BRIEFING PAPER

Research Informing Message Strategy of Chronic Disease Prevention and Control Consumer Education Campaign

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Executive Summary

A disproportionate share of Missourians and other Americans of lower income have or are at risk of chronic diseases such as heart disease, cancer, and diabetes. The ultimate goal of the Chronic Disease Prevention and Control Consumer Education Campaign is to positively affect health and health care behaviors that contribute to prevention, early detection, and management of chronic disease. The target market is Missourians ages 45 to 64 who are at risk or have chronic disease. Targeted *health* behaviors include healthy eating, regular physical activity or exercise, and not smoking. Targeted *health care* behaviors include timely health screenings for chronic disease, regular physician check-ups, and ongoing self-monitoring and self-management.

The purpose of the research and recommendations in this briefing paper is to inform development of a general thematic message and supporting submessages for the media campaign, educational materials, and grassroots partners. The general thematic message (and submessages) will fit within MoCAN's overarching message of "Be Active, Eat Smart, Feel Better" and support existing submessages for chronic disease. Grounded in empirically-based health communication theory, this research examined knowledge, beliefs, and social norms in the target market or general population related to the targeted health and health care behaviors. It also examined individual-level perceived self-efficacy or confidence in achieving these behaviors, recognizing the additional disproportionate structural barriers such as lack of health insurance that many members of the target market face. Additionally, several research-supported message strategies are recommended along with media and grassroots message channels utilized by the target market. Recommendations from the research will be tested in a telephone survey and alternate messages will be tested in focus groups.

Health Behaviors

Knowledge of or belief in the benefits of healthy nutritional habits and especially regular physical activity in preventing chronic disease does not appear to be strong in the target market. The risks of smoking are well known but it appears that, although many see it as a risk factor for lung cancer, they do not see it as a risk factor for other chronic diseases. The research supports use of gain-framed messages in promoting *health* behaviors. These are messages stressing the benefits of the behaviors. Evidence-based messages should make vivid the benefits of healthier eating and increased physical activity in preventing chronic disease and, for those already with chronic disease, in slowing down the development of their disease. Messages should make clear that quitting smoking, even late in life, has significant benefits in preventing or lessening the effects of chronic disease.

In addition, research recommends messages aimed at *health* behaviors that try to increase the self-efficacy or confidence of members of the target market that they can do what is being promoted. This includes recognizing the barriers to these behaviors, which include lack of time and feelings of being overwhelmed by the enormity of the tasks. Messages should include evidence of the benefits of small steps over time. Other ways to increase

self-efficacy include reminding people of their other accomplishments in life – "You've done [x], you can do this" – and convincing them how good they will feel, including emotionally, about accomplishing the behaviors. This includes an approach that, in essence, celebrates the journey and not just the final outcome (of, for example, losing "x" pounds).

Health Care Behaviors

The research supports a different message strategy for the *health care* behaviors of compliance with screenings and regular physician visits. For these behaviors, loss-framed messages that stress the costs of not doing the behavior have been shown to be more effective. Messages aimed at screening compliance should stress the costs, in terms of health and quality of life, of not detecting disease early. Messages should stress not waiting for symptoms before getting screened – that early detection is often accomplished when there are no symptoms.

Research supports the effects of "important others," including physicians and family members, in pressuring individuals to get their screenings. Data indicate that people generally know they are supposed to get screenings but do not know at which age and how frequently. The campaign should consider cards for physician offices or provided to target market members that physicians can quickly mark to indicate the individualized screenings schedule for a patient. Messages should encourage people to "Ask your physician" and be proactive in finding "which, when, and where" in terms of their own screenings. Available alternate ways to receive screenings should be communicated for those in the target market without insurance.

Channels

Research supports use of the media channels of especially television but also newspapers for the target market. More detailed messages and information can be provided in pamphlets. Some health campaigns do not have their desired effects because of lack of message exposure. Message exposure should be maximized using multiple media channels and the campaign's partnership network. Additionally, news coverage should be pursued. Coverage of health behavior stories is rare in the news, and this presents an opportunity for cost-effective dissemination of the campaign messages. This may include stories of individuals of the target market successfully incorporating the behaviors in their lives and attesting to the benefits.

Thematic Message and Submessages

Of course, most of these messages will be campaign submessages as they cannot all be communicated in the single thematic message. The thematic message will have to be broad, as it needs to speak to people with and without chronic disease, ages 45 to 64 and 65 and above, about both gain-framed health messages and loss-framed health care messages. The research supports a gain-framed thematic message that communicates the benefits of a general health orientation that would include the targeted health and health

care behaviors as well as other behaviors of health living. An example, along with recommended submessages, is provided in the report. The broader message will be supported by specific submessages. A thematic message that is more specific may be pursued, keeping in mind the diverse messages it needs to support and audience segments it needs to speak to, and its relation to the overarching MoCAN message.

