Published in final edited form as:

Med Ref Serv Q. 2012 October ; 31(4): 400–413. doi:10.1080/02763869.2012.724285.

The Frontera Collaboration: A Preliminary Report of Health Sciences Librarians Promoting Evidence-Based Practice in US-Mexico Border Communities

Keith W. Cogdill, PhD, AHIP [Director],

National Institutes of Health Library, 10 Center Drive, Room 1L25F, MSC 1150, Bethesda, MD 20892-1150. He was previously Director, South Texas Regional Information Services, University of Texas Health Science Center at San Antonio Libraries, 7703 Floyd Curl Drive, M/C 7940, San Antonio, TX 78229-3900

Lorely Ambriz, MSIS [Specialist],

Alliances Development and Knowledge Management, Pan American Health Organization (PAHO), A Regional Office of the World Health Organization (WHO), United States-Mexico Border Office, 5400 Suncrest Drive Suite C-4, El Paso, TX 79912

Brooke L. Billman, MA, AHIP [AZHIN Librarian],

Arizona Health Sciences Library, University of Arizona, 1501 N. Campbell Avenue, PO Box 245079, Tucson, AZ 85724

Kathleen V. Carter, MLIS [Medical Librarian],

Mario E. Ramirez, M.D. Library, University of Texas Health Science Center at San Antonio Libraries, Regional Academic Health Center – Harlingen, 2102 Treasure Hills Boulevard, Harlingen, Texas 78550

Barbara Nail-Chiwetalu, PhD, MLS [Distance Services Coordinator],

Health Sciences Library and Informatics Center, The University of New Mexico, MSC09 5100, 1 University of New Mexico, Albuquerque, NM 87131-0001

Julie M. Trumble, MLIS [Head of Reference and Educational Services],

Moody Medical Library, The University of Texas Medical Branch, Galveston, TX 77555-1035

Yamila M. El-Khayat, MA [Outreach Services Librarian], and

Arizona Health Sciences Library, University of Arizona, 1501 N. Campbell Avenue, PO Box 245079, Tucson, AZ 85724

Annabelle V. Nuñez, MA [Mel & Enid Zuckerman College of Public Health Liaison Librarian]

Arizona Health Sciences Library, University of Arizona, 1501 N. Campbell Avenue, PO Box 245079, Tucson, AZ 85724

Keith W. Cogdill: keith.cogdill@nih.gov; Lorely Ambriz: ambrizlo@paho.org; Brooke L. Billman: brooke.billman@ahsl.arizona.edu; Kathleen V. Carter: carterk3@uthscsa.edu; Barbara Nail-Chiwetalu: bnailchi@hotmail.com; Julie M. Trumble: jtrumbl@utmb.edu; Yamila M. El-Khayat: yme@ahsl.arizona.edu; Annabelle V. Nuñez: anunez@ahsl.arizona.edu

Abstract

This paper reviews the formation of the Frontera Collaboration, a coalition of health sciences librarians serving clinicians and public health personnel in the US-Mexico border region. Based on findings from an assessment of the target populations' learning needs, the Frontera

Collaboration participants developed a shared set of training materials that have been used in pilot training sessions. The Frontera Collaboration's participants learned several lessons related to collaborative health information outreach and increased their understanding of the concerns and needs of clinicians and public health personnel serving border communities.

Keywords

Community outreach; evidence-based practice; Frontera Collaboration; health care disparities; health sciences libraries; health status disparities; Hispanic Americans; minority health; US-Mexico border

