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Evaluating Community Engagement in an Academic Medical Center

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Abstract

From the perspective of academic medical centers (AMCs), community engagement is a collaborative process of working toward mutually defined goals to improve the community's health, and involves partnerships between academic medical centers and individuals and entities representing the surrounding community. AMCs increasingly recognize the importance of community engagement, and recent programs such as Prevention Research Centers and Clinical and Translational Science Awards (CTSAs) have highlighted community engagement activities. However, there is no standard or accepted metric for evaluating the performance and impact of community engagement activities undertaken by AMCs.

This paper presents a model for evaluating the community engagement activities of AMCs. The model includes broad goals and specific activities within each goal, wherein goals and activities are evaluated using a health services research framework consisting of structure, process, and outcome criteria. To illustrate how to use this community engagement evaluation model, the paper presents specific community engagement goals and activities of the University of Rochester Medical Center to: (1) improve the health of the community served by the AMC; (2) increase the AMC's capacity for community engagement, and (3) increase generalizable knowledge and practices in community engagement and in public health.

Using a structure--process--outcomes framework, a multi-disciplinary team should regularly evaluate an AMC's community engagement program with the purpose of measurably improving the performance of the AMC and the health of its surrounding community.

With increasing recognition that the United States has failed to deliver on its promise to be the healthiest nation in the world, despite the highest per capita health expenditures in the world, there is within the US an evolving appreciation for the principles of population health and a new focus on health promotion rather than disease treatment. Academic medical centers (AMCs) are under increasing pressure in all of their mission areas (i.e., education, research and patient care) to demonstrate improvements in health,[1] healthcare quality, and cost-- by addressing the behavioral, social, and environmental determinants of health.[2] To do this requires collaboration with the communities that they serve.

Community engagement is a relatively new activity within many AMCs. In 1997, the Centers for Disease Control and Prevention (CDC) defined community engagement as *"the process of working collaboratively with and through groups of people affiliated by geographic proximity, special interest, or similar situations to address issues affecting the well-being of those people....It often involves partnerships and coalitions that help mobilize resources and influence systems, change relationships among partners, and serve as catalysts for changing policies, programs, and practices."*[3] Of note, some AMCs do have a history of engaging their surrounding communities to focus on consensus-based health problems. For example, in the 1920s, George Eastman (founder of he Eastman Kodak Company) funded a new medical school in Rochester, New York with the proviso that, *"the skills and talents be used to make Rochester the healthiest community in the world."* However, most AMCs have until recently focused on principal missions of medical education, clinical care, and scientific research, while paying less attention to the health of their surrounding communities.

This appears to be changing. Over the past decade, a number of factors coalesced to increase attention within AMCs on the importance ofcommunity engagement.. First, a growing

body of literature has highlighted the prominent role of behavioral, social, community, and environmental factors in the health of populations[4-6]- factors that influence the health of populations as much or more than do strictly "medical causes."[4] Investigators from multiple disciplines have demonstrated that collaboration between academic and community partners can enhance translation of scientific knowledge to clinical and community programs.[3, 5, 7] As the nation seeks to improve population health, transform the health care delivery system, and reduce costs, AMCs increasingly recognize the value of working with the community to identify critical health challenges and their potential solutions.[7, 8] In addition to the moral and public health imperatives, AMC's face financial imperatives to address these issues as payment policies become more population- and outcomes-based.[9]

Second, changing demographics and rising poverty in urban areas, together with the growth of hospital-based health care systems and the decline of the manufacturing sector, elevated many AMCs to positions of economic and political leadership within their communities.[10] Therefore, communities are increasingly demanding that AMCs serve the public good. In addition, new Affordable Care Act and Internal Revenue Service regulations related to non-profit organizations require institutions to demonstrate "community benefit"[11, 12] by developing community service plans jointly with community partners.

Third, several major federal initiatives have focused the attention of AMCs on community engagement. The CDC's Prevention Research Center program[13] which currently funds 37 centers, requires community-based participatory research as a core component. More recently, the Clinical and Translational Science Awards (CTSAs),[14] which now fund 61 centers, encourage AMCs to include a community engagement component. In fact, many AMCs have

made important strides in community-based participatory research and community engagement as demonstrated by recent examples of successes.[15-17]

Finally, health reform stimulated by the Affordable Care Act has resulted in an explosion of new collaborations as AMCs have either formed accountable care organizations or have partnered with other organizations to develop large health systems that are responsible for the health outcomes of populations.[18, 19] In sum, converging factors have stimulated AMCs' interest and investment in community engagement.

