Using tailored communication in community settings to help eliminate health disparities

Health Communication Research Laboratory (HCRL)
and Center for Cultural Cancer Communication (4C)
Brown School, Institute of Public Health & Siteman Cancer Center
Washington University in St. Louis

Matthew W. Kreuter, PhD, MPH

August 4, 2008
Addressing disparities
What’s the role for tailored communication?

• Reach
• Effectiveness
• Connections
Tailoring on values to increase effectiveness
St. Louis, MO
St. Louis, MO
Percentage African American population by census tract, 2000
St. Louis, MO
Incidence of late-stage breast cancer 2X expected rates for MO, by census tract
St. Louis, MO

Neighborhood health centers serving predominantly African American populations
Can effects of tailored communication be enhanced by tailoring on cultural values?
1,227 African American women ages 18-65

1-, 6- and 18-month follow-up (72% final retention)
Behavioral tailoring

Theory-based determinants

- Stage of change
- Self-efficacy
- Perceived risk
- Benefits and barriers
- Knowledge and beliefs
Cultural tailoring
Four key values

- Racial pride
- Collectivism
- Time orientation
- Religiosity/spirituality
Tailoring on spirituality
Example

If a woman says… “I rely on God to keep me in good health”

We tell her… “The Lord has given us a powerful tool to find breast cancer when it can still be treated effectively…”
A Little Action Now Prevents Big Problems Later

A pulled thread on your favorite sweater. A sweater in your bag. A sock in your pants. What do these things have in common? They are all easy to overlook, but if you don’t take care of them, they will get worse. Heart disease is the same way. It could be quietly growing in your body without you feeling anything.

The good news with all these things— including heart disease—is that a little action now can save the whole thing.

75 Years

Sunny day in August, this has been a jiffy of a week out of the ordinary. A wife, mother and a grandmother of five. She’s worked hard and has sacrificed for those that were less fortunate, the children, the family. All her people—young and old—have gathered in her home.

And like her, her love—now long gone. Sunny day in August. She’d been told she had cancer. She knew it was a cancer that was aggressive, that it would spread, and that it would be hard to treat. She had a grandson who was in high school. She was determined to fight.

She started by getting a mammogram. A mammogram can help save your life. To hear this message come true is amazing. There are millions of women who have had mammograms and are alive today. It’s a sign that we are moving in the right direction.

Mammograms: How They Work

A mammogram is a test for breast cancer. It’s a painless, non-invasive procedure that can detect cancerous growths and tumors. The mammogram involves X-rays of the breast tissue. These images are then analyzed by a radiologist to look for any signs of cancer.

Freedman’s

The mammogram is a simple test that can save your life. It’s a way to detect cancer early, when it’s most treatable. The mammogram is a way to give you peace of mind. It’s a way to give your family peace of mind. It’s a way to give yourself peace of mind. It’s a way to give your loved ones peace of mind.

For more information, please visit our website at www.reflections.com.
Getting a mammogram
18-month follow-up (n=192; OR=2.6)

% 40+ reporting mammogram in last 12 months

- Usual care: 54.5%
- Behavioral: 64.6%
- Cultural: 63.6%
- Behav + Cult: 75.6%

Fruit and vegetable consumption
18-month follow-up (n = 599; $p < .05$)

women <40, mean change in FV servings per day

<table>
<thead>
<tr>
<th></th>
<th>Change in servings per day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usual care</td>
<td>0.59</td>
</tr>
<tr>
<td>Behavioral</td>
<td>0.43</td>
</tr>
<tr>
<td>Cultural</td>
<td>0.25</td>
</tr>
<tr>
<td>Behav + Cult</td>
<td>0.96</td>
</tr>
</tbody>
</table>

What about other values?
Health is not a primary value.
2007 WRANGLER AND 2007 WRANGLER UNLIMITED
LIVE YOUR OWN ADVENTURE
Some common **terminal** values

- Being respected
- A comfortable life
- Sense of belonging
- Power or influence
- Family security
- Happiness
- Excitement
- Freedom
Selected instrumental values

- Ambitious
- Organized
- Dependable
- Loyal
- Hard working
- Honest
- Rebellious
- Spiritual
Implementing tailoring programs to maximize reach
Reflections of You

Have you ever had a mammogram?

