The Impact of Public Access Computing on Rural and Small Town Libraries

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Table of contents

List of Figures

List of Tables

Abstract

Rural and small town libraries, those serving fewer than 25,000 people, make up four-fifths of all public library systems in the United States. Historically these are the unseen and unstudied libraries although they face many of the same challenges and provide services similar to their larger urban and suburban counterparts. In this paper we focus on these rural and small town libraries, looking specifically at the impact of public access computing. We consider the special challenges they face because of their isolation, lack of adequate tax base, and lack of trained staff. But for all the challenges surrounding public access in rural and small town libraries, we find that many of these libraries have prospered with the new technology. After having begun to provide public access computing, they are more visible in their communities, they have more patrons, and they appreciate being able to provide greater access to a "world of information." The librarians, perhaps partially because of familiarity with their patrons, are more content with their roles than their urban counterparts. Rural and small town librarians also tend to feel that public access computing is less of a burden to manage and support than librarians in metropolitan areas. Our research suggests that the efforts of the Bill & Melinda Gates Foundation U.S. Library Program, designed in part to enhance the likelihood of sustaining public access computing, have paid off in general, and have been of particular value for rural and small town libraries where technical support and technology training are often difficult to obtain. On-going challenges persist however, and rural and small town libraries vary in important ways in how they respond to these challenges.

Introduction

Historically, rural and small town libraries provide an array of services similar to their larger urban and suburban counterparts, but they do so with fewer staff and often with modest budgets. In most cases, small[1] libraries develop and maintain collections that include books, serials, and audio/video materials. They answer reference questions and/or help patrons find their own information. And they provide programming for their patrons—especially for children. In more recent years, they offer their patrons access to computers and the Internet.[2]

Many rural and small town libraries obtained their first public access computers (PACs) through the assistance of the Bill & Melinda Gates Foundation U.S. Library Program. Targeting impoverished communities across the nation, the Library Program provides public libraries with public access computing "packages" that include hardware, software, support materials, training,

[1] Following the example of the Center for the Study of Rural Librarianship (CSRL) at Clarion University of Pennsylvania, we use "rural" and "small" interchangeably in this paper to refer to libraries serving a rural community or small town.

[2] These libraries generally lagged behind the larger ones in the implementation of this new service. Public Access Computing Project (PACP) 2002 survey data found that libraries serving the smallest population areas (less than 1,000) began providing public access to computers about four (3.6) years ago (on average) with Internet access added for patrons about a year later (2.9 years ago). The larger libraries (those serving more than 50,000) started offering public computer access more than seven (7.4) years ago followed by Internet access about five (5.4) years ago.

and technical support.[3] The Gates Foundation began implementing this five-year program in the late 1990s.

Rural and small town libraries receive many benefits from this relatively new service. For example, with public access computing libraries are now able to offer faster and more comprehensive information access and reference services as well as improved education and communication opportunities for their patrons. In addition, PACs are bringing in new patrons and current patrons are spending more time at the library. At the same time public access computing leads to an increased staff workload, problems with recruiting and retaining sufficient staff with appropriate technology skills, and sustainability challenges. Some form of these issues occurs in public libraries –large and small—throughout the nation. They take on a distinctive character in rural and small town libraries, as discussed throughout this paper.

This paper looks at the impacts of public access (PA) computing on rural and small town libraries in the United States. We define these libraries as those that are in rural or small town settings outside of a metropolitan area, generally serving legal service areas (LSAs) of less than 25,000[4], with some additional attention to libraries serving less than 2,500.[5] These rural and small town libraries, though representing almost four-fifths of all public library systems,[6] are broadly dispersed, often considered to be under-staffed and under-funded, and overall serve 17% of the nation's population. In general, these libraries seem to receive less attention from the library leadership in the U.S.[7] than the larger urban and suburban libraries, presumably in part because of the relative size of the populations served by the two groups of libraries. Less attention may also be a result of the relative lack of awareness in the small libraries of the importance of gaining the attention of the U.S. library leadership, as well as a possible lack of training in how to do it. As a result of this neglect, there is relatively little information available regarding the particular needs, struggles, and accomplishments of this vast group of libraries.

Before turning to the impact of public access computing on these small libraries, it is important to have a better understanding of the nature of rural and small communities, the libraries that serve them, and the methods we use in this project.

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[3] Targeted communities have at least 10% of the service population living in households below the poverty line. See www.gatesfoundation.org for more information.

[4] Nearly all (94%) of these rural and small town libraries in our survey reported a legal service area (LSA) of less than 25,000.

[5] The definitions of "rural" and "small" in the literature vary. The Center for the Study of Rural Librarianship uses two definitions: one following the US Census that defines a rural community as one with up to 2,500 people and; another that includes up to 25,000 people outside a metropolitan area. See http://clarion.edu/rural. Most respondents to PACP surveys provided the population of their legal service areas (LSAs) and self-identified the type of area served by their library (rural, small town, suburban, urban). For those who did not provide this information, National Center for Education Statistics (NCES) data were used.

[6] The national data on public libraries are taken from the National Center for Education Statistics' (NCES) annual survey of public libraries for the year 2000. These data, for the most part, reflect the state of public libraries at the "administrative entity" level, rather than the outlet level (the 9,074 "systems" (i.e. administrative entities) are comprised of 16,298 stationary outlets and 884 bookmobiles). See Chute, Kroe, Garner, Polcari, and Ramsey: Tables 1A and 1B and glossary.

[7] As one state library staff member put it: there are "two tiers" of libraries, "the better funded, professionally managed ones, and then the [others]." She went on to say that this distinction "is not often acknowledged" by leadership in the library community.

Methods

The primary data for this paper are drawn from an independent, multi-year, multi-methodological independent evaluation of the Bill & Melinda Gates Foundation U.S. Library Program. The Public Access Computing Project (PACP),[8] which began its work in 1998, looks at the Library Program through several lenses:

- Repeated administration of questionnaires to library administrators,[9] staff librarians,[10] and library patrons[11] in 18 focus states[12] (3 years in some states).
- Repeated national and state-level (in the focus states) random digit dial (RDD) telephone surveys (two years) with over samples of low-income neighborhoods residents in the focus states.[13]
- Site visits to hundreds of libraries and other sites, including several on Native American reservations.
- Focus groups with library staffs as well as foundation staff members.
- Review of documents and other data-gathering strategies.

Data for this report are drawn primarily from site visits, focus groups, and surveys of library administrators, staff, and patrons completed in 2000 to 2002. Data are also drawn from the National Center for Education Statistics fiscal year 2000 annual survey of public libraries.

Relevant comments from library administrators, staff, and patrons responding to PACP surveys are in gray boxes throughout the report. These quotes are verbatim and representative of the issues and points of view expressed by respondents.

[8] The Public Access Computing Project at the Daniel J. Evans School of Public Affairs, University of Washington is directed by Professor Andrew C. Gordon.
[9] Total of 1,630 surveys to date.
[10] Total of 6,306 surveys to date.
[11] Total of 22,124 surveys to date.
[12] Alabama, Arkansas, Florida, Idaho, Illinois, Louisiana, Maine, Michigan, Mississippi, Missouri, Montana, New Hampshire, New York, North Dakota, Pennsylvania, Texas, Vermont, and Washington.
[13] Total of 18,599 telephone surveys to date.

