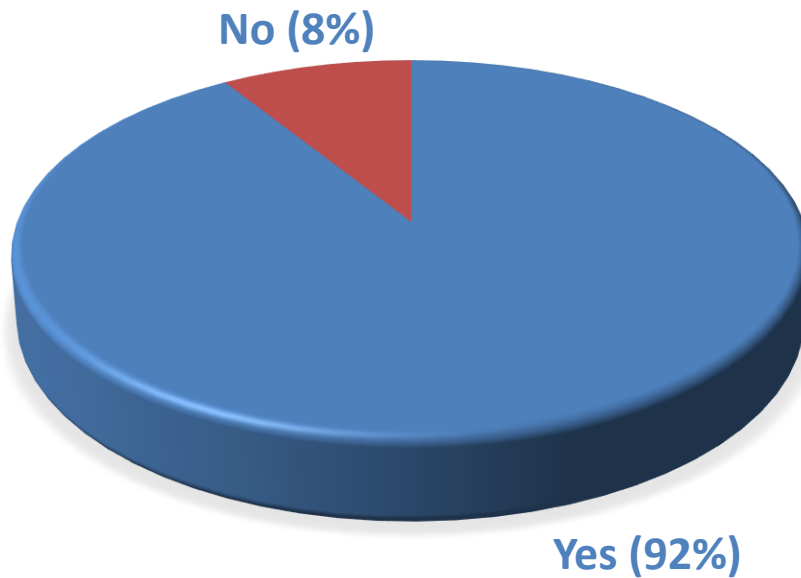

Fig. 10. Interest in providing ongoing health programming

Most respondents indicated that they were interested in working with health organization partners to provide ongoing health information/learning activities for their communities. Interest in offering an ongoing health program increased from 60% to 92% compared to what libraries were providing prior to the pandemic (see Figure 6 for the prior results). This is a significant increase. If it holds statewide, it could be transformational.

4l. What health organizations and other community-based organizations does (or would) your library partner with for health-related program development and implementation?
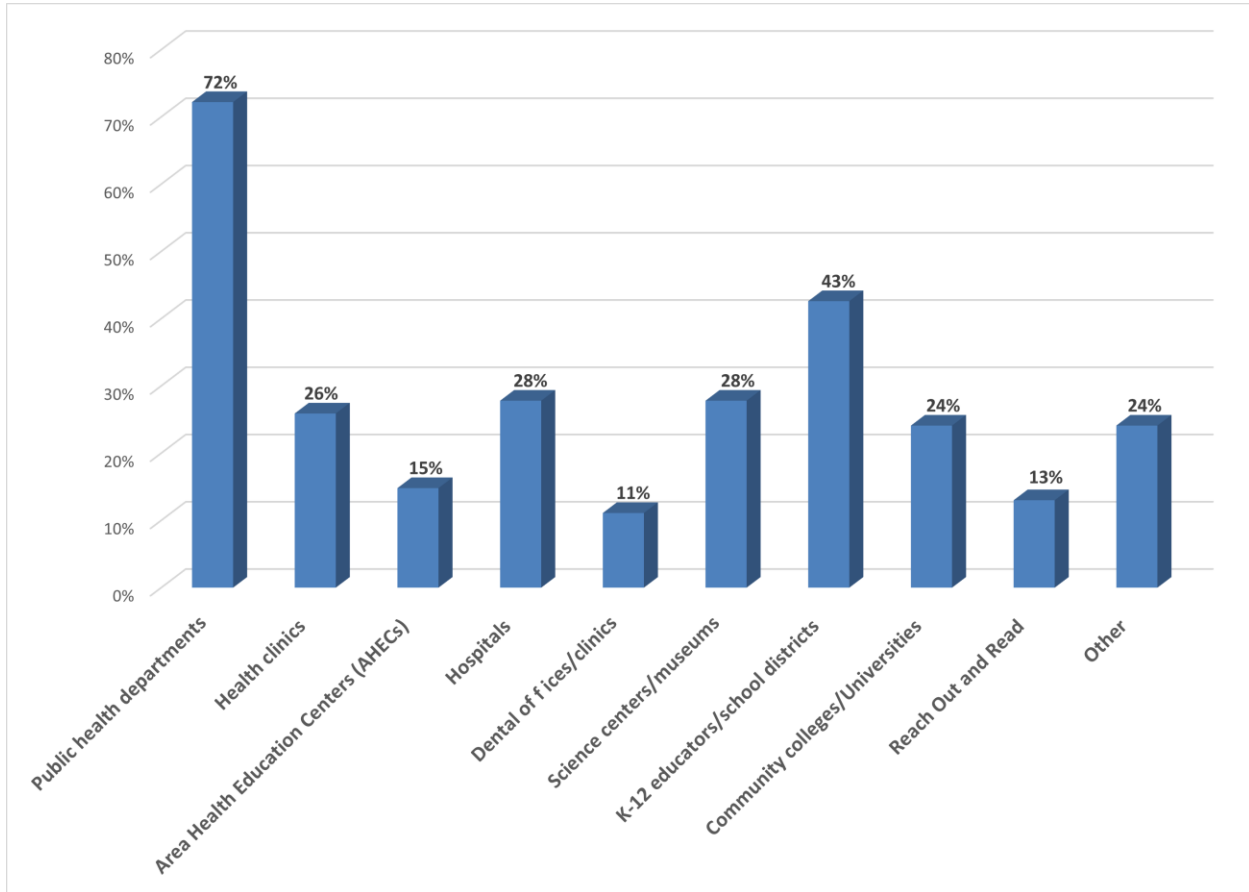
The two largest responses to this question were public health departments (72%) and K-12 teachers and school districts (43%). The next group of responses (20%-30%) included the majority of possible organizations that libraries are currently or are planning to partner with (health clinics, hospitals, science museums, community colleges/universities, and the "Other" category). The "Other" category included the following types of organizations: Tri-county Health Network, local experts, Catholic Charities, community-based groups, county mental health departments, Early Childhood Councils, health food stores, and the Alzheimer's Association. Area Health Education Centers (AHECs), dental offices, and Reach Out & Read were the least mentioned. This is an important opportunity for libraries to develop collaborations with these organizations that will serve their common interests and missions. What are some strategies and tools that libraries can use to build effective collaborations and partnerships? These are discussed below.