Yes  no

continue
goback
Research questions
Reach and specificity

*Which community settings…*

1. Have the highest rates of kiosk use?
2. Reach users with the greatest need?
3. Have the most geographically localized reach?
### Mean kiosk use per day

By community setting (n = 12,643; p < .001)

<table>
<thead>
<tr>
<th>Community Setting</th>
<th>Mean Uses per Kiosk Day</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beauty salons</td>
<td>6.3</td>
</tr>
<tr>
<td>Churches</td>
<td>7.3</td>
</tr>
<tr>
<td>Social service</td>
<td>9.2</td>
</tr>
<tr>
<td>Libraries</td>
<td>10.3</td>
</tr>
<tr>
<td>Health centers</td>
<td>12.9</td>
</tr>
<tr>
<td>Laundromats</td>
<td>18.8</td>
</tr>
</tbody>
</table>

Ever had a mammogram? (40+)
By community setting (n = 2,607; p < .001)

Up-to-date on mammograms? (40+)
By community setting (n = 2,607; \( p < .001 \))

Know where to get a mammogram?
By community setting (n = 2,607; p < .001)

<table>
<thead>
<tr>
<th>Setting</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beauty salons</td>
<td>87.8</td>
</tr>
<tr>
<td>Churches</td>
<td>86.6</td>
</tr>
<tr>
<td>Social service</td>
<td>76.7</td>
</tr>
<tr>
<td>Libraries</td>
<td>71.2</td>
</tr>
<tr>
<td>Health centers</td>
<td>81.8</td>
</tr>
<tr>
<td>Laundromats</td>
<td>58.9</td>
</tr>
</tbody>
</table>

Is transportation a barrier?
By community setting (n = 2,607; p < .001)

Are hours of operation a barrier?
By community setting (n = 2,607; p < .001)

Reach and specificity
Criteria for prioritizing among settings

Laundromats •

Public libraries •

Social services •

Health centers •

Churches

Beauty salons

Lowest specificity

Highest reach

Lowest reach

Highest specificity
GIS analysis of home-to-kiosk distance
By community setting (n = 6,648; p < .001)

Alcaraz K, Kreuter MW, Bryan R. 2007 CDC Cancer Conference, Aug. 12, Atlanta, GA.
High incidence of late-stage breast cancer
High incidence of late-stage breast cancer
High incidence of late-stage breast cancer

Beauty salons & churches
High incidence of late-stage breast cancer

Beauty salons & churches

Health centers & social service agencies
High incidence of late-stage breast cancer

- Beauty salons & churches
- Health centers & social service agencies
- Laundromats & libraries
What’s known about coin laundries?
Attributes of desirable locations

• High population density
• High percent rental property
• High percent low income population
• High birth rate

What’s known about coin laundries?

Customer base

• 50% households < $15,000
• 20% households $15,000 - $25,000
• 30% of renters

Building industry partnerships
Coin Laundry Association

BREAST CANCER INFORMATION AT THE LAUNDROMAT

A 4-year study finds coin laundries are "by far" the best location

4-year study finds coin laundries are "by far" the best location

According to a new study, coin laundries could play a crucial role in the fight against cancer:

The study placed user-friendly cancer kits that provide information about breast cancer and mammography in 78 coin laundries, beauty salons, churches, health centers, social service agencies and public libraries in Milwaukee and Boston. Kits were used most often and reached women with the greatest need for breast cancer information when placed in coin laundromats.

"If we're serious about reducing death and suffering from breast cancer, we have to do a better job of reaching women who have the highest risk," said Dr. Matthew Rosenzweig, lead scientist on the study. "Coin laundromats were by far the best place for doing that."

The study found that among women 45 and older who used the kits in a coin laundry:
- 69% had not had a mammogram in the last year.
- 52% had never had a mammogram ever.
- 4.4% didn't know where to go to get a mammogram.

National guidelines recommend women get annual mammograms beginning at age 40.