Community engagement at AMCs can occur within multiple contexts,[3, 19] all of which are core functions of medical centers. These often include education, clinical activities linked with community-based organizations, research (particularly community-based participatory research or Community-Engaged Research), health policy, and community service. Community engagement can involve many types of community-based partners: community and neighborhood organizations, individual community leaders, other institutions such as schools and workplaces, local government public health, and community-based coalitions that focus on key populations (e.g., youth, HIV, Latino, disabled) or priority issues within the community (e.g., lead poisoning, violence, obesity).

With the financial stresses that require all organizations to closely examine the effectiveness of their programs, AMCs are increasingly interested in evaluating the effectiveness and return on investment of their community engagement activities. In addition, the new funding cycle of CTSAs, unlike the prior cycles, no longer require community engagement; thus some AMCs may consider reducing or dropping these activities unless there is clear evidence of their value to institutions and communities alike.

Unfortunately, there is no standard or accepted metric for evaluating community engagement.[3] One challenge is that the community engagement activities of AMCs vary widely, and are often tailored to their specific communities. This is distinct from evaluating educational or research programs, where standard guidelines, procedures, and metrics exist. A recent joint publication from the Department of Health and Human Services, the National Institutes of Health, CDC, the Agency for Toxic Substances and Disease Registry, and the CTSAs[20] listed five types of evaluation for community engagement: 1) formative, 2) process, 3) summative, 4) outcome, and 5) impact; and stressed the importance of using both qualitative and quantitative methods for evaluation. This publication also provided successful case examples of community engagement, yet few of these programs displayed results of rigorous evaluations.

In Rochester, New York, we have developed a model for evaluating our community engagement activities. This paper describes the model, and lists specific local examples. In 2006, our medical center established the Center for Community Health, which consolidates community engagement activities and provides a core infrastructure to link service, education, research, and policy programs with the community. The Center has since grown to employ more than 60 faculty and staff and has developed a variety of community programs and research initiatives focused on population health improvement. In addition, the Center supports and collaborates with programs from many other departments and schools in the medical center that have successfully engaged the community. While not all AMCs will have this type of core infrastructure, this evaluation model could serve as a template for other AMCs in their quest to evaluate their own community engagement activities.

A Model for Evaluation of Community Engagement

We use a traditional health services research framework[21] to evaluate the community engagement activities of an AMC by assessing the structure, process, and outcomes of these community engagement activities. This model was developed by a group of Rochester faculty members interested in community engagement and community health improvement, in response to the concern that there were no commonly accepted metrics for community engagement and with the desire to codify our thinking as we developed and evaluated our University's community engagement activities. We have used components of this model to define, drive, and evaluate our activities within the medical center and in the community, and plan to apply it more systematically in the future. The model enables us to identify the key elements that are required for transformation through community engagement. These elements are reflected in the Community Health Strategic Plan and will provide a template for a ongoing evolution of a Prevention Strategic Plan under development by the medical center.

Table 1 displays the key components of the model, and suggests structure, process, and outcome elements that should be common to all robust community engagement efforts. Table 2 displays the University of Rochester's community engagement activities and the specific findings comprising the structure, process, and outcomes of these activities.

INSERT TABLE 1 APPROXIMATELY HERE

Community Engagement Goals: The far left column displays community engagement goals. We suggest that AMCs develop three ambitious yet attainable 5 to 10-year goals for community engagement: (1) to impact the surrounding community, (2) to impact the AMC itself, and (3) to impact population health through generalizable knowledge and practices. Of course,

AMCs may tailor goals for their own communities. Within each goal, AMCs should have specific, focused objectives. For simplicity these are not included in the tables, since they are likely to be specific to each AMC.

Community Engagement Activities: The second column represents major community engagement activities that involve large-scale, multi-component efforts designed to achieve each community engagement goal. These activities should span many disciplines and years, and include core functions of the AMC.

Evaluation Criteria: The next three columns represent the three evaluation criteria—structure, process, outcomes—used to assess progress. We suggest that each AMC engage an evaluation team that includes health services researchers; community experts within and outside the AMC; community members; and education, policy, and administrative leaders. These teams, which optimally would be distinct from the individuals leading the community engagement activities, should regularly evaluate the community engagement activities and report to AMC leadership.

Starfield and colleagues first defined the seminal health services research framework involving structure, process, and outcomes.[21] In the context of this framework, *structure* represents the administrative arrangements and committees that are developed, the new organizations established to enhance community engagement goals, any new facilities or space, and financial as well as non-financial arrangements regarding community engagement. This includes percent effort of faculty and staff that are supported by the AMC for community engagement activities, and types of experts working on these activities. Each AMC should determine the extent of structural components needed to achieve its community engagement goals; one evaluation goal is to assess the adequacy of these structural elements.

Process reflects a description of activities undertaken; this should include both qualitative and quantitative assessments of activities. In health services language, process assessments often ask two questions—what services were delivered (i.e., were they appropriate and necessary?), and how well were they delivered (i.e., were they delivered with fidelity and rigor, and in a timely, patient-centered, and culturally sensitive manner?). To evaluate community engagement, a process evaluation would measure the number and quality of community engagement activities, and assess the perceptions of both the individuals delivering the interventions and the recipients. Process can be measured by: (a) review of documents (e.g. activity logs, minutes), (b) interviews of key individuals, (c) quantitative surveys of constituents, and (d) observational and quasi-experimental research studies.

Outcomes are the most challenging to measure and to attain, but are obviously the most important. One key domain of outcomes involves health metrics within the community or catchment area surrounding the AMC. If community engagement is to be truly successful, it should result in improved community health. Different communities will use different metrics to measure community health depending on their capacity to measure a variety of indicators, but in general, community level measures should be consistent with national metrics such as those incorporated into Healthy People 2020.[22, 23] Recent developments in electronic medical records and other data resources provide new opportunities to collect these outcome measures. A second domain of outcomes involves educational metrics, since many community engagement activities will include an educational component. We recommend Kirkpatrick's Model of Education[24] to assess the knowledge, skills and behavior of learners as well as the health outcomes of their patients or target audiences. For example, a long-term educational outcome of a community engagement training program could involve demonstration of improved health of a specific

patient population, resulting from the community engagement activities performed by graduates who completed community engagement training within an AMC.

Of note, this evaluation framework is designed to assess key goals and activities of community engagement. We have not attempted to develop a composite scoring system to measure more precisely the potential return on investment for community engagement activities. In addition, return on investment accrues for both the AMC and the community itself, and is thus difficult to measure.

Evaluating an AMC's Community Engagement Goals Using Examples from Rochester NY (Table 2)

INSERT TABLE 2 APPROXIMATELY HERE

Our three over-arching goals for community engagement at the University of Rochester Medical Center (URMC) have their beginnings more than two decades ago when URMC leadership committed to the first goal which addresses community impact and is to *measurably improve the health of our community*. The second goal addresses impact on the institution itself: to *increase institutional capacity for community engagement and thereby its value to the community, and community credibility/trust in the institution*. The third goal seeks to *have global impact by increasing generalizable knowledge and practice through research, education, collaborations, and advocacy*. Our institution has undertaken major activities that address each of these goals; the following section describes some examples, using the structure/process/outcome framework.

Goal 1: Local Community Impact:

This goal is to improve the health of the local community directly served by the URMC, with particular emphasis on Monroe County which has a population of >750,000 (including the city of Rochester which has a population of 250,000). The community engagement activities include (Table 2): (a) technical assistance for a process of community health improvement detailed in the example below; (b) community service through a variety of URMC channels; (c) research including the Prevention Research Center, the CTSA's community engagement core, and a variety of community-based participatory research activities; (d) public health leadership; (e) policy and advocacy via multiple community task forces; and (f) education of the community through targeted programs and many courses and learning venues. The next section describes the first activity (first row of Table 2)—technical assistance in community health improvement.

Example of a Community Engagement Activity—Technical Assistance in *Health Action*:

- *Structure: Health Action*, initiated in the early 1990's, is led by the Monroe County Department of Public Health. Its goal is to improve the health of the community in specific, measurable areas, through a process of community-wide process-improvement activities. *Health Action* has no financial support but rather creates a blueprint for the community to seek funding to support priority health interventions and research. URMC community engagement leaders and experts have worked closely with county department of health leaders to design and implement *Health Action*. Key activities have included (Table 2): assistance with community health assessments for key health measures, helping the county prioritize areas for support for upcoming years, implementing quality improvement strategies within health systems, and evaluating interventions. The

URMC made several structural enhancements (Table 2) to address these activities. Key community organizations such as the African-American Health Coalition and the Center for Community Health naturally forged coalitions; these community organizations serve on a very active Community Advisory Council of the Center. The URMC revised its infrastructure to increase financial support for the Center for Community Health and elevate the Center's director to senior-level leadership status within the URMC. The URMC improved its communication with the community through regular meetings, seminars, a newsletter, and direct bi-directional involvement in activities, many through the Center but others emanating from URMC departments. Finally, URMC established both intramural and extramural funding streams for small grants to foster community-engaged research and service activities. Assessment of the strength and merit of collaborations is the primary factor in funding decisions.

- *Process: Health Action* is a process of community-wide continuous quality improvement. On a regular basis, local health leaders and community members from a variety of disciplines and organizations (including our AMC) engage in a community-wide process of reviewing the health status for all age groups and setting health priorities for children, adolescents, and adults through broad community engagement. Collaborating organizations (including our AMC) then develop action plans and focus resources to address the highest priorities. Our AMC had a long-standing relationship with the health department preceding the creation of the Center for Community Health. Over the years, faculty and staff helped lead *Health Action* committees and participated in specific interventions.

The URMC, through its own funds and sponsored research grants, has provided financial support for collaborating organizations of *Health Action*. These activities are detailed in *Health Action Report Cards* published by the health department.[25]

- *Outcomes:* Many of the examples in this paper are outcomes of the *Health Action* process. One of the Health Action priorities in the 1990's involved improving childhood immunization coverage, based on prior data showing low coverage overall and substantial disparities between immunization coverage rates among children residing in the city of Rochester versus the suburbs of the county. The project began as a randomized clinical trial of a reminder/recall/outreach program (patient navigator program) to improve infant and childhood immunization rates. The trial improved rates by 20 percentage points.With leadership from URMC faculty, *Health Action* engaged a community-wide collaborative that engaged all three of the community's hospital-based health systems and the two largest insurers to implement the program throughout the city of Rochester and also to continuously evaluate to the program by measuring immunization rates every 3 years county-wide. The result has been improved childhood immunization rates, and virtual elimination in pre-existing disparities in immunization rates between city-suburb and across racial/ethnic groups..[26-29] Box 1 details this example.

Measuring the structure, process, and outcomes of Health Action illustrates a major challenge in evaluating the community engagement impact of an AMC. Since community engagement is collaborative by definition, credit for these collaborative activities is shared between the AMC and the community. In the case of Health Action, URMC faculty members

collaborated with many community partners to carry out Health Action activities and assessments. In a process designed for equal rather than directed collaboration, clear attribution of specific efforts to specific results is not feasible. Thus it is not easy to measure the "return on investment" for one partner alone.

Goal 2: Academic Medical Center Impact: This goal reflects the impact of community engagement activities on the AMC itself—i.e., enhancing the quality of research, education, and service activities. We articulated five broad URMC community engagement activities (Table 2): (a) research support to faculty and staff engaged in community engagement; (b) training for faculty and staff in community engagement including the importance of community service; (c) education of students, residents, fellows, and other trainees in community engagement; (d) increased community input into medical center activities; and (e) improvement in the medical center's culture and "image" within the community. The next paragraphs summarize some of the structural, process, and outcome components that are involved in many of these five activities; details are shown in Table 2.

- *Structure:* Educating faculty, staff, students and others about community engagement and population health is a priority for URMC. Several URMC faculty members assure that students at all levels of education learn about community engagement through courses as well as experiential learning. Faculty and staff participate in a community engaged faculty group, and leaders of experiential learning meet monthly to ensure institutional collaboration along a learning continuum. Regular communications through in-house listserves update and engage faculty and staff in community engagement activities within the AMC. On-line community engagement learning modules are available to all

faculty, staff and students within URMC and incorporated into several graduate courses. Additional learning opportunities, including video recordings of public health grand rounds, can be accessed through the Center for Community Health website.

- *Process:* Community engagement process in education involves measuring: the learning of faculty/staff, students and community partners and the behavior and skills of faculty/staff and student activities that may foster sustainable contributions to community health improvements.. Additional educational metrics include the number of students involved in community engagement projects during their education and their subsequent career trajectories after graduation. We use minutes, reports, and reference documents from various committees, as well as minutes and health status reports created by the coalitions, as qualitative and quantitative process assessments of activities.
- *Outcomes:* Community involvement in and awareness of the scope of URMC community engagement activities has effectively occurred through two major mechanisms. The URMC Community Advisory Council has provided advice and guidance to the medical center on all matters of community engagement since 2006. We as well as others[30] believe that community perspectives are critical. Second, community coalitions such as the African American and Latino Health Coalitions and the Deaf Health Community Committee, convened and staffed by a community organization, serves a vital role in advising URMC community-engaged researchers and other leaders. Short-term outcomes include the number of community members serving on the Community Advisory Council and