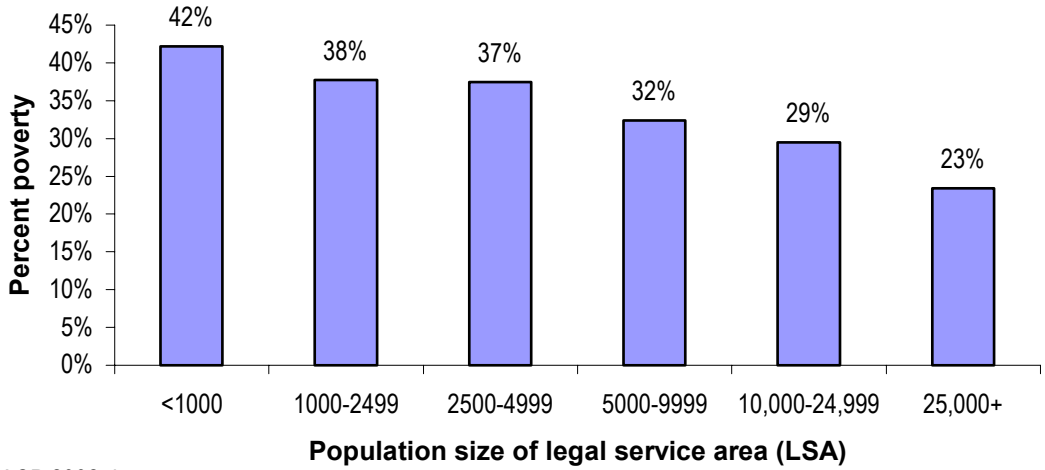
Findings

About the communities served by rural and small town libraries

The communities served by rural and small town libraries range in size from a few hundred people to larger towns or areas of more than 25,000 (those responding to our survey had an average of 8,000 people in the service area). Some of these communities are several hours away from major shopping facilities, cultural opportunities, and medical and other services while others are much closer. While it is hard to categorize this diverse group, there are common characteristics that reflect the nature of these communities and in turn the nature of their libraries. Some of the most relevant factors about these communities are:

- The rural areas and small town communities served by smaller libraries are often poorer than those served by larger libraries. Figure 1 shows that the poverty level of communities served by the smallest libraries (less than 1,000) is considerably higher than that of the communities served by the largest of these libraries (more than 25,000) (42% versus 23%). That is, about 40% of the families living in the smallest of the rural and small town communities live below the federal poverty line, compared with less than one-fourth of those living in the more densely populated areas.[14]

Figure 1
Poverty level of small towns and rural communities served by public libraries decreases as size of the population served increases



PACP 2002 data

[14] Interestingly, the pattern of poverty level and population density is different for the communities identified as urban or suburban. In these settings, the percentage of people living below the poverty line *increases* with population density from 12% in the least populated urban or suburban communities to 34% of the most densely populated urban or suburban communities.

- Rural America has proportionally more adults with lower literacy rates than urban America. According to a 1993 Rural Clearinghouse report, *Literacy in Rural America: A Study of Current Needs and Practices,* rural residents make up 28% of the United States population, but account for 42% of the functionally illiterate.[15]

- The availability of goods and services in rural communities and small towns is more limited. With less dense populations, and longer distances for delivery of goods, commodities are less available and more costly. As a result of these limited resources, expectations of available services are often lower, be it the choices available in the grocery store or the selection of books in the library.

In addition to the above facts about small town life, a distinctive feature that pervades small town living is that "darn near everyone knows each other" (including each other's business). As Simmel put it in his early but comprehensive explorations of the implications of population density, the small town is "where one knows almost everybody one meets and where one has a positive reaction to almost everyone."[16] This familiarity influences all aspects of small town life, including that of the library in ways that will become evident through out this paper.

About rural and small town libraries

The public library structure in the United States is comprised predominantly of libraries serving rural and small town communities. There are various ways of measuring the number of libraries and the populations they serve, depending in part on whether the data are *system* (i.e. administrative entities) or *outlet* (i.e. all central libraries and all branches) based. The most common method of assessment to date, and the one used by the National Center for Education Statistics (NCES), is *system* based. For the year 2000, NCES reported that four-fifths (79% or 7186) of the 9,074 library systems in the U.S. serve population areas of up to 25,000 individuals; these systems are spread across the country and serve 17% of the population. Twenty-nine percent (2,632 library systems) provide service to communities of up to 2,500 people.[17]

While the vast majority of the small (less than 25,000) "systems" are independent community libraries—that is, they do not have branch libraries and they are not legally part of larger systems[18] (though they may choose to join a library consortium or cooperative), many small

[15] Cited in Byers. Based on 1980 US Census bureau self-reports of grade level completion.
[16] Simmel, 1903.
[17] Chute, Kroe, Garner, Polcari, and Ramey: Tables 1A and 1B. Note that library branches that serve small communities but are part of a system where all the outlets together serve more than 25,000 will be omitted from these computations. Because these numbers are system rather than outlet based, the percentage of the population served by all small public library outlets in the U.S. (whether independent or part of a system), is likely to be considerably underestimated. Bertot and McClure have begun to collect some data on public libraries at the outlet level. They estimated, in 2001, that 68% of the more than 16,000 library outlets in the U.S. serve populations of up to 25,000. See Bertot and McClure, 12/01: Table 3-1.
[18] Just six percent (408) of the public library systems serving population centers up to 25,000 have branch libraries (total of 757 branches) while 3% (205) have bookmobiles. Only 14 of the 2,632 library systems with less than 2,500 population have branches (a total of 20 branches) and 11 have bookmobiles. See Chute, Kroe, Garner, Polcari, and Ramsey: Table 2A.

libraries are branches (i.e. legally part) of larger "systems" and therefore, not "visible" in the system-based statistics about small libraries.

Historically, two of the major challenges faced by rural and small town libraries are relatively limited budgets and staff. As can be seen in Table 1, the smaller library systems in particular have endured a history of deprivation. In the year 2000, the average library serving up to 2,500 people operated with a total budget of less than $35,000 and with less than one full-time staff person. For those serving fewer than 1,000 people, the average budget drops significantly—to less than $21,000.