Breast cancer death rates are higher among low-income and minority populations, in part because these cancers are found later when treatment is less effective. When breast cancer is found early by giving regular mammograms, a woman has an excellent chance of survival.

To help address the problem, the kits take questions about breast cancer and mammography and women answer by touching the screen. Based on each woman’s answers, the kits create a personalized magazine, "Reflections of You," filled with information to help her learn what to do and where to go to get a mammogram. It even points the magazine for her to keep. It takes five minutes to see the kit.

"Providing these kits in coin laundries could definitely help deliver the most needed message and information about breast cancer and mammography. It would be a chance to give back to our community and build consumer satisfaction and loyalty at the same time," said John Darden, Owner of Marketing at P&G The Laundry Company. "Great idea! It can help prevent cancer - that would be a wonderful contribution."

The study took place from June, 2003 to March, 2007, and kits were used over 10,000 times. The National Cancer Institute and the Susan G. Komen Breast Cancer Foundation funded the study.

Dr. Rosenzweig and colleagues are planning a national study of cancer education kits in coin laundromats to begin in Fall, 2009. If you would like your coin laundromat to participate in the study and host a kit (free cost), please contact Debbie Mather at 314 477-4111 or gmafari@nci.nih.gov.
Using technology & tailoring to connect people & services
### Ever vs. never screened kiosk users

<table>
<thead>
<tr>
<th>Measure</th>
<th>Screened (n=1,772)</th>
<th>NBS (n=835)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seen doctor last 12 months</td>
<td>84%</td>
<td>67%</td>
</tr>
<tr>
<td>Told by doctor to get mamm</td>
<td>46%</td>
<td>27%</td>
</tr>
<tr>
<td>Transportation a barrier</td>
<td>24%</td>
<td>50%</td>
</tr>
<tr>
<td>Hours of operation a barrier</td>
<td>26%</td>
<td>52%</td>
</tr>
<tr>
<td>No health insurance</td>
<td>22%</td>
<td>31%</td>
</tr>
<tr>
<td>BC knowledge score (mean)</td>
<td>4.4</td>
<td>3.4</td>
</tr>
<tr>
<td>Know where to get a mamm</td>
<td>67%</td>
<td>48%</td>
</tr>
</tbody>
</table>
Never or rarely screened

Significance of the problem

- No mammogram in last 1-3 years associated with half of late-stage breast cancer cases (Taplin, 2004)
USB broadband wireless modem
Tailoring when the unit of customization is a community
African American population in U.S.
188 Black newspapers; 6M circulation
The usual approach
A better way

Make cancer information more…

1. Locally relevant
2. Race specific
3. Culturally appropriate
Research questions

1. What is the current state of cancer coverage?

2. Can we increase amount and quality?

3. Will changes in coverage affect readers’ perceptions, decisions, behavior?
Study sample: Black papers in 24 cities
FOR IMMEDIATE RELEASE: August 14, 2006

Phone: (573) 882-8225
Contact: Crystal Lomphkins
E-mail: ozionanews@missouri.edu
Web user name: richmond
Web password: voice

Ozioma
(573) 882-8225
Oziomanews@missouri.edu

1 IN 4 BLACK WOMEN IN RICHMOND COULD BENEFIT FROM NEW CERVICAL CANCER VACCINE

A new vaccine to protect women from cervical cancer may be especially valuable to African American women. The vaccine prevents women from getting HPV, a virus that can lead to cervical cancer. African American women are more likely to die from cervical cancer than any other group of women in the U.S.

The vaccine, called Gardasil, has been approved for women ages 9 to 26 that have never had HPV. There are over 83,000 African American women in Richmond, and more than 1,000 are ages 9-26. That means 1 in 4 African American girls and young women in Richmond could be eligible for the vaccine.

"This vaccine is a significant advance in the protection of women’s health in that it strikes at the infections that are the root cause of many cervical cancers,” said Andrew C. von Eschenbach, M.D., Acting Commissioner of the FDA. In the United States, the rate of cervical cancer among African American women is 12.4 per 100,000 population.