community coalitions, the number and diversity of community organizations represented on these groups, and the number of community members trained in community-based participatory research and community engagement and who are qualified to serve as community researchers. Additional outcomes include academic deliverables such as the Principles of Community Engaged Research[20] and list of research priorities established through the Community Advisory Council process.[31] While there are not separate measures of AMC culture change, the other short and longer-term outcome measures represent key indicators of the AMCs progress toward a focus and investment in community health.

Box 2 displays a specific example of how community engagement activities have affected the URMC itself—the establishment of the Healthy Living Center.

Another example of institutional change in response to community need is the National Center for Deaf Health Research. Rochester has one of the largest per capita deaf and hard of hearing populations in the world, and is home to numerous community resources designed to serve deaf individuals. In 2003, a local community agency convened a Deaf Health Task Force, which was comprised of both deaf and hearing individuals that represent various community organizations serving the deaf. The Task Force Report recommended the study of the health of deaf and hard of hearing populations. Building on the work of the Task Force, in 2004, the URMC was awarded a five-year grant by the CDC to create an innovative Prevention Research Center to establish baseline measures of health in the deaf and hard of hearing community and to develop research and programs to improve their health status.

The National Center for Deaf Health Research has cultivated and sustained meaningful partnerships with individuals and organizations in the deaf and hard-of-hearing community in Rochester and nationally.[32, 33] Its first product was the development and deployment of a culturally and linguistically appropriate health risk assessment tool for the deaf, using computer-based American Sign Language video communication technologies. Data from this tool informs health priorities of the deaf population that are factored into the overall community health assessment and considered when determining community-wide health priorities. The National Center for Deaf Health Research, currently in its second five-year funding period, is focusing on four major goals – to eliminate health disparities between deaf and hard of hearing and other populations; to unite the National Center for Deaf Health Research, its partners and the deaf and hard of hearing communities through enduring partnerships; to establish a rich, generalizable evidence base regarding health risks, determinants of health, and effective health promotion interventions in deaf and hard of hearing populations and assure its dissemination; and to establish the National Center for Deaf Health Research as a leading organization for deaf and hard of hearing health research.

Goal 3: National/Global Impact: The third community engagement goal for the URMC is to enhance its national/global reputation through community engaged research, development of community engagement educational platforms, dissemination of models of community health improvement (such as *Health Action*), and potentially through input into policies or guidelines that affect the health of national populations. The vision is to increase generalizable knowledge and practices.

Table 2 displays major activities under this goal that have been undertaken at the URMC. These activities include: (a) support for community-based research via education, infrastructure,

grants, and informatics; (b) practice-based research by developing and sustaining a practice-based research network (Box 3)[34]; (c) national collaborations for community engagement through participation in a number of national organizations; (d) education nationally through multiple forums; and (e) national/global policy and advocacy efforts via faculty participation in targeted activities that involve community health improvement.

Box 3 shows an example of an activity within this goal—the Greater Rochester Practice-based Research Network.

Efforts to reduce lead exposure in Rochester represent another example of a successful University-community partnership that resulted in significant improvement in the health of the community and developed national models for implementation in other communities. Lead-poisoned children can have substantial long-term morbidity often leading to difficulty with learning.[35, 36] Geographic areas of Rochester had rates of children with elevated blood lead levels as high as 10 times the national average.

- *Structure:* In 2001, the Coalition to Prevent Lead Poisoning was created in response to community concern and included representatives of community residents, housing, business, philanthropy, local government, environmental healthcare, and public health.
- *Process:* URMC faculty and staff, in leadership positions with the Coalition since its inception, performed much of the underlying research regarding lead poisoning[37-40] and have been instrumental in developing and implementing outreach, education, and screening programs as well as public policy regarding exposure.
- *Outcomes:* These efforts culminated in passage of an historic lead ordinance by the City which went into effect in July 2006. The impact of lead abatement efforts has

been significant. More than 2,300 Rochester homes have been made "lead safe," and the number of children in the Rochester area with elevated blood lead levels was reduced from 2,000 children in 1998 to 290 children in 2010.[41-44] Importantly, this ordinance has had significant national impact, becoming the national standard for policy change to reduce childhood lead poisoning. Several other municipalities nationwide have followed Rochester's lead on lead policy, and the U.S. Environmental Protection Agency (EPA) awarded the coalition an Environmental Justice Achievement Award in 2009 for its leadership in community based efforts to prevent lead poisoning.

