

New Medical School Engages Rural Communities to Conduct Regional Health Assessment

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Background and Objectives: *Engaging communities in authentic partnerships is increasingly accepted as best practice in both medicine and public health, despite the many barriers to doing so. New medical schools have an opportunity to incorporate community engagement into their very foundation. In rural northeast Pennsylvania, a new medical school used a regional health assessment to engage community partners across the 16 counties it serves. **Methods:** A community health advisory board guided the development and implementation of a key informant focus group methodology. Twenty-three focus groups were held. Themes were generated using content analysis involving 21 observers along with the principal investigators. **Results:** A total of 221 representatives of 195 agencies from across the region participated. Twelve themes relating to needs were discussed in more than 75% of focus groups. The findings revealed barriers to improving health in the region, including lack of access to preventive services, to primary care and specialty providers, and to basic mental health services. Consistent themes related to strengths and expectations for the new medical school also emerged. **Conclusions:** Holding focus groups across the region allowed community service providers to connect to a new medical school, despite distances in the rural region. Partnerships with community agencies and providers are evolving. Findings from the study regarding needs and strengths in rural communities have been incorporated into the school's curriculum and research agenda. Dissemination efforts have focused on communicating findings to community partners in formats and venues that are useful for them.*

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Engaging communities in authentic partnerships is increasingly accepted as best practice in both medicine and public health.¹⁻⁹ Benefits of community engagement include improving relevance of research, increasing validity of findings, improving acceptability of interventions among those affected by them, and increasing trust between researchers and communities.¹⁰⁻¹² The 2009 National Institutes of Health (NIH) Clinical and Translational Science Award guidelines¹³ explicitly specify the need to foster collaborative community partnerships. Still, the challenges of bridging gaps between academia and communities are real; both medical schools and communities encounter barriers to

engagement.¹² A recent survey found that residents of rural counties see academic health center resources as “fragmented, inaccessible, or unknown,” perceive the health center’s interest in communities as linked only to research opportunities, and felt that the university rarely acknowledged “community assets, aims, or priorities.”¹⁴

Rural settings, with their geographically spread-out populations, can make community engagement especially challenging. Long-term commitment, co-learning, attention to power relationships, and mutual benefit required in community engagement implies significant investment of time and resources.¹⁵ Long distances, multiple small communities, and little experience with the academic medical centers all make community-engaged research strategies in rural areas challenging. Still, there is a unique need to engage patients and community partners in rural areas where the physician to patient ratio is so low,¹⁶⁻¹⁸ scarce resources cannot be spent on efforts that seem important

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to academics but may be irrelevant or unacceptable to the communities they are meant to serve. Research in such settings may require the same adaptability, improvisation, and collaborative skills that practicing physicians in rural settings must possess.¹⁹

Recently, a number of new medical schools have been established,^{20,21} providing an opportunity for incorporating community engagement into the very foundation of the school. A new allopathic medical school in Northeastern Pennsylvania, The Commonwealth Medical College (TCMC),²² used a community engaged research framework in conducting a regional health assessment in the counties it serves. The college founders, a small group of community physicians and business and legislative leaders, envisioned training and recruiting physicians to fill the workforce needs in Northeastern Pennsylvania.

In August 2009, TCMC welcomed its first classes of 65 MD and 13 Master of Biological Science (MBS) students. TCMC's mission is to "educate aspiring physicians and scientists to serve society using a community-based, patient-centered, inter-professional, and evidence-based model of education that commits to inclusion, promotes discovery, and utilizes innovative techniques." The founders envisioned that the medical school would be a leader in transforming the health care system in the region and contribute to its economic transformation from a post-industrial to knowledge economy as well as address health workforce needs. The medical college uses a distributive model of education, with regional campuses in Scranton, Wilkes-Barre, and Williamsport, spanning 16 mostly rural counties (Figure 1). Students spend the third and fourth years in their assigned clinical campus. The school expects to produce primary care and specialty physicians who will integrate a community perspective into their work.