HPV is the most common sexually transmitted disease in the United States. An estimated 20 million people are currently infected with HPV. Most HPV infections occur without symptoms and go away without any treatment, but some can lead to cervical cancer. Both HPV and cervical cancer can be detected by getting an annual cervical cancer screening and a Pap test by the age of 21, or three years after becoming sexually active. In 2004, 19.1 percent of African American women in Virginia reported having had a Pap test in the past three years.

Tamika Felder, a 5-year cervical cancer survivor and founder of the www.TamikaAndFriends.org online

Continued on next page

Community Resources

For your convenience, we have compiled several resources in the Richmond area that could provide additional information:

Tamika and Friends
www.tamikaandfriends.org

American Cancer Society
Glen Allen Annex
3991 Deep Rock Rd
Richmond, VA 23223
Phone: (804) 223-3700
Fax: (804) 273-6004

Massey Cancer Center
401 College Street, P.O. Box 980037
Richmond, VA 23298-0037
Phone: (804) 828-0450
Fax: (804) 828-6453
http://www.vcu.edu/mcc/

UVA Cancer Center
PO Box 800334
Charlottesville, VA 22908
Phone: (434) 924-0333
Toll free: (800) 223-0178
Fax: (434) 922-0918
http://www.healthsystem.virginia.edu/internet/cancer/

Ozioma® is a national cancer news service based in Missouri. It is funded by the National Cancer Institute in Bethesda, MD. Ozioma® provides minority media outlets with information about cancer risks, treatment and prevention with a focus on taking action to improve health in African American communities.
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The vaccine, called Gardasil, has been approved for use by women that have never had HPV. There are over 62,000 young women in Richmond, and more than 17,000 of ages 9-26 African American girls and young women in Richmond could benefit from the vaccine.

“This vaccine is a significant advance in the prevention of cervical cancer, to that it strikes at the infections that are the root cause of cervical cancers,” said Andrew C. von Eschenbach, MD, Acting Director of the FDA. In the United States, the rate of cervical cancer among African American women is 12.4 per 100,000 population.

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Note: Images related to this release can be found at http://oziomanews.missouri.edu

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Tumika Felder, a 5-year cervical cancer survivor and founder of the www.TumikaAndFriends.org online community.

Continued on next page
Black women could benefit from cervical cancer vaccine

A new vaccine to protect women from cervical cancer may be especially valuable to Black women. The vaccine prevents women from getting HPV, a virus that can lead to cervical cancer. Black women are more likely to die from cervical cancer than any other group of women in the United States.

The vaccine, called Gardasil, has been approved for women ages 9 to 26 that have never had HPV. In the United States, the rate of cervical cancer among Black women is 12.4 per 100,000 population.

To gauge the impact of the vaccine, look at Richmond, for instance. There are over 62,000 Black women in Richmond, and more than 17,000 are ages 9-26. That means 1 in 4 Black girls and young women in Richmond could be eligible for the vaccine.

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Tamika Felder, 5-year cervical cancer survivor and founder of the www.TamikaAndFriends.org online resource center for cervical cancer, says the vaccine will help Black women.

“When I was diagnosed 5 years ago there was no HPV vaccine and no HPV test. Now, we have both. Cervical cancer is 100 percent preventable and no woman should die of it – especially African American women. This is a wonderful step in eradicating this cancer.”

The price of the vaccine is $120 per dose, and $360 for the full series of three doses. Insurance companies often cover the costs of recommended vaccines. Federal health programs such as Vaccines for Children (VFC) provides free vaccines to those under age 19 and covers Gardasil. The VFC Program also allows children and adolescents to get vaccines through Federally Qualified Health Centers or Rural Health Centers if their private health insurance does not cover the vaccine. Check with your insurance provider about its coverage before getting the vaccine.
O.R. = 1.36, p < .05
## Effects on readers?

