Transforming Consumer Health

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The 2010 Patient Protection and Affordable Care Act is intended to transform the U.S. health care system. Its success will require the transformation of consumers' views about health and their willingness to participate in healthful behaviors. Focusing on three barriers to consumers' engagement in healthful behaviors, the authors review the research literature and suggest opportunities for further research. Using a social marketing perspective, they suggest actions for health care providers, marketers, and policy makers to help overcome these barriers.

Keywords: understanding, decision making, health maintenance, engagement, activation

The Patient Protection and Affordable Care Act (2010), signed into law March 2010, brings the United States closer to universal health coverage than ever before. Implicit in the new law is the assumption that consumers will willingly participate in a variety of health care initiatives, from choosing health care providers on the basis of the quality of care they provide to participating in preventive care to stay healthy. The success of this new law will require innovative public policies and initiatives aimed at changing consumers' views about health and enhancing their motivation and ability to participate in healthful behaviors.

We believe that existing and new research on consumer health behavior will be a valuable aid in this endeavor. We focus on three barriers that undermine consumer health: (1) understanding health information, (2) making healthful decision , and (3) maintaining healthful behaviors. For each barrier, we note relevant literature and suggest opportunities for further transformative research. We also provide suggestions for health care providers and marketers to help support transformed consumer behaviors and recommendations for public policy that could help overcome the barriers (Table 1).

Transformative consumer researchers apply marketing techniques and tools to enhance individual and collective well-being (Mick 2006). We advocate a social marketing approach for segmenting consumers and identifying the challenges that each segment faces (Andreasen 2006). As the Health Belief Model (Becker 1974) outlines, identifying consumer barriers is a key determinant for changing health behavior. In the current article, we use our combined research knowledge and the research literature on consumer health behaviors to identify three key barriers. The primary focus in on individual consumer barriers, but we also identify needed changes in health care provider (hereinafter, provider) behavior in addition to social and policy initiatives that support individual behavior change.

Barrier 1: Consumer Understanding of Health Information and Actions

For consumers to become more engaged in managing their own health, they must have the knowledge, skills, and confidence to understand health information and the impact of their behaviors on their health and well-being. Consumers may not recognize, and may even deny, the relationship

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Table 1. Current Knowledge About Barriers to Consumers' Health and Implications for Practice, Public Policy, and Research

	What We Know		Implications	
Barrier	**Knowledge About Obstacles**	**Knowledge About What Works**	**Health Care Practice and Public Policy**	**Future Research Directions**
Consumer understanding	•Lack of understanding of connection between behaviors and health status •Low perceived vulnerability •Lack of recognition of implicit trade-offs •Amount and form of available health information •Low statistical literacy, especially difficulty understanding probabilities	•Vivid presentations •Personal stories •Graphical presentations •Consumer participation in online health social networking •Segmentation strategies •Tailored health information •Health coaches	•Tailor health information to level of activation •Use health coaches to support behavior change •Develop new measures to assess patient experience •Use technology to support delivery of personalized health care •Use health coaches as part of care team •Enhance health literacy •Reduce the impact of the digital divide •Expand health information technology to include information exchange across health care settings	•Consumer segments based on differences in understanding and motivation •Better tools for assessing the patient experience •Ways to improve consumer understanding of risk and benefit information •Message formats and characteristics that facilitate understanding and action •Ways to increase engagement for people at different levels of activation •Ways to increase health orientation and literacy •Impact of messages on emotion and cognition •Preferred information sources of different consumer segments
Consumer decision making	•Competing goals/priorities (trade-offs between health and other life goals) •Environmental constraints (e.g., lack of healthful alternatives, time constraints) •Difficulty making trade-offs among noncomparable features (e.g., cost, quality, risk) •Effort required to find and use health information •Risk aversion heuristics •Tendency to categorize in binary format •Failures of self-regulation •Lack of goal setting •Goal abandonment •Ineffective patient–provider communication	•Reduce perceived cost of behavior •Strategies for dealing with perceived barriers •Awareness of low self-control •Goal setting based on patient's preferences •Implementation plans •Simple (limited) choices •Deadlines •Precommitments and pledges •Communications devices such as decision boards to provide better insight into choices	•Strengthen health care providers' listening and patient engagement skills •Support health care delivery redesign (e.g., certification of practices as PCMHs) •Use policy to minimize environmental constraints (e.g., provide healthful food options in schools; revise building codes to require accessible, safe stairs to encourage exercise; provide safe spaces for exercise [e.g., parks, paths, walkable environments]) •Encourage public performance reporting by providers •Develop standards for reporting risk and value information •Align medical school curriculum with practice redesign (e.g., care teams, goal setting) •Pay-for-performance compensation for providers based on quality and value of health outcomes •Reduce insurance premiums for consumers who complete health screenings and reduce health risks	•How consumers make trade-offs between health goals and other life goals •How highly involved and less involved consumers differ •Ways to reduce effort to process health information •How consumers interpret and use health care quality and cost information •What assistance consumers need in making and implementing plans •What tools consumers would find useful for goal setting and monitoring •Consumers' coping strategies •Ways to increase attitude of moderation •Ways to activate consumer engagement •Ways to plan for "hot states" (i.e., high level of readiness to change) •Ways to improve patient/physician communication •How consumers talk about health •How consumers integrate support from social networking sites into decisions about health behaviors •What consumers need/want to know when choosing a health care provider

