



Michael Aakhus. *San Christobal Cafe*. Oil on canvas, 1998, 41" × 60".
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Replication of an evidence-based model for increasing breast and cervical cancer screening for African American women has shown promising early results.

Replication and Dissemination of a Cancer Education Model for African American Women

Deborah O. Erwin, PhD, Jennifer Ivory, BA, Charlie Stayton, BS, Mattye Willis, AAS, Lina Jandorf, MA, Hayley Thompson, PhD, Sharita Womack, PhD, and Thelma C. Hurd, MD

The purpose of this study was to investigate the effectiveness of replicating an evidence-based model, the Witness Project, for increasing breast and cervical cancer screening with African American women in a variety of locations and organizations in the United States.

The quantitative and qualitative methods included a cadre of process and outcome measures to evaluate the effectiveness of the four-phase replication process. The intervention was replicated in 25 sites with 401 volunteers, delivering cancer education and screening programs to over 10,000 women. Key components and criteria of successful replication were established, and preliminary screening outcomes demonstrated a 43.4% increase in mammography in women aged 40 and older.

This study demonstrates that the Witness Project model can be effectively replicated, that the replication process can be standardized, and that the replication sites were able to obtain positive screening results comparable to the original intervention outcomes. The model was not able to be effectively replicated with just the "turnkey" toolbox approach, but required additional technical assistance.

From the Department of Surgery (DOE) and College of Medicine (JI), Arkansas Cancer Research Center, University of Arkansas for Medical Sciences, Little Rock, Arkansas, the Arkansas Witness Project, Little Rock, Arkansas (CS, MW), the Derald Ruttenberg Cancer Center, Mount Sinai School of Medicine, New York, New York (LJ, HT), the University of Buffalo, State University of New York, Buffalo, New York (SW), and the Roswell Park Cancer Institute, Buffalo, New York (TCH).

Submitted March 31, 2003; accepted July 15, 2003.

Address reprint requests to Deborah O. Erwin, PhD, University of Arkansas for Medical Sciences, Arkansas Cancer Research Center, 4301 West Markham Street #629, Little Rock, AR 72205. E-mail: doerwin@uams.edu

This study was funded by a cooperative agreement from the Centers for Disease Control and Prevention, U51/CCU615108. Additional support is acknowledged from the Avon Breast Care Fund, the Susan G. Komen Breast Cancer Foundation and Affiliates, and the Arkansas Department of Health Breast Care Program.

Introduction

Marked racial disparities have been observed in breast cancer mortality rates, which are higher among African American (AA) women across all age groups. For women under 65 years of age, the mortality rate per 100,000 is 13.9 for whites and 20.2 for AA. For women over 65 years of age, the mortality rate per 100,000 is 120.9 for whites and 132.9 for AA.¹ Additionally, the 5-year relative survival rate for breast cancer among AA women (71%) is considerably lower when compared to white women (86%),² with approximately 40% of race/ethnic-based disparities in survival explained by more-advanced stage of disease at detection among AA women.³

Evidence from both observational and randomized, controlled studies shows that breast cancer screening, specifically annual mammography as recommended by the American Cancer Society (ACS), is associated with lower breast cancer mortality.^{4,5} Recent studies of factors related to breast cancer screening have reported rates of “ever use” of mammogram by AA women in their samples ranging from 64% to 81%.⁶⁻⁸ However, 1998 Behavioral Risk Factor Surveillance System data indicate that fewer AA women than white women report ever having a mammogram across all age groups. In light of higher mortality rates among AA women, efforts to increase first-time and repeat mammography use are critical. The breast cancer screening goal set by the National Institutes of Health in its objectives to be accomplished by the year 2010 is to have 70% of all women age 40 and older receive a mammogram at least every 2 years.⁹

The Witness Project

In response to the high breast cancer mortality and lower screening rates in AA women, especially in rural Arkansas, a cancer education intervention called the Witness Project (WP) was developed in 1991 to address the multiple and complex sociocultural barriers of AA women.¹⁰⁻¹⁵ The WP is a culturally informed, community-based breast and cervical cancer education program originally designed for rural Arkansas to meet the specific cultural, educational, knowledge, and learning styles of underserved AA women. It was developed with a theoretical base in health education, learning styles, and ethnographic fieldwork.^{10,12} The WP intervention incorporates local AA breast and cervical cancer survivors defined as “Witness role models” (WRMs) to present their personal experiences with cancer, focusing on the need for early detection and treatment, and incorporating a spiritual context. “Lay health advisors”

(LHAs) teach the breast self-examination (BSE) procedure using ethnic breast models. The LHAs also offer information about early detection and breast and cervical cancer screening services.