Table 1

Features of public library systems by size of LSA

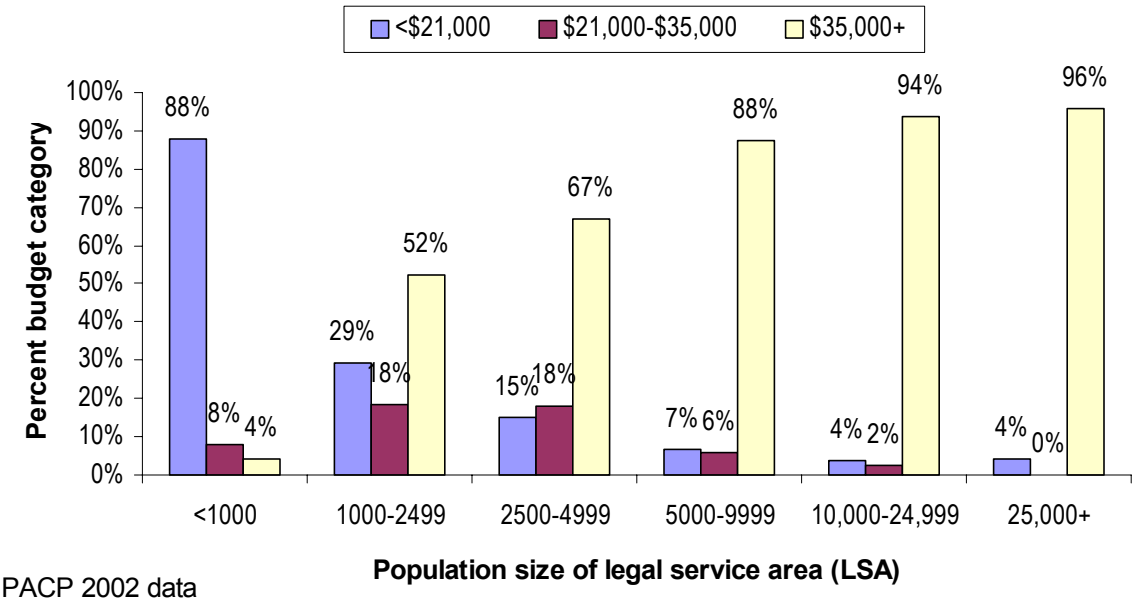
Average library has	<25,000 LSA	<2,500 LSA	<1,000 LSA
Operating Budget	$186,163	$34,666	$20,552
Book and serial collection of	27,251	11,145	8,489
Weekly hours of less than	40 (55%)	30 (72%)	20 (59%)
Staff of	3.8	0.9	0.63
# of PA computers	3.5	1.8	1.5
% with Internet access	94%	87%	77%

Source: calculated from NCES FY2000 Data

A 2002 PACP survey of library administrators serving communities with at least 10% of the population living below the federal poverty line confirms that libraries in these poorer communities remain particularly strapped financially. Figure 2 shows that nearly all of the rural and small town libraries serving fewer than 1,000 people and nearly half of those serving fewer than 2,500[19] have budgets of less than $21,000.

[19] This figure is derived by combining the libraries serving <1000 and those serving between 1000 and 2499.

Figure 2
Most of the libraries serving fewer than 1000 people and nearly half of the libraries serving fewer than 2500 have budgets below $21,000



PACP 2002 data

Bernard Vavrek, of the Center for the Study of Rural Librarianship at Clarion University of Pennsylvania, notes that funding is a "relative matter, with some communities being able to provide a decent working budget for services and activities, while others are struggling."[20] The challenge is especially great for those in rural areas, where communities are often economically depressed, and tax bases do not provide adequate funding to support even minimal library service. PACP data show that, on average, rural and small town libraries in communities with at least ten percent poverty receive the same budgets per person in the library's service area ($21) as do the urban and suburban libraries, but with so many fewer people, the resulting budgets are especially small.[21] If the library is included as a line item in the city or county budget, the library directly competes with other basic services such as maintaining the streets, as well as police and fire protection (some communities, of course, do not have funds for these services and rely on state and federal grants – or volunteers). *PACP found that rural and small town libraries across the country face similar struggles, regardless of the wealth of the state they are in*. This is in contrast to urban and suburban libraries, where budgets *are* related to the *state's* poverty level.[22]

Limited budgets result in limited staffs and in those areas with fewer than 25,000 people this usually means operating with less than four FTEs. For the smaller libraries (less than 2,500) it is less than one FTE, and for some, where there are no funds for staff, the library is run by volunteers. Ruth and George Strassler, formerly of the Neligh (NE) Public Library, highlight the

[20] Vavrek: 4.
[21] Gordon, Moore, and Gordon, 8/02: 3.
[22] Gordon, Moore, and Gordon, 8/02: 3.

difficulties faced by the one-person staff: in contrast to the "highly compartmentalized" urban library, the small library has "one or two people to do everything…Time has to be allowed for shelving the books…, processing material, doing reports, fixing the computer, fixing the copy machine, [and] mopping the floor after that cute story time preschooler upchucks on the floor." Consequently, the staff "is able to spend only a small portion of his time on reference/access."[23]

The numbers about staffing, however, address only one part of the staffing challenge. Vavrek is also of the opinion that the "most important factor limiting the present and future development of rural and small town information services is lack of *academically trained* staff."[24] Using 1994 NCES data, Vavrek noted that just one-third (34%) of the full-time librarians in rural libraries (serving fewer than 25,000) had an ALA master's degree, and in communities of fewer than 2,500 people only 5% had one. Vavrek attributes this situation to conservative attitudes that do not want to change the norm, low salaries, failure of some staff members to recognize a need for formal education, and the lack of distance learning opportunities in librarianship (though he notes that the latter is improving). By the year 2000, this situation had changed little. NCES data show that 37% of librarians serving less than 25,000 people have a MLS while 7% of those serving fewer than 2,500 have this degree.[25]

Small budgets and staffs that are often short in both numbers and education result in extremely limited book collections that often focus on recreational reading and how-to materials (reference books are in short supply) and staff time dedicated to on-going fundraising efforts that range from bake sales to grant writing.

These limitations on budgets and staff are daunting hurdles to overcome, but our site visits and surveys also show there are many librarians in these rural and small communities who are doing exceptional work with their libraries. While small town librarians are less likely to have professional degrees, we have seen outstanding examples of service -- including collections finely tuned to communities' interests, rich and appropriate programming for all ages, well-developed PA computing services, and creative partnerships with local clubs, organizations, and community agencies. In future publications we will be featuring some of these librarians who achieve a great deal with limited resources.

Attitudes toward public access computing

With small budgets and one or two people responsible for all services, the attitude of rural and small town library staffs toward the addition of public access computing is worth investigating. Is it yet another task added to an already over worked staff? Does it make their lives easier? Is it good for the library overall? Does it help their patrons? Do staff members even like it? Figure 3 shows that the answers to these questions are "yes," it does *all* these things.