Goal of Campaign

The ultimate goal of the Chronic Disease Prevention and Control Consumer Education Campaign is to positively affect identified health and health care behaviors of the target market. Campaign evaluation criteria against which to measure progress toward that ultimate goal are yet to be determined. The target market in Phase I of the campaign is identified as Missourians ages 45 and older who have or are at risk of chronic disease. More prevalent chronic diseases in Missouri and the nation include heart disease, cancer, stroke, diabetes, lung diseases such as chronic obstructive lung disease and asthma, arthritis and osteoporosis, and Alzheimer's (Homan, DHSS, 2007; CDC, 2004; Yun, DHSS). Risk factors that apply across or to multiple chronic diseases include poor nutrition, lack of physical activity, being overweight, smoking, high blood pressure, high cholesterol, not receiving screenings for chronic diseases, and lack of health insurance (CDC, 2004). Positive *health* behaviors that are effective in the prevention and management of chronic disease include not smoking and habits of healthy eating and regular physical activity (CDC). Positive *health care* behaviors include getting recommended health screenings to detect disease earlier, and regular monitoring (of, e.g., blood pressure) and management (e.g., medication compliance) by physician and self (Homan, DHSS; CDC, 2004; Yun, DHSS). In addition to individual-level barriers, the campaign must also consider structural barriers to desired health and health care behaviors experienced by members of the low income target market, such as lack of health insurance and higher cost and lesser availability of healthy foods such as fresh fruits and vegetables (CDC, 2004; Viswanath).

Phase I of the campaign includes assembling recommendations from the research literature (this briefing paper); testing these (and possibly alternative) strategies in the CASR telephone survey; finalizing a market strategy; testing messages through focus groups; and developing a campaign evaluation methodology. The second phase will be actual implementation of the campaign.

Purpose of Research

The purpose of this research is fourfold:

1) To inform message development by identifying important factors to address in the target market.
2) To inform message development by identifying supported message strategies.
3) To inform message channel selection by identifying those most likely to reach and affect target market.
4) To inform related question development for the CASR survey.

This research is to inform a general thematic message and related submessages that effectively target the identified factors for a broad target market that includes all chronic diseases. This general message, in turn, needs to fit MoCAN's overarching message – "Be Active, Eat Smart, Feel Good" - and support submessages in other existing and

future campaigns aimed at particular chronic diseases, risk behaviors, and/or target markets.

Target Market

Chronic Disease Prevalence

The leading causes of death in Missouri in 2004 were heart disease and cancer (Yun, DHSS). The prevalence of diabetes is growing rapidly, and African-American and lower income Missourians are disproportionately affected. Arthritis is the leading cause of disability, with 32% of Missourians in 2005 having a physician diagnosis of the disease. A higher proportional prevalence, often statistically significant, of these and other chronic diseases is seen in Missourians of lower income (Homan, 2007).

Related Risk Factors and Behaviors

2002 data show obesity is highest among Missourians in the overlapping categories of annual income of less than $15,000 (28%); ages 50 to 64 (28%); and African-American women (27%) (DHSS, 2006).

Health Behaviors

About one third of Missouri BRFSS (2003) respondents in households with annual incomes less than $25,000 responded that they were currently trying to lose weight. Interestingly, a greater percentage responded that they were using physical activity or exercise to lose weight (about one half) than eating fewer calories or less fat to lose weight (about one fourth). More people ages 50 to 64 responded that they were trying to lose weight (48%; 445,332) than those ages 65 and older (31%; 245,873).

Although 2004 self-reported fruit and vegetable consumption per day generally appears higher as income increases, it is not markedly different between income levels (BRFSS). The Five a Day campaign recommendation appears to be followed by about one fourth or slightly less of Missourians, with the best compliance among those 65 and older.

The percentage of Missourians reporting no physical activity or exercise generally increases as income level decreases (18% or 36,711 of those in households with less than $10,000 annual income compared to 3% or 18,079 of those with $75,000 or more) and age increases (including 10% or 97,314 of those 50 to 64 and 17% or 135,048 65 of those 65 and older) (BRFSS, 2003).

The national Health Information Trends Survey (HINTS) 2005 data also show that physical activity declines with age. Self-reported “inactive” respondents were more likely to have lower income and be women and less educated. They were less likely to believe that exercise lowers cancer risk and less likely to eat 5 or more servings of vegetables per day. They were less likely to pay attention to health messages in the media, less likely to use the Internet, and watched more hours of television. Responses of no leisure time physical activity were disproportionately higher in African-Americans and Hispanics as compared to Whites.

Smoking prevalence (1990-2002) among adults in Missouri has been consistently higher than the national average (Yun, DHSS). It is higher for uninsured Missourians of all races than for those with health insurance, with 47% of White uninsured adults smoking (Kayani, DHSS). BRFSS self-reported data (2003) show, within each annual household income category, a progressively lower percentage of current smokers who smoke every day as income rises, including 30.1% (64,139) of person in households making less $10,000 and 25.6% (172,164) of person in households making $50,000 to $74,999, followed by a marked drop to 11.5% (75,396) of persons making $75,000 or more.

Health Care Behaviors

The percentage of Missouri women age 40 and older who reported not having a mammogram within the past two years generally increases with lower income level, including 46% or 30,634 of those in households with annual income of less than $10,000 and 33% or 44,516 with $20,000 to $24,999 (BRFSS, 2004). Reported compliance is better in women age 50 and older, with about one-fourth reporting not having had a mammogram within the last two years as compared to 40% of those 40-49.

This pattern in income level is similar for Missouri women age 40 and over who reported not having had a PAP test within the past three years, including 27% or 21,294 with household income of less than $10,000 compared to 9% or 25,977 with $75,000 or more (BRFSS, 2004).

These income level patterns are similar for colorectal screening tests for respondents 50 or older and for PSA tests (within the past two years) for men respondents (BRFSS, 2004). Additionally, respondents age 50-64 are less compliant in colorectal and PSA screenings than those 65 and older. Interestingly, income level was not associated with less recent blood pressure or cholesterol checks by a health professional.