In keeping with a mission to use a community-based model of education, the Department of Family Medicine and Community Health conducted a regional health assessment of TC-

MC's counties with four objectives: (1) to gather broad qualitative data on strengths, needs, and underserved populations, (2) to initiate relationships with community leaders, (3) to build goodwill and trust with communities, and (4) to better define the role that the medical college may play in meeting health needs in these communities.

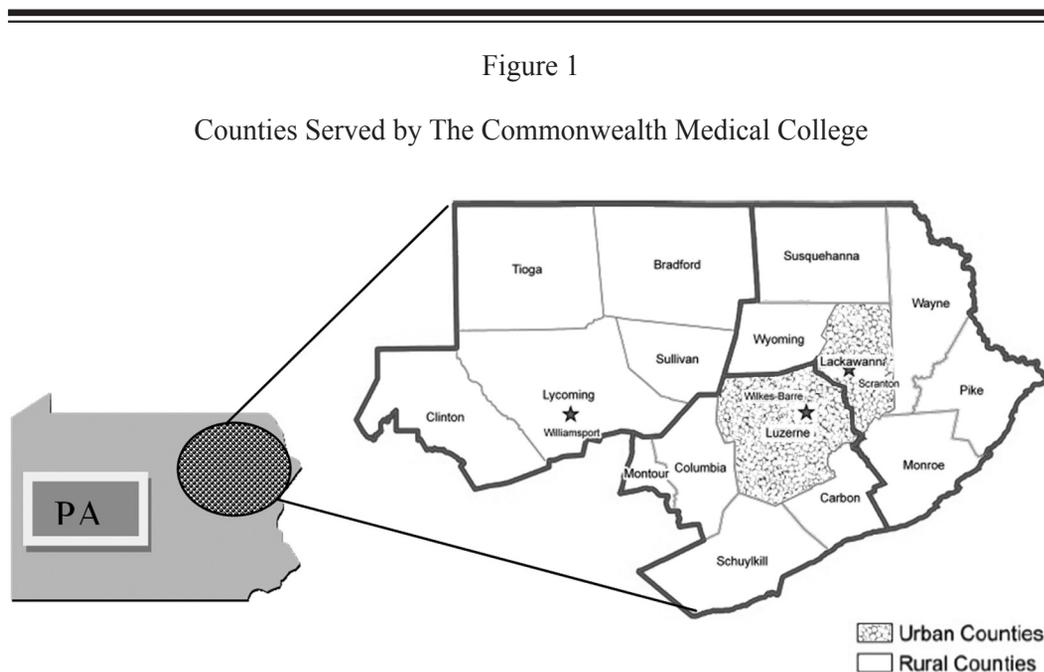
Methods

Study Population

The study population included residents of 14 Northeastern and North Central Pennsylvania counties. Of the 514 municipalities represented in this region, 393 or 76.46% are rural.²³ The region's poverty rate is 13%, slightly higher than the state average of 12.1%.²⁴ Ethnically, the region is 92.4% white, 2.97% Black, and 3.11% Latino, less diverse than the state, which is 81.4% white, 10.8% Black, and 4.8% Latino.²¹ The region includes Pennsylvania's two fastest growing counties.²⁴ In several counties, the Latino population is increasing at a rapid rate.²⁵

Planning and Oversight

The Executive Director of the regional Area Health Education Center (AHEC) identified a list of senior leaders from health and social service agencies that serve multiple counties within the region. The study staff recruited a group of 17 individuals from that list representing multiple disciplines and the entire region to serve on a Community Health Advisory Board (CHAB). The AHEC director co-chaired this



Map diagrams obtained and adopted from The Center for Rural Pennsylvania—a legislative agency of the Pennsylvania General Assembly.

group with TCMC's principal investigators (PIs). The CHAB met four times during the course of the study and participated in several ways: study design, participant recruitment, piloting focus group questions and methodology, validation, and dissemination of study findings.