> "We need to rethink, redesign, and reinvent the why, what and how of our work in every arena from education to healthcare to public safety…It's no longer good enough to make the case that we're addressing real needs. **We need to prove that we're making a real difference.**"
>
> *Leap of Reason: Managing to Outcomes in an Era of Scarcity* by Mario Morino (2011)

Communities in Colorado, and beyond, are faced with many daunting challenges (e.g., COVID-19, health disparities, homelessness). Developing and nurturing key partnerships is a needed strategy for communities to address these challenges. By working closely with like-minded organizations, libraries and their partners can achieve much more than if they worked in isolation. This close-knit collaboration is often called a learning ecosystem.

A learning ecosystem (Traphagen and Traill, 2014) includes the formal education system, afterschool programs, and the informal education sector (such as science museums and public libraries). A healthy system is one in which all these elements work collaboratively together to maximize their collective impact to benefit the whole community in programs that engage diverse learners (e.g., health fairs, screenings, workshops, exhibits). Collective Impact (Kania and Kramer, 2011) is a strategy to harness the power of collaborative programs to solve complex and often intractable social challenges (e.g., access to internet resources, homelessness, substance abuse, mental health). Certain conditions must be present for such collaborations to be successful (e.g., a shared vision, shared measurement system, shared activities, open communication, and organizational support). See Table 4 below.

Table 4: The Five Conditions of Collective Impact (Kania and Kramer, 2011)

Common Agenda	All participating organizations have a shared vision for change including a common understanding of the problem and a joint approach to solving it through agreed upon actions.
Shared Measurement	Agreement on the ways success will be measured and reported with a short list of key indicators across all participating organizations.
Mutually Reinforcing Activities	Participant Activities must be differentiated while still being coordinated through a mutually reinforcing plan of action.
Continuous Communication	Consistent & open communication is needed across the key players to build trust, assure mutual objectives, and adaptation of strategy.

Backbone Support	Creating and managing collective impact requires a separate organization to serve as a backbone for the entire initiative & coordinate participating organizations & agencies.

"You have to include the people you want to impact from the very beginning, throughout the entire process. Programs have to be genuine, authentic, and culturally responsive to the community that you're working with."

Antonia O. Franco, Executive Director, SACNAS

How do libraries and their communities build effective and sustainable partnerships and collaborations? One successful partnership building strategy was developed by *STAR Net* called [*Community Dialogues*](#) (Holland and Dusenbery, 2018). It has been implemented in more than 150 public libraries nationwide and funded by 4 different federally funded projects in the *STAR Net* portfolio (including the NIH/SEPA funded *Discover Health* project). This dialogue framework is aligned with other community engagement practices such as ALA's *Libraries Transforming Communities* (LTC) framework (ALA, 2015).

Community Dialogues encourage library staff to reach out to community leaders and stakeholders to move beyond focus groups and questionnaires into a two-way dialogue that encourages underserved communities to be part of the conversation. *Dialogues* have yielded valuable data about the needs of identified underrepresented audiences (e.g., how they use the library and barriers to participation in certain types of programming), and identified or solidified community partnerships. During the disruptions caused by COVID-19, *STAR Net* has developed a list of recommendations that help libraries turn [*Dialogues*](#) into virtual events.

5. Conclusions

Public libraries are particularly ideal for reaching populations in need of quality health information and resources as they serve people of all races, ages, and socio-economic backgrounds and are re-envisioning their mission and role in the community to be more inclusive and sustainable. But more needs to be done. This survey showed that library staff in Colorado are very interested in establishing a robust health literacy program that covers all age bands from Pre-K to seniors and are enthusiastic about partnering with community-based organizations to ensure long-term success.

The COVID-19 pandemic made it abundantly clear that informal learning institutions (ILIs) cannot exist in an institutional vacuum. While libraries and other ILIs have always found their collaborations critical, the pandemic has shown it's even more important now. They need to chart a path forward together that not only benefits them but *includes* the communities and audiences they serve. Such partnerships can help to improve access to health services and provide the necessary training for community members to better understand how to maintain their physical and mental health.

There are, for instance, cross-sector models where community partnerships between libraries and science museums have been established and are successful (e.g., in Ithaca, NY; Columbus, OH; Portland, OR; and Seattle, WA). These efforts will make a real long-term difference to the health and vitality of all communities, large and small, across the country. Like Mario Marino (2011) said, "It's no longer good enough to make the case that we're addressing real needs. **We need to prove that we're making a real difference.**"

On a national level, it is far from certain when public libraries, or our nation and world, will return to a new "normal." Some libraries are resuming indoor in-person programming, and patrons need assurances that the library is taking care of their safety and health concerns. Challenges, such as digital divide inequalities, homelessness, access to affordable healthcare services, will need to be addressed locally as well as nationally.

COVID-19 is not the first health crisis we have seen that is wrought with misinformation and lack of effective educational outreach resources to help communities make appropriate science-based decisions. Examples include the Spanish Flu of 1918 and the AIDS epidemic of the 1980's. We have seen Ebola epidemics in other countries that hit too close to home. In all of these, disparities in health education and the delivery of health resources and information were at the crux of these health challenges. How do we address the need to rapidly respond to current and emerging health crises in our ever tightly populated human community? We need an infrastructure and networking system in place that engages communities with people they trust from their community and who have a track record of working effectively together. What is needed is a *Health Response Network*. It would include public libraries, public health departments, universities/community colleges, and other community-based organizations.

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7. Appendix: Health Program Survey Instrument

1. How would you define your library's community type?
   City
   City/Suburb
   Suburb
   Suburb/Rural
   Rural
   Resort
   Other

2. What is your role in your library?
   Director/Manager
   Youth Services Staff
   Adult Services Staff
   Other [Text Box]

3. Who are the community members you feel are under-utilizing your services?
   [Text]

4. Before the pandemic, what community members were not able to access good health information and resources?
    [Text]

5. During the pandemic, what community members were not able to access good health information and resources?
    [Text]

6. What health topics are most important to your library and community? Please check all that apply.
    Access to healthcare
    Health Insurance
    Health literacy
    Aging
    Cancer
    Child health
    Vaccinations
    Diabetes
    High Blood Pressure
    Heart disease
    Diet/nutrition/lifestyle
    Maternal/reproductive health
    Sexual health (e.g., STIs, birth control, cervical cancer, breast cancer, prostate health, sexual dysfunction)
    LGBTQ
    Respiratory diseases (e.g., asthma, COPD, Emphysema, Interstitial lung disease such as silicosis, asbestos, or other hazards)
    Substance overuse or abuse disorder
    Smoking
    Gun violence
    Mental health (e.g., Mood disorder (Bipolar), Schizophrenia, loneliness)
    Suicide/bullying
    Other [Text box]

7. Prior to the pandemic, did your library offer health-related activities or programs?
    [Yes, No]

8. During and after the pandemic, how interested are you in offering health-related programs at your library?

    Scale: Not interested, Somewhat interested, Interested, Very interested

9.   What types of health programs is your library most interested in providing?

    Scale: Not interested, Somewhat interested, Interested, Very interested

    Hands-on/Interactive exhibits

Panel exhibits (illustrations & text)
Health fairs
Health screenings
Adult lectures
Storytime activities
Hands-on workshops
Lectures hosted by medical or public health experts
Checkout Kits
Vaccination clinics
Teen Science Cafes

10. Is your library interested in providing on-going health education about chronic disease, social determinants of health, mental health, as well as quick response education and information to new public health crises as they arise (with assistance/content/support from health organization partners)?
[Yes, No]

11. What general age levels are you (or would) you target with health-related programming? Please check all that apply.
Pre-K
Elementary students
Middle school students
High school students
Young adults
Adults
Seniors
Mixed ages (Families)

12. Does your library partner/collaborate with health organizations and other community-based organizations for health-related program development and implementation? Please check all that apply.
Public Health Departments
Health Clinics
Area Health Education Centers
Hospitals
Dental Offices
Science Centers/Museums
K-12 educators/school districts
Community Colleges/Universities
Reach Out and Read
Other [Text Box]

Thank you for your time and input.