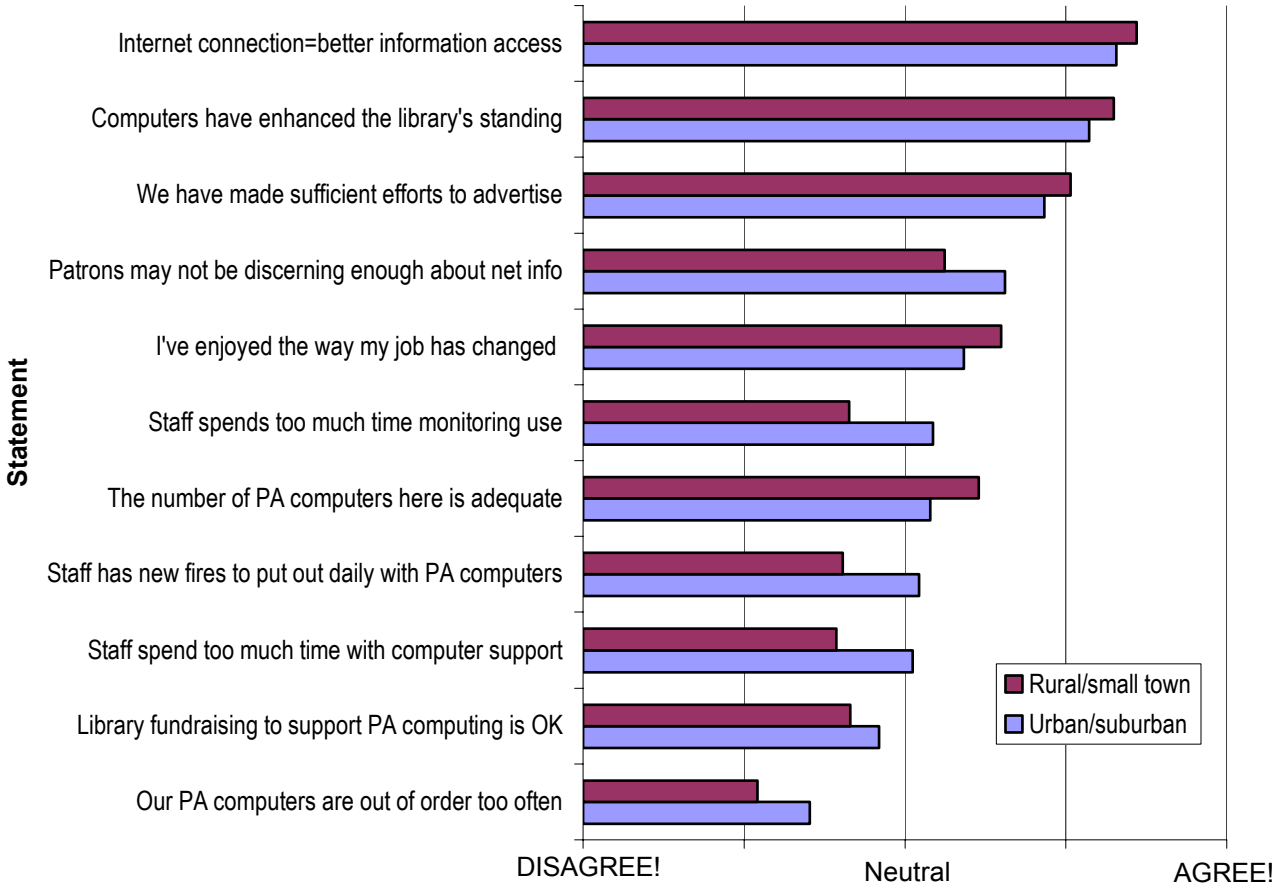
Overall, rural and small town library staffs are extremely pleased with public access computing and feel it is a positive addition to their library. Figure 3 illustrates some items on which rural

[23] Strassler and Strassler.
[24] Vavrek: 5.
[25] Chute, Kroe, Garner, Polcari, and Ramsey: Table 10A.

and small town library staff differ from their urban/suburban counterparts. As can be seen, rural and small town library staff are significantly more likely than urban/suburban staff to:

- feel that the reputation of the library has been enhanced in the community;
- say they enjoy the way their job has changed with PA computing; and
- say they have better access to information with the Internet.

Figure 3
Rural and small library town staffs are especially pleased with PA computing



PACP 2002 data;
All differences significant at at least p<.05

In addition to these enhancements, Figure 3 reveals some of the challenges and concerns facing libraries with this service. What is perhaps most striking about this chart is that *rural and small town library staffs generally report PA computing services to be less of a burden to manage and support than do the urban and suburban staffs*. In particular, they are significantly less likely than their urban and suburban counterparts to feel they spend too much time putting out fires with PA computing, monitoring computer use, or supporting them. And, rural staff members are

significantly more likely than urban and suburban staffs to feel they have enough computers for their patrons.

Attitudes reflect experience and the environment in which those experiences occur. The next sections look in more detail at the impacts of PA computing and discuss how the characteristics of rural and small communities affect these benefits and challenges.

The benefits of public access computing

The above discussion of attitudes of library staff toward computers and the Internet in libraries highlights some of the key benefits of public access computing for rural and small town libraries. These include: enhanced and expanded information services; broader visibility and improved reputation in the community; and greater job satisfaction. As Figure 3 indicates, these benefits are felt more strongly by staff in rural and small town libraries than those in the urban and suburban ones. In addition to these greater positive impacts, the rural and small community settings seem less affected by a variety of problems experienced by suburban and urban libraries. For example, feedback from library staffs indicates that Internet pornography appears to be a greater problem in metropolitan libraries than it is in rural and small town libraries.

More, and new patrons

A substantial change which most libraries, urban and rural, large and small, have had to address with the introduction of public access computing is the rise in the number of patrons, and in the ways in which these patrons are different from traditional library users. PACP data show that, in 2002, 89% of rural libraries and 88% of small town libraries experienced an increase in traffic since the PA computers were installed. Rural libraries reported an average increase of 21% while small town libraries reported a 14% increase.

Many administrators and staff report that the new patrons who are drawn to the library by the public access computers often begin to use other library services as well. In open-ended survey comments, both administrators and staff members report that for some users the move to other services is an awareness issue—that is, once they are in the library the patrons begin to learn about the variety of services the library offers and then to take advantage of them. For other patrons, making use of other library services is a by-product of waiting to use the public access computers. Librarians (happily) report that students waiting for their turn to use the computers will pick up a magazine and read it (as one librarian said “at least they’re reading!”). Others will browse the stacks and ultimately check out books. Approximately half of rural and small town libraries (53% and 46% respectively) reported an increase in circulation since the PA computers were installed.

Libraries also report that some patrons are attracted to the library because of free computer and Internet access and never move beyond the computers. This is undoubtedly the case in some libraries and for some patrons. It is not, however, what is reported by the majority of our survey respondents, and it is not, in general, what we observe and experience on our site visits to public libraries. For example, on a spring 2002 trip to 23 rural and small town libraries (in communities with populations of 100 to 6,000, with most below 1,500) in five Northwest and Rocky Mountain states, it was obvious that public access computers are without exception an important addition

to these libraries for the reasons detailed below. They have not become, however, the sole, or even predominant focus of most of these facilities. The majority of these libraries experienced an increase in the number of patrons using the library after the public access computers were installed, and most also reported that the patrons generally use other services. Observations of patron use were consistent with staff reports: public access computer users generally spent time browsing shelves, looking at magazines, and checking out books and videos in addition to spending time on computers.

Better access to information

With public access computing, rural and small town library staffs are especially pleased that they can now offer their patrons, old and new, a much broader array of information. In addition to the quantitative survey results, many staff and patrons have told us in their survey comments and during site visits that having public access computers that are connected to the Internet has provided substantial new opportunities for them and their communities. In rural and small communities, where the library is generally the only place to go for computing services and Internet access (as one small town librarian said "This *is* the Internet café!"), and where there are few bookstores, often more limited reference collections and fewer other information sources available, these expanded resources are of particular importance.

Staff Say…
Public access computing satisfied the curious, enabled the seriously interested, offered a piece of the big picture to a small town thus leveling the learning and playing field.

We can explore places closed to us because of distances or lack of funds. With the Internet, there are very few questions we can't answer.

Many of our patrons are poor and have no access to a PC. The library does a great service to the community by providing the access to this equipment. I look at these as economic/ educational levelers.

Our library serves a mainly rural population. Our students sometimes encounter great difficulty in finding the reference materials they have to have. Now that they have access to the Internet, especially our [state's] virtual library connection, they are astonished at all the reference materials available to them.