Participant Selection

Focus group participants were selected based on recommendations from the CHAB, AHEC, and the State Health Improvement Plan (SHIP) partnerships (county-level health coalitions coordinated through the Department of Health). We requested recommendations for individuals or agencies across a broad spectrum of sectors, populations, and health issues. We focused on non-clinical service providers. As a medical school our closest ties in our rural counties are with community-based physicians. By recruiting primarily non-clinical providers we aimed to broaden our base of connections with families and the general public (Figure 2). We sought key informants who worked closely with families and communities, and were senior enough to have a county-wide perspective. Potential participants recommended two or more times were contacted by phone. In cases where only an agency was identified, agency directors identified a participant. In three coun-

ties, most or all of the suggested participants were in the SHIP partnership; these focus groups were held during a regularly scheduled SHIP meeting.

Focus Groups

Twenty-three focus groups were held in 2009. The number of focus groups in each county was determined by total county population, with most counties (population < 100,000) having one focus group and the larger counties (>200,000) having up to four (Table 1). In counties with multiple focus groups, discussions targeted different populations (eg, youth, minority communities, etc). In two counties where there was a recently completed county assessment, we worked with their county assessment leaders to identify an issue prioritized by them and relevant to us (Table 1). The focus groups ranged from six to 14 participants.

The same six questions were asked at every focus group (with modifications for specialized focus groups), which lasted 60-90 minutes (Table 2). Focus groups were facilitated by the two principal investigators. An invitation to attend the focus groups was extended to all medical school faculty and staff. Each focus group was audio recorded and notes were taken by the employees and interns who attended. Participants were offered reimbursement for travel expenses.

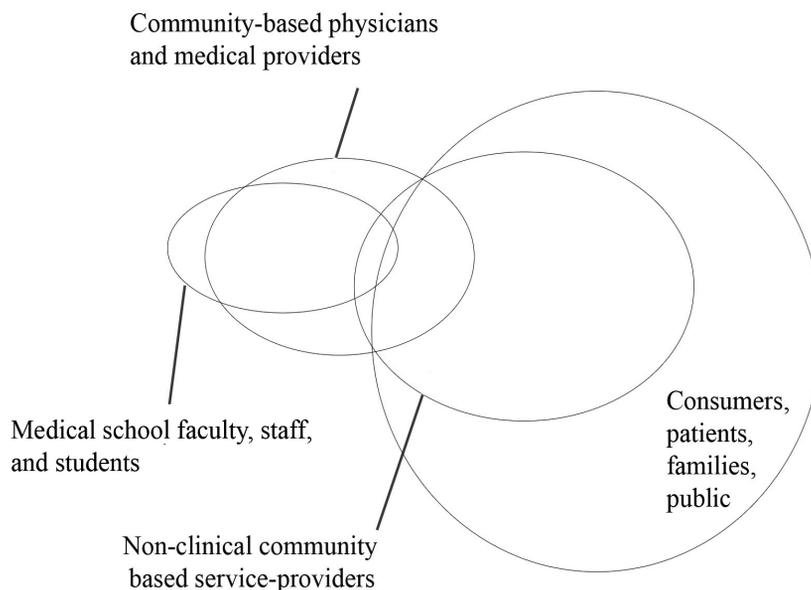
The cost of the study was underwritten by the medical college. Incremental costs included printing and mailing, local travel for staff and participants, recording equipment, space rental, catering, one laptop computer, software, transcription services, and graduate student stipends (total = \$20,000). In addition, one PI (MPH) worked 65% effort and the chair of family medicine devoted 2.5% on the project for 12 months. Participation by other medical college staff was intermittent and of modest scope for each individual. The study was reviewed and approved by the Institutional Review Board of the Scranton Temple Residency Program.

Data Analysis

Immediately after every focus group, the observers debriefed the discussion with one of the PIs, creating an outline of the main themes and important issues. A total of seventeen employees and six undergraduate and graduate student interns were involved in generating themes in these debriefing notes.

Figure 2

Conceptual Model of Levels of Connection Between the Medical School and its Rural Constituents*



* Based on a model of levels of participation in participatory research in Green and Mercer²⁶

Content analysis of the debriefing notes by one PI (MG) generated the main themes across all focus groups.²²

The percentage of focus groups and counties that discussed a given theme was calculated. Percentages were calculated from only those groups where the question was asked (eg, not every focus group discussed expectations). Themes about needs and expectations were included if discussed in at least 75% of the focus groups.

Themes about strengths and resources were included if discussed in at least 50% of the counties. There was more variation in how participants interpreted the question about strengths and, therefore, less consistency across focus groups. Calculating the frequencies by county (instead of focus group) provided a clearer indication of the relative importance of these themes. All themes were presented to the CHAB, who discussed and validated them as accurately capturing the main characteristics and issues in the region.

Results

Participants numbered 221 individuals representing 195 agencies in our focus groups. Eighteen sectors were represented, distributed evenly across the region (Table 3).

There was consistency across counties on the most important needs discussed. Twelve themes were discussed in at least 75% of focus groups (Table 4). The need for more and improved mental health services was expressed in every focus group. Needs relating to access to care were noted in every focus group; when divided into specific themes (transporta-

tion, insurance and cost, lack of providers, knowledge and culture) the first three of these were discussed in more than 90% of the focus groups.

Themes regarding strengths showed more variability, but several strong patterns still emerged (Table 5). Every community reported specific programs and services that have a significant impact on the health and well-being of residents. Many service providers present were themselves lifelong members of the community, and the interconnecting webs of personal and professional relationships were evident, especially in the smallest communities. Schools and faith communities were specifically recognized as helping to address

Table 1

The Commonwealth Medical College Regional Health Assessment County Focus Groups

County	Type of Focus Group (# of Participants)	Population (2008)
Bradford	General (7)	61,233
Carbon	General (14)	63,558
Clinton	General (12)	37,038
Lackawanna	Youth (12), Seniors (9), Minorities (8), Minorities (8)	209,408
Luzerne	Youth (11), Seniors (9), Minorities (11), General (11)	311,983
Lycoming	Youth (9), Seniors (9)	116,670
Monroe 1	General (9), General (8)	165,058
Pike*	Mental Health (8)	59,664
Schuylkill 1	General (6), General (8)	147,254
Sullivan	General (9)	6,124
Susquehanna	General (11)	40,831
Tioga	General (12)	40,574
Wayne*	Mental Health (11)	52,016
Wyoming	General (10)	27,759
Total	23 focus groups (221 participants)	1,339,160

* Counties with community assessments recently completed. Specific health issue identified jointly with those assessment investigators.

Table 2

Questions Asked in Each Focus Group

What health issues are currently the biggest burdens on (youth, adults, seniors) in your county?
What are the significant health issues, not currently problematic, that you see on the horizon?
What populations are most overlooked or underserved by health and social services in the county?
What programs or services are having the biggest positive impact on the health of (youth, adults, seniors) in your county?
What do medical providers in your county need?
What do you want to see from the new medical college in the region?

additional needs brought on by the economic recession.

Discussion of participants' expectations for the new medical school centered around four themes (all addressed in more than 75% of focus groups) (Table 6). Participants were very interested in the medical school training more physicians who stay to practice in the region. They also encouraged the school to emphasize certain characteristics and topics in its training of physicians, including communication, using a medical home model and caring for seniors and substance abusers. Participants especially wanted the school to be active and visible in the rural communities.

Discussion

In the 16 mostly rural counties served by the medical college, we identified a range of needs and strengths. Two primary themes, access to health care and mental

health issues, emerged. The issue of access to health care was expected in this largely rural area. Lack of public transportation, medical providers, and health insurance combine to create serious barriers to care.