INTRODUCTION

The US-Mexico border spans 1,952 miles from California to Texas. In Mexico, the border region encompasses the northern portions of six states: Baja California, Sonora, Chihuahua, Coahuila, Nuevo León, and Tamaulipas. The 1983 La Paz Agreement between the United States and Mexico defined the border area as the land within 100 km (62.5 miles) on either side of the international boundary. This region is home to more than 13 million people in both countries and has more crossings than any other border in the world.¹ Many studies conducted in this region point to stark deficits and challenges including widespread poverty; escalating violence; shortages of health services personnel; disparities in health status discernible on the basis of ethnicity; a relatively high prevalence of chronic and infectious diseases; and low levels of health insurance coverage, especially among residents of border communities in the United States. Environmental health concerns stemming from manufacturing and substandard infrastructure in many unincorporated communities (*colonias*) add to these challenges.²⁻⁵

FORMATION OF THE FRONTERA COLLABORATION

The Frontera Collaboration brought together five members of the National Network of Libraries of Medicine (NN/LM) in US-Mexico border states to promote evidence-based practice (EBP) among clinicians and public health personnel in the border region. Another goal of the collaboration is to foster cooperation among NN/LM members serving border communities. Partial financial support for this project was provided by the NN/LM South Central Region (NN/LM SCR) and the NN/LM Pacific Southwest Region (NN/LM PSR). Beginning in 2009, librarians from participating institutions gathered for biweekly conference calls. To facilitate sharing documents and event information, the group used SharePoint provided by the Panamerican Health Organization/World Health Organization (PAHO/WHO) to serve as its online organizational home.

NEEDS ASSESSMENT AND ASSET MAPPING

The group began the work of the Collaboration by assessing the training needs and perceptions of EBP among border health professionals. To inform the development of a survey instrument and to understand the information needs of health professionals in this area, the group conducted literature searches in MEDLINE, CINAHL, and the Health and Psychosocial Instruments (HaPI) database. The themes emerging from published and grey literature included barriers to EBP,⁶⁻¹² cross-border care,^{13, 14} health disparities,¹⁵ complementary and alternative therapies,¹⁶ and socioeconomic and cultural factors related to accessing health services in border communities.¹⁷ Following their review of the relevant literature, the Collaboration participants developed an online survey of border clinicians and public health professionals, focused on their training needs and perceptions of EBP. This survey defined EBP as, "The integration of best research evidence with clinical/professional

expertise and patient/community values to facilitate decision making,” a definition adapted from Sackett et al.¹⁸ The three issues explored in the survey’s assessment of learning needs were the overall perceptions of EBP in border communities, self-reported use of EBP, and self-reported use of specific information resources. The online survey was distributed through discussion lists maintained by the PAHO/WHO US-Mexico Border Office as well as specific clinicians and public health personnel across all states.

In addition to the online survey, which provided quantitative information, each participating library developed a plan for gathering qualitative data in the local border community it serves. For the local data collection effort, each library’s selection of data collection method was driven by practicality and relied on convenience sampling of clinicians and public health personnel in its service areas. The different university institutional review boards (IRBs) responded to proposed plans for local data collection with varying degrees of restriction. The qualitative data collected during the assessment were especially helpful in deepening the understanding of Frontera Collaboration librarians about the reality of EBP in border communities. Nine themes related to clinical care and public health with implications for EBP emerged. These themes are consistent with issues noted in the literature about the border region:

- Research and interventions often do not focus on Hispanic populations or US-Mexico border communities.
- Importance of binational communication and cooperation.
- Limited access to care.
- Availability of prescription medications in Mexico.
- Importance of environmental health.
- Common use of complementary/alternative therapies.
- Prevalence of specific health conditions.
- Cultural differences.
- Limited access to the research literature.

These themes can inform examples used in training and help librarians appreciate the challenges of practitioners in this area. The limited access to research literature is an area of particular interest for librarians to consider for future outreach efforts.