With small spaces and limited budgets, the Internet provides these more remote libraries with an expansive window to all kinds of information that is not "on-site." While this is a benefit for all types of libraries, it is especially so for rural and small town ones that are so often burdened with extremely limited collections. Reference materials are frequently either almost nonexistent or terribly outdated and libraries cannot afford to improve this situation. Increasingly, libraries are canceling various reference subscriptions, using the Internet for their reference work, saving both money and space for other resources.[26]

Public access computers and access to the Internet expand resources even further by providing patrons with access to the many bibliographic databases that state library agencies are now making available to their libraries. In addition, librarians can go online and check the holdings of other libraries in their cooperative or consortium, system, or state (one patron called it having access to a "world of libraries"). Interlibrary loan, of course, has been done for years, but being

[26] A recent posting on the Maine Lib Listserv indicates that, for a variety of reasons, some libraries still prefer print reference materials. See Margaret Main, MELIBS-L@LISTS.MAINE.EDU. Thursday, September 12, 2002. Subject: Reasons for Print vs. Electronic.

able to conduct this service over the Internet speeds up the service and expands it dramatically.[27] *As a rural librarian in a Rocky Mountain state put it, "With all the tools that we have, with the computers and the Internet, we can provide the same kinds of services that a big library can, if we just work together."*

In addition to the expanded and more up-to-date information available on the Internet, the set of resources provided with the Gates Foundation computers supplies rural and small town libraries with additional materials that most cannot afford to purchase out of their limited budgets. Research programs such as Encarta, the travel planner, resume writer, children's games, as well as the Office applications, allow libraries to offer patrons a variety of services that many do not have on their non Gates computers. As one librarian acknowledged these programs are "invaluable" to her library and she would not have been able to purchase them.

Patrons Say…

I got Rocky Mountain Spotted Fever and if it wasn't for the library and Internet and web I would be dead right now. The doctors wouldn't help me…The doctor I went to is a specialist, and he told me I don't have it. I have all the symptoms, I saw it on the Internet. If it wasn't for the information I got on the Internet, he [the doctor] wouldn't have sent me out with any antibiotics. If you wait an extra day or two you could be dead. I had to force that doctor. It says on the Internet if you suspect you have it, or Lime Disease, don't wait for a blood test, you could be dead, the doctor had to go do more research on his Internet. It saved my life.

Assisted in making major medical decisions because of access to health related materials and information on medical providers. We have saved money on travel arrangements. It has aided in job searches.

These computers have aided me in my college and scholarship search in the past year. My family has benefited in that we are able to use these computers for research and preparation of school projects, resumes, etc.…

Library computers are amazing—they allow me and my foreign husband to keep in touch with our families, meet people with similar political interests, as well as information when traveling.

I work at a rural outpost, and do not have Internet access on my computer. The library computers allow me to stay in touch with my office and colleagues and research my columns on health for a rural paper.

I appreciate having two computers with unlimited time access to the Internet. As a teacher I often need more than the 30 minutes allowed previous to the grant computers coming in to research topics and useful websites. I have Internet access at home, but living in a rural area it costs the additional 1–3 cents per minute phone company charge to access the number to use it, so I appreciate the luxury of free access.

I can save the 30-mile trip to school by using these computers for online classes

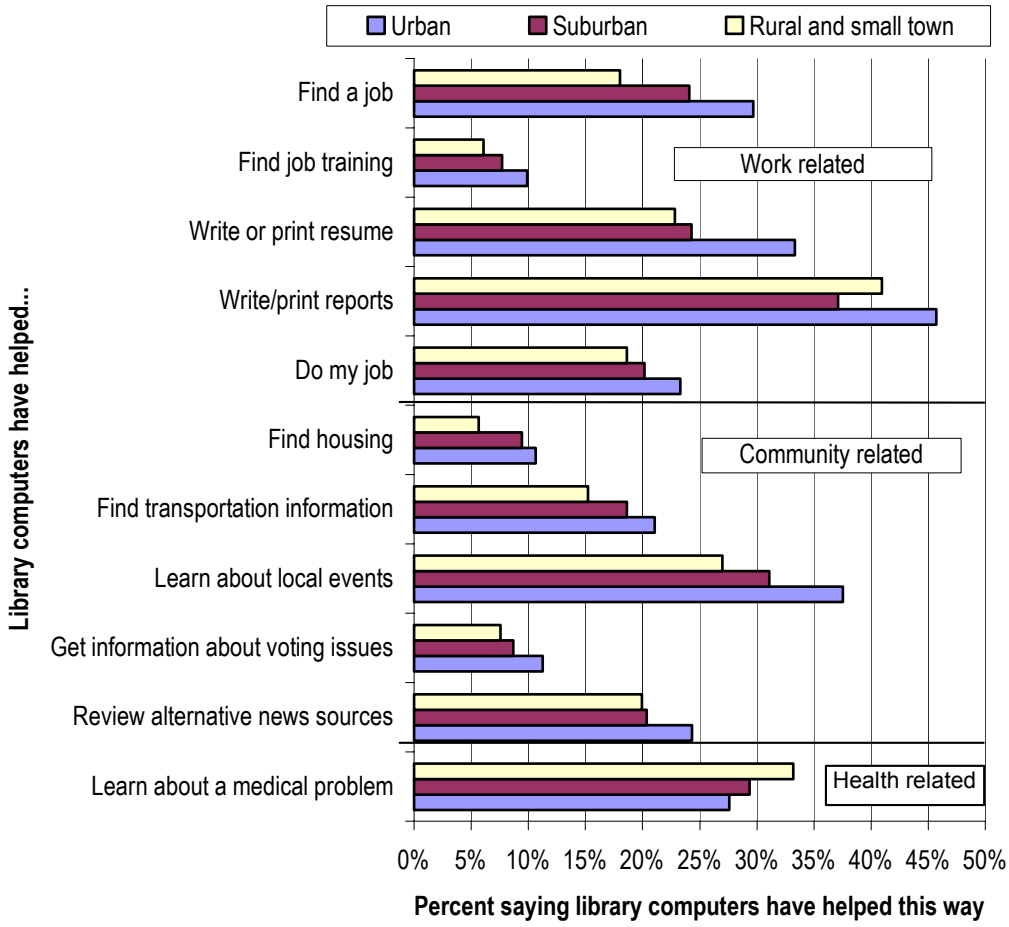
Access to this "world of information" helps patrons of rural and small town libraries in a variety of ways. A particularly important information benefit for people in rural and small communities is the ability to gain medical information independently. Both medical services and medical information are much less available outside of metropolitan areas, so, as Figure 4 shows, obtaining medical information is particularly important to patrons in rural communities and small towns. As one patron stated, "Being able to find information about specific diseases has been a God-send."

Rural and small town patrons use the library computers for a variety of other purposes including work and community related activities, though they tend to do these activities online less than urban and suburban users. As noted in a previous PACP report, the more informal communication networks in smaller communities mean people can more easily find out about local events or learn about local voting issues than can

[27] Flatley reports, for the year 2000, that 92% of rural and small librarians use the Internet to answer reference questions, 91% use it to access library related sites, and 68% use it for interlibrary loan: 10.

urbanites. Many students, regardless of rural or metropolitan location, use the library computers for school-related activities.[28]

Figure 4
Library computers are particularly important to rural and small town library patrons for obtaining medical information



PACP 2002 data

[28] See Moore, Gordon, Gordon, and Heuertz, 9/02 for a more detailed discussion of patron PAC use.