The goal of the WP is to increase awareness, knowledge, and motivation, resulting in an increase in screening and early-detection behaviors among AA women to reduce the mortality and morbidity from breast and cervical cancer. Prior research in Arkansas demonstrated women who participate in WP programs, compared with women who do not, have significant increases in mammography screening behavior (23%, $P < .005$) and BSE screening behavior ($P < .0001$).¹³ Although cancer-screening behaviors significantly decrease ($P = .0012$) with increased age, 78% to 88% of Witness participants who would normally not practice cancer screening, particularly those older than 60 years, did engage in screening.¹² The Witness intervention was shown to be culturally appropriate and effective in reaching low-income, less-educated, and aged minority women who previously have been difficult to reach through traditional education methods.

Replication of a Model

From 1997 to 2001, the Centers for Disease Control and Prevention funded the WP to investigate efforts to replicate and disseminate the model for use in other communities and states. Replication of a model is a complex intervention process, and the research literature on replication of models is limited and often found primarily through consulting and corporate groups.^{16,17} It is defined as “the process of moving a tested prototype program to additional sites in keeping with the hard (invariable) and soft (variable) aspects of that particular program’s components while remaining sensitive to the local context of each additional site.”¹⁶ Furano et al¹⁸ state that a replicable program must precisely clarify the activities and services in the program, and include a series of program elements such as services offered and their duration, a targeted group, staffing patterns, and recruitment strategies. On the other hand, dissemination means to scatter widely, to spread abroad, or to promulgate. Therefore, the goal for the WP was to reproduce (replicate) the model in new sites in order to spread (disseminate) the message about early detection to women in the new community.

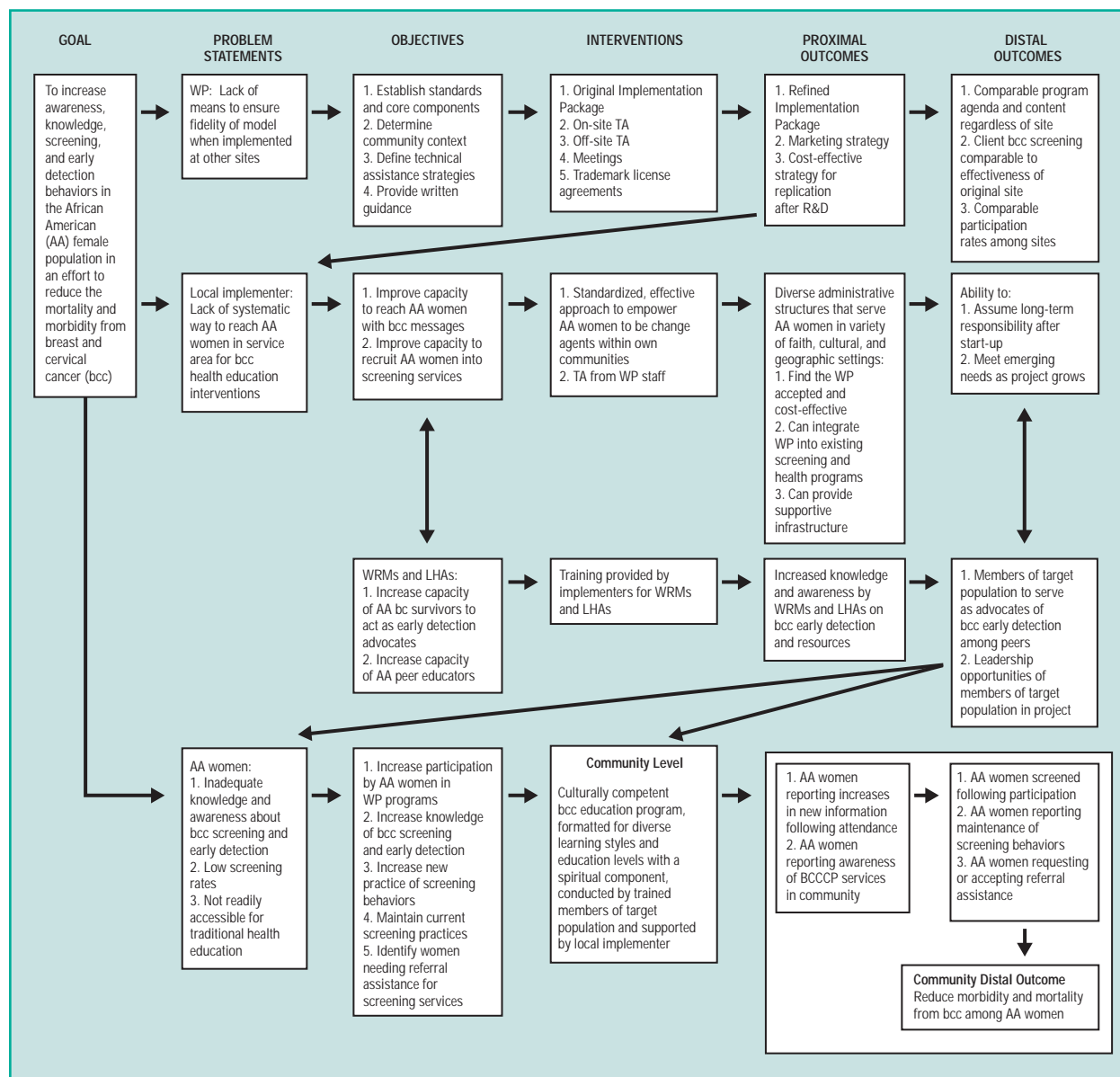
The purpose of this study was to investigate the feasibility and effectiveness of replicating an evidence-based, sustainable program for increasing breast and cervical cancer screening with AA women in a variety of locations in the United States. This article reports