### Preliminary analyses of follow-up survey

<table>
<thead>
<tr>
<th>Self-reported reader behavior</th>
<th>Exp (B)</th>
<th>95% CI</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Talked to others about cancer (n=339)</td>
<td>1.07</td>
<td>(1.00, 1.14)</td>
<td>.04</td>
</tr>
<tr>
<td>Searched for cancer info online (n=321)</td>
<td>1.04</td>
<td>(.99, 1.10)</td>
<td>.14</td>
</tr>
<tr>
<td>Serious effort to eat healthier (n=338)</td>
<td>1.17</td>
<td>(1.06, 1.29)</td>
<td>.00</td>
</tr>
<tr>
<td>Serious effort to reduce smoking (n=87)</td>
<td>1.13</td>
<td>(1.00, 1.27)</td>
<td>.06</td>
</tr>
</tbody>
</table>
Providing community partners with tools for customization
FOR THE FIRST TIME EVER, MAKE THEM YOUR OWN.

NIKEiD.

Base Color

Ankle Strap Material
Nubuck Patent

Ankle Strap Color

Swoosh Color

Lace Color
We Built the Original.  
Now It’s Your Turn.

Customize Colors
Body
Select color

Handles
Select color

Bottom
Select color

Zip-Top (optional)
☐ No ☐ Yes (add $7.00)

Gusset Color

Outside Pocket (optional)
☐ No ☐ Yes (add $2.00)

Pocket Color
Step 2: Fit Style

2-1: Select Your Preferred Style/Fit

- Slim
- Classic
- Relaxed
- Cargo
- Carpenter

2-2: Leg

- Straight
- Bootcut
- Tapered
- Flare
- Relaxed
miyo
make it your own
**HOW DO YOU GET ANSWERS ABOUT HEALTH?**

1. At your yearly visit, your doctor asks about your sex life. You tell her...
   - A. Only what you want to tell her. That’s private.
   - B. Everything. How else can she give good advice?

2. You get a letter in the mail saying you had an abnormal Pap test and should call the doctor. Then you...
   - A. Put the letter in a safe place – and find it two months later.
   - B. Call your doctor the next day and make a follow-up appointment.

3. You’re watching a talk show and a 23-year-old woman with cervical cancer is telling her story. You think...
   - A. “I hope that never happens to me.”
   - B. “That’s scary. She’s my age. I want to ask my doctor about that.”

4. You learn a common sexually transmitted infection called HPV can cause cervical cancer. Your best friend has HPV, so you...
   - A. Don’t say anything about it to her – you don’t want to scare her.
   - B. Tell her – she needs to know the facts and take care of herself.

5. You have questions that you want to ask the doctor, but she seems rushed. You decide to...
   - A. Ask the questions next time. You know the doctor has other patients to see, too.
   - B. Ask your questions anyway. You know you won’t see your doctor again for another year.

**TOTAL A’s**

**TOTAL B’s**

*Turn the page to find out what your answers mean!*

---

**Center for Cultural Cancer Communication**
R U 18-26?
The HPV vaccine can **protect you** from cervical cancer.

*Call to learn more.*
1-800-4-CANCER

You’re connected. You’re respected.
Are you protected?

---

National Cancer Institute

Center for Cultural Cancer Communication
I'd never heard of HPV
Most women haven't
Here's how to learn more:

1. Ask your doctor:
   - What is HPV?
   - What is cervical cancer?
   - Can HPV cause cervical cancer?
   - Can the HPV vaccine protect me from cervical cancer?

2. If you can't talk with your doctor, call 1-800-4-CANCER. A cancer expert will answer your questions.

Call 1-800-4-CANCER Monday-Friday between 9:00 AM and 4:30 PM.
50,091 materials ordered since Jan. ‘08
By 16 different organizations in St. Louis

- Colleges, public & vocational schools (n=6)
- Community health centers, FQHCs (n=3)
- Community-based organizations (n=3)
- Departments of health (n=2)
- Faith-based organizations (n=1)
- Local health foundations (n=1)
HPV vaccination materials in use
Clinical and community settings
Is MIYO *needed* for HPV materials?

