

Community–Academic Partnerships

How Can Communities Benefit?

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Abstract: In answer to the question of how academic institutions will meet medical education needs and public health challenges of the 21st century, a strong, vibrant, and sustained community partnership has been developed to teach public health, address community public health needs, and develop health policy to sustain these improvements, all with a practical approach. In this paper, the partnership between the University of Vermont College of Medicine and various community agencies is described from the perspective of how the community can benefit from educational efforts in public health. Particular focus is given to the community–academic partnership model in public health, a strong and sustained partnership between the University of Vermont College of Medicine and the United Way of Chittenden County Volunteer Center that began in 2004. Public health projects are designed, through partnerships with community nonprofit agencies, to be effective in addressing community issues while helping prepare students to become problem-solvers in population health. Examples of benefits seen by the community are used to illustrate the success of this approach. Project examples and a brief case study illustrate how community–academic partnerships in medical education can serve as a “catalyst” to improving community health.

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Introduction

The importance of population health in medical education and the leadership role of academic medical centers has been recognized by the IOM,^{1–4} the Josiah Macy, Jr., Foundation,⁵ and others in recent articles calling for social accountability and recommendations for public health content in medical curricula.^{2,6,7} Recent recommendations also highlight the importance of developing community-based initiatives as part of undergraduate medical education, and such initiatives are described at institutions like Duke University, the University of Vermont, the University of Utah, the University of Rochester, and Stanford^{8–12} in the U.S., and Ege University¹³ in Turkey.

There is substantial literature related to community–academic partnerships in community-based participatory research (CBPR) settings,^{14–23} policy setting,²⁴ public health practice,^{25–28} undergraduate public health

education,²⁹ graduate schools of public health,³⁰ nursing practice,³¹ health professional education,^{32–34} and healthcare delivery.^{35,36} The CDC^{37,38} and others^{15,39} recommend approaches for building capacity and skills for community engagement, but there is sparse literature related to sustained community–academic partnerships used to teach public health in medical education. Although principles developed to create partnerships for CBPR may also be useful in educational settings, there is currently little evidence.

New approaches are likely to emerge as more medical schools prepare to develop educational programs in local communities in response to recent recommendations^{6,7} and changes in Liaison Committee on Medical Education (LCME) requirements.⁴⁰ Current research and literature specifically emphasizes the academic benefits of partnerships, with little or no focus on specific types of community benefits. Better understanding and documentation of how communities can actually benefit from community–academic partnerships is critical to understanding how to create and sustain these partnerships. This, in turn, will help medical schools as they develop new educational programs in their local communities.

A “community-first” approach to teach public health in medical education has been described previously.⁹ The purpose of this paper is to highlight exam-

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Table 1. Public health projects: focus areas of *Healthy People 2010*

Access to quality health services	Mental health
Cancer	Nutrition and overweight
Diabetes	Occupational health
Educational and community-based programs	Oral health
Environmental health	Physical activity and fitness
Health communication	Public health infrastructure
Immunizations and infectious diseases	Respiratory diseases
Injury and violence prevention	Substance abuse
Maternal, infant, and child health	Tobacco

ples of the types of benefits experienced by communities. The sustained community–academic partnership used to teach public health to medical students at the University of Vermont College of Medicine is described. Project examples and a brief case study illustrate how community–academic partnerships in medical education can serve as a “catalyst” to improving community health.

Vermont’s Community–Academic Partnership

Since 2004, public health projects⁹ have been a required part of the second-year medical curriculum at the University of Vermont College of Medicine (UVCOM). These are developed in partnership with the United Way of Chittenden County Vermont Volunteer Center, which has a large network of many nonprofit organizations. Projects link to *Healthy People*⁴¹ priorities, and more than 100 community-based public health projects lasting a semester have been completed or are in progress. A wide variety of agencies have participated, and public health issues have included many *Healthy People* focus areas (Table 1).