In addition to the qualitative data, responses to the Likert scale questions in the online survey also suggested how clinicians and public health personnel perceived EBP relative to their personal responsibilities and behavior. The data gathered helped inform the Frontera Collaboration’s subsequent development of training resources. Based on findings, three priority areas were identified for the content of this training:

- PICO (Patient or Problem, Intervention, Comparison and Outcomes) format for formulating searchable questions,
- Searching the literature effectively, and
- Options for obtaining articles

A total of 54 clinicians and public health personnel responded to some or all of the online survey questions. All respondents noted that they work in the United States, with roughly equal representation from California, Arizona, New Mexico, and Texas. Three respondents (6%) indicated that their professional responsibilities span the border region and are not specific to a single state. Fifty-one respondents provided information about the general

nature of their professional responsibilities, with 22 (43%) identifying themselves as a member of the public health workforce. The remainder selected a clinical role or “other.” Among clinicians, “physician” and “nurse” were the most frequently selected categories. The responses are summarized in Tables 1 and 2.

In addition to learning needs, the Frontera Collaboration participants also set out to identify the information resources and services already available to clinicians and public health personnel in United States border communities. Each participating library developed a state-specific asset map highlighting the options available for library services including article delivery within border communities. With the assistance of PAHO/WHO, two region-wide asset maps were also developed, one oriented to clinicians and the other to public health personnel.¹⁹ These asset maps are serving as useful supplements to training resources, described below, aimed at border clinicians and public health personnel.

OUTREACH ACTIVITIES

Classes

As part of this initiative, the Frontera Collaboration participants created two sets of presentation materials for training on EBP, one for clinicians and one for public health personnel. This allowed for consistency in information presented to groups trained under the auspices of the Frontera Collaboration, as well as saving time and resources of each individual participant. Training materials were posted in both English and Spanish to the Frontera Collaboration site within PAHO’s Border Virtual Health Library <<http://www.infofrontera.org>> (see Figure 1). These training materials are intended to serve as resources for health sciences librarians on both sides of the border to provide guidance on formulating PICO questions, using a systematic approach to scientific literature searching to find evidence-based information, and retrieving and appraising the literature. The materials use specific scenarios for border clinicians and public health professionals.

Librarians from the University of Texas Health Science Center’s Ramirez Library in Harlingen, Texas conducted the first EBP pilot training events using instructional materials developed through the Frontera Collaboration. A one-hour class on evidence-based medicine for family practice residents was conducted at the Ramirez Library. In addition, three evidence-based public health classes using the Frontera Collaboration curriculum were taught for public health personnel with the Texas Department of State Health Services, staff from Migrant Health Promotion, and MD/MPH students in the South Texas Environmental Education and Research (STEER) program. The classes included an introduction to the steps of EBP, levels of evidence, the PICO framework, and developing a search strategy from a PICO question. Participants reviewed a scenario, formed an answerable question, developed a list of search terms, and then performed a search in PubMed with guidance from a librarian. Due to time constraints, critical appraisal was not included in the pilot training classes on evidence-based public health. However, links to resources for critical appraisal, such as the TREND checklist and Critical Appraisal Skills Programme, were provided to the participants.^{20, 21}

Following the classes, participants were asked to complete a class evaluation. While feedback from the class evaluations was generally favorable, the participants noted that they would have benefited from working through several cases during additional time for hands-on searching. Participants also noted that they had the least confidence in evaluating the quality of research, and that they wanted to know more about critical appraisal. Several months after the training for Migrant Health Promotion (MHP), staff from this organization summarized the major positive outcomes. These included an increased capacity for staff to be “focused and systematic” in their approach to research. Information obtained from their

searches of PubMed significantly altered the nature and structure of two MHP interventions and proved useful for preparing eight proposals for federal, state, corporate, and private foundation funding.

Exhibits

In addition to training sessions, Frontera Collaboration participants also created exhibits for displays at various events and gatherings. These were opportunities to introduce individual clinicians and public health personnel to information resources and services available from the National Library of Medicine and PAHO as well as from each library participating in the Frontera Collaboration. In the Lower Rio Grande Valley, an exhibit was conducted at a local hospital in the spring of 2010. This event, promoted as “March Madness: A Physician’s Ticket to Information,” is hosted at a local hospital each year to increase awareness of library services, resources, and emerging technologies that support EBP. Clinicians attending the exhibit in 2010 were introduced to the Frontera Collaboration and asked to complete the learning needs assessment.