9 different combinations from 14 organizations

<table>
<thead>
<tr>
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Is MIYO *needed* for HPV materials? 9 different combinations from 14 organizations

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New tailoring opportunities: messenger and approach
Breast cancer survivor stories

Research questions
Three randomized studies of survivor stories

1. What are the active ingredients of stories?
2. Are stories preferred to other communication?
3. Can exposure to stories increase mammography?
Design: 300 stories, 200 women
Cross-classified data structure

Video Clip 1

Video Clip 2

Participant 1

Participant 2

Video Clip 3
St. Louis, MO

Incidence of late-stage breast cancer 2X expected rates for MO, by census tract
Neighborhood Voice
Reaching out for cancer prevention and control
Participant characteristics
African American women ≥ 40 (n=200)

- Mean age: 56.1 years
- 42% < HS education (mean = 11.3 years)
- 63% < $10,000 pre-tax household income
Interactive tablet PC for BC patients
Users choose from a library of stories, survivor

Touch the picture to view clips from this person.

Beatrice
- 50 yrs old
- Unmarried
- Mastectomy
- Unemployed
- 19-yr survivor
- With health insurance
- No kids
Interactive tablet PC for BC patients

Users choose from a library of stories, survivor

Beatrice  "I was still in a state of shock."
Randomized experiment (n = 150)
Head-to-head: narrative vs. non-narrative

(stories) vs. (non-stories)
Part 1: *It can happen to anyone*

Part 2: *Let’s talk about it*

Part 3: *10 minutes to save your life*
Participant characteristics
African American women ≥ 40 (n=150)

• Mean age: 53.3 years
• 35% < HS education (mean = 12.0 years)
• 78% ≤ $20,000 pre-tax household income
Production quality
Mean score on six dimensions, by DVD type

Living Proof: 4.75
Facts for Life: 4.76
Easy to understand
Mean score three items, by DVD type

- Living Proof: 4.24
- Facts for Life: 4.18
Learned “some” or “a lot” of new info
Proportion, by DVD type

Living Proof: 86%
Facts for Life: 85%
Which video did you enjoy most? (n=149)

- Living Proof: 30%
- Facts for Life: 7%
Which video was most interesting? (n=150)

- Living Proof: 32%
- Facts for Life: 11%
Which would you show a group of friends? (n=150)

- Living Proof: 59%
- Facts for Life: 36%
Which would you recommend to a woman just diagnosed with BC? (n=150)

- Living Proof: 64%
- Facts for Life: 30%
Would you like a copy of either video? (n=150)

- Living Proof: 65%
- Facts for Life: 31%
Randomized trial (n = 489)
Effects on use of mammography

(stories) vs. (non-stories)
Participant characteristics
African American women ≥ 40 (n=489)

- Mean age: 60.8 years
- 32% < HS education
- 57% ≤ $10,000 pre-tax household income
Follow-up
Three points in time

• *Immediate post-exposure*
• *3-month follow-up*
• *6-month follow-up (ongoing)*
Survivor stories promising
Compared to non-narrative videos…

- More novel
- Better liked
- Evoked more emotion
- Enhanced recall of key content
- More agreement with breast cancer information
- Less counter-arguing against breast cancer information
- Fewer perceived barriers to getting a mammogram
- Greater intention to get a mammogram
History of mammography:  
Ever screened vs never-been-screened
I was mentally involved in the video

![Graph showing mean involvement for previously screened and never-been-screened groups. Narrative and non-narrative categories are compared.]
Watching this video made me feel bored
This is the kind of video that usually plays in a doctor’s office waiting room.

- Previously screened
- Never-been-screened

- Non-narrative
- Narrative

Mean
The issues that come up in the video are like things that happen in the real world.

The graph shows the mean values for previously screened and never been screened participants for both narrative and non-narrative content.

- **Narrative**:
  - Previously screened: Mean value
  - Never been screened: Mean value

- **Non-narrative**:
  - Previously screened: Mean value
  - Never been screened: Mean value
The video was difficult to understand

Mean

Previously screened

Never-been-screened

Non-narrative

Narrative

Previously screened

Never-been-screened

Mean

5

4

3

2

1

Narrative

Non-narrative

Previously screened

Never-been-screened
If I had a question about mammograms, I’d want to talk to the women in the video.
Among never-been-screened women
Narrative videos were perceived as…

- More engaging
- More novel
- More realistic
- Easier to understand
- More trusted