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## Providing Consumer Health Information to the Underserved Public at Remote Area Medical Events in East Tennessee

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## **Providing Consumer Health Information to the Underserved Public at Remote Area Medical Events in East Tennessee**

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**Abstract:**

The University of Tennessee's Preston Medical Library (PML) collaborated with local libraries for outreach at a Remote Area Medical (RAM) event. Librarians staffed a resource table and distributed consumer health handouts, received and fulfilled health information requests, and administered the Newest Vital Sign, a health literacy assessment tool, to volunteers. Researchers analyzed completed health information requests and health literacy assessment results to better inform future outreach. Collaboration at this event built relationships, particularly with the University of Tennessee Knoxville Libraries, for future community events.

**Keywords: health literacy, collaboration, consumer health**

## **Introduction**

Ever since the start of a health information service in 1993, which provides people in the region with quality consumer health information, the University of Tennessee's Preston Medical Library (PML), located in Knoxville, Tennessee, has sought multiple avenues of outreach to better educate and understand regional health information needs. A joint hospital and academic library serving the University of Tennessee Medical Center and the University of Tennessee Graduate School of Medicine, the library serves a wide variety of patrons, including the public. In 2014, a major change occurred when PML moved from a hospital office building to a central location on the hospital's main floor. Additionally, the Health Information Center (HIC) opened, offering a dedicated consumer health space and resources to the public. With these facilities, the library pursued collaborative partners to more effectively provide outreach to the community.

Partnering with community agencies is a priority for medical and health science libraries. Several studies have been written describing library experiences in this area (Grabeel, 2019; Weyant, 2019; Woodward, 2012). Medical libraries have also partnered with public libraries and university libraries to promote information access (Petersen, 2013). In recent years, several libraries have collaborated with community agencies to address the opioid epidemic (Coleman, 2020). Other studies have examined the broader impact of libraries collaborating with organizations outside of the medical and health science area such as local government, other departments within a library's own institution, and other non-profit agencies (Lenstra, 2019; Dehmlow, 2017). While every library's situation is different, one author noted the prevalence of "champions" in libraries that were essential to the success of collaborative projects (Coleman, 2020).

## **Background**

PML has previously collaborated with local public library systems to promote consumer health information. Since the 1970s, the Knoxville Area Health Sciences Library Consortium (KAHSLC) has allowed area librarians to meet for continuing education and mutual support. The mission of the Knoxville Health Sciences Library Consortium (KAHSLC) is “to promote better communication, sharing of resources, and continuing education among health sciences librarians in the Knoxville area” (Knoxville Health Sciences Library Consortium, n.d., para. 1). KAHSLC members consist of librarians from several area colleges, universities, and medical centers. The consortium meets at least three times a year for dialogue, professional development endeavors, and discussions on potential outreach opportunities (Knoxville Health Sciences Library Consortium, n.d.) During KAHSLC’s meeting on March 27, 2019, PML’s Library Director initiated discussions on the consortium’s participation with upcoming Remote Area Medical (RAM) clinics (Thurman, 2019). KAHSLC members continued to organize volunteer sign-ups and schedules primarily through emails on the consortium’s listserv, with the volunteer schedule being finalized in late January 2020. (D. Petersen, personal communication, January 23, 2020).

PML was particularly interested in collaborating with the University of Tennessee, Knoxville Libraries (UT Libraries) given that both libraries are part of the University of Tennessee system. While the libraries collaborated for this RAM event, both parties are eager to continue collaboration on future projects. The large research university strengths of UT libraries combined with the specialized hospital and medicine nature of PML make for an effective team to serve different population groups.

### **UT Libraries’ Background**

The University of Tennessee, Knoxville Libraries (UT Libraries) comprises three libraries: the John C. Hodges Library, George F. DeVine Music Library, and Webster C.

Pendergrass Agriculture and Veterinary Medicine Library (University of Tennessee, Knoxville Libraries, n.d.-a). John C. Hodges Library serves as the main library providing research, instruction, and academic support to the campus community in line with UT Libraries mission to “providing expertise and leadership in accessing, creating, disseminating, and preserving knowledge.” (University of Tennessee, Knoxville Libraries, n.d.-b).

### **Overview of Health Sciences Outreach at UTK**

UT Libraries has a rich history of providing outreach and supporting the health-related research needs of local communities. In 2016, the UTK Health Sciences Librarian was invited by a faculty member from the UTK College of Nursing to participate in the “Eat, Shop, Dine...Healthy” event. This community health-focused event provided Knoxville area medical, nursing, and pharmacy students with hands-on experiences in providing health screenings and information to community members. As a part of this event, the Health Sciences Librarian provided a health information table and shared various print and online consumer health resources with attendees (Williams, 2016).

Another primary outreach opportunity for the Health Sciences Librarians at UT Libraries centers around public demonstrations of the Anatomage Table, housed at John C. Hodges Library. The Anatomage Table is a life-sized three-dimensional (3D) virtual dissection table with a touchscreen that allows users to dissect and interact with various human anatomy models (Allen, Kirkpatrick, and Agosto, 2019). Between 2018-2020, the Health Sciences Librarians have provided several Anatomage Table demonstrations to varied student groups from local elementary, middle, and high schools. One group of students that visited with the Health Sciences Librarians on March 10, 2020, received demonstrations of the Anatomage Table and

Visible Body, which is an online anatomy tool that is also offered by UT Libraries (L. Meschke, personal communication, March 3, 2020).