The universality of mental health issues, often with co-occurring substance abuse, was somewhat less expected. The lack of an adequate workforce of mental health providers is a significant problem for residents across the lifespan. We also identified a strong sense of collaboration between agencies, many of which will make important partners for us in the future. Programs serving children and seniors

Table 3

Agencies and Sectors That Participated in Focus Groups

County and state government	K–12 schools
County human services	Colleges and universities
County assistance offices	Non-profit and community-based organizations
County children and youth services and Head Start	Hospitals
Area agency on the aging and other senior services	Health systems/health insurers
County and private mental health services	Health centers and clinicians
County and private substance abuse services	Legal and justice system
County coroners	Faith organizations
Public health	Community leaders
Businesses	

Table 4

Community Needs Discussed in Regional Health Assessment Focus Groups

Theme	% *	Description of Theme
Mental Health	100	Prevalent; high comorbidity with substance abuse; not enough providers or facilities (especially for seniors and youth); poor coordination between providers; primary care providers lack the capacity to address mental health issues; stigma prevents some from accessing care.
Access to Care: Transportation	91	Seniors and youth most affected; providers (especially specialists) and services are often distant; few public transportation options available; “shared ride” programs are time-consuming, cumbersome, and impracticable; recession and rise in fuel costs exacerbate transportation issues.
Access to Care: Insurance and Cost	91	Uninsured populations include working poor, post-Medicaid (18–24 years) and pre-Medicare (55–64 years) single adults, the recently unemployed; uninsured residents strain hospital ERs; Medical Assistance is not widely accepted; application paperwork prohibitively confusing.
Access to Care: Lack of Providers	91	Need more providers and facilities; recruitment and retention of new physicians is difficult for social and economic reasons; physicians inaccessible due to inconvenient office hours and long wait times.
Lack of Prevention and Wellness	91	Providers lack time for prevention messages; healthy behaviors not valued or understood; social norm is avoid doctors unless an emergency.
Specific Diseases and Behaviors	91	Diabetes, cancer, cardiovascular disease, asthma, and STDs frequently mentioned; motor vehicle accidents among teens and family violence widespread; behavioral health risk factors include substance abuse, tobacco use, unsafe sexual behaviors among adolescents, and obesity.
Drugs and Alcohol	87	Alcohol is a gateway drug used at a very young age; excessive drinking is socially acceptable; heroin and prescription drugs mentioned repeatedly; insufficient treatment options exist locally.
Access to Care: Knowledge and Culture	83	Low health literacy and insufficient knowledge about services (especially immigrants, seniors); more interpreters needed; discrimination toward minority groups, the poor, and women creates barriers
Seniors	83	Mental health issues undiagnosed or misdiagnosed; over-medication and under-medication both problematic; not enough facilities and services; senior centers a great resource but underused.
Poor Coordination of Care	78	Poor coordination among physicians, between social services and medical services, and between schools and medical services.
Dental Health	74	Few dentists and even fewer that accept Medical Assistance; widespread lack of dental hygiene and dental education.
Vulnerable Populations	74	Working poor most vulnerable; young adults, young seniors, minority communities, and caregivers also mentioned.

* Needs themes are reported as percentage of focus groups in which the issue was discussed.

Table 5

Community Strengths Discussed in Regional Health Assessment Focus Groups

<i>Theme</i>	<i>% *</i>	<i>Description of Theme</i>
Specific Programs	93	Programs mentioned include early childhood intervention, home visitation programs (new families), Meals on Wheels, YMCAs, senior centers.
Interagency Collaboration	86	Interagency collaboration especially among social services agencies; residents care a lot about their communities and work tirelessly.
Schools and Faith Communities	79	Schools, religious institutions are central to community life and often provide location for services; religious institutions especially important for seniors.
Volunteers and Informal Supports	57	Volunteers stretch limited resources to meet needs; strong informal support and great generosity in small communities.
SHIP Partnerships	50	Active, well respected SHIP partnerships have large and positive impact.

* Strength themes are reported as percentage of counties in which the issue was discussed.