Structural Barriers

It is no surprise that Missouri BRFSS data (2004) show income level related to health insurance coverage, with the largest percentage of uncovered persons, 26.4% or 80,618, in households with annual income of $15,000 to $19,000. The effect of Medicare is seen in the difference between those uninsured who are age 65 and older (1.6% or 12,276) and 50 to 64 (10.8% or 103,150). The highest percentages of those responding “no insurance/cannot afford” to the question, “What is the main reason for no usual source of care?”, were in the $10,000 to $14,999 household income category (32% or 11,435) and the less than $10,000 category (22% or 10,056).

Identifying the Factors to Address in Messages

Common outcome measures in health behavior campaigns include, in proper sequence: attitude-intention-behavior. In addition to attitude, self-efficacy or perceived control and social norms influence health behavior (Fishbein & Cappella, 2006). Attitude and self-efficacy are each determined in large part by underlying beliefs. Social norms influence underlying beliefs. Mass media campaigns can influence a behavior through influencing underlying determinants of the behavior (Randolph & Viswanath, 2004). Underlying beliefs found important in health behavior and health communication research will be described, including why they are important. The task of identifying which belief(s) to target in this campaign is based on which are determined to be most obstructive to the desired health and health care behaviors in the target market. In addition to identifying specific beliefs to potentially target, the literature review sought research on the direction of these beliefs in the target market or the general population. The CASR survey will serve to test assumptions from the literature review and provide information not found in the search.

Attitude

Attitude towards a behavior is simply a favorable or unfavorable summary judgment toward the behavior. Primary determinants of attitude towards a behavior include the perceived benefits of performing the behavior and, in disease prevention campaigns, the perceived susceptibility to and/or severity of the disease one is acting to prevent or manage. Of course, one's knowledge and awareness about the disease(s) are also important in forming attitude toward associated behaviors.

Awareness, Knowledge, Beliefs

Knowledge or awareness for the at-risk target market may be assessed by questions such as, "Do you know what is meant by 'chronic disease'?" "Do you know you're at risk for chronic disease?" "Do you know how chronic disease would affect you?" "Do you know how to help prevent chronic disease?" For the target market that already has chronic disease: "Do you know you're at risk for other chronic diseases?" "Do you know how to manage it so you'll feel better?" Certain knowledge/awareness constitutes a necessary baseline for persuasive messages to be effective in this campaign. For example, the at-risk target market probably needs to know that early detection means better prognoses in order to be persuaded to get regular screenings. Of course we can be aware of something and still not believe it. I may be aware through public health messages that "Eating too much red meat is not good for you," but I may discount it and mostly not believe this. Multiple factors in addition to research-based knowledge make up beliefs about health and health care behaviors. These include family beliefs, personal experiences, religious beliefs, and so on.

The knowledge level about risk factors linked to cancer is lower in lower SES groups (Viswanath online). A health knowledge gap exists between higher income and

education groups and lower income and education groups (Viswanath, Breen, & Meissner, 2006).

In a national 2003 HINTS survey, when participants were asked if there is anything about their behavior or lifestyle they would like to change to reduce risk of getting cancer, the highest response percentages were, Don't smoke/quit smoking (15%); Eat better/better nutrition (14%); Exercise/exercise more (7%); and Reduce weight/maintain healthy weight (2%). (Disturbingly, 54% responded "No/nothing.")

MediaCross's (2006) focus groups for the MoCAN campaign shed light on the current campaign. Most (21 of 26) adults (ages 25-59) knew how to prepare or select healthier meals even though only 8 said they did this on a consistent basis. A variety of reasons were given as to why they did not. Similarly, most in the focus groups reported knowing enough about physical activity to begin an appropriate exercise program, but less than half described themselves as physically active and only a few consistently engaged in physical activity outside of that required in their jobs. Lack of time and motivation were given as primary reasons.

Data show that people are more aware of well publicized risks and consequences such as smoking and lung cancer and sun exposure and skin cancer. For example, 84% of respondents to the HINTS survey (2003) thought smoking increases chances of getting cancer "a lot," and 9% responded "a little." Another study found that women smokers were more aware of their increased risk of lung cancer than of heart disease and osteoporosis (Moran, Glazier, & Armstrong, 2003).

HINTS data (2003) show that most Americans are aware of cancer screenings but not the specific age and frequency recommendations for each test.

Focus groups for a CDC colorectal screening campaign found that many participants knew of people who died from colorectal cancer and assumed it wasn't curable (Jorgensen, Gelb, Merritt, & Seeff, 2001). Others thought it meant an ostomy and felt, "Why bother getting screened?" In response, the CDC campaign pushed the knowledge that earlier screening means better outcomes, using the message, "Don't wait for symptoms."

Perceived Benefits or Outcome Expectations

In addition to knowledge of risk factors, belief in the benefits of promoted health and health care behaviors is important. A kind of cost/benefit analysis is conducted by people contemplating behavioral change, including consideration of the facilitators and impediments to such change (Bandura, 2004). It is important to understand the target market's beliefs about the benefits and outcomes of doing what we will ask them to do. If they believe that very little personal gain will be achieved by changing dietary habits or activity levels, we ideally should know this and try to understand why so we can try to influence underlying beliefs. If, on the other hand, they are motivated by what they perceive would be significant gain, the research and message(s) need to build on this by

understanding and addressing any barriers to action. An example of a narrowly focused health campaign aimed at knowledge of benefits is found in an effort to educate women of childbearing age about the benefits of folic acid (cited in Randolph & Viswanath, 2004). Though, in this case, the "costs" of compliance were less than broader changes in diet and physical activity.

In a HINTS (2003) survey, 40% of Americans thought that not eating many fruits and vegetables increases risk of cancer "a lot." 34 % thought, "a little." Similarly, 28% thought that not getting much exercise increases risk of cancer "a lot," 45%, "a little." 21% responded "somewhat agree" to the statement that "There's not much people can do to lower their chances of getting cancer." 32% responded "somewhat disagree" and 33% "strongly disagree."