Table 1. Continued

	What We Know		Implications	
Barrier	**Knowledge About Obstacles**	**Knowledge About What Works**	**Health Care Practice and Public Policy**	**Future Research Directions**
Consumer maintenance of healthful behaviors	•Despite their understandings and intentions, people often do not maintain healthful behaviors •Research focus on adoption rather than maintenance of health behavior •Lack of innovative practices that focus on health maintenance	•Focus on health-maintaining behaviors rather than quick medical fixes •Recognition that enduring changes tend to occur gradually •Long-term perspective toward health •Focus on time-release practices •Biopsychosocial approach	•Provide "menus" of time-release practices •Develop innovative time-release practices (e.g., Internet/social media, mobile interventions/reinforcements) •Report on providers' "top-ten time-release practices" •Investment credits for business opportunities for time-release products •Develop clear guidelines for time-release practices	•A taxonomy of time-release practices that are at least sometimes effective to identify what is being usefully "released" over time •Which health behavior maintenance practices are most effective and when? •What are the metrics to measure the effectiveness of time-release practices? •What are the determinants, moderators, and mediators of intertemporal discounting?

Notes: PCMH = patient-centered medical home.

between their own behaviors and their health status (Hoch and Lowenstein 1991). Protection motivation theory suggests that when consumers do not perceive that they are vulnerable to a health risk, they may lack the motivation to change their behavior (Rogers 1975). Further reducing motivation, decisions about health behaviors often involve trade-offs between short- and long-term gains. In addition, many health benefits are invisible (something happens inside the body), and consumers may place greater value on visible results (e.g., enhanced appearance from frequenting a tanning salon) rather than less visible but more serious health consequences (e.g., skin cancer). Given these trade-offs, it is understandable that consumers may not follow recommendations for behavior change.

An appreciation of the connection between everyday behaviors and health outcomes can be increased by providing more specific and lay-oriented information. Vivid presentations of health information with concrete stories about consumers who have achieved positive health outcomes have been shown to prompt healthful actions (Keller and Lusardi 2012). Health social networking sites can provide the power of personal stories, social norms, and peer influence to help consumers understand the consequences of their behaviors on their health (Cialdini and Goldstein 2004; Fox 2010).

Another key barrier to consumer understanding involves the amount and form of available information. Consumers frequently have trouble processing and understanding health information, from nutrition information on food packages to risk information presented in the popular press. Common practice in the popular press and medical journals of highlighting relative risk rather than the combination of relative risk, absolute risk, and base rate, which is necessary for comprehension, further obfuscates consumer understanding (Kurz-Milcke, Gigerenzer, and Martignon 2008). Health information is typically presented using numbers, but low statistical literacy, even among the well educated, creates vulnerability (Lipkus, Samsa, and Rimer 2001). Even simple percentages are difficult for many, and conditional probabilities (e.g., the chance of a false-positive HIV test) are beyond the ken of most (Chen and Rao 2007). Consumers tend to overestimate risks described verbally (e.g., "rarely," "commonly") (Cox, Cox, and Mantel 2010). Compared with numerical presentation formats, graphic presentation formats hold some promise for making risk communications more transparent, though there is mixed evidence about when and how graphic formats work (cf. Hawley et al. 2008).

Implications for Practice

Several well-established models of health behavior can help providers promote greater patient understanding of health information. For example, the theory of reasoned action (Ajzen and Fishbein 1980) suggests that beliefs and attitudes underlie values. Thus, to change the value consumers place on a particular aspect of health, it may be helpful to focus on changing their beliefs and attitudes.

Providers have a particularly important role in helping consumers understand the impacts of their behaviors on their health. Health professionals can adopt a social marketing approach by being sensitive to differences in consumer knowledge and motivation and tailoring information accordingly. Tailored information can be particularly helpful in increasing patient activation (Hibbard, Greene, and Tusler 2009). Consistent with Prochaska, Norcross, and DiClemente's (1994) stages-of-change model, awareness of differences among consumers also suggests that additional resources and accountability options may be useful in supporting behavior change. Bodenheimer et al. (2002) report that health coaches can help some consumers develop healthful behaviors.

Improved measures and innovative methods for assessing patients' experiences are needed. Development of new and more sensitive measures of the patient experience (e.g., assessments of the physician–patient interaction) could help providers deliver more patient-centered care (National Committee on Quality Assurance 2007). Health care administrators and staff could employ several research techniques to gain a better appreciation of the barriers to understanding patients face. Focus group interviews and community action research (Ozanne and Anderson 2010) may be helpful in gaining insights into why consumers behave as they do and interventions that could enhance behavior change.