An exhibit was also displayed at the New Mexico Chapter of the American Academy of Family Physicians Winter Refresher in Albuquerque, a conference which is known to attract a number of border physicians. Of the 123 registrants, approximately 24 were from the border region of New Mexico. Those who approached the exhibit for interaction were generally interested in freely available NLM products.

PAHO/WHO information dissemination efforts about the Frontera Collaboration were done through exhibits displayed at various border health related meetings to provide information on evidence-based public health information available from the National Library of Medicine and BIREME/PAHO/WHO. These meetings included the International Health Regulations Meeting (March 2010 in El Paso, TX), Vaccination Week of the Americas/ National Infant Immunization Week (April 2010 in Las Cruces, NM), and the US-Mexico Border Chronic Diseases Prevention and Control Forum (June 2010 in National City, CA). The PAHO/WHO US-Mexico Border Office Chief also presented the Frontera Collaboration to key decision makers in strategic meetings, such as the Annual Strategic and Planning Meeting of the Binational Health Councils (April 2010 in El Paso, TX) and the Fifth Annual Border Health Conference (June 2010 in Washington, DC).

LESSONS LEARNED

Librarians participating in the Frontera Collaboration learned several lessons related to teaching EBP, health information outreach, collaborative outreach, and the US-Mexico border region.

Training Issues

Time—The pilot training sessions confirmed that one hour is inadequate to cover all aspects of EBP. When an hour or less is available, planning a series of training events is advisable. These sessions also underscored the benefit of allowing time for small-group discussion about appraising evidence.

Value of hands-on practice as part of training—Based on the experience of participants in the Frontera Collaboration, it is helpful for training participants to have opportunities to gain experience using information resources to retrieve evidence. It may be difficult, however, to find or secure a computer lab in a facility that is convenient for the target population. This challenge may be resolved in the future with the proliferation of mobile devices.

Health Information Outreach

Value of understanding information needs—Considerable attention has been given to the information needs and information seeking of clinicians, but only a limited number of studies have focused on information-related behavior among public health personnel.^{22, 23} Although a preliminary learning needs assessment focused on EBP was conducted during the initial phase of the Frontera Collaboration, a wide-spread, systematic assessment of the information needs of clinicians and public health personnel along the border has yet to be conducted.

Importance of relationships with leaders in targeted communities—Many of the activities conducted as part of the Frontera Collaboration came about as a result of endorsements from leaders among clinicians and public health personnel in border communities. Many of the relationships with these community leaders were developed prior to the Frontera Collaboration. In addition to these pre-existing relationships, faculty and students at Frontera Collaboration institutions were instrumental in fostering new relationships with clinicians and public health personnel in border communities. Through community-based clerkships and community service learning projects, students and faculty often develop relationships with local clinics and agencies that can be fruitful for health information outreach. For example, MD/MPH students who attended a Frontera Collaboration evidence-based public health class were eager to promote library services and EBP classes to the clinicians and agencies with whom they had contact.

Time constraints of clinicians and public health personnel for training events—It may be difficult for clinicians and public health personnel to justify their attendance at training events. This challenge may be addressed by making the training easily accessible, as part of regularly scheduled meetings or through web conferencing software. Providing continuing education credit may make a training session more appealing for clinicians and many public health personnel.²⁴

Collaborative Outreach

Administrative differences—For outreach initiatives that involve collaborations across institutions, it can be helpful to anticipate differences in administrative policies. For example, the Frontera Collaboration entailed data collection as part of the initial assessment of learning needs related to EBP. The institutional review boards (IRBs) at the universities participating in the Frontera Collaboration provided a range of feedback in response to plans for local data collection. The feedback from one IRB was relatively conservative, limiting the data collection to a single key informant interview. Relying on a single institution for IRB approval and data collection across communities may be advisable for future collaborative efforts.