on the process and outcomes of the study as an important contribution to the cancer control intervention and replication literature.

Methods

The methods for this replication research mandated qualitative data gathering to develop a cadre of process and outcome measures not previously available. Then, through a four-phase replication process, the process and outcome effectiveness of the replicated WP intervention at various sites was evaluated using approximately 24 instruments and survey forms over the course of the four phases. Primary documentation was a Progress Report Form that allowed

the replication sites to document all program outreach efforts, training, and open-ended questions for the site staff to indicate successes, barriers, recommendations, and accomplishments as well as the volunteer training pre- and post-test information. This report also allowed the WP sites to indicate the level of technical assistance provided and their satisfaction with the technical assistance. The evaluation process included (1) periodic written reports by both the replication and dissemination (R&D) WP staff and new sites implementing the local WP, (2) site visits to replication sites to see the programs and staff, and (3) local evaluation and outcome measures of participating women at the new WP sites. Bimonthly conference calls were developed to foster communication and increase quality assurance in addition to provid-



The Witness Project logic model (AA = African American, bcc = breast and cervical cancer, BCCCP = Breast and Cervical Cancer Control Program, LHAs = lay health advisors, R&D = replication and dissemination, WP = Witness Project, WRMs = Witness role models).

ing a forum to discuss issues involving the Replication Package, training format, and curriculum.

Those sites involved in the screening outcome data collection process (requiring human subjects approval processes at both the national and replication sites) sent aggregate data reports bimonthly to the R&D WP staff. Data collection instruments were used by the replication sites to collect baseline information about participant-reported cancer screening practices and the need for assistance, as well as necessary demographics and contact information. All screening data reported (baseline and post-intervention) were obtained through self-report by individual women to the replication site or through the screening institution affiliated with the replication site.

The data collection instruments included a sign-in sheet, Program Registration Form (Baseline Survey), and Follow-Up Form. For those women who were unscreened in the past 12 months, specific methods to provide navigation to screening services were developed in eight sites (this process will be reported elsewhere). All data were entered and analyzed using an integrated software program for design, administration, processing, and analysis of surveys (SphinxSurvey, Lexica edition, Pugh Computers Ltd). Quantitative data analysis included univariate analyses of demographic data that incorporated frequencies and percentages and bivariate analysis using Pearson's chi-square for cross tabulations. Process analysis included compiling text responses from reports, site visits, replication group meetings, and conference call discussions.

Research Questions and Goals

The WP Logic Model (Figure) was an important focus for the entire R&D process. It graphically explained the objectives, potential problems, intervention plan, and outcome for the program. From this logic model, the research questions to be answered during this replication process were as follows: (1) Will the WP show consistent impact while implemented in differing geographic, cultural, and organizational structures? (2) Can the replication process be standardized without creating barriers for team members' participation? (3) Does the WP Replication Package provide adequate support to replicate the model with minimal outside assistance? (4) Is the replication effective as measured by outcome data?