SHIP— State Health Improvement Plan

Table 6

Community Expectations of Medical College Discussed in Regional Health Assessment Focus Groups

<i>Theme</i>	<i>% *</i>	<i>Description of Theme</i>
More Physicians	93	Cultivate primary care, specialty physicians who stay in the region.
Train a Different Kind of Physician	77	Communicate well with colleagues and patients; have a multicultural perspective; use a medical home model; focus on both community and individual health; understand seniors and addiction.
Better Regional Health Care	77	Improve coordination and communication within the health care system; increase access to care; more personal health care; shape a culture of prevention; improve health and wellness.
Connection to Community	77	Collaborate with existing educational, health care entities; reduce regional geographic barriers; play an active role in the region's clinics, hospitals, agencies, and especially in rural communities.

* Expectations themes are reported as percentage of focus groups (FG) in which the issue was discussed.

were frequently mentioned as strong, as were the SHIP partnerships.

Two other objectives of this study were to initiate relationships with potential partners and to build goodwill toward the new medical school. This study has introduced the medical college to many service providers across the region, many of whom were not even aware of the new medical school before the study. Broad engagement from the medical school included focus group participation by the dean, an associate dean, a vice president, basic science and clinical faculty, and student services staff. This participation served to strengthen the relationship-building objective of the study. The community participants could become acquainted with school leadership and view the seriousness with which they approached this study. The participants from the medical college met important community partners and heard firsthand about issues and resources.

The Community Health Advisory Board (CHAB), focus group participants and others in the region

have been explicit in their appreciation of the medical school's attention to regional needs and approach to sharing the data. We asked the CHAB for input on strategies to disseminate the data to reach the most people in a useable format. Members of the group noted that past researchers did not share their data so freely and appreciated that the researchers were doing so in this case. Focus group participants were grateful for the listening stance on the part of the medical school and the opportunity to share their knowledge of the region. An e-mail from one participant captured sentiments shared by many:

Thank you for including me in your focus group discussion today . . . it was worth every minute of my time as there are so many needs and concerns in our community here in [a rural county]. I am very excited about the medical college . . . If you need anything, do not hesitate to call me. . ."

At a presentation of the regional health assessment results at grand rounds in a local hospital, one of the physicians asked the group, "Have we ever had data about our region before?" By not only soliciting input from the region but also by sharing it back, the college is laying a foundation of trust for future endeavors.

Most focus groups concluded with discussion of participants' expectations for the school, thus addressing the final objective of the study. Shifting the discussion to the medical school's role in addressing regional issues gave the facilitators a chance to share school activities that already related to the participants' expectations while creating an opportunity to manage expectations (sometimes unrealistically high) for the new school. Balancing these expectations and the start-up demands of the new school (eg, LCME accreditation, foundational basic science and clinical instruction, establishing core clerkships in community campuses, developing clinical services, establishing a robust research enterprise) is enormously challenging in an era of constricted resources. Effective regional partnerships, strategic pacing of initiatives, and diverse external sources of support will be necessary to have an impact on the complex social and medical issues in the region. The health assessment process helped to prioritize issues and identify strategies that could be carried out by the medical college in its early stage of formation as well as develop relationships that will facilitate development of community-based structures in later stages of formation.

One of the key aspects of community-engaged research is that the data are used for action in addition to knowledge generation. The study findings were presented at a joint meeting of the leadership from the school and the CHAB, who then broke into small groups to discuss the impact of the data on TCMC's curriculum, clinical practice, research agenda, and service to the region and to brainstorm dissemination strategies. The following actions have already been taken to follow up on recommendations in the areas of dissemination, curriculum, and research.