2005 HINTS data show the majority of respondents believed that lung (80%) and skin cancer (67%) are most often caused by behavior or lifestyle. Less than half (44%) believed this for colon cancer.

In a 2003 HINTS survey, 64% of Americans reported that they believe that some cancers are preventable. But they do not always know details. Most can identify the risk of smoking. 25% reported that healthy eating can reduce risk of getting cancer, and 34% of those age 35-64 reported wanting to do this. More younger people, 18-34, reported wanting to quit smoking to reduce their cancer risk (44%) than those 35-64 (30%) and those 65 and older (21%). A greater percentage of those 65 and older (42%) reported as a desired behavioral change a healthy lifestyle that includes exercise and weight loss than those 35-64 (27%).

In a study looking at compliance with mammogram screening recommendations, perceived benefit scores were lower in "precontemplators" than in women who were compliant and up-to-date (Champion, 2003). Women who never received a mammogram were more likely to feel that they were too old for the procedure.

Research has looked at underlying beliefs that may account for proportionately less African-American women getting mammograms than other groups. Some findings suggest a higher degree of fatalism in African American women regarding breast cancer – that the diagnosis is in effect a death sentence (Phillips, Cohen, & Moses, 1999; Spurlock & Cullins, 2006). In interviews of 92 African-American women age 20-77, consensus opinion about effective messages to counteract this belief included ads with testimonials from role models: African-American women whose breast cancer was detected early through mammogram screening and who continue to live healthy, productive lives (Frisby, 2002).

It is also important to understand how those in the target market who already have chronic disease feel about the benefits of the behavior changes we are promoting. National HINTS data (2005) show that about three-fourths of respondents believe that "there are ways to slow down or disrupt the development of" colon, skin, and lung cancer.

In 2001 Missouri BRFSS data, 32% of persons 65 and older agreed with the statement, "There are no effective treatments for arthritis," as compared to 22% 50-64. In general, a higher percentage of persons with lesser income are more likely to agree with this statement than persons with higher income (e.g., 30% in "less than $10,000" group and 20% in "$50,000 to $74,999 group).

Perceived Susceptibility and Perceived Severity

Perceived susceptibility and perceived severity also influence attitude. Perceived susceptibility applies to the at-risk target market. The basic question for this factor is, To what extent do you believe you are at risk for chronic disease? If the target market collectively believes "not much," they will not see the message(s) as relevant to them. Furthermore, the group's perceived severity of chronic disease – how negative will the impact be if I develop chronic disease – affects its motivation to act. Perceived severity similarly applies to those in the target market who already have chronic disease: How much worse will it get if I don't do what they are recommending?

A study found that those with greater risk perception and greater perceived self-efficacy were more likely to seek information about cardiovascular disease (Rimal, 2001). The relative effect of heightened risk perceptions on information seeking behaviors was highest in the low-efficacy group.

Self-Efficacy and Perceived Control

Self-efficacy refers to your confidence that you can perform the behavior(s) - that you have the skills and stick-to-it-tiveness necessary. It includes belief that you have sufficient control of what is needed to accomplish the behavior(s). It is related to a person's sense of personal agency (ability to make things happen): "It's up to me and I can do this despite the obstacles." Examples of obstacles or barriers include lack of time, physical frailty, and lack of family support. In addition to individual, personal barriers to action, members of the low-income target market face "structural" barriers that include lack of health insurance and lack of income to make adoption of some behaviors easier (e.g., joining an exercise facility or buying healthier foods which are more expensive). The research should identify barriers to self-efficacy and, if indicated, campaign submessages should help to address them. The difficulty of consistently performing the behaviors being asked of the target market will affect its collective self-efficacy toward them. "Lose thirty pounds by summer" is much different than "Everyday things make a big difference over time." In addition to "do-able" behaviors, campaign messages should reinforce high self-efficacy and attempt to raise low-self efficacy, including through addressing, where possible, how to surmount structural barriers. Other messages affecting self-efficacy address skills needed to perform promoted behaviors – for example, in addition to a message that "you can eat healthy versions of the food you love," access to cookbooks that provide recipes and show how to eat healthier. Long-term adoption of targeted health and health care behaviors require the self-efficacy to

work through and around the inevitable barriers to action. Perceived health self-efficacy is the belief that one can change, manage - exercise control over - one's health habits.

Research found that both a person's "baseline" self-efficacy and changes in perceived self-efficacy promoted by a health campaign contributed to the targeted health behaviors (Maibach, Flora, & Nass, 1991). Moreover, there was a reciprocal relation between self-efficacy and the behavior in reinforcing and increasing each other.

In a study that included examining how to increase moderate physical activity in adults (median age 44) in a rural area, the three primary success factors identified were an awareness and belief in the benefits, increased perceived self-efficacy, and availability of time (Tai-Seale, 2003). Concerning self-efficacy, a substantial number of participants didn't think they could initiate or maintain regular physical activity. In addition to being a separate and distinct contributing factor, availability of time likely affected self-efficacy. Almost 40% of those who took action reported an increased availability of time in their schedules.

Another study found that self-efficacy mediated between knowledge and dietary behavior, as measured by whether participants thought they had the ability to, "starting tomorrow," eat less salt, red meat, egg yolks, sugar, and whole milk for at least six months (Rimal, 2000). In other words, higher self-efficacy was found to be key in translating knowledge about healthy eating into actual behavior.