Discussion of Evaluation of Community Engagement in an AMC

We present a model for evaluating the community engagement programs of an AMC. This model follows a health services evaluation framework, and includes: identification of AMC community engagement goals (and objectives), delineation of multi-faceted community engagement activities, and a systematic evaluation program with assessment of the structure, process and outcomes of the community engagement efforts. We used the three community engagement goals of the URMC as a template: 1) to improve the health of the community served by the AMC; 2) to increase the AMCs capacity for community engagement and its value to the community; and 3) to increase generalizable knowledge, practices, and policies to improve individual and population health. AMCs can use and modify the model to tailor specific goals and activities to their needs, and apply a structure--process--outcomes approach to evaluation. In this era of fiscal constraint, it is imperative that AMCs rigorously evaluate their community

engagement efforts, enhance some that need improvement, and focus efforts on the most productive and meaningful activities.

Systematically evaluating the community engagement efforts of an AMC can have both short and long-term paybacks. Short term, rigorous evaluation can serve to highlight successful programs, point out those that may need modification, and elevate the rigor of community engagement activities. Long term, successful community engagement activities can truly improve a community's health and enhance the value of an AMC locally and its reputation nationally. Community engagement experts should help lead the way in self-evaluation, and AMC leaders should use the evaluation process to improve performance and not to cut costs. We believe that fundamentally, most AMC leaders have a strong desire to improve their local communities, but since community engagement is a relatively new endeavor, we currently lack the tools to evaluate an AMC's community engagement activities in a standardized, validated way. By applying our model, AMCs may be able to focus efforts in an organized manner and intensify successful activities that can lead to improved community health.

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Table 1: A Model to Evaluate Community Engagement Activities of an Academic Medical Center (AMC)

Community Engagement Goals	Community Engagement Activities	Evaluation Criteria		
		Structure	Process	Outcomes
Local Community Impact: *Improve the health of the community served by the AMC*				
Academic Medical Center (AMC) Impact: *Increase the AMC's capacity for community engagement, its value to the community, and community credibility/trust in the AMC*				
National/Global Impact: *Increase generalizable knowledge and practices*				

Table 2: Evaluating Community Engagement (CE) Activities at the University of Rochester School of Medicine

CE Goals	CE Activities	Evaluation Criteria		
		Structure	**Process**	**Outcomes**
<u>Local Community Impact:</u> *Improve the health of the community served by the AMC*	Technical Assistance in Health Action: • Community health assessment • Identification of priority foci • Implementation of improvement strategies • Identification of AMC resources • Evaluation/Research	• Community coalitions • AMC infrastructure • Communication channels within AMC and with community • Intramural and extramural funding	• AMC leadership engagement • AMC participation • Community participation in oversight of AMC activities • Bidirectional research translation • Enhanced extramural funding for community priorities • Comparison to national and equivalent communities	• Improved community-wide health metrics (e.g. health behaviors, chronic disease rates, injury, morbidity and mortality, hospitalization, cost, etc.) • Reduced disparities (racial, socioeconomic, etc.) • Change in local policies affecting public health
	Community service	• AMC infrastructure • Community benefit • Departmental strategic plans	• Volunteerism • Community education • Services enhanced • Employment • Community benefit needs assessment and improvement planning in collaboration with public health and local hospital systems	

	Research	• CTSA CE
		• CDC-PRC
		• Departmental strategic plans
		• Investigator/community consultation
			• Community input into research priorities
			• Evidence-based community programs
			• #, scope, topics, funding for research
			  ○ Public health research
			  ○ Health services research
			  ○ Prevention research
			  ○ Comparative effectiveness research
			  ○ CBPR or CEnR	

	Public health leadership	• Sustainable programs/grants • Boards/Coalitions representation	• Participation • Leadership • Collaboration	