Dissemination of Results

A 20-page report of the findings was shared with all participants; the CHAB; and faculty, staff, and students at the medical college. An initial suggestion was to develop two–three-page briefs on each county and each theme that community-based organizations could more easily use for planning and grant writing, particularly important in our rural counties where such information is hard to obtain. The county briefs have been completed by one of the authors. Thematic briefs are still being developed. Three other dissemination strategies were encouraged: meetings with legislators, coverage in local media, and presentations at local groups. The research team met one on one with the US Congress-

man who represents most of the college's counties and held a legislative breakfast meeting with four other state and federal representatives. Joint meetings with the editorial staff at three regional newspapers led to summary articles and an in-depth article on mental health. These articles have generated more contact with the college, especially from community-based mental health providers. Finally, we have presented the findings to local service groups (Lions and Kiwanis Clubs), interagency councils, hospital grand rounds, and academic meetings.

Curricular Impact

These findings are incorporated into the curriculum at several levels. Faculty responsible for curricular "threads" (themes such as family and community health being incorporated across the 4-year curriculum) use the findings to inform content and teaching strategies. A strong emphasis on public health is integrated into the curriculum. The first-year Profession of Medicine and second-year Art and Practice of Medicine courses place strong attention on communication skills and patient centeredness. Shared decision making with patients will be a focus of the third-year longitudinal clerkship curriculum. The second-year Systems course leads off with a block on mental health, addressing service delivery as well as clinical issues, and offers multiple opportunities for students to hear from patients and doctors about the experience of managing illness. The principal investigators presented to MBS students on findings and the principles of community engagement.

The medical students and master's degree students completed 18 Community Health Research Projects in partnership with community-based organizations or physicians across the three campuses in their first year. Although these projects were set up before the assessment was completed, many topics converged with the priorities identified in the assessment. Future projects will be based on our findings. Service learning opportunities for the medical students are being developed, linked to the findings of the assessment. The directors for Continuing Medical Education at the medical college and a local health system are both using the findings to guide programming and grand rounds topics.

Impact on Research

This study, conducted with internal funding, lays the groundwork for future community engagement efforts and funding. Further in-depth qualitative analysis of specific themes will be performed, using the focus group transcripts. We now have a strong basis for continuing investigations regarding specific health needs in our rural constituency. Relationships initiated through this study have already been influential in developing grant applications for the NIH and other agencies. We have prioritized mental health, the most prominent

theme, for the next steps in the department's research agenda. Medical student summer interns collaborated with several SHIP coalitions to lay the groundwork for a comprehensive mental health assets inventory to delineate the exact service need, resources, and deficits in our three regional campuses and conducted an in-depth qualitative analysis of mental health and substance abuse themes in the transcripts.

Limitations

The analysis for this paper was based on field note observations and debriefing of relatively inexperienced observers. We addressed this by having consistent involvement of the PIs, both experienced, and by corroborating with the transcripts, when questions arose. In the design of this study, we chose to include all the counties that the medical school serves. By choosing breadth we decided against deeper inquiry into any issue or region. We have only a broad understanding of the biggest issues across the region. There are certainly subtleties within themes and regional or local issues that we have not identified. In addition, we primarily recruited community-based agency representatives, with few participants who could share perspectives without the lens of an organizational agenda. Getting input from informal leaders and community members will be an important future step. In the future, measuring the degree and models of community engagement and the impact over time of interventions based on sequential assessments will be essential to meeting expectations of the founders, the community, and the medical college itself.

Conclusions

Serving the health needs of our rural counties can be most effectively done when we understand community needs and strengths from the perspective of those who live and work there. We can learn much from epidemiological data, but there is no substitute for showing up and asking people for their opinions, both in the quality of the data and the foundation of trust that is set. As a brand new institution, The Commonwealth Medical College has the advantage of little or no history about past researcher-community interactions to overcome. Conversely, we are a little-known entity and have to establish ourselves as a new player in the region. The data collected from this study will influence the content of our students' education. Moreover, we have modeled for them the importance of taking the time to engage with our non-clinical community partners. We were explicit with both participants and students that we are not here to solve all the region's health problems but that we are here to partner with providers and communities to work on them together. This focus group study is only a first small step in a process of engagement with the communities in the region. Following through on

the commitment to partner with regional communities in research, educational, and clinical activities will be essential to achieve the mission of the medical college.

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