Enhanced library standing

Besides feeling positive that public access computing enhances and expands library services, rural and small town library staffs also believe that PA computing service has improved the visibility and reputation of the library within the community (rural and small town significantly more than urban and suburban--see Figure 3). Comments such as "it is now 'in' to be at the library," and "they [computers] have put us on the map" are frequent in the open-ended remarks from library staff and administrators. Many patrons say that the library is a more interesting place to go since the public access computers were installed. And local patrons often express a sense of pride that their small library has this kind of service, while tourists and other out-of-town visitors are surprised that small town libraries have such "nice computers."

Staff Say…
They have 'put us on the map'.

The new computer gives the library a more current use image, keeping up with technology.

I didn't expect the computers to enhance the position in the community as they have done. Traffic has increased, public expresses pride in the library and appreciation to the Gates Foundation.

More technology at their fingertips, positive image of the library.

The reputations of rural and small town libraries also appear to be enhanced by their role of providing access to those who cannot afford technology. As one non-computer using library patron stated: "We are proud of our community and our library. I do not use a computer but it sure has made a difference. Those who don't have computers at home are able to further their skills by using the library computers."

Some libraries have been able to turn this enhanced visibility into increased local funding. For example, a library in the Midwest reported that they were able to obtain additional funds from their county because of the increased use of the library after the computers were installed. While there are not many comments to this effect,[29] they do show that some librarians are able to take advantage of the "political moment" that the Gates Foundation grants offer to libraries.

Greater job satisfaction

As indicated in Figure 3, rural and small town library staff members enjoy the changes that public access computers bring to their jobs. Some of the reasons for this are discussed above, namely, they are especially pleased with being able to provide enhanced resources to their patrons, often feeling that they can now offer the same types of service that urban/suburban libraries can. And they feel the stature of their libraries has improved in their communities.

Several other important factors also contribute to this greater level of satisfaction. Rural and small town libraries are more likely to have a sufficient number of computers for the populations they serve than are urban and suburban libraries. Accordingly, rural and small town libraries have 3.6 persons per computer compared to urban and suburban libraries that have 9.0 per computer. Consequently, the tasks involved in managing PACs are less intensive as well as less stressful. Staffs in the small libraries tell us that the honor system is frequently relied upon for signing in and out on the computers, and small town familiarity helps enforce time limits. The

[29] The specific question was not asked – comments on this topic were volunteered.

patrons of the small libraries are usually friends and neighbors that the staff see everyday, whereas in the metropolitan libraries the patrons are often anonymous strangers, including a population of homeless individuals in many settings. Because of this familiarity, people in the small libraries are far less likely to attempt to view pornography or disrupt library services in other ways. This is in sharp contrast to the experiences of some metropolitan library staffs who report regular confrontations with strangers, drug addicts, and homeless people. These staff must deal with unpredictable behavior including far more frequent problems with Internet pornography. Ultimately, one of the consequences of small town familiarity is that rural and small town libraries are still viewed as safe and comfortable places for children while some urban libraries struggle with maintaining this environment.

The challenges of public access computing

While public access computing services bring considerable positive returns to public libraries, the effort and work to provide these services can be substantial and at times pose significant challenges to them. Though rural and small town library staffs indicate they have fewer concerns than urban and suburban staffs about managing and supporting the PA computers (see Figure 3),[30] observations from site visits and focus groups, as well as open-ended survey comments indicate that there may be more challenges here than many acknowledge or recognize (which is, of course, a challenge itself). The most significant day-to-day problem for rural and small town libraries appears to be supporting the technology. This includes having access to readily available technical support, and gaining and maintaining staff technology skills. As one librarian put it, we have difficulty "keeping up with the changes in the technology and how to solve 'technological problems.'"

Staff Say…

Received my MLS pre-computers; currently live in rural area many miles from training; Lack of time during normal workday.

Lately the greatest challenge has been maintaining our equipment. At least two of our computers have technical problems at any given time. This is frustrating for me, the staff, and the patrons.

Keeping the computer up and running and finding time to help patrons with it. Finding time to improve my own computer skills. No computers at home.

Our staff is not very well trained on computer as a whole. Some know more than others and have to be asked if there is a problem, but any staff member should be able to answer most questions. For me personally, the greatest challenge is finding time to become more proficient in using the programs and the Internet.

Keeping up with the changes in the technology and how to solve "technological problems." We do not have a member on staff who is really proficient in computer hardware operations. This causes us to be dependent on outside help for some situations.

Supporting the technology

When staff members in an urban or suburban library have a technical problem with a computer, if they are unable to fix the problem themselves, they can usually contact the local tech support person who, if not on staff, is down the street or just across town. When a librarian in rural America can't fix a technical problem, it often means placing an out-of-order sign on the computer for several days or weeks until a volunteer (if they are lucky enough to have one), a technical assistance staff from their consortium or system (if they are a member), or a paid consultant (if they have any money in the budget for this purpose) can come fix it. These resources can be several hours away so 'dropping by' to fix the computer is not something

[30] See also Gordon, Moore, and Gordon, 8/02 for further discussion.

that can easily or quickly be done. For the small library that only has one computer (shared by staff and patrons alike), computer-related activities come to a halt until the computer is fixed. For rural and small town libraries, the essence of this problem goes back to one of the fundamental characteristics of rural America—lack of local resources—or, as one state librarian so aptly put it, "there are no geeks in the farm belt." And there are few if any nearby computer stores or opportunities for technology training.

Having no local technical consultants to call on often means that family members serve as primary technical support for the rural library. For example a rural librarian (60 miles from a community of 10,000, 100 miles to a metropolitan area) in a Rocky Mountain community (population 400) we visited enjoys technology and is quite capable of handling general troubleshooting problems. But when it comes to more complex technical issues she contacts her son who lives several hundred miles away. He orders replacement parts, answers questions via email and phone, and takes care of larger computer tasks when he comes to visit.

Rural and small town library staff members also turn to high school students for technical support. One remarkable story came from a librarian in the Midwest who retains the assistance of a student she first hired when he was a freshman in high school, even though he is now in college three hours away. He promised he would continue to take care of the computers so the librarian has taken him up on his offer. She calls or emails him when she has a problem and, like the above librarian's son, he takes care of more complicated problems when he comes home on his holiday breaks. The librarian realizes how lucky she is to have such a dedicated person helping her, and does not know what she will do if he is no longer available.

In addition to gaining technical help from family and students, we've heard from librarians who obtain technical support from their local school or city/county office, as well as those who are involved in creative "bartering." These librarians trade space (e.g., they house equipment for ISPs) and/or promotion (e.g. they place "Technical support is courtesy of …" signs by the computers) for technical support and/or additional computers. We also heard from some librarians that state library consultants, in the states where they are available, offer valuable technical assistance to them, though this seems to vary from state to state.