CE Goals	CE Activities	Evaluation Criteria		
		Structure	**Process**	**Outcomes**
		• Formal partnerships with gov't. public health – local, state, federal	• Technical support • Resource sharing	
	Policy and Advocacy	• Community Coalitions • Health Impact Assessment Coalitions and Projects • Local government and leadership • AMC infrastructure • AMC Government Relations integration • AMC researchers and change agents	• Provision of evidence-base for policy change • Amplification of community voice • Study of health impact of social policy • Education and facilitation of community advocacy efforts • Alignment of AMC policy agenda with community interests	
	Community Education	• Faculty members engaged • AMC programs targeting specific community coalitions • Courses and seminars focusing on community-based learners	• # individuals and disciplines engaged in these efforts • #, scope, topics covered by educational sessions	• # learners, # community coalitions represented • Assessments of learning • # community members newly engaged or who attribute AMC education as supporting their work
Academic Medical Center (AMC) Impact: *Increase the AMC's capacity for community engagement, its value to the community, and community credibility/trust in the AMC*	Research support to faculty and staff engaged in CEnR	• Community Health Faculty Group • Clinical research coordinators group • Staff community interest group • PBRN • Listserv • Website • Blogs • Integration of CE in departmental strategic plans • Internal CE grants by AMC	• CE consultation • Access and awareness of national resources • Mentoring • Community research approval process • Facilitation of community input • Acknowledgement and support: promotion/tenure, awards, intramural funding	• # of faculty and staff involved in CBPR and CEnR projects • # of CBPR and CEnR projects • Amount of extramural funding received for CEnR • # of researchers whose research received community approval

CE Goals	CE Activities	Evaluation Criteria		
		Structure	Process	Outcomes
	Training for faculty and staff in CE	• Online CBPR/CEnR learning modules	• Community engagement and population health education	• # of faculty and staff trained in CBPR and CEnR
	Education of students, residents, fellows, and other trainees in CE	• Courses in CBPR/CEnR, prevention and population health • Experiential learning opportunities • Internships and volunteer opportunities in community engaged research projects • Advocacy, ethics, and cultural competence curriculum	• Student engagement • Student contribution to ongoing community projects • Mentoring and consultation • Requirements	• # of students/residents completing training in community health • # of students involved in volunteer community-based experiences and internships • Impact of students and residents on ongoing community health improvement efforts • Career trajectories and impact of graduates
	Community input into medical center activities	• Community Advisory Council (CAC) • Community Health coalitions • Partnerships with public health and community-based organizations	• Community input into all missions of AMC • Representation of AMC on community coalitions • Impact of community priorities on strategic plan of AMC	• # of community members on CAC and quality of participation • # of organizations represented on CAC • # of community members trained in CBPR/CEnR and qualified to serve as community researchers • CAC outputs (e.g., research principles, community research priorities)
	AMC culture change	• Community Advisory Council • Leadership committees in AMC • AMC leadership positions by CE experts • Awards • Promotion criteria involving CE		• AMC focus on community health • AMC investments in community health • AMC strategic vision for community health

CE Goals	CE Activities	Evaluation Criteria		
		Structure	**Process**	**Outcomes**
National/Global Impact: *Increase generalizable knowledge and practices*	Community-based research	• Grants • CBPR/CEnR projects	• Local guidelines for best practices in community engagement • Dissemination of research findings • Translation of research findings to clinical and community settings • Public Health Systems Research national agenda topics	• # of research projects • Amount of extramural funding for CBPR/CEnR projects • Implementation and dissemination of findings • Impact on community health
	Practice-based research	• Development and sustainability of practice-based research network	• Disciplines involved in the practice-based research network • Types of studies being conducted • Content areas investigated	• # PBRN projects • Amount of extramural funding for PBRN • Impact on practice quality • Impact of PBRN-supported studies on health outcomes
	National collaborations for CE	• AMC member participation in national or multi-site collaborative efforts	• Topic areas covered • # of AMC members involved	• Manuscripts, books, guidelines published
	CE education nationally	• AMC member participation in national or multi-site CE education efforts	• Topic areas covered • # of AMC members involved	• Dissemination of curriculum
	National/global policy/advocacy	• AMC member participation in national or multi-site policy/advocacy efforts • Projects specifically targeting national/global health policy and advocacy	• Topic areas covered • # of AMC members involved • Evaluation and research of local policy initiatives • Dissemination of lessons learned from local policy intervention	• National or international policies that were substantially affected by local work • Communities nationwide who learned from the AMC experience

AMC= Academic Medical Center

CAC = Community Advisory Council

CTSA = Clinical and Translational Science Award

CBPR = Community-Based Participatory Research

CEnR = Community-Engaged Research

PBRN = Practice-Based Research Network

CDC-PRC = Centers for Disease Control and Prevention-Prevention Research Center

CE = Community Engagement

Box 1

Childhood Immunization: An Example of a Community Engaged Activity to Improve the Health of the Surrounding Community: We implemented, evaluated, and then disseminated widely a patient reminder/recall/outreach (patient navigator) program designed to improve childhood immunization rates in the city of Rochester. We developed specific structure, process and outcome indicators for URMC's contribution toward Health Action.

- *Structure:* Structural components included teams led by URMC faculty and resources provided by the URMC (as distinguished from external funding). Metrics included specific in-kind personnel and non-personnel support by pediatric and social work leaders, and substantial funding of outreach workers by the URMC through its "Community Services Plan."
- *Process:* These included: (a) participation by URMC members in specific Health Action interventions, (b) surveys and focus groups facilitated by URMC faculty, and (c) participation in data analyses, writing, and dissemination of Health Action Report Cards. Project-specific process indicators included feedback from families as well as tracking of the procedures carried out-- the number of mailed/telephone reminders and home visits, referrals, and specific actions performed by the patient navigators.
- *Outcomes:* These included county-wide immunization metrics and disparities in these metrics by city/county and by race/ethnicity. A community-wide coalition led by URMC faculty has, every three years, measured and reported on county-wide childhood immunization rates and disparities in rates between the city and suburbs, both of which have improved markedly since the start of Health Action.[28] We have since expanded this model to serve adolescents and adults, respectively.[27,29]

Box 2

The Healthy Living Center: A response to a Health Action Priority. One example of the community having a major impact on University priorities was the development of the Healthy Living Center within the Center for Community Health. Improving health behaviors was identified as one of two critical Health Action priorities.

- *Structure*: The Healthy Living Center was established within the Center for Community Health in a community location, and funded by a supplement to the Clinical and Translational Science Award, for the purpose of translating basic behavioral science into interventions applicable in community and clinical settings. The triple aims of research, community intervention, and clinical preventive services address the community's request for a serious institutional commitment to prevention. The Center is supported by the Center for Community Health infrastructure and directed by a team of clinicians and scientists. Services in the Healthy Living Center are paid for by a Human Resource contract for employee participants, insurer payments for referred patients, and extramural grant funds for community interventions. Research funding comes primarily from the NIH, but increasingly from other federal agencies.
- *Process*: The Healthy Living Center was established by a team of clinicians and investigators with expertise in health behavior change based on basic psychological research in the field of Self Determination Theory. The Healthy Living Center includes: multiple evidence-based programs translating behavioral science into community programs, a variety of studies addressing health behavior

improvement, and individual treatment for obesity, tobacco use, stress, and chronic disease management.

- *Outcomes*: The Healthy Living Center is an innovative and community-responsive approach to addressing critical health behaviors. Over 2,000 individuals have participated in its individual and group programs over the 3 years since its founding with consistent and significant improvements in health behaviors. Approximately 20,000 community members have participated in community based education and health promotion activities, providing increased awareness and much needed health education, as a first step to permanent health behavior change. The Healthy Living Center team has generated many grant proposals and publications and has become an important training facility for learners.

Box 3

The Greater Rochester Practice-Based Research Network (GR-PBRN). The GR-PBRN is a network of 85 primary care pediatric, family physician, internal medicine, and mixed-specialty (e.g., community health centers) primary care practices which have collaborated on their mutual interest in promoting practice-based research.[34]

- *Structure:* The GR-PBRN is funded by the Clinical Translational Science Institute at the URMC. It consists of 85 primary care practices- internal medicine, family medicine, pediatrics, and medicine-pediatrics. Together, these practices serve >200,000 adults (30% of Monroe County) and >150,000 children (80% of Monroe County). A multi-disciplinary Executive Committee and a largely community-based Steering Committee direct the GR-PBRN, and a core group led by a full-time Senior Health Project Coordinator perform the daily operations.
- *Process:* The GR-PBRN has participated (in the prior year) in more than 50 practice-based research studies, most involving health care delivery, quality-improvement, or comparative effectiveness research. We assess the number of providers and patients, degree of external funding, and content areas investigated, as well as the internal processes such as the stages in research during which the GR-PBRN assists the investigations.
- *Outcomes:* We measure the number of completed projects and manuscripts resulting from these practice-based studies. We qualitatively measure the impact upon practices through interviews and quantitatively assess impact (every few years) via surveys of practitioners. It is of course challenging to measure precisely the added value of the GR-PBRN upon the research or the impact of the research

for these projects, but we attempt to qualitatively assess these metrics through interviews of key informants including practitioners, community, and national scientific leaders.