Criteria, Phases, and Materials

The methods and processes of replication for the WP began by defining eight key components as criteria for replication. These criteria, developed by the WP staff and CDC R&D team, are shown in Table 1. These

Table 1. — Criteria for Replication

| Component | Core Issues |
|------------------------|---|
| Product | Quality and attractiveness of the program being replicated |
| Local context | Local context in which a program is being replicated |
| Organizational support | Organizational investment in success of the program replication |
| Leadership | Leadership from "champion" committed to replication success |
| Partnership | Effective partnerships for collaborative efforts |
| Financial support | Adequate and secure financing |
| Fidelity | Fidelity of implementation |
| Evaluation | Timely and appropriate evaluation |

components were organized by the WP R&D staff to be used as criteria for measuring and determining the appropriateness of applicants for participating in the replication process that was organized by CDC into four phases.

Phase 1 focused on developing and refining the Replication Package — those materials and information necessary to implement a WP at a new site. Phase 2 was to design strategies for implementing and evaluating the model including criteria for new site selection, as well as a systematic implementation plan. Phase 3 was to pilot test the Replication Package and implementation plan, and phase 4, or the replication phase, was to determine if the intervention had been implemented as planned.

A Replication Package was developed through phase 1 and phase 2 and consisted of an implementation manual with forms and training slides, WP video, facilitator's video, and BSE training video. The objectives of this package were (1) to explain the WP model, its goals, and the background and research supporting it, (2) to provide information about AA women and the cultural barriers and issues as they relate to the early detection of cancer, (3) to define and guide the collaboration, staffing needs, and steering and advisory committees to implement a WP, (4) to explain the recruitment and selection of WRM and LHA team members, (5) to provide the guidelines, agendas, slides, and resources for training team members, (6) to provide resources, information, and forms to monitor, evaluate, measure, and maintain the WP, (7) to provide resources for promoting and enhancing the program efforts, as well as for troubleshooting as necessary, (8) to provide videotapes to illustrate the spirit and methods of the WP to enhance fidelity to the model and probability of success, (9) to provide technologies to link the network of WP programs for the purpose of increasing communication and technical assistance, and

(10) to provide technical assistance and an esprit de corps from an experienced staff of leaders, trainers, and volunteers as necessary.

The replication process involved approximately 9 months for each individual new site. Month 1 was for reviewing the Implementation Package. Months 2 and 3 were dedicated to “Training the Trainers” and providing coaching and administrative guidance to the new site project director. Months 3 to 7 were used for recruiting and training a local volunteer team of WRMs and LHAs, and months 6 to 9 were for initiating programs and hosting a site visit by the R&D WP staff.

The objectives for each new site were (1) to recruit and train a minimum of 2 survivors as WRMs, (2) to recruit and train at least 1 LHA, (3) to organize a steering committee and community advisory board, (4) to establish Memorandums of Agreement for screening and treatment for women reached through the program, and (5) to conduct a minimum of three WP programs in the first 12 months and then average at least eight per year. New replication sites were recruited primarily by word of mouth, solicitations at scientific and cancer control meetings, letters to programs that had previously purchased WP videos, and letters and information to organizations like the ACS and the Susan G. Komen Breast Cancer Foundation.

Following the piloting of the Replication Package with five sites during phase 3, technical assistance and selection criteria for new sites were refined. By the end of phase 4, a total of 21 new programs were replicated during this process. This resulted in a total of 26 WP programs, as there were four original partner sites outside Arkansas, plus the “parent” program in Arkansas. The results described below are reported by phases to reflect a combination of the process and outcome data obtained in phases 2 and 3, and then the screening baseline and outcome results

from phase 4 of this replication process. The Arkansas WP is excluded in the results reporting unless otherwise noted.

Results

Pilot and Replication Results (Phases 2 and 3)

During the 4 years of the R&D study, 21 new replication sites were trained and added to the existing WP network of five. Five sites (one existing and four new) became inactive over the 4 years for a total attrition rate of 19% of the total of 26 sites (or <5% per year). Although originally developed in the rural South, the majority (72%) of the replication sites were developed to serve urban/suburban communities, many of which were in the Midwest and Northeast. Table 2 displays the institutional homes of the various replication sites. More than one third (36%) of the sites were organized through a local organization like a YWCA, ACS, or Susan G. Komen Breast Cancer Foundation affiliate, followed by those in academic cancer centers (24%), local medical centers or hospitals (16%), faith-based organizations (12%), and state or local health departments (8%). Table 3 demonstrates the wide distribution of financial support received by the sites demonstrating that the program can be developed to serve a limited area with only local in-kind resources and no additional funding, while larger programs and those serving a statewide population require and obtain much more significant funding.