"No geeks in the farm belt" generally means there are few, if any computer stores in small town America, so even if a librarian's skills are such that s/he can handle some of the technical problems that arise there is often no local person for him/her to talk with or to purchase parts from. A librarian in the Southeast told us that she has to drive two hours to get to a computer store because there are none within the three-county area around her library. Compounding this problem is the fact that she and her staff do not know enough about computers to be able to order supplies off the Internet. They need the personal interaction that allows them to get answers to their many questions.

This same Southeast librarian says she enjoys technology, feels it can do good things for her library, and wants to do more with it. But she has no budget to hire consultants. So she struggles to learn, on her own, as much as she can about working with computers. She says she would love to take computer classes, and there is a community college in her town, but they are not offering the classes she needs. Her state library offers technology related classes, but these are almost

always focused on specific bibliographic software rather than on the essentials of troubleshooting computers, installing a firewall, or even planning for technology. (This seems to be the situation in many states; library software developers provide classes on their software for free or at reduced rates so these types of classes are fairly readily available, but state libraries have limited funds to offer other types of technology classes.) And, just like the computer store, these classes are often a two-hour drive away. When there is a class of interest offered by the state (regardless of its topic), or a conference that would be beneficial to attend, the one-person librarian then faces the choice of either closing the library or finding a volunteer to cover during her/his absence, and, of course, s/he must come up with the funds to pay for the trip.

Lack of local opportunities for technology training is one of the central challenges to improving the technical skills of librarians in rural and small communities, but it is by no means the total problem. If staff members are fortunate enough to be able to obtain some technology training, the challenge then becomes finding the time to practice these newly gained skills or the computer to practice them on. We hear repeatedly how frustrating it is for library staff to learn a new skill, only to not have the time or resources to practice or use the skill for several months, by which time they have forgotten what they originally learned. PACP data from library administrators reinforce these perceptions. Only about one-third (32%) of responding directors, in 2002, reported that their staff members have enough opportunity to practice computer skills at work.[31] Administrators who said their staff does *not* have opportunity to practice report that *lack of time* is the predominant reason. Another contributing factor, for 28%, is that there are no machines available for staff members to practice on. Compounding these training difficulties in bringing staff skills current is the additional challenge that what is "current" keeps moving forward with new and upgraded software, as well as the Internet's rapid pace of change. Indeed, Flatley found, in 2000 that though the majority (61%) of rural librarians believed they were "keeping up-to-date" with "the Internet's rapid pace of change", 18% and 21%, respectively believe they were being left behind or were not sure.[32]

Given the limited resources of rural and small town libraries, it's not surprising that only 11% of administrators responding to our 2002 survey reported they offer a formal training program for new staff, a figure that is significantly lower than the 28% of urban and suburban libraries that do this. The majority of rural and small town libraries (62% compared to 43% of urban and suburban libraries) rely instead on providing staff with a brief introduction to technology when they are hired.[33]

Sustainability and rural and small town libraries

This paper summarizes the variety of dimensions on which rural and small town libraries face special challenges in delivering the array of services expected of them. Many of these are relevant to long-term successful public access computing. The lack of local expertise, the frequency with which technical support is unavailable in libraries and beyond easy reach, the likelihood that patrons come with little other computing experience and often with greater functional literacy challenges, the need for a staff short on resources and appropriate training to

[31] Gordon, Moore, Gordon, 8/02: 13.
[32] Flatley:10.
[33] Gordon, Moore, Gordon, 8/02: 12.

keep the technology running–all these are examples of the special challenges facing small libraries. And at the same time, the importance of successful public access computing in these libraries is heightened as well.

Gates Foundation efforts to help libraries sustain public access computing

The problem of sustaining public access computing faces all public libraries, and strategies to enhance the likelihood of success have been part of the Gates Foundation's approach from the onset of the U.S. Library Program. Several features of their "package" are of particular relevance to environments that lack local technology support and which begin with limited technology experience and skills. These features demonstrate that the Foundation has thought about sustainability in those environments from the earliest stages of the program, and our data indicate that this attention has yielded positive results.

The library program provides *not* just a *computer* but a *package*, many elements of which have proven their value in rural and small town libraries. For example, the Library Program package includes a "bullet-proof" computer which resists any attempts to modify its core elements, and which looks the same and operates the same way for every patron, regardless of what previous patrons may have been doing. To minimize troubleshooting problems, these public access models, designed with and built especially for the Library Program, reset themselves and correct many problems when the machines are turned off and then on again. We have many reports of the value of this unique feature, and of the ways in which it distinguishes the Gates library model from others in public libraries. One librarian in the Northeast, for example, commented in detail on the way the Gates computers "clean themselves up" after a patron has "messed around" with them–something that her non Gates machines do not do. This "on/off" clean-up feature makes public access computing much easier for her to manage, and she commented that she wishes all her computers were designed this way.

From its inception, the Gates package has incorporated on-site training at each small library system, explicitly crafted for library staff and then revised over time in response to feedback from participants. Library Program staff work with each library on the specific needs and appropriate configurations for their building, and then install the technology and networking infrastructure at the library before the training begins. Various publications oriented towards administration of the computers (and others to assist patrons' use) are provided to each library, and like the training program have been modified repeatedly in response to feedback. Moreover, free technical support (via an 800 number and the Internet) for librarians is included in the package. In addition, the Library Program has made training grants to state libraries to allow them to provide additional training that each state designs to meet the specific needs of local library staff in their state.

Staff Say…

The trainers [who came to our state] are so young—they look 15 years old, and they come in and our initial reaction is 'oh my goodness, how's Myrtle going to handle this one?' But they're wonderful, they're super, they're professional, they did an excellent job, they talk 'to' the people not 'at' them. They went in there and weathered the storm.

The security of the [Gates] computers has made my job easier because I don't have to "clean up" after patrons have messed up something. That is wonderful! We have had more people coming into the library and that has increased use of other services. Thank you!

Training and support has been excellent. Gates computers have been very reliable with no down time so far.

Our research strongly suggests that these efforts have paid

off, and in general have been of particular value for isolated libraries where assistance of this kind is so hard to come by. Overall, "administrators at libraries that received the on-site Gates Foundation training as part of the package rated their staffs' skills significantly higher than the administrators at buildings that did not receive this training."[34]

The package received from the Gates Foundation has enormous impacts in many small libraries. It has been described by recipients as a "windfall" that helps many small libraries either initiate public access computing or expand their services. The typical small library staff person reports few, if any, substantial technical problems with the computers (some who have had the equipment for three years have never had a problem). Others using the Library Program's technical support line report satisfaction with the service they receive.[35] And library staff report being pleased with the training the Program provides.[36] Many comment at length on how rare it is to receive training from a grants program, reporting that most funding bodies limit their support to hardware and software, skipping the "essential" training component. The overall impact of the Library Program is often profound, as indicated by the following comments from the Paulding County (OH) Carnegie Library in the *Rural Library Service Newsletter*: "Our service philosophy has been greatly impacted by Gates. Bottom line: we cannot imagine life without this wonderful gift. History to us is BG (before Gates) and AG (after Gates). We can only imagine the possibilities in the future…."[37]

In addition, rural and small town libraries report, somewhat to our surprise given all the above difficulties we've seen and heard, that supporting the computers and providing assistance are not particularly troublesome issues. For example, only 5% of rural and 6% of small town administrators consider "supporting computers" to be a "big problem" for them, compared to 24% and 21% respectively saying it is "no problem".[38] In addition, very few administrators in rural (2%) and small town (3%) libraries indicate that staff training is a "big problem" while relatively larger percentages report that it is "no problem" (26% rural and 23% small towns).[39] So though the vast majority of administrators indicate at least some level of difficulty with both staff training and supporting computers, these challenges appear not to be critical issues from their perspective.[40] What we *hear* in response to our questions about these difficulties in both site visits and focus groups reinforces these perceptions. However, we are not convinced that these perceptions are completely correct.