Research has also found that higher self-efficacy is associated with greater information seeking behavior (Rimal, 2001). (Additional data on information seeking from the 2003 HINTS show that cancer information seekers are more likely to have incomes greater than $50,000) (Finney, Rutten, Squiers, & Hesse, 2006).

In terms of health care behavior, a study found health communications that raised self-efficacy in the behavior of breast self-examination to be effective as compared to messages that informed how habits affect health, aroused fear of breast cancer, or increased perceptions of vulnerability or risk (Meyerowitz & Chaiken, 1987).

Having a support network likely affects health-related self-efficacy. According to Bandura, social support is most effective when it builds self-efficacy (Bandura, 2002).

Four sources or ways of positively affecting self-efficacy though health communication have been identified: verbal persuasion, performance accomplishment, vicarious performance, and physiological arousal (Bandura, 1977). These can be impacted by "modeling appropriate behaviors, making individuals' past accomplishments salient, role-playing health behaviors through realistic vignettes, or making individuals aware of the affective benefits of taking action" (Rimal, 2000, p. 232). In other words, role models of what to do and how to do it, reminders to people that they've been successful in the past, and convincing messages of how great they'll feel taking action have been shown to be effective strategies.

Structural Barriers

The literature addresses structural barriers to behavioral changes, which can logically be thought of as impediments to self-efficacy – to the confidence that one can accomplish the task. Clearly, systemic barriers such as lack of health insurance are beyond the scope of this campaign, although some in the target audience may be unaware of current governmental programs they are eligible for. Still, the campaign can raise the issue of structural barriers to lower income Missourians in achieving healthier behaviors. Support is found in the literature for health campaigns that also try to address structural barriers through the mass media including the news media (Marcus & Crane, 1998; Randolph & Viswanath, 2004).

Social Norms

The final factor to understand in the target market and address in the messages if indicated is social norms. These can be thought of in two ways, using me as an example: the norms of behavior of my sociocultural group; and the opinions about my behavior of individuals who are important to me – i.e., whose opinions I care about. If sociocultural norms of the target market are hindering adoption of targeted behaviors, campaign messages may attempt to counter these norms, recognizing that this is a long-term process. On the other hand, messages may build on norms that support targeted behaviors. Peer pressure is assumed to not operate in exactly the same way in campaigns aimed at the 45 and older target market as in campaigns targeted at adolescents. Still, what others think does affect behaviors of adults, and sociocultural norms are important to understand as they may be the basis for certain beliefs. Identifying "important others" in the target market should also help in identifying effective channels for messages as well as possibly in formulating the message itself. A central question is how effective physician advice and opinion is on targeted behavior changes. Examples of other "important others" in health messages include, for the African-American and Hispanic community, leaders in the church (Viswanath & Emmons, 2006).

A study showed that women who believed their friends, coworkers, and relatives were getting mammograms were more likely themselves to get mammograms (Rimer, 1994).

Normative beliefs are central to health screening behavior (Fishbein & Cappella, 2006). What others think and their application of pressure to "Get screened!" is a trigger to action. The national ad that portrays a woman literally on the back of her husband, until he gets the promoted health screening, is a message strategy built on this research-based assumption.

Fishbein and Cappella (2006) suggest that screening intentions such as for a colonoscopy are more under normative control (i.e., most effectively promoted by important others); whereas intentions toward health behaviors such as exercise are influenced by attitudes and self-efficacy. There is some intuitive sense to this. Screening is a behavior with the goal of avoidance; whereas health behaviors such as better exercise and eating hold the promise of actually experiencing the benefits of feeling better.

Message Strategies

Here, several relevant message strategies will be described, including their application to this campaign.

Gain and Loss Framed Messages

A gain framed appeal frames the behavior in terms of the benefits of doing it. A loss framed appeal frames it in terms of the costs of not doing it (Rothman, Bartels, Wlaschin, & Salovy, 2006). Research has shown that gain frames work better for promoting health behaviors and loss frames work better for health care "detection" behaviors such as screenings.

Consistent with this, it has been argued that loss frames work better when a person is facing uncertainty or risk, such as diagnostic tests, and gain frames work better when a person is facing certainty, such as subsequent treatment (Viswanath, online). A study showed that multicultural loss frames were more effective in encouraging low-income women to get mammograms (Randolph & Viswanath, 2004). Another study found loss frames in a pamphlet to be more effective in promoting positive attitudes, intentions, and behaviors toward breast self-examination than either gain frames or no frames (or arguments) (Meyerowitz & Chaiken, 1987).

Some research suggests that responses are also due to differences in people: that gain-frames are more effective with people with a promotion-oriented perspective and loss frames are more effective with people with a prevention-oriented perspective (Cessario, Grant, & Higgins, 2004; Lee & Aaker, 2004; as cited in Rothman et al., 2006). A study found that gain-frames were more effective with people who scored higher on "behavioral activation" and loss frames with those scoring higher on "behavioral inhibition" (Mann, Sherman, & Updegraff, 2004; as cited in Rothman et al., 2006).

Perceived risk or susceptibility may also have an effect. One study found people led to believe they were high risk for a disease reacted to a loss frame in the same manner as those placed in a prevention-focused mindset (Lee & Aaker, 2004; Rothman et al., 2006).

Loss frames should be considered in encouraging regular physician check-ups. A large part of the reason for check-ups is detection.

Addressing Multiple Versus Single Behaviors

The overarching theme is aimed at multiple behaviors across multiple chronic diseases. A preliminary search of newspapers and professional journals using the Lexis-Nexis database did not find public health media campaigns aimed at chronic disease in general or multiple associated health and health care behaviors in general. Campaigns found were generally aimed at individual chronic disease and single behaviors. This simply means there were not ready examples found of existing overarching messages that have been tried.