Table 4 shows the training results for 15 of the replication sites during the first three phases. Sixty-six volunteer trainings were held to train 232 survivors as WRMs and 169 women as LHAs. These 401 volunteers were trained in small groups, averaging 6 volunteers per session, demonstrating the individualized attention provided to each group of

Table 2. — Institutional Characteristics of All Witness Project Sites (n = 25 sites)

| Home Institution | Number of Sites |
|-------------------------------|-----------------|
| Local organizations* | 9 (36%) |
| Academic cancer center | 6 (24%) |
| County/local medical center | 4 (16%) |
| Faith-based organization | 3 (12%) |
| State/local Health Department | 2 (8%) |
| Planned Parenthood | 1 (4%) |
| Parish nurse program | 1 (4%) |
| Veterans hospital | 1 (4%) |
| Total | 27 ** |

* Local organizations consisted of the YWCA, ACS, or Susan G. Komen Breast Cancer Foundation affiliate.
 ** Two sites had collaborative organizational “homes” with more than one institution.

Table 3. — Funding Characteristics of All WP Sites (n = 25 sites)

| Level of Financial Support | Number of Sites |
|----------------------------|-----------------|
| 0-\$5,000 | 4 (16%) |
| \$5,100 - \$15,000 | 2 (8%) |
| \$15,100 - \$20,000 | 2 (8%) |
| \$21,000 - \$30,000 | 3 (12%) |
| \$31,000 - \$40,000 | 5 (20%) |
| \$41,000 - \$50,000 | 3 (12%) |
| \$51,000 - \$75,000 | 2 (8%) |
| \$76,000 - \$100,000 | 1 (4%) |
| >\$100,000 | 3 (12%) |
| Total | 25 |

Table 4. — Training of Witness Project Team Members at Replication Sites 1998-2001 (n = 15 sites)*

| Region (# of sites) | # of Trainings | # of Witness Role Models | # of Lay Health Advisors |
|---------------------|----------------|--------------------------|--------------------------|
| Midwest (5) | 25 | 71 | 44 |
| Northeast (4) | 23 | 50 | 34 |
| South (3) | 10 | 46 | 43 |
| West (3) | 8 | 65 | 48 |
| Total** | 66 | 232 | 169 |

* Excludes inactive sites and trainings prior to 1998.
 ** Total 401 volunteers trained; averaged 6 volunteers/training.

new trainees. During this same time period, the new volunteer teams at the 15 replication sites performed 419 programs, educating 7,140 women. Including the women reached in Arkansas during this time, 569 WP programs were held, educating 10,431 women about breast and cervical cancer. Interestingly, the original WP programs in Arkansas averaged audience sizes of 14 participants per program, providing a very direct, personal educational experience. Likewise, the audiences at the replication sites ranged from 14.7 (in the South) to 19.9 (in the Northeast) for an average of 17 women per program.

Process Results

Process evaluation results from the many text-based reports, site visits, group meetings, and trouble-shooting experiences during pilot replication (phase 3) revealed valuable results for defining three key strategies necessary for successful replication of this outreach program. When adequately applied to replication sites, these key strategies assured fidelity to the model and better outcomes. Those sites that were unsuccessful in replicating the WP generally failed because one of these three strategies had not been successfully addressed:

Establish Clear Objectives: Replication sites needed to know exactly what would be expected of them in terms of personnel trained, numbers of programs conducted, expected outcomes, development of committees and advisory boards, and memorandums of agreement with clinical services.

Technical Assistance/Training: Although originally aiming for a “turnkey” system (planned as a toolbox of materials to be mailed to a prospective site), pilot results indicated that the self-guided approach to implementation decreased the fidelity to the model. It was discovered that additional technical assistance and training were necessary to effectively replicate the program. Administrative “coaching” of staff prior to establishing a project at a site, professional expertise and guidance for training of staff and project volunteers, and then site visits and technical

assistance with various program challenges improved the quality of programs established and reduced the attrition of existing programs.

Dual Champions: The concept of two “champions,” an administrative champion and a community champion, were important components of effective replication sites for this WP model. The administrative champion is ideally an advocate within an organization who attends to project management and administrative development. The community champion recruits and nurtures team members as well as promotes the project to people and the gatekeepers in the AA community. A community champion should be a representative of the community who has earned respect and has credibility in the community. Both of these dual champions should be trained in all components of program replication through administrative coaching and the training of their volunteers.