Benefit of tools for collaborative work—The ability of the Frontera Collaboration participants to share information online facilitated the productivity of the group. In addition to the Frontera Collaboration's publicly accessible web presence as part of the PAHO/WHO Border Virtual Health Library, the SharePoint workspace was invaluable for sharing meeting notes and document drafts. In addition, a discussion list provided by the University of Arizona made it possible for the Frontera Collaboration participants to exchange messages conveniently. The Frontera Collaboration participants were also able to use a conference call account provided by the US-Mexico Border Centers of Excellence Consortium.

Importance of social cohesion—Complementing their long-distance cooperative efforts, participants in the Frontera Collaboration efforts benefited from periodic in-person

meetings. Many of the Frontera Collaboration participants were able to attend annual meetings of the Consortium of Medical Hispanic Centers of Excellence. Presentations at the Medical Library Association's annual meetings provided additional opportunities for in-person meetings. As noted elsewhere, the social cohesion achieved through periodic in-person meetings can be an important dimension of successful collaborative efforts.²⁵

Clearly defined roles and expectations—The formation of the Frontera Collaboration relied on several preliminary discussions among library directors and other representatives. These discussions provided opportunities for clarifying roles and expectations. These were clarified further during the process of developing proposals for funding from the National Network of Libraries of Medicine. Studies of “team science” have similarly underscored the value of clearly communicated expectations among research collaborators. Smalheiser, Perkins, and Jones conducted an analysis of scientific collaborations and suggested a set of guidelines for negotiating expectations among participants. These relate to sharing of resources, design of experiments, division of labor, publication of results, co-authorship order, access to unpublished data, and intellectual property issues.²⁶ Consideration of similar issues would also be helpful in the context of collaborative health information outreach.

Border-Specific Lessons Learned

Limited access to libraries and subscription-based information resources—Although they are increasing, the number of health sciences libraries within the US-Mexico border region remains low. In this context, it is important to highlight open access publications and other freely available resources for evidence-based information.

Recognize local concerns—The training resources developed as part of the Frontera Collaboration include scenarios that draw on concerns specific to the border region, including health disparities and environmental concerns (e.g., water quality, prevalent use of pesticides). Low levels of health insurance coverage and other barriers to health care access are additional concerns in the region. Language and cultural differences can also undermine access to appropriate care. Participants responded favorably to training that reflected their everyday challenges.

FUTURE DIRECTIONS

To inform plans for the future of the Frontera Collaboration, input and suggestions were gathered from clinicians and public health personnel through in-person interviews and, at two hospitals, a brief online survey. The survey and interviews asked respondents to rate three options for delivery of future training sessions as well as their anticipated frequency of use of a hypothetical bibliographic resource focused on border health research. A total of 74 respondents answered at least part of the survey. All training options received highly favorable responses, with in-person training receiving the greatest number of positive responses (64 respondents, 86%). Fewer than half of respondents indicated that they would use a new border-focused bibliographic resource daily or weekly if it were available (32 respondents, 43%). As a result, the Frontera Collaboration will pursue raising awareness of existing information resources and appraisal criteria rather than the development of a new bibliographic resource.

PAHO/WHO intends to continue providing online evidence-based public health training opportunities beyond this initial phase of the Frontera Collaboration, as resources permit. Classes will be available in both English and Spanish to specific groups such as the Binational Health Councils and the Leaders Across Borders Program. In addition, the Frontera Collaboration asset maps and training materials available at the Border Virtual

Health Library <<http://www.infofrontera.org/php/level.php?lang=en&component=34&item=10>> will continue to be enhanced and promoted.