Research related to developing an encompassing message includes a study that found that a person's overall health orientation – e.g., "I actively try to prevent disease and illness" – was more important in explaining respondents' beliefs that exercise is important in fighting health problems than was their demographic differences (including income) (Dutta & Bodie, 2006). Overall health orientation was also important in positively predicting fruit and vegetable consumption (Dutta-Bergman, 2005). This perspective recognizes that health behaviors are intertwined, and argues that "campaigns need to engage 'lifestyle' or an inter-related group of behaviors with the goal of changing overall health orientation in the community" (Dutta-Bergman, 2005, p. 31). More pertinent to this campaign, it raises the question as to whether, for the thematic message, a broad message promoting a health orientation rather than specific behaviors should be considered. Submessages would then communicate the specific actions needed to support health living. This supports a life-stages approach of wellness supported in at least one CDC article (Steinberg, 2007).

Targeting and Tailoring

This research is supporting development of a targeted message that resonates with the target market. Targeting increases the message's relevancy and effect. Tailoring messages to an individual's needs, preferences, and characteristics has been shown to be even more effective (Kreuter & Skinner, 2000; Kreuter et al., 2004; Rimer & Kreuter, 2006). Of course, as a mass media message, the overarching message cannot be individually tailored. But this strategy is identified because there may be ways that submessages in supporting efforts can be tailored. One mechanism to facilitate tailoring is a database with relevant individual data of target market members.

Other Message Considerations

Two-sided arguments, as compared to one-side arguments, acknowledge barriers or obstacles to what they propose. They have been shown to be effective in many instances (Salmon & Atkin, 2003). Acknowledging in campaign messages the additional barriers to the behavioral changes faced by the target market may be effective in communicating that "these people do understand our situation." This should be followed, when possible, by ways to surmount identified obstacles.

Research has shown that ambiguity in information about cancer preventability is negatively related to perceived cancer preventability (Han, Moser, & Klein, 2006). Where possible within evidence-based medical findings, messages should be clear and unambiguous about benefits of proposed behaviors.

Finally, research has shown that exemplars of effects of targeted behaviors are most effective when they are "concrete, vivid, consequential, and emotional" (Viswanath, online, p. 240). Messages including exemplars such as role models giving testimonials should incorporate these attributes.

Target Market Channels

Media Channels

In a 2003 HINTS national survey on cancer communication, more respondents across all income categories said they paid "a lot/some" attention to health information on TV as compared to radio, newspaper, magazines, and the Internet (Viswanath, online). A similar percentage – about 72% - said this across income levels. Newspapers were second, magazines third, and the Internet fourth for all income levels, with higher income corresponding to a greater number reporting "a lot/some" attention.

Data show that interest in health information exists across racial and ethnic groups, but that there are differences in access (Viswanath, online). A digital divide exists, with disproportionately less Internet users in 2003 in the $15,000 to $24,999 household income bracket (38%) than the $75,000 and above bracket (83%) (NTIA, 2004). There were also proportionately less African-American (46%) and Hispanic (37%) users than White (65%) users.

News media coverage of your message can also be an effective strategy in maximizing exposure (Randolph & Viswanath, 2004). Health behavior stories are rare in the news, and could be compelling as role models of desired behaviors (Caburnay, 2003).

Partners as Channels

Campaign partners are, of course, vital channels in disseminating the messages. Research indicates that primary physicians are a key channel, especially in affecting health care behaviors such as screenings. In 2001 Missouri BRFSS data, most respondents – about two-thirds - would go first to their primary care physician if they wanted information about arthritis, with no marked differences across income levels. Not a large percentage of those who cited "no usual source of care" provided as the main reason for this, "Do not like/trust/believe in doctors," the largest (6% or 27,450) being within the $20,000 to $24,999 income level.

A main goal of CDC's Screen for Life campaign to increase awareness and screening of colorectal cancer was to encourage men and women age 50 and older to speak with their doctors about getting a screening test (Jorgensen et al., 2001). Those up-to-date on their colorectal cancer screening were much more likely to report "some" or "a lot" of trust in their health care provider, and preferred to receive screening information in the form of personalized reading materials. Another study of respondents age 50 and older found personalized communications about screenings from physicians or other health care providers as most desired and trusted – and most predictive of being "up to date" (Ling, Klein, & Dang, 2006).

In response to the question, "Has a doctor or other health professional ever talked with you about your diet or eating habits?", there were no marked differences across income levels, with about one fourth responding that this had occurred within the past 12 months

(BRFSS, 1999). A similar finding in this response applied to age, with 31% or 247,470 of those 50-64 and 28% or 219,081 of those 65 and older responding that this had occurred. The same applied to physician-patient discussion about physical activity or exercise, with about one third across income levels responding that this had occurred within the past 12 months, and 38% of those ages 50 to 64 and 36% of those 65 and older responding that this had occurred.

As already indicated, research supports churches as an effective health communication channel in African-American and Hispanic communities (Viswanath & Emmons, 2006).

Research also stresses the importance of sufficient message exposure to the success of a health campaign (Hornik, 2002; Randolph & Viswanath, 2004). Ideally, media exposure is supplemented by word-of-mouth in the community. Indeed, Hornik argues that contradictory evidence of the impact of health campaigns between controlled trials and non-controlled observational studies is because controlled studies do not sufficiently account for the "background communication" that increases message exposure. Campaign partners in this effort will be vital in generating this background communication and in reinforcing the message. The effect of message exposure on awareness is seen in the National Cancer Institute's 5 a Day campaign that started in 1991. This slogan is recognized by about 25% of adults and has made some impact on vegetable and fruit intake (Finnegan & Viswanath). This campaign illustrates that duration makes a difference in exposure and, thus, awareness.