Screening Rates and Intervention Effectiveness (Phase 4)

As a measure of replication effectiveness, screening baseline and outcome results were obtained during phase 4. Not all replication sites had adequate funding, personnel, and human subjects review to provide in-depth evaluation of their program outcomes. This was not a prerequisite for becoming part of the replication study as the goal was to explore the process in all types of organizational structures and settings. Eleven of the replication site institutions received Institutional Review Board approval (through multi-project assurances or their own IRB) and had the

Table 5. — Baseline Breast and Cervical Cancer Screening Behaviors (Group A)

| | |
|--|-------|
| <u>Performed breast self-examination in the past month (n = 1,113)</u> | |
| No | 38.3% |
| Yes | 59.8% |
| No response | 1.9% |
| <u>Had a clinical breast examination in the past 12 months (n = 1,113)</u> | |
| No | 32.0% |
| Yes | 66.4% |
| No response | 1.6% |
| <u>Had a mammogram in the past 12 months (n = 697*)</u> | |
| No | 36.7% |
| Yes | 61.7% |
| No response | 1.6% |
| <u>Had a pelvic examination in the past 12 months (n = 1,113)</u> | |
| No | 36.4% |
| Yes | 61.9% |
| No response | 1.7% |
| <u>Had a Pap test in the past 12 months (n = 1,113)</u> | |
| No | 35.7% |
| Yes | 61.7% |
| No response | 3.2% |

* Includes only women aged 40 and above.

staff and funding to provide baseline screening data (group A). Eight replication sites provided screening outcome results following WP programs during the last year of the project (group B). Results are reported for each group as designated.

Within group A, 1,113 women participated in WP presentations and completed assessments to provide self-report baseline information regarding types of women reached and their current screening behaviors. Almost 39% of the participants were between 40 and 59 years of age, 32.0% were under age 39, 20.5% were between age 60 and 79, and 3.5% were above the age of 80. Seventy percent of the participants were AA and 15.4% were white. (One replication site is integrated with AA and white volunteer team members.) Five percent indicated that they were of Hispanic origin. Fifty-four percent of the participants attended a program at a religious location (eg, a church), and 46% of the participants attended a program at secular location (eg, workplace, community center). Of the 11 replication sites in group A submitting data, 57% classified their WP programs in an urban environment, 44.7% were located in the Northeast, 24.6% were in the Midwest, 17.6% were in the West, and 13.1% were in the South or Southeast region of the United States.

Table 5 shows self-reported baseline breast and cervical cancer screening, including BSEs, clinical breast examinations, mammograms, and Papanicolaou (Pap) tests as indicators of the type of women reached by the replication sites. Almost 67% of the participants reported having a clinical breast examination in the past year, 59.8% had examined their breasts in the past month, 61.7% reported having had a mammogram, and approximately 62% had a Pap test in the past 12 months. The results of the bivariate analysis for mammogram screening showed no significant difference in baseline mammography screening according to location of the WP program (eg, religious/church-based or secular/community organizations), indicating that women reached at either site were obtaining screening approximately equally.

These baseline screening data demonstrated that the WP programs at the replication sites were reaching significant numbers of unscreened and under-screened women. The variations in screening by age for mammograms and Pap tests are shown in Tables 6 and 7, respectively. There was a significant difference ($P < .02$) in most age groups for mammograms, with the highest proportion of unscreened women in the age cohorts between 40 and 49 (44.8%), 70 and 79 (36.5%), and 80+ (55.3%). The lowest proportion of Pap test screening was reported by women 70 years of age and older, but none of the age cohorts reported appropri-

ate cervical screening for more than 67% of respondents. Table 8 shows the wide variation in baseline mammography by region, with the replication sites in the Northeast and West having participant populations with higher baseline screening rates (72.8% and 72.5%, respectively) than those in the South or Midwest (64.1% and 35.8%, respectively).

Table 9 shows the screening outcomes for group B (the eight replication sites that were able to accrue detailed screening outcomes postintervention between January and July 2001). These were also the eight sites that initiated the navigation program to focus on providing follow-up to unscreened women

Table 6. — Baseline Mammograms by Age (Group A, n = 686)*

| Age Group | Mammogram | | P Value |
|--------------|--------------------|--------------------|-------------|
| | Yes | No | |
| 40-49 | 144 (55.2%) | 117 (44.8%) | ≤.02 |
| 50-59 | 115 (70.6%) | 48 (29.4%) | ≤.02 |
| 60-69 | 88 (73.3%) | 32 (26.7%) | ≤.02 |
| 70-79 | 66 (63.5%) | 38 (36.5%) | NS |
| 80+ | 17 (44.7%) | 21 (55.3%) | ≤.02 |
| Total | 430 (62.7%) | 256 (37.3%) | ≤.02 |

* Excludes women under age 40 and 11 missing age values.

Table 7. — Baseline Pap Tests by Age (Group A, n = 1,021)*

| Age Group | Pap Test | | P Value |
|-----------|-------------|-------------|---------|
| | Yes | No | |
| <40 | 227 (65.0%) | 122 (35.0%) | NS |
| 40-49 | 173 (67.3%) | 84 (32.7%) | ≤.01 |
| 50-59 | 99 (61.5%) | 62 (38.5%) | NS |
| 60-69 | 79 (66.9%) | 39 (33.1%) | ≤.01 |
| 70-79 | 52 (52.0%) | 48 (48.0%) | ≤.01 |
| 80+ | 9 (25.0%) | 27 (75.0%) | ≤.01 |

* Excludes 92 women with missing values.

Table 8. — Baseline Mammogram Rates by Region (Group A, n = 686)*

| Region | Mammogram | | P Value |
|--------------|--------------------|--------------------|-------------|
| | Yes | No | |
| Midwest | 59 (35.8%) | 106 (64.2%) | ≤.01 |
| Northeast | 225 (72.8%) | 84 (27.2%) | ≤.01 |
| South | 59 (64.1%) | 33 (35.9%) | NS |
| West | 87 (72.5%) | 33 (27.5%) | ≤.01 |
| Total | 430 (62.7%) | 256 (37.3%) | ≤.01 |

* Excludes women under age 40 and 11 missing age values.

Table 9. — Screening Outcomes for Replication Sites (Group B, n = 8 sites)*

| | |
|---|-------------------------|
| Total no. of women ages 40+ yrs | 594 |
| Women screened in past 12 months | 371 (62.5%) |
| Women unscreened in past 12 months | 223 (37.5%) |
| Women who had mammograms after WP program | 161 (72% of unscreened) |
| Increase in screened women | 43.4% |

* January 2001 - July 2001.

who may need assistance in obtaining appointments for screening services. In this limited sample of 594 women ages 40 and older, these data demonstrated a 43.4% increase in screening of previously unscreened or underscreened women following participation in a WP program (161 mammograms obtained out of 223 unscreened women, increasing the total screened from 371 to 532).

Conclusions

The research questions of this replication process were answered as follows: (1) Yes, the WP model can be effectively implemented into a wide variety of geographic and organizational structures. The study opportunities limited this investigation to primarily Protestant and Christian groups; the exploration of other groups such as Muslim and Catholic replication sites is reserved for future research. (2) Yes, with careful and thorough training, process evaluation, and attention to the criteria for replication discussed above, the replication process can be standardized (eg, materials, training, timeline) for most site teams. (3) No, this model did not prove to be effectively replicated with fidelity to the program components with just a turnkey, mail-out-the-toolbox approach. Therefore, a systematic coaching, training, and technical assistance component was developed. (4) Yes, these preliminary data indicate that those replication sites that were able to obtain outcome data produced screening results comparable or better than the original published increase in screening reported by the WP model.

Discussion

This study demonstrated that the WP model was effectively implemented in 21 very different communities previously lacking culturally appropriate programs to address the cancer education needs of underserved AA women. The preliminary evaluation outcomes of the replication process for the WP model in the new sites were promising. The culturally tailored components of the model appear to be generalizable to and appropriate for multiple AA communities. Aggregate baseline screening rates across regions for both breast and cervical cancer (all under 67%) demonstrated that the WP programs at new replication sites were reaching and serving underscreened women, especially those programs in the South and Midwest with baseline screening rates below 65%. There was an increase in the proportion of women obtaining mammograms following participation in the WP programs, and over 10,000 primari-

ly underserved women in a 3-year period received education on breast and cervical cancer screening.