Limited time with patients is a key barrier to physicians in providing personalized care. Technology may help customize health recommendations, but using it effectively depends on providers' deep insights into patients' barriers to understanding and following through on health information. Electronic medical records and health risk assessments, including information on patient preferences, level of activation, and life circumstances, could provide customized talking points for health coaching.

Implications for Public Policy

The Patient Protection and Affordable Care Act (2010) began efforts toward health care payment reform and delivery redesign. Such reforms are essential to create an environment in which providers can afford to spend the time needed with their patients to develop strong relationships that support patient understanding and engagement. Current public policy initiatives encourage physicians to use health information technology in meaningful ways. For example, they can access effective, tailored talking points using personal data assistants. Meaningful use must include the exchange of health information across health care settings and among providers so that more complete information is available to all providers treating a given patient to facilitate patient–physician discussions that enhance patients' understanding.

Further Research

Further research can help provide solutions that facilitate consumer understanding of health information (see Table 1). General questions include the following: How can complex information be presented to enhance understanding and encourage action? How can risks and benefits be presented to stimulate optimal consumer decisions about health behaviors? How can the effects of communication format on cognition and emotion be disentangled (Luce, Bettman,

and Payne 2001)? Furthermore, there is an urgent need to understand how consumer segments differ with regard to their health knowledge and motivations. With an understanding of different segments, researchers can target specific segments by answering questions such as the following: What interventions are most effective in increasing activation for consumers at different levels of baseline activation? How can health knowledge, skills, and self-efficacy be enhanced in different segments? What information sources do different consumer segments prefer, and which result in optimal processing and persuasion?

Barrier 2: Consumer Decision Making About Health Behaviors

Not all consumers place a high value on health; thus, it is important to understand how consumers make trade-offs between health goals and other life goals. Behaviors that seem to reflect misunderstanding of health information may actually be the result of pursuit of other priorities. For example, a patient who skips taking medications may do so not because of a lack of understanding of the dosage recommendations but because of a choice between putting food on the table and refilling a prescription. Consumers may face environmental constraints that keep them from eating healthful foods, such as a lack of availability of fresh produce in neighborhood grocery stores and a lack of time to prepare home-cooked meals. Understanding these constraints in patients' lives is an essential foundation for assisting patients in overcoming these barriers. Environmental solutions that make "good" behaviors easier (e.g., ensuring access to safe space for exercise in inner cities, changing the food options available in schools) can increase the likelihood that consumers will engage in healthful behaviors.

Consumers differ with regard to their choices and decision-making styles. Knowledge of both dimensions is important for designing tailored health interventions. The decisions consumers make about health-related behaviors are diverse, including what insurance plan to pick, which provider to select, what treatment option will be best (e.g., surgery vs. medicine), whether to have preventive screenings, and even what to eat and how much to exercise. The complexity of these decisions and the need to make trade-offs among incomparable features (e.g., costs, risks, outcomes, self-efficacy) can lead to an inability to choose wisely and/or implement a health behavior.

The extent to which consumers want to be involved in decisions about their health and health care depends on several factors, including individual characteristics, the nature of the health decision, and the available alternatives. Some consumers want to be actively involved in health decisions and take an autonomous or shared approach to health decision making, while others adopt a more paternalistic, hands-off style (Charles, Gafni, and Whelan 1997).

Internet-based health information is a tremendous resource for many consumers. It is the most common type of information consumers seek from the Internet. Online health social networking sites can impart the "wisdom of many" (Miller 2010). A Pew Internet and American Life Project study reports that communities of learning on social networking sites broaden the scope of resources for consumers. Although some argue that increased access to information can be dangerous, the bottom line is that the ready availability of health information enables consumers to participate more in their health care (Fox and Jones 2009).

Communication channels should be matched to a person's motivation level. Highly motivated consumers may seek out health information through interpersonal communication, specialized print media, or the Internet, while consumers who are less interested in health information may receive health information passively through mass media channels such as television and radio (Dutta-Bergman 2004). Mobile devices hold significant potential for reaching even less motivated consumers (Fox 2010).

Medical science is complex, and individual decision styles may be different for preventive, diagnostic, and treatment initiatives. Uncertainty aversion may lead to a variety of dysfunctional evaluation heuristics (see Anderson and Iltis 2008). In particular, we note a tendency to convert probability information into discrete categories (e.g., will/will not occur, healthful/unhealthful; Parascandola, Hawkins, and Danis 2002), which can hamper accurate interpretations of risks and benefits and create rigid categorizations that may detract from healthful decision making. Categories bring meaning and structure to life; however, health-related categorization schemes are often oversimplified. Consumers who categorize options as simply acceptable or unacceptable may fail to recognize the role of moderation in behavior (Poynor and Haws 2009).

Decision accuracy can be facilitated by decreasing the cost of implementing health actions. By identifying ways to decrease the effort required to use health information, even low-knