

# Development of a Replicable Process for Translating Science into Practical Health Education Messages

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There has been considerable discussion about translating science into practical messages, especially among urban minority and “hard-to-reach” populations. Unfortunately, many research findings rarely make it back in useful format to the general public. Few innovative techniques have been established that provide researchers with a systematic process for developing health awareness and prevention messages for priority populations. The purpose of this paper is to describe the early development and experience of a unique community-based participatory process used to develop health promotion messages for a predominantly low-income, black and African-American community in Baltimore, MD.

Scientific research findings from peer-reviewed literature were identified by academic researchers. Researchers then taught the science to graphic design students and faculty. The graphic design students and faculty then worked with both community residents and researchers to transform this information into evidence-based public health education messages. The final products were culturally and educationally appropriate, health promotion messages reflecting urban imagery that were eagerly desired by the community. This early outcome is in contrast to many previously developed messages and materials created through processes with limited community involvement and by individuals with limited practical knowledge of local community culture or expertise in marketing or mass communication. This process may potentially be utilized as a community-based participatory approach to enhance the translation of scientific research into desirable and appropriate health education messages.

**Key words:** African Americans ■ marketing ■ education ■ urban population ■ minority health

© 2006. From Johns Hopkins Urban Health Institute (Tyus, Freeman, Gibbons), Johns Hopkins Medical Institutions (Gibbons), Johns Hopkins Center for Health Disparities Solutions (Gibbons), Baltimore, MD. Send correspondence and reprint requests for *J Natl Med Assoc.* 2006;98:1505–1509 to: Dr. M. Chris Gibbons, Associate Director, Johns Hopkins Urban Health Institute, 111 Market Place, Suite 850, Baltimore, MD 21202; phone: (410) 895-1104; fax: (410) 895-1111; e-mail: mgibbons@jhsph.edu

## INTRODUCTION

Within the past few years, there has been increasing discussion and activity in research, academia and practice concerned with improving the flow of science into the community. In the U.S. healthcare arena, this concept is most commonly portrayed in the context of promoting evidence-based medicine, with much less emphasis on primary prevention or population-based health promotion. For this reason, most research findings are communicated via the scientific literature, symposiums and conferences. It is very rare for findings to be systematically disseminated among disadvantaged populations who are commonly used as participants in these research studies. In addition, findings may be communicated in a manner that is not understandable to the general public. When health information is not understandable by the public, it may fail to help improve healthcare utilization, costs, quality and outcomes, and in turn contribute to the existence of racial and ethnic health disparities.

Effectively communicating health information is considered to be instrumental in improving the quality of healthcare. In 2001, the Institute of Medicine (IOM) released a report entitled, “Crossing the Quality Chasm,” which includes a key recommendation of developing programs that make scientific information more useful, applicable and accessible to physicians and patients. The report noted that it would be “critical” for both the private sector and consumer representatives to be involved in developing enhanced dissemination efforts to communicate scientific information to the general public.<sup>1</sup> To begin to address this issue, unique and innovative strategies are needed to translate science into population-based health educational messages, especially among urban and minority populations.

One method for translating science from clinical research to the general public is to engage community residents in the process. Community-based participatory research (CBPR) is increasingly recognized as a valid mechanism to enhance the relevance and value of research by involving community members in all aspects of the research process.<sup>2</sup> CBPR encourages vari-

ous partners (i.e., community members, researchers, organizational representatives) to contribute their unique expertise and perspectives to enhance research hypothesis generation, data collection, analysis, interpretation and dissemination of research findings in a given target community.<sup>3</sup> In the literature, CBPR has been conducted in many areas of health from mental healthcare to community adolescent diabetes prevention.<sup>4</sup> In addition, CBPR is recognized at the National Institutes of Health (NIH) as a successful model for conducting health research.<sup>5</sup>

Social marketing is an approach that may be helpful in assisting individuals with planning, implementing and evaluating campaigns and programs that influence healthy behaviors. Key aspects of the social marketing process include formative research activities such as information gathering, audience segmentation and channel and market analysis.<sup>6</sup> Similar to consumer marketing strategies, social marketing ensures the importance of understanding how the public conceptualizes an idea and discovers what resources individuals will need or use in performing a desired behavior.<sup>6</sup>

In the first phase of social marketing, formative research activities are undertaken to gather information about the target audience (consumer analysis), to identify the most effective methods for receiving this information (audience segmentation) and to determine the best avenues to market this information (market analysis).<sup>7</sup> The second phase includes a planning process that facilitates the design of messages and materials that are appropriate for the population. In the final phase of the social marketing process, the developed messages and products are disseminated and evaluated.<sup>7</sup>

Successful dissemination of scientific information can be facilitated by using a CBPR approach that builds on social marketing theory. An example of a successful large health awareness campaign that used social marketing theory is one conducted by the Centers for Disease Control and Prevention (CDC) with communities and health department officials in eight major U.S. cities to determine the most effective avenues to communicate the changing epidemiology of the syphilis epidemic in the United States.<sup>8</sup>

## BACKGROUND

East Baltimore is a typical urban, low-income, predominantly black and African-American community that is growing in its diversity with 74% African-American, 21% non-Hispanic white and 2.5% Hispanic residents.<sup>9</sup> In addition, blacks of Caribbean or other non-African descent also live in East Baltimore. Unfortunately, accurate numbers of these subtypes are not available at the census level. The median income for East Baltimore is \$30,850 for non-Hispanic whites, \$29,871 for Hispanics and \$19,393 for blacks and African Americans.<sup>9</sup> Of those individuals living below

the poverty line in East Baltimore, about 30% are black or African-American, 20% Hispanic and 17% non-Hispanic white. In terms of housing, 52% of homes in East Baltimore are vacant or abandoned.<sup>9</sup>

In addition, East Baltimore has very low adult health literacy levels<sup>10</sup> and some of the worst population health indicators in the United States. Overall, Baltimore's infant mortality rate in 2003 was 13.2 deaths per 1,000 live births<sup>11</sup> compared to the state of Maryland, which had a rate of 8.1 deaths per 1,000 live births,<sup>12</sup> and the 2002 U.S. rate of 7.0 deaths per 1,000 live births.<sup>12</sup> Among blacks and African Americans living in Baltimore City, their infant mortality rate was an astonishing 17.5 per 1,000 live births.<sup>11</sup> Also, among the general population in Baltimore City, leading causes of death in 2003 were 26% for heart disease, 20% for cancer, 6% for stroke and 5% for HIV.<sup>12</sup> Furthermore, East Baltimore has been noted to have disproportionate rates of cancer, diabetes, sexually transmitted diseases and HIV-related illness, and even once ranked as one of America's 10 most violent communities.<sup>13</sup>

East Baltimore is even more unique because it is home to Johns Hopkins Hospital. Although the presence of this institution is largely known within East Baltimore, residents often complain that they are often just "used" as research subjects<sup>14,15</sup> and that the research being conducted within the institution is not being effectively communicated to residents of the city.

To help address these problems, scientists, graphic artists and East Baltimore community residents formed an innovative partnership. The purpose of this paper is to describe the partnership and activities conducted as part of a CBPR approach in the efforts to develop a systematic, replicable process for making critical health information more applicable and useful to individuals living in East Baltimore.

## METHODS

### Establishing a Community Partnership

In the spring of 2001, Johns Hopkins Urban Health Institute (UHI) initiated a collaboration among Johns Hopkins researchers, the Maryland Institute College of Art (MICA) and the East Baltimore community. This collaboration began in part because of the desire that MICA faculty expressed to the UHI in regards to making an impact within Baltimore communities using the skills and expertise of the students and faculty. Hopkins researchers similarly wanted to improve the flow of science to the community. Community residents involved in this project were members of community-based organizations that had previously worked with the UHI on other health initiatives in East Baltimore. As the collaboration began to grow, one of MICA's graphic design faculty developed a special course in which young artists with a passion for social engagement accepted

the challenge of transforming scientific data into high-impact health media messages.

## Message Development Process

In the first phase of this process, Hopkins researchers identified scientific research that was ready to be translated into important messages with relevance to this population. Selected research topics included ideas derived from studies such as the NIH-funded Young Black Men's Hypertension study and the Dietary Approaches to Stop Hypertension (DASH) diet study. After identifying these studies, Hopkins researchers presented results from these studies to the MICA students and faculty. As part of this process, Hopkins faculty made several formal, didactic presentations to MICA students and faculty. The purpose of these presentations was to teach basic epidemiology, pathophysiology and prevention of hypertension and cardiovascular disease to MICA students and faculty.

During the instruction process, the medical vocabulary was initially overwhelming for both MICA faculty and students, requiring that they put in many hours of independent study to familiarize themselves with the subject matter. Students contributed an average of 30 extra hours per week to their projects in addition to their regular class load.

Upon mastery and clarification of the science, MICA students and faculty sought to become acquainted with East Baltimore residents and the geographical area of the community by meeting with residents, taking walking tours of the neighborhood and taking photographs of the community. In addition, various techniques, including focus groups along with key informant interviews moderated and conducted by MICA student and faculty, were employed to enable the MICA students to develop an informed understanding of the lifestyles, activities, interests, opinions and other social phenomena found among East Baltimore residents. Two series of focus groups were held to provide iterative feedback during the developmental process. Participants of focus groups were recruited from two area community-based organizations; the Middle East Community Organization (MECO) and the Men's Center. Prior to the focus groups, Hopkins researchers met with the community-based organizations to make sure that the idea of MICA students participating in this process was acceptable. In the end, MICA faculty facilitated the focus groups without Hopkins researchers because of the initial distrust between the community and the institution.

The focus groups held at MECO were conducted with East Baltimore residents who had some knowledge of hypertension (either through personal experience or families or friends) and were between the ages of 35 and 70. These focus groups discussed the DASH diet. Participants were first asked to read information explaining the DASH diet (i.e., goals of the diet and possible menu choices). After reading this material, a series of ques-

tions were explored concerning the name of the DASH diet, experiences with following the diet regimen and the importance of dealing with hypertension in the context of other daily priorities.

The focus groups held at the Men's Center focused on findings from the African-American Male Hypertension study. Approximately 30 males who participated in this study at Hopkins served as focus group participants for this partnership. The themes explored in these groups included discussions on how to deal with hypertension and strategies to address hypertension.

In the next phase of this process, MICA students worked with Hopkins researchers and the community to develop the messages that were based on scientific evidence, qualitative findings and local culture. Community experts and residents from local community-based organizations were consulted to provide iterative input and constructive feedback during the entire planning and product development process.

## RESULTS

Results from the MECO focus groups revealed several ideas about the DASH diet. For example, it was suggested that encouraging community residents to talk about improving dietary choices by referring to the acronym "DASH" did not work in East Baltimore. In the city of Baltimore, DASH is an acronym for the "downtown area shuttle," which most East Baltimore residents frequently used and, thus, it would be confusing to associate it with the DASH diet. Also, participants felt the DASH name was too obscure and they didn't like the word "diet." Some believed the DASH meals were expensive and difficult to purchase and/or prepare, while some resisted changing their current meals. Many felt the DASH materials were difficult to understand, and many did not like the food groups offered. Participants also expressed distrust with Hopkins in the focus groups.

In the Men's Center focus groups, men discussed their current drug addiction problems and how they were dealing with addiction, acute hypertension, problems remembering their medication, the importance of the hypertension study, and myths concerning how to prevent hypertension. For example, men expressed a belief that they could "feel" when their blood pressure was rising and as such they could tell when they needed to take their medication and when they did not. They also mentioned that there was some distrust with Hopkins.

MICA students and faculty then worked over a period of several weeks to develop various products that were frequently reviewed by community members and faculty for relevant feedback. Each time, the products were modified—and in some cases discarded—based on the comments of the groups.

In the end, several innovative products were developed. For example, the products developed for the

DASH diet were vibrant, eye-catching, colorful messages using hip-hop and urban cultural themes that instantly resonated with the community. One message successfully brought together a cartoon format with super-hero imagery and healthy diet information to produce food super-heroes, including “the Grainmaster.” In another example, an advertising and marketing campaign slogan was produced that uniquely employed urban pop linguistics to encourage healthy eating behavior. The result was the slogan, “Fresh Groove.” In urban ethnic parlance, the term “fresh” means to be “cool” or “desirable.” But at the same time, “fresh” also plays off the idea of eating fresh foods such as fruits and vegetables. The term “groove” often means “to do repeatedly” or “to enjoy.” Thus, the term “Fresh Groove” instantly suggests to an urban ethnic audience the idea that it is cool and enjoyable to eat more fresh fruits and vegetables.

One product that was developed for the hypertension study was a photograph with a background showing urban row houses in which an apparently healthy young adult black male is joyfully hugging what appears to be a close friend. However, the friend’s photograph was digitally washed out to give the appearance of the young man hugging a “ghost” of his friend. At the top of the picture was the phrase, “High blood pressure can kill any time.” This product cleverly conveys the thought that even apparently healthy people can quickly die from uncontrolled hypertension.

In addition to the primary messages or products that were produced, other branding or messages supporting paraphernalia were also developed to enhance and increase consumer (patient/community resident) recognition and acceptance of the primary messages. These included t-shirts, sweat shirts, personal journals, diaries and key chains with the messages and/or logos emblazoned on them.

## DISCUSSION

Overall, the message development process was initially slow and difficult. Not surprisingly, some ideas introduced by MICA students and Hopkins researchers failed miserably. Early messages based largely on general knowledge of blacks and/or African Americans and national level ethnic information were regarded as ineffective and sometimes offensive by community residents. Other ideas designed by the MICA students were deemed as negative, confusing or inappropriate. One discarded slogan included a “no hype” concept that alluded to “no hypertension.” However, residents responded that hypodermic needles used by drug dealers and addicts in East Baltimore are called “hype.” Thus, this was not appropriate for this message. Another example attempted to unite “real” urban life experiences with a message about high blood pressure. For this idea, a picture of a burned-out row house was employed. Res-

idents were offended because they felt the message and image only helped to portray negative stereotypes of their community.

In all, the initial reaction was very positive for those products that ultimately survived the process. Community members’ comments revealed that the products instantly conveyed the intended messages. Both the messages and the paraphernalia were regarded as culturally attractive and desirable. In fact, local demand for the products continues to exceed our ability to supply the materials to community residents. Community residents have also eagerly requested that additional health themes be explored and developed through this process. This has resulted in a permanent course at MICA that focuses on using this process to help address urban health issues in the Baltimore community. Subsequent courses have focused on developing organ and tissue donation messages, diabetes treatment and prevention messages, gun violence prevention, and breast and prostate cancer messages.

Each partner in this process has experienced many other positive results. Primarily, this project increased the East Baltimore community’s capacity to work with the academic community in addressing common health concerns. The East Baltimore community is benefiting from another new project initiated by the MICA graphic design faculty that will bring disadvantaged young people from East Baltimore to MICA. By taking them into an artistic environment, MICA will expose them to new career ideas and potentially open doors to new opportunities. Researchers also benefited from new insights and a deeper understanding of the East Baltimore community gained through this experience. The project also helped to encourage the CBPR process among additional researchers at Hopkins.

This unique collaboration among researchers, MICA and the East Baltimore community has firmly established in the minds of all partners the value and interdependency of this tripartite relationship among academic researchers, graphic designers and community experts. Important lessons learned by Hopkins faculty members include:

1. The best health information may be ineffective if portrayed in a manner not relevant to the intended audience. Educational and cultural appropriateness is essential to make messages useful for an urban black or African-American population.
2. It is important to know the local community in order to communicate effectively with them. National information and generalizations may not apply to all communities. High-quality formative research is essential.
3. Messages that appeal to or work for physicians and practitioners may not be necessarily ideal for patients or community residents. It is important to

actively solicit feedback from community residents throughout the entire planning and development process. Participatory problem-solving and engagement of the community will enhance development of effective solutions and improve message acceptance.

- Employing media and culturally appropriate themes familiar to the target population can enhance the desirability of the final products. Employing unfamiliar and culturally inappropriate themes or media could hinder recognition and acceptance of intended messages.

In the end, Hopkins' scientific expertise, residents of the local community, along with the technical skills of the MICA students and faculty, created something better, stronger, more creative and more appealing to many East Baltimore residents than if each group approached the project separately. This perhaps is the greatest lesson of all.

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