Value to Community Partners

Community agencies are equal partners in the development, design, implementation, evaluation, and presentation of results in every project. Projects are initiated by the community agencies themselves, in contrast to projects being developed from available health status data about the community or based on academic interests of students.⁹ Medical student groups rank available projects and computer **match** to them, after a lunchtime **speed**

networking session, where agencies have an opportunity to briefly pitch their projects.

The course includes a community agency orientation, where student groups visit their project agency to see and understand the mission of the agency, population served, most pressing health issues, and barriers to improving health, and to discuss most efficient ways to communicate. Projects last about a semester (about 19–20 weeks), beginning in late August and culminating in a poster session and community celebration each January. Each student project group has six to eight second-year students and two mentors, one a university faculty member and the other a mentor from the community agency. Mentors jointly provide guidance during regular meetings with student groups to ensure projects meet community needs and maintain an academic focus. Students have one afternoon per week of protected time, in the fall of their second year, devoted to project-related work.

At the conclusion of each project, both university and community mentors provide student evaluations of the group. Community agencies are asked to answer a brief survey regarding their reasons for participation and their impression of the impact of the projects. The process and results of evaluations have been previously summarized,⁹ with nearly all community agencies agreeing or strongly agreeing that projects benefited the populations served. In addition, community agencies value their relationship with the university; want to be involved in the education of medical students; report prior positive experience with students; and need additional help.⁹ Learner evaluation is conducted by project group and has more recently, in 2010, included Likert-scale questions about student learning in the community, for example, asking agreement with the statement, “I am confident that my experiences in our community will help me in my role as a physician.”

Benefits to Communities

Community agencies also report needing additional resources as one reason for participation⁹ and report public health needs consistent with many *Healthy People 2010*⁴¹ areas, although projects have not yet been linked to specific objectives. Project benefits for community agencies generally fall into such categories as: (1) identifying needs for public health education; (2) advocacy for resources to improve public health; (3) problem solving to help community agencies; (4) advocacy for policy change; (5) public health program development, implementation, or evaluation; (6) community needs assessment and planning; or (7) documenting the extent of a public health issue to serve as a catalyst for community action in public health. Examples of projects illustrating specific catego-

ries of benefits to communities are described below, with additional examples presented in [Table 2](#).

Identifying Needs for Public Health Education

The Vermont Department of Health has participated in the UVCOM public health projects since 2004 when the projects began. Medical students have helped the department better understand the educational needs of practicing clinicians and the general population with regard to specific public health topics. Climate change and its impact on infectious diseases⁴² was one topic of study that resulted in a publication in the Vermont Medical Society newsletter.⁴³

Advocacy for Resources to Improve Public Health

The Community Health Center of Burlington (CHCB), a Federally Qualified Health Center, is a nonprofit medical and dental practice serving the greater Burlington area in Vermont. CHCB cares for about 13,000 patients; about 26% are uninsured or homeless; and about 6% of primary care visits each year require interpreter assistance.

Student projects over several years studied issues of eligibility and navigation,^{44,45} trying to understand and have an impact on the healthcare needs of patient populations served by the CHCB. In one project, students described the insurance history of uninsured populations and found the vast majority had been previously insured, some of whom might now be eligible for public programs but were unaware of the application process, suggesting the need for an “eligibility specialist.”⁴⁴ A subsequent project better defined the role of this specialist who could inform and help clients enroll in social service programs. The CHCB subsequently used project results to successfully advocate for, and hire, a “Patient Assistance Specialist” who helps clients access needed services. This advocacy was unique as through collaboration with the University of Vermont College of Nursing and Health Sciences, both medical and nursing student public health projects contributed to this successful outcome that demonstrated advocacy for resources to improve public health.

Problem-Solving to Help Community Agencies

A project with the Chittenden (Vermont) Emergency Food Shelf tested whether practical ways to improve the quantity and nutritional quality of donated foods could be achieved by working with local grocery stores. The stresses of a poor economy resulted in increased local demand for food at the emergency food shelf. Students worked with seven local grocery stores that had food collection bins to see if educating consumers with such methods as using posters and **tear-off** lists at entrances to grocery store or labels at the point of purchase could

influence what foods were donated. At the end of 4 weeks, they found a significant increase in the proportion of nutritious donations, and concluded such steps could be easily taken in other communities.

Advocacy for Policy Change

Some student groups tried to understand and influence policy in Vermont ([Table 2](#)). A project completed in partnership with the American Lung Association of New England (Vermont), “Assessing Health Concerns and Obstacles to Diesel Exposure Reduction in Vermont Diesel Vehicle Operators,” was used to provide testimony to the Vermont Legislature regarding legislation entitled “An Act Relating to the Idling of Motor Vehicles.”⁴⁶ Students had surveyed diesel truck operators before their morning delivery routes in two Vermont counties and found that 75% of the drivers had not been informed about health effects of diesel exhaust. Students presented data to the legislature detailing occupational health concerns about diesel exhaust among the vehicle operators and how truck drivers would respond to policies that limit diesel idling. Although the legislation was not enacted during that legislative session, the level of interest in this issue remains high. Students also presented their project findings at an American Public Health Association (APHA)⁴⁷ annual meeting.

Public Health Program Development, Implementation, or Evaluation

A Vermont nonprofit organization using a troupe of puppets to teach children about disabilities, children’s mental health, social and safety issues, substance abuse, and AIDs, requested a project to assess community needs for classroom education related to autism spectrum disorders, described in [Table 2](#).

Community Needs Assessment and Planning

Cathedral Square Corporation is a nonprofit organization that owns and/or manages senior housing communities in four Vermont counties. In response to needs of the aging population, the organization, along with stakeholders from government, academia, health care, nonprofits, and advocacy organizations, created Vermont’s Seniors Aging Safely at Home program to better integrate health, long-term care, and support services for seniors, to ensure that they could remain in their own homes as long as possible. Medical students have completed projects with Cathedral Square Corporation to assess needs and determine priorities in development of Seniors Aging Safely at Home initiatives. In one project, students identified risk factors of seniors living independently and found less than half passed a cognitive screen, more than a third had a history of falls, and nearly 20% related a history of inadequate nutrition, factors requir-

Table 2. How can communities benefit from public health projects in medical education?

Community benefit category	Project title	Community partner (Healthy People areas)	Brief description
1. Identify needs for public health education	Warming Climate Changes Vermont Disease	Vermont Department of Health (Environmental Health; Immunizations and Infectious Diseases)	Students modeled temperature projections to generate predictions of Vermont's future climate to 2020; vector habitats and disease lifecycles were analyzed to determine disease threats. Human cases of WNV, RMSF, hantavirus, encephalitis, and possibly malaria were expected to emerge. Students developed professional educational strategies for emerging infectious diseases.
	Are We Getting the Message About Mercury? A Survey to Assess Public Awareness of Mercury in Fish	Vermont Department of Health (Environmental Health; Health Communication)	Students surveyed members of the public in Vermont's largest county regarding fish consumption practices and knowledge of consumption advice. Vulnerable populations were specifically targeted. Based on results, students recommended expanding public health education efforts, including more emphasis on canned tuna.
2. Advocacy for resources	Implementing a Physical Exercise Curriculum for Residents of Woodside Juvenile Rehabilitation Center	Woodside Juvenile Rehabilitation Center (Physical Activity and Fitness)	Woodside Juvenile Rehabilitation Center, a detention and treatment facility for delinquent adolescents, identified health needs in residents. Students designed a holistic physical activity curriculum, including evaluation tools. The facility's clinical director used project results to successfully advocate for funds from the Vermont legislature to purchase exercise equipment to implement the program.
3. Problem solving to help community agencies	How Can I Help You? Eligibility Worker: Navigating Patients Through the Social Services Maze	Community Health Center of Burlington (Access to Quality Health Services; Health Communication)	See description in text.
	Food Shelf Friendly: Increasing the Nutritional Quality of Food Shelf Donations	Chittenden Emergency Food Shelf (Nutrition and Overweight)	See description in text.
4. Advocacy for policy change	Impact of Paid Sick Days on Public Health in an Elementary School Population	Peace and Justice Center of Vermont (Access to Quality Health Services; Immunizations and Infectious Diseases)	Students evaluated the impact of parental-paid sick days on children's health, with a survey distributed to parents of 1135 students in nine Vermont elementary schools. Findings that adults with fewer paid sick days were more likely to send a child with symptoms of illness to school was used in testimony to the Vermont legislature on An Act Relating to Absence from Work for Health Care and Safety.
5. Public health program development, implementation, or evaluation	Assessing Health Concerns and Obstacles to Diesel Exposure Reduction in Vermont Diesel Vehicle Operators	American Lung Association of Vermont (Occupational Health; Environmental Health)	See description in text.
	Assessing the Current State and Potential Needs of the Community for Autism Spectrum Awareness in the Classroom	Puppets in Education (Maternal Infant and Child Health; Health Communication; Educational and Community-Based Programs)	Students determined what information would be useful to include in a puppet program addressing Autism Spectrum Disorders. Surveys were developed and administered to parents with and without children on the autism spectrum, and to educators across the state of Vermont. Findings suggested that a puppet program addressing autism spectrum disorders was needed within the surrounding community and Vermont as a whole.
6. Community needs assessment and planning	Promoting Healthy and Active Communities: Medical Students and the Built Environment	Vermont Department of Health (Physical Activity and Fitness; Environmental Health)	Students developed a questionnaire of community factors that promote physical activity, interviewed town staff and/or local government officials in interested towns, identified and shared best practices.
	Seniors Aging Safely at Home: Identifying Risk Factors of Seniors Living Independently	Cathedral Square Corporation (Access to Quality Health Services)	See description in text.
7. Catalyst for community action in public health	Suburban Satellite Health Care Facilities Limit Access for Low-Income Patients	Committee on Temporary Shelter and Safe Harbor Clinic (Access to Quality Health Services)	See description in text.

WNV, West Nile virus; RMSF, Rocky Mountain spotted fever

ing attention in the development of Seniors Aging Safely at Home programs.

The executive director of Cathedral Square Corporation (N. Eldridge, Cathedral Square Corporation, personal communication, 2009) wrote about the student's project:

From the Governor of Vermont to the Episcopal Bishop of Vermont, I use the data collected and convincingly presented by the medical students in their poster to draw a picture of the depth and scope of the problem, a problem that will have increasingly disturbing ramifications on our state's financial health and on the ethics of how we treat the most frail in our society.

A subsequent project assessed nutrition and social eating habits among seniors living independently and made practical recommendations, such as vitamin supplementation, individual education, and social eating opportunities, to enable seniors to live independently at home in the community. Representatives from each of these projects presented their project at the APHA 2009 and 2010 annual meeting.^{48,49}

Catalyst for Community Action in Public Health—a Brief Case Study

The Committee on Temporary Shelter and the Safe Harbor Clinic, part of the CHCB, submitted a project proposal for a Fall 2008 project about transportation as a barrier to health. The project was designed to study the impact on homeless and low-income populations of relocating specific specialty healthcare services to a suburban location, not yet located on a city bus route. Project data supported the perception that lack of transportation was a barrier to health care for some community populations. Project results were presented as a poster entitled "Suburban Satellite Health Care Facilities Limit Access for Low-Income Patients" at the College of Medicine Poster Session and Community Celebration in January 2009 and at the APHA annual meeting.⁵⁰ This information was subsequently used in research by the Vermont Interfaith Action (VIA) committee, part of PICO (People Improving Communities through Organizing), a national network of nonpartisan and multicultural, faith-based community organizations.

In June 2009, the VIA held an **action**,⁵¹ covered by local news and cable TV, where more than 100 people met at a local cathedral to discuss the transportation issue in a public setting. Members of the academic medical center, county transportation authority, and city manager met with VIA leaders and heard testimony from members of the refugee community, senior citizens, local churches, and VIA leaders, about difficulty accessing needed healthcare services because of lack of transportation.