CONCLUSION

In its initial phase, the Frontera Collaboration provided US health sciences librarians working in the US-Mexico region with an opportunity to collaborate on efforts to promote evidence-based practice. The design of the Frontera Collaboration allowed its participants to focus on challenges and opportunities in local border communities while simultaneously coordinating efforts with the work of other libraries across the region. Data from the preliminary assessment of learning needs have informed the development of training materials, which have been pilot-tested and made available in English and Spanish. In the future, it may be possible to continue this collaboration with an initiative that focuses on extending this training to clinicians and public health personnel on both sides of the border through partnerships with librarians in Mexico.

Acknowledgments

This project was funded in whole, or in part, with federal funds from the National Library of Medicine, National Institutes of Health, Department of Health and Human Services, under contract numbers N01-LM-6-3505 with the Houston Academy of Medicine-Texas Medical Center Library and N01-LM-6-3507 with the UCLA Louise M. Darling Biomedical Library.

References

1. Pan American Health Organization. Health in the Americas. Washington, DC: Pan American Health Organization; 2007. United States-Mexico Border Area; p. 732-744. Available: <<http://www.paho.org/hia>>
2. [Accessed: August 1, 2011] Border Lives: Health Status in the United States - Mexico Border Region. United States -Mexico Border Health Commission. Available: <http://www.borderhealth.org/extranet/files/file_1689.pdf>
3. Skolnick AA. Along US Southern Border, Pollution, Poverty, Ignorance, and Greed Threaten Nation's Health. JAMA. 1995; 273(19):1478, 1480-1482. [PubMed: 7739056]
4. Warner DC. Health Issues at the US-Mexican Border. JAMA. 1991; 265(2):242-247. [PubMed: 1984155]
5. Davidhizar R, Bechtel GA. Health and Quality of Life Within Colonias Settlements Along the United States and Mexico Border. Public Health Nurs. 1999; 30(4):301-306. [PubMed: 10499019]
6. Funk SG, Champagne MT, Wiese RA, Tornquist EM. BARRIERS: The Barriers to Research Utilization Scale. Appl Nurs Res. 1991; 4(1):39-45. [PubMed: 1741634]
7. McColl A, Smith H, White P, Field J. General Practitioner's Perceptions of the Route to Evidence Based Medicine: A Questionnaire Survey. BMJ. 1998; 316(7128):361-365. [PubMed: 9487174]
8. McKenna HP, Ashton S, Keeney S. Barriers to Evidence-Based Practice in Primary Care. J Adv Nurs. 2004; 45(2):178-189. [PubMed: 14706003]
9. Nelson TD, Steele RG. Predictors of Practitioner Self-Reported Use of Evidence-Based Practices: Practitioner Training, Clinical Setting, and Attitudes Toward Research. Adm Policy Ment Health. 2007; 34(4):319-330. [PubMed: 17268858]
10. Palfreyman S, Tod A, Doyle J. Comparing Evidence-Based Practice of Nurses and Physiotherapists. Br J Nurs. 2003; 12(4):246-253. [PubMed: 12671571]
11. Tracy CS, Dantas GC, Moineddin R, Upshur RE. Contextual Factors in Clinical Decision Making: National Survey of Canadian Family Physicians. Can Fam Physician. 2005; 51:1106-1107. [PubMed: 16926949]
12. Upton D. Attitudes Towards, and Knowledge of, Clinical Effectiveness in Nurses, Midwives, Practice nurses and Health Visitors. J Adv Nurs. 1999; 29(4):885-893. [PubMed: 10215980]