In addition to sufficient exposure, research supports the use of multiple media channels if possible (Marcus & Crane, 1998; Viswanath). Bandura (1994) argues that complex behaviors need multiple message exposure through multiple sources.

Key Conclusions and Recommendations from Literature

Health Behaviors

- Messages aimed at health behaviors should focus on 1.) making salient the benefits of the targeted behaviors in preventing and managing chronic disease; and 2.) increasing perceived self-efficacy to perform the behaviors.

- Knowledge of or belief in the benefits of healthy nutritional habits and especially regular physical activity in preventing chronic disease does not appear to be strong in target market.

- A substantial portion of Missourians ages 50 to 64 want to lose weight. Adding to their reasons to lose weight, "It will help prevent chronic disease," may help trigger action.

- Self-efficacy is key in eating better and increasing physical activity over time. Messages should help increase self-efficacy by addressing barriers of time (especially for those under age 65) and feelings of being overwhelmed by the enormity of the tasks. The cumulative benefits of small steps and the increased motivation of continuous goal setting with intermediate milestones should be stressed.

- Messages promoting health behaviors should use gain frames communicating the benefits of healthy eating and physical activity in chronic disease prevention and management.

- Use of role models giving testimonials is recommended, especially for promoting self-efficacy. This should include persons easily identified as from the target market talking about healthy behavioral changes they've made to prevent or manage chronic disease; or talking about how early detection made all the difference in their disease course and management.

- Other messages for increasing self-efficacy should include those that remind people of their own accomplishments in life - "You've done [x], you can do this" - and those that convince people how good they'll feel about accomplishing the behavior(s).

- Knowledge or belief that smoking contributes to chronic diseases other than lung cancer is likely not strong in the target market.

- Research showing the gains in chronic disease prevention or management from quitting smoking should be communicated, especially for older, longer-term smokers – "It will still make a difference."

- A health orientation message (versus one of specific behaviors) should be considered for the general thematic message.

- In addition to personal physicians, available community resources in dietary and physical activity counseling should be identified.

Health Care Behaviors

- Messages aimed at the health care behavior of screenings should focus on the costs (in terms of health and quality of life) of not detecting disease early.

- The target market is likely not fully aware of the benefits of early detection in successful treatment and management of a chronic disease.

- Messages aimed at health care behaviors of screenings and regular physician check-ups should use loss frames communicating the costs in chronic disease prevention and management of not doing these things in a regular and timely manner.

- "Important others" including physicians should be used in messages to pressure audience members to keep screenings and physician visits up-to-date.

- Personalized written information, clearly stating which screenings are needed and when and where to get them should be available to individuals.
    - Primary physician could provide this, with forms provided by campaign.
    - Or target market members could be given them to bring with them to their next physician visit for the physician to fill out.
    - Information on available alternate ways to get screenings should be provided, for those without health insurance.

- Messages should encourage individuals to proactively ask physicians about screenings they should have.

- Messages should stress not waiting for symptoms before getting screened – that early detection is often accomplished when there are no symptoms.

Other Message Considerations for Both Health and Health Care Behaviors

- The target market's perceived susceptibility to and perceived severity of chronic disease is still ambiguous. Understanding this may not be crucial, as promoting healthy eating and physical activity can in effect also communicate the susceptibility of not doing those things to those who do not eat healthy and are inactive. Potential severity of chronic disease can be communicated through the loss framed screening messages.

- Messages should be as clear and unambiguous as possible, especially submessages that are more specific than the general thematic message.
- When possible, tailored messages should be used in persuading people to act on indicated health and health care behaviors.

- Messages should recognize the additional barriers faced by members of the target market and, when possible, suggest behaviors that minimize them (e.g., exercises in the home versus outside or at a facility).

Media and Partner Channels

- Television and newspapers should be used, budget permitting.

- More detailed information can be provided in pamphlets.

- Campaign should focus on maximizing exposure, as it often is not sufficient in health campaigns.

- Partners can play a key role in reinforcing the message and increasing exposure.

- Physicians should be enlisted in reinforcing the screening message and providing individualized screening schedules, possibly with forms provided by the campaign to either physicians or target market members. This may be viewed as mutually beneficial by physicians, and will not take the time from short office appointments that dietary and physical activity counseling would.

- Along with other community leaders, clergy should be enlisted in promoting the messages, especially in African-American and Hispanic communities.

- News coverage should be pursued. Coverage of health behavior stories is rare in the news, and this presents an opportunity for cost-effective dissemination of the campaign messages. This may include stories of individuals of the target market successfully incorporating the behaviors in their lives and attesting to the benefits.

Recommendations for Thematic Message and Submessages

Thematic Message

Of course, not every key finding can be incorporated into the general thematic message. Fortunately, the thematic message will be communicated within an overarching MoCAN message of "Be Active, Eat Smart, Feel Good" and will be supported by more specific submessages for the target market.

The thematic message will have to be broad to speak to both *health* and *health care* (especially screening) behaviors, people with and without (but at risk of) chronic disease, and age groups 45 to 64 and 65 and above. For example, it would be difficult to accommodate the different message strategies of gain frames for health behaviors and loss frames for health care behaviors in a single message. This approach to the thematic message is not being recommended.