The Seed Library is one of many campus-specific outreach endeavors to connect with students, faculty, and staff by providing a collection of open-pollinated seeds free of charge for home gardening (Dean 2018). Their mission “to facilitate food access and help alleviate food insecurity...” is demonstrated in their services and events. From integrated course materials to seed sorting and hosting events, the Seed Library quickly became a vital part of UT Libraries and the university since its inception (Dean and Johnson, 2019, 22).

Another key outreach initiative for UT Libraries revolved around the Accessing Academic Research (AAR) workshops that helped local nonprofit organizations locate and search academic resources to fulfill their varied research needs. A group of UT librarians, led by their Scholarly Communication and Publishing Librarian, partnered with graduate students from the UT School of Information Sciences (SIS) to host several workshops starting in 2016 for participants from various nonprofit groups throughout the East Tennessee region. Participants were provided with opportunities to learn how to search for peer-reviewed literature within both subscription and open access resources. They were also introduced to the concepts of open access, paywalls, and subscription access. Additionally, participants were also given time to consult one-on-one with librarians and SIS graduate students for specialized research support, and participants were also extended the opportunity to request up to 20 articles from UT Libraries at no cost to their nonprofit groups (Caldwell, Allen, Viera, and Wallace, 2020).

### **Case Study**

PML partnered with Remote Area Medical (RAM) to further the library’s outreach to underserved communities, provide quality consumer health information to requestors, and gain

knowledge about the medical needs of our region. RAM has been providing free clinic-based healthcare to underserved rural communities since 1985. While RAM's schedule varies, a free clinic is generally held in Knoxville one weekend per year in addition to other weekend clinics in the east Tennessee region. East Tennessee State University's (ETSU) Quillen College of Medicine Library has extensively collaborated with and participated at RAM events in the northeast Tennessee region for over a decade (Weyant, 2019). Their success led PML to partner with RAM in the Knoxville area. Furthermore, PML librarians wanted to conduct a health literacy assessment of RAM attendees as well as collaborate with other medical librarians and their institutions in the regional area.

PML applied for and received an NNLM grant to purchase needed supplies including laptops, handouts, and other materials<sup>1</sup>. Coordination with RAM to obtain permission to attend the RAM events followed. RAM agreed to include PML as a local area resource and provided a dedicated space furnished with a table and chairs. Three locations in east Tennessee were finalized for PML's involvement: Knoxville, Cookeville, and Morristown. While resource partners are prohibited from collecting information on attendees, PML was given special permission to conduct anonymous health literacy assessments from volunteer attendees. PML subsequently contacted each site coordinator to address individual site concerns and needs. Next, a schedule was created for the three locations. However, due to COVID-19 cancellations and restrictions, librarians only participated in the Knoxville event.

The process became more complex due to the involvement of various local libraries. Since ETSU's medical library had previously participated in events, the senior librarian who

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<sup>1</sup> Earl, M., Petersen, D., & Grabeel, K. National Network of Libraries of Medicine Region 2, Outreach Grant 19-3538. Providing consumer health information to the underserved public seeking health care at Remote Area Medical clinic events in East Tennessee, 2019-2020.

coordinated ETSU's involvement gave a short Zoom presentation to prospective volunteers on what to expect at a RAM event. PML invited all KAHSLC librarians to the Zoom presentation. Approximately twelve people attend the meeting and expressed interest. PML coordinated communication with those who wished to participate and made sure everyone understood procedures for accessing the event. Keeping clear communication regarding the schedule, expectations, and other pertinent information was vital to the success of the libraries' collaborative involvement with RAM.

### **RAM Event**

Four PML librarians, two UT Knoxville librarians, and five local librarians representing three institutions participated at the Knoxville RAM event. Based on discussions with ETSU librarians, two librarians simultaneously staffed the table from 7:00am until 3:00pm on Friday and Saturday and from 7:00am until Noon on Sunday. Although the event lasted until 5:00pm each day, the best time to interact with attendees was in the morning as they waited for medical, dental, or vision care.

At the event table, librarians provided pre-printed health information on various topics as well as healthy recipes. A health information request form was made available so that people could request specific information to be mailed to them. Participants were interested in the free handouts, recipes, and various library materials. This interest allowed for further discussions, which led to health information requests and the reviewing of various health information resources. These conversations then allowed librarians to ask participants if they were interested in taking a health literacy assessment.

Overall, results were obtained that offered some insight into attendees and their needs. We recorded 137 patron visits and received 13 completed health information requests.