13. Rivera JO, Ortiz M, Cardenas V. Cross-Border Purchase of Medications and Health Care in a Sample of Residents of El Paso, Texas, and Ciudad Juarez, Mexico. *J Natl Med Assoc.* 2009; 101(2):167–173. [PubMed: 19378635]
14. Escobedo LG, Cardenas VM. Utilization and Purchase of Medical Care Services in Mexico by Residents in the United States of America, 1998–1999. *Rev Panam Salud Publica.* 2006; 19(5): 300–305. [PubMed: 16805971]
15. Bastida E, Brown HS, Pagán JA. Persistent Disparities in the Use of Health Care Along the US-Mexico Border: An Ecological Perspective. *Am J Public Health.* 2008; 98(11):1987–1995. [PubMed: 18799782]
16. Rivera JO, Ortiz M, González-Stuart A, Hughes H. Bi-National Evaluation of Herbal Product Use on the United States/México Border. *J Herb Pharmacother.* 2007; 7(3–4):91–106. [PubMed: 18928136]
17. Ruiz-Beltran M, Kamau JK. The Socio-Economic and Cultural Impediments to Well-Being Along the US-Mexico Border. *J Community Health.* 2001; 26(2):123–132. [PubMed: 11322752]
18. Sackett, DL.; Straus, SE.; Richardson, WS.; Rosenberg, W.; Haynes, RB. *Evidence-Based Medicine: How to Practice and Teach EBM.* 2. Edinburgh: Churchill Livingstone; 2000.
19. Kretzmann, JP.; McKnight, JL. *Building Communities from the Inside Out: A Path Toward Finding and Mobilizing a Community's Assets.* Chicago, IL: ACTA Publications; 1993.
20. Des Jarlais DC, Lyles C, Crepaz N. Improving the Reporting Quality of Nonrandomized Evaluations of Behavioral and Public Health Interventions: The TREND Statement. *Am J Public Health.* 2004; 94(3):361–366. [PubMed: 14998794]
21. National Health Service, Solutions for Public Health. Critical Appraisal Skills Programme. Solutions for Public Health; Available: <<http://www.sph.nhs.uk/what-we-do/public-health-workforce/resources/critical-appraisals-skills-programme>>
22. Younger P. Internet-Based Information-Seeking Behaviour Amongst Doctors and Nurses: A Short Review of the Literature. *Health Info Libr J.* 2010; 27(1):2–10. [PubMed: 20402799]
23. Twose C, Swartz P, Bunker E, Roderer NK, Oliver KB. Public Health Practitioners' Information Access and Use Patterns in the Maryland Public Health Departments of Anne Arundel and Wicomico Counties. *Health Info Libr J.* 2008; 25(1):13–22. [PubMed: 18251908]
24. Eldredge JD, Carr RD. Public Health Informatics Training in New Mexico. *J Med Libr Assoc.* 2007; 95(3):343–346. [PubMed: 17641772]
25. Stokols D, Misra S, Moser RP, Hall KL, Taylor BK. The Ecology of Team Science: Understanding Contextual Influences on Transdisciplinary Collaboration. *Am J Prev Med.* 2008; 35(2 suppl):S96–S115. [PubMed: 18619410]
26. Smalheiser NR, Perkins GA, Jones S. Guidelines for Negotiating Scientific Collaboration. *PLoS Biol.* 2005; 3(6):e217. [PubMed: 15941361]

Figure 1.
Frontera Collaboration home page

TABLE 1

Perceptions of EBP

Perception/Attitude	Level of Agreement (on a 5 point Likert scale)*
EBP is part of my everyday practice.	4.0
I am confident in my ability to effectively search the literature.	3.8
I am confident in my ability to evaluate the quality of research papers.	3.8
I am familiar with the PICO format for formulating evidence-based questions.	2.6
I feel confident in my ability to know where to find evidence-based information.	3.9
Research articles are easily obtained.	3.3
I feel isolated from knowledgeable colleagues.	2.6
It is only important to utilize research in unusual circumstances.	1.6

* 1=Strongly disagree; 5=Strongly agree

TABLE 2**Resources Used in Practice**

Information Resource	Frequency of Use (on a 5 point Likert scale)*
Colleagues	3.9
Practice guidelines	3.5
Personal journal subscriptions	2.8
Textbooks	2.8
MEDLINE/PubMed	3.0
Google/Wikipedia/Internet searches	4.0
MedlinePlus.gov	2.7
CDC website	3.3

*
1=Never; 5=Daily