The thematic message should broadly stress benefits in a gain frame and communicate positive self-efficacy. An example of a broad, gain-framed message that accommodates all behaviors and age groups of the target market, as well as a sense of self-efficacy, would be, "You can make these some of the best years of your life." A more specific approach may be chosen, one that more directly communicates the health behaviors and the health care behavior of screening. But it must be kept in mind that the MoCAN message already includes advocated health behaviors - "Be Active, Eat Smart…" - and a message about only screening would not be broad enough for the thematic message.

Submessages

Submessages will communicate specific behavioral, benefit, and risk messages within the unifying thematic message. Based on the literature review, submessages included in the campaign should communicate the following:

Health Behaviors

- Vivid, evidence-based benefits of healthy eating in the prevention of chronic disease.
- Vivid, evidence-based benefits of physical activity in the prevention of chronic disease.
- Vivid, evidence-based benefits of healthy eating in minimizing symptoms and/or advance of chronic disease.
- Vivid, evidence-based benefits of physical activity in minimizing symptoms and/or advance of chronic disease.
- The benefits of quitting smoking in preventing and/or minimizing symptoms and/or advance of chronic disease – even in later life.

- Simple, achievable ways to eat better and increase physical activity.

Health Care Behaviors

- The costs avoided by early detection.

- The costs avoided by regular physician visits.
    - The need to proactively ask physicians or other health professionals about what health screenings are needed, when, how often, and where.

- Available alternate ways for uninsured members of the target market to get screenings.

Communication of these messages should incorporate the strategies and other recommendations outlined in *Key Conclusions and Recommendations from Literature*, above.

Examples

Examples of ads that incorporate some of the strategies and key specific submessages would include:

<u>For Health Behaviors</u>

- A role model easily identified as belonging to the target market so that audience feels, "She's one of us."
- A humorous (often effective) opening of, "I don't exercise/eat healthy for my looks…."
- Followed by reasons why they *do* exercise/eat healthy – i.e., to prevent/minimize/manage chronic disease.
- Vivid examples about the benefits of doing these things to her physical health and quality of life.
- Closing that incorporates the thematic message.

<u>For Health Care Behaviors</u>

- A role model whose chronic disease was detected early through screening.
    - Including that he did not have symptoms – that he was simply following the schedule of screenings <u>he asked his doctor for</u>.
- Vivid examples of what early detection has meant to him in reducing symptoms and health-related limitations. Stressing the "costs" avoided by this action.
- An overall message that he's successfully living with the disease – that his quality of life is good.
- Messages about how eating better and increasing physical activity have benefited him in managing his disease, reducing its symptoms, and slowing its course.
- Closing that incorporates the thematic message.

These are meant to illustrate one approach and how the strategies and submessages may be incorporated into ads.

Preliminary Recommendations for
CASR Survey Questions

Critical Questions

Health Behavior

Knowledge/Beliefs/Perceived Control

How much can a person control whether they get a chronic disease such as cancer or heart disease through healthy eating and physical activity or exercise?
(Using scale of *Not at all* to *A lot*)

Perceived Self-Efficacy/Control (including barriers)/Beliefs

Following question, How often do you participate in some form of physical activity?
[1] Once a week
[2] Twice or three times a week
[3] Four to five times a week
[4] Every day
[5] Never

[8] DK/not sure
[9] Refused

If [1], [2], and [5]
Is this as often as you want to?

If [8]
Do you participate in some form of physical activity as often as you want to?

If yes to either of above – stop

If no to either of above,

How much of a barrier are each of the following to participating in physical activity as often as you want to?
[Using scale of *Not a Barrier* to *A Huge Barrier* (or other scale as advised by CASR)]

- time
- my health
- lack of energy
- low motivation or desire
- haven't found activity I enjoy
- no place to go outdoors
- not belonging to an exercise facility

Following the question (to be added), How often are the meals and snacks you eat healthy for you?
[1] Hardly Ever
[2] Sometimes
[3] Usually
[4] Almost Always
[5] Almost Never

[8] DK/not sure
[9] Refused

If [1], [2], and [5]
Is this as often as you want to?

If [8]
Do you eat healthy meals and snacks as often as you want to?

If yes to either of above – stop

If no,

How much of a barrier are each of the following to eating healthy meals and snacks as often as you want to?
[Using scale of *Not a Barrier* to *A Huge Barrier* (or other scale as advised by CASR)]

- time
- my health
- lack of energy
- low motivation or desire
- don't enjoy healthy foods
- don't know how to cook healthy
- it costs too much to eat healthy

Health Care Behavior
Perceived Susceptibility

For those without chronic disease

How likely do you think it is that you will develop a chronic disease in the next 5 years?
[likelihood scale]

In the next 10 years?
[likelihood scale]

For those with chronic disease

How likely do you think it is that you will develop another chronic disease in the next 5 years?
[likelihood scale]

In the next 10 years?
[likelihood scale]

<u>Optional Questions (to be asked of all, those who have and who don't have chronic disease)</u>

Health Behavior Knowledge/Beliefs

How beneficial do you think the following are in preventing chronic diseases?

Using scale of *Not at all* to *Extremely*

- healthy eating
- physical activity and exercise
- losing weight if one is overweight
- quitting smoking

For people who already have chronic disease, how beneficial do you think the following are in slowing down the development of their disease?

Using scale of *Not at all* to *Extremely*

- healthy eating?
- physical activity and exercise?
- losing weight if one is overweight?
- quitting smoking?

Health Care Behavior Normative Pressure

Of the following, who is most likely to convince you to keep current with your screenings?

Responses choices:
Spouse; Son or Daughter; Physician; Friend; Other Relative; Other_____

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