Two types of strategies are suggested from this research to promote the most effective utilization of a replication process. The first is incorporating the criteria for replication (Table 1) listing eight key components that were identified as necessary for a successful replication process. It is hypothesized that these are applicable to the replication of other intervention models in cancer control or other behavior change programs and provide an opportunity for further research. To apply these criteria requires that both the new replication site and the parent model carefully and objectively examine the availability of these criteria components at the new site. One approach to achieve this assessment is to obtain a written application from replication sites, answering questions on each component as they apply to the particular model. A second approach is a telephone conference call among members at the parent and replication site to discuss specific components and issues to further clarify the assessment, allowing for more-specific descriptions of such issues as "leadership" and "organizational support" as defined for a particular intervention model. Third, the achievement of "fidelity" necessarily requires in-person observation or site visit to the newly replicated program by the parent model staff to adequately assure the achievement of a successful replication. The fourth approach is to obtain useful, appropriate, and accurate evaluation data from the newly replicated site — both process and outcome, and, if possible, impact results.

The second set of strategies suggested by this research is specific to replication of this WP model. These strategies were (1) to establish clear objectives and expectations for each new site in writing as well as orally in preliminary discussions so there is no confusion about what is expected by both the parent site and the replication site, and how "success" will be defined by each, (2) to provide adequate technical assistance before, during, and after the replication process to optimize fidelity to the model and to guide new sites through problems and pitfalls, and (3) to designate 2 individuals as champions for the project at each replication site to assure that administrative responsibilities as well as volunteer support and participation are well addressed. The replication process was most likely to be successful in a new WP site when these three strategies, as well as the other key components of the replication criteria relating to funding, etc, were able to be addressed (Table 1).

This study was designed to measure the effectiveness of the replication process. It reported both process and outcome results but was not planned to include a rigorous experimental design with controls for measuring screening outcomes. Therefore, the

preliminary data demonstrating screening increases are of limited generalizability to all replication sites. Now that multiple sites are established, this will be an excellent opportunity for further research to specifically test multisite outcomes effectiveness.

Lessons learned through this R&D experience can contribute to the replication literature for other health education interventions for special population groups developed at academic settings and applied in the public and private sector. The successful R&D of a model program is a complex intervention process that requires the support of administrative staff and the involvement of local communities in this process. The amount of funding and staff resources allocated for the WP implementation varied by each replication site. These variations affected the ability of some replication sites to adequately follow the appropriate guidelines in order to ensure the consistency and fidelity of both the program and the evaluation data.

One reference source regarding the replication of a community-based Teen Outreach Program¹⁷ suggested that technical assistance and in-depth training are fundamental to all successful replication programs. With little experience in the intricacies of data collection and reporting, community organizations often underestimated the time and labor demands needed to facilitate a satisfactory evaluation of their project. Adjusting the level of technical assistance based on the needs of each replication site and using diversified training approaches (eg, coaching conference calls, train-the-trainer, and site visits) helped maintain the WP standards. These and other preparatory factors were major variables affecting the ability of a site to replicate a WP model that reflected fidelity to the original model structure and outcomes. Finally, although we emphasized the use of technical assistance and training, we must recognize that not every site interested in replicating a health model such as the WP has the labor and resources for successful implementation. Again, rigorous application of the criteria for replication with any prospective site is a useful approach for minimizing attrition and replication failures.

Ultimately, the success of the WP model in every site has depended on the strength and commitment of the volunteers, particularly the WRMs who, as breast and cervical cancer survivors, relate their stories about their experiences with cancer. Each replication site needed strong champions with leadership abilities to initiate and to maintain the outreach role of the project while working with collaborators for funding and support. We believe that the sustainability of the model depends on the ability of the staff and volunteers to maintain their enthusiasm and continue their outreach activities over time. Providing the volunteers with opportunities to address their concerns

and increase their feeling of ownership will strengthen their commitment to the project.

Appreciation is expressed to all of the Witness Project volunteers and staff who participated in this replication and dissemination study in the following sites: Little Rock, Ark; Bridgeport, Conn; Wichita, Kan; Hattiesburg and Jackson, Miss; Patterson and Newark, NJ; Oakland and Moreno Valley, Calif; Gainesville, Fla; Atlanta, Ga; Normal, Rock Island, and Champagne/ Urbana, Ill; Monroe, La; St. Louis, Mo; Asheville and Charlotte, NC; Las Vegas, Nev; Buffalo and New York, NY; Oklahoma City, Okla; Nashville, Tenn; San Antonio, Tex; Madison, Wis; and Lynchburg, Va. The authors gratefully acknowledge the individual contributions of Corinne Graffunder, Patty Poindexter, and Barbara Wethers with the Centers for Disease Control and Prevention, Division of Cancer Prevention and Control.

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