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[34] This finding is for all types of libraries, not just rural and small ones. See Gordon, Moore, and Gordon, 8/02: 12. The Gates Foundation has contracted with the Online Computer Library Center (OCLC) to develop an online portal to facilitate the on-going availability of many of these features once their U.S. Library Program is completed.

[35] We have often been told that when problems have arisen, the Foundation has been very responsive. For example, when respondents to our early surveys reported concern about long waiting times on the free technical help line the Foundation revamped their procedures, cutting back the waiting time dramatically.

[36] For more information about library staffs' response to the Library Program's services, see various PACP reports on the Gates Foundation website at www.gatesfoundation.org/libraryevaluation.

[37] "Gates Computers: One Year Later."

[38] Gordon, Moore, and Gordon, 8/02: 9.

[39] As indicated in an earlier PACP report, it is unclear whether "no problem" means they have dealt with a problem successfully and it is no longer a problem, they are not concerned with the issue, or they simply have not encountered it. This is an issue we are exploring further. See Gordon, Moore, and Gordon, 8/02: 9-10.

[40] See Gordon, Moore, and Gordon, 8/02 for a more detailed discussion of these issues.

The sustainability challenge persists

While the efforts of the Gates Foundation U.S. Library Program have undoubtedly helped many librarians in rural and small communities make important strides in their ability to support public access computing services, many challenges persist. For example, rural and small town libraries are still isolated from technical help, and they are still less likely than their peers in large libraries to have received appropriate professional training. Moreover, they are less likely to attend relevant association meetings and continuing education training workshops that are a great distance away and may require closing the library. With their small budgets, rural librarians spend a proportionally larger percent of their limited resources replacing and/or repairing the technology. And many face on-going challenges of inadequate or unreliable connections to the Internet (another problem with remote areas where high-tech infrastructures are slow to materialize).

Librarians in rural and small communities fall along a continuum of possible responses to these challenges.

Staff Say…
I think [Gates] tech support has already ended since we received our computers in Dec 2000. I am not very technical savvy so I am a bit clueless on how to keep the computers up to date and running smoothly.

The technical support given by Gates and other support technicians has helped us tremendously. We will be stressed to try to keep all systems running on our limited computer technical skills.

At one end of the continuum is what appears to be a relatively small percentage of rural "librarians" who "just work" at the library, as opposed to those who are "professional" librarians (and by "professional" we do not necessarily mean they have a MLS). These "librarians" open the doors in the mornings and do the basic tasks required, but they do not seem to think in terms of goals or long-term planning—for public access computing or library services in general. For many librarians in this group, the irony of the Gates computers is that they may have worked too well. That is, this group's only experience with public access computers has been the "bullet-proof" model that has had few if any problems. Consequently, some have not felt compelled to either improve their skills and/or plan for post-Gates technical support. Going hand-in-hand with their failure to recognize the need for planning for the sustainability of public access computing are questions about the quality of the service that is delivered. In some libraries we visited, the "service" component of public access computing appears to be turning on the computer in the morning and turning it off at night. In these few places, this limited support of PACs may indicate a lack of motivation, or interest, or perhaps a lack of understanding of how things could be better with public access computing (perhaps, in part, a result of lack of exposure to "quality" library service)– a sort of "people don't know what they don't know" syndrome. As noted earlier, Vavrek argues that one of the reasons for the lack of MLS staff in rural libraries is that some staff fail to recognize a need for formal education. We were told that this often reflects community leaders as well who fail to recognize the value that a trained (and reasonably well-paid) librarian can bring to their library and community.

At the other end of the continuum are the many librarians who are cognizant of the problems surrounding the delivery of PA computing, but recognize the potential value the computers and Internet access can bring to their library and patrons, and are consequently motivated to overcome these obstacles and deliver the best possible public access computing service. We are constantly impressed with the stories we hear about innovative ways librarians go about

obtaining technical support, or learning how to make-do, or how many hours and how much effort they put into trying to learn new skills to handle things themselves. These librarians often seem to have, for want of a better phrase, a "can-do" attitude that shows a remarkable willingness to provide service regardless of the inherent challenges they face. Their attitude towards PACs reflects their outlook toward the overall delivery of library services in their community. That is, they have a vision for their library service and they think in terms of long-term goals and planning to obtain that vision.

Summary and Conclusions

Public access computing, is, in general, having a substantial and positive impact on rural and small town libraries and their communities. The distinctive characteristics of small and more distant communities mold many of the primary benefits the library and the community derive from this relatively new service and help alleviate some of the problems caused by these small town factors. Specifically, public access computing expands and speeds up access to news and information, especially medical information that is in such short supply in more remote areas. It also increases access to communication, education, and recreation resources, helping residents of rural America gain more equal access to the benefits these resources can provide. The residents of rural communities are responding favorably to this new service, holding their libraries in higher regard since the PA computers and the Internet were installed. In addition, rural library staffs, more then metropolitan staffs, are enjoying the changes that PA computing brings to their work. This is attributed in part to easier management of the PA computers, including less disruptive behavior from patrons that is more readily controlled through the familiarity of the community. Consequently, rural and small town libraries remain safe and comfortable places for children.

While the rural and small town factors enhance some of the benefits of PA computing and help to ease a number of the difficulties faced by rural residents, certain attributes of these communities also contribute to ongoing challenges libraries face in sustaining the service. Access to readily available technical support is especially challenging in more remote areas where there is a dearth of resources, as is gaining and maintaining staff technology skills. The Bill & Melinda Gates Foundation U.S. Library Program has worked from its inception to address many of these challenges, designing a computer that has worked exceptionally well for small libraries, helping staff improve their technical skills and generally moving them along a sustainability path.

Challenges, however, persist, and librarians' responses range from the "can-do" librarians who are delivering dynamic services, to those whose delivery consists of turning the machines on and off. The libraries at these two end-points of the continuum, as well as the many that fall somewhere in between, struggle with providing and sustaining public access computing. But, our prediction is that regardless of where they fall on the scale, public access computing will survive in rural and small town libraries, though, as with other library service, with varying degrees of quality. We agree with the assessment made by several state librarians in a focus group held in 2002: "community expectations around the nation have now 'been set,' and local libraries will do 'whatever it takes' to sustain public access computing, though this will be challenging to

many communities."[41] This attitude was reinforced recently in a focus group comprised of "can-do" librarians from rural communities and small towns around the country. Public access computing will likely thrive for this group because they will do "whatever it takes" to make it so, though they will undoubtedly face ongoing challenges. The others who yet fail to recognize the need for planning and for gaining skills will face a far greater struggle. All, however, deliver a greatly needed service to their communities.

[41] Heuertz, Gordon, Gordon, and Moore: 2-3.

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