Requestors asked for health information on a variety of topics; mental health was the most requested topic as seen in Figure 1:

[Figure 1: Number of Health Information Topics Requested by Category]

### **Health Literacy Assessment**

Part of the outreach included using an assessment tool to examine participants' health literacy. Librarians chose to use the Newest Vital Sign (NVS) based on extensive research done and ease of use. The NVS is a health literacy assessment produced by Pfizer, Inc. and was first utilized in a published study in the *Annals of Family Medicine* in 2005 (Weiss, 2005). There was some concern about administering the NVS at RAM regarding attendees feeling uncomfortable or causing shame for those with limited health literacy. Ryan et al (2008) reported no difference in patient satisfaction between randomized groups of public/private medical practices with the control group not using NVS and the experimental group offering NVS to patients. Another study (VanGeest, 2010) showed that > 99% of patients said that the NVS did not cause feelings of shame. Since then, the NVS has been used successfully in multiple studies to study health literacy in family medicine, primary care, and emergency medicine (Caldwell, 2020; McGuinness, 2020). Because of the assessment's short length, it is ideal for use in primary care or at health events like RAM.

The assessment asks up to six questions about a sample nutrition label for ice cream. The questions focus on practical concerns such as the amount of saturated fat in one serving or what percentage of one's daily value of calories would be consumed in a serving. The librarian or other interviewer asks the questions while the person looks at the label; each response is marked "yes" or "no" on the answer sheet by the interviewer depending on if it is correct. A score of 0-1

correct “suggests high likelihood (50% or more) of limited literacy”, answering 2-3 correctly “indicate[s] the possibility of limited literacy”, while 4-6 correct answers “almost always indicates adequate literacy.” (Newest Vital Sign)

### **Assessing Results**

During the event, sixteen participants completed the NVS. A strong majority (75%) scored as likely adequate in health literacy (Figure 3). This was higher than expected; however, there might be a few reasons for this result. First, people were pre-selected in that they came by the table and were interested in health information. Second, the event took place in the most populous county in the east Tennessee region. Attendees may possibly be better educated or have greater health knowledge than those in remote regions of the state. Future research includes attending events and using the assessment tool in other areas of the state for comparison.

[Figure 2: Health Literacy Assessment Results by Number of Surveys Received]

The assessment required the librarian to ask several questions and the volunteer to respond while in the midst of a busy and noisy environment; this made giving the assessment difficult, and researchers were concerned the distractions might have influenced the responses. No identifying data was gathered other than the participant’s zip code. Obtaining the zip code enabled researchers to better understand, from a demographic sense, the people who took the assessment. Researchers found the 16 completed assessments represented 12 zip codes in the east Tennessee region.

[Figure 3: Zip Codes in East Tennessee Represented by Completed Assessments]

Utilizing Tableau, researchers mapped the given zip codes in east Tennessee (Figure 4). Seeing the results visually gave a different impression when assessing the library’s outreach to

regional patrons at this event. Several zip codes represented residences far outside the immediate Knoxville area and indicated that some had travelled considerable distance for healthcare at RAM. At future events, library staff will include health information handouts that might be particularly relevant to rural patrons.

## **Discussion**

Overall, there were positive features from participating at the RAM event. Several patrons who lived in the area said they had not heard about the library before and were interested in using the services in the future. A relationship with RAM was established while also learning more about their involvement in the east Tennessee region and how to best work together. Furthermore, this research showed that a health literacy assessment could be conducted at such an event. Even though the data is small, using the assessment in future events may be advantageous.

The RAM event showcased the importance of collaboration. Coordinating involvement at a public event takes many people; PML staff would have been challenged to staff the table for the entire time. Librarians from other institutions offered their knowledge at the event, gained by working with the public, faculty, and a wide variety of student levels. Through involvement at the event, cross-institutional relationships were strengthened for future events and projects. In particular, PML and UT Libraries will plan future outreach events together that target the public as well as University of Tennessee system employees and students.

Several lessons were learned that will be incorporated for future planning of RAM and other public health events. First, the health information request form was too vague. Ten health topics were identified that people could circle for information. After receiving the requests, library staff performed the searches and mailed the information to the requestors. If an attendee

merely circled heart/cardiovascular problems, for example, this represented a very broad range of material. Staff had to include general information on a variety of conditions and request that the person follow-up if they wanted more specific information. Future forms may still include broad categories as suggestions, but librarians will ask for more details about needed information at the event. Mental health was the most requested literature topic, which might speak to the lack of behavioral/mental providers in east Tennessee, particularly in rural regions. For future events, PML will provide more handouts on mental health topics.

Another area for improvement was the process of giving the health literacy assessment. If possible, future use of the tool would include a dedicated place for giving the assessment to minimize distractions and disruptions. Finally, a more proactive outreach during the RAM event would assist in distributing more information and increasing assessments taken. While hosting a table proved valuable, it might be possible to talk with attendees as they sit in assigned waiting areas for care. This would undoubtedly increase interactions and perhaps boost health literacy assessment volunteer numbers.

Future plans are murky given the uncertainty surrounding the COVID-19 pandemic and restrictions on university related travel. RAM has resumed weekend clinics; however, they are by appointment only. Thus, community agencies are unable to be present. When conditions allow, PML desires to continue involvement with RAM, collect additional health literacy assessment data at regional events, and increase collaboration with UT Libraries and other local librarians.

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