There were articles in the local newspaper and TV interviews. Subsequently, VIA met with involved parties in September 2009⁵² to continue progress toward improving the issue. In November, VIA spoke out on cable TV⁵³ and reported on progress.⁵⁴ Finally, in January 2010, leaders from all local organizations announced that a shuttle service, jointly funded by involved organizations, would provide transportation to low-income residents needing specialty care at the suburban location.⁵⁵ Project results were a catalyst used by a local faith-based community organization to organize community members and involved agencies to facilitate a workable solution to the problem.

Discussion

Community-driven public health projects have been implemented as a required part of the medical curriculum at UVCOM, since 2004. Educational goals associated with the projects are to: learn public health through actions in the community to improve health; understand and apply basic public health research methods; and put science into practice to improve health in the community. Public health needs have been identified by local community agencies, and projects are designed as **community first** to meet these health needs.⁹ There is growing evidence that project findings are resulting in tangible benefits for participating community agencies (Table 2).

Academic credibility is important and brings strength to the partnership. Many of the projects listed in Table 2 were also presented by students at APHA meetings.^{42,45,47,48,50,56–59} Students find, summarize, and present the public health science and literature behind public health issues facing the community. In so doing, students develop skills in critical thinking, caring, and communication to support teamwork, collegiality, and problem solving. Building relationships with a wide range of community agencies is possible and feasible, but achieving consistency, sustainability, and results that benefit the community takes time.

Principles from the CBPR literature may apply to educational endeavors in medical education. The CDC³⁸ provides guidance for community engagement, and other authors provide advice related to the challenges of CBPR, including dissemination of results.⁶⁰ Israel and her colleagues²⁴ emphasize capacity building to promote policy advocacy; Ahmed¹⁸ cites models for community engagement in research^{61–64} and details a framework to educate researchers that includes values, strategies, and outcomes of community engagement in research¹⁸ that may be applicable to educational partnerships as well. Other authors^{15–17,65} discuss "core principles and values," and 12 common characteristics of successful part-

nerships,⁶⁶ and Shalowitz¹⁵ shows how these characteristics can be applied to a successful community partnership for asthma.

Although there may be similarities with CBPR principles in the area of community partnerships, there may also be differences. For example, most educational initiatives in medical schools last several months, the time of a semester, rather than years. In our experience, although some longitudinal projects with agencies span several years, in most cases, community agencies have specific and timely needs that can be addressed in one semester-long project.

Conclusion

Successful community engagement resulting in a strong and sustained community–academic partnership must be based on the premise that the community is an equal partner and that, while there are clear educational goals and competencies for students, the needs of the community must be put first. It is essential for medical schools developing such programs to understand that reasons community agencies participate may be very different from the missions of the academic medical center. Community agencies may be affected by economic factors, with increased demand for services requiring more resources, and not have the person-power or expertise to look at a problem from a broader perspective. However, the missions of community nonprofit organizations involved in health intersect with those of the academic medical center and can complement meeting the medical, social, and overall health needs of individuals and populations. Understanding where missions intersect and reasons for participation are important to ensure the highest level of collaboration and successful outcomes.

Ensuring that educational endeavors result in tangible products that benefit the community is essential to nurturing and sustaining such partnerships. Educational projects must be conducted in a timely manner, and easily understandable results must be clearly developed and presented. Mentoring from both an academic and community perspective is important to keep projects on task, and to maintain the balance between academic and community needs. It is important also to celebrate success. In a busy and demanding environment seen in both community and academic settings, celebrating progress and small successes that over time translate to benefits to community health enhances the efforts of all participants. As more medical schools work to achieve both recommended competencies⁷ and required standards,⁴⁰ the development of educational initiatives in public health, in partnership with communities, will be more common.

Both communities and academic institutions can benefit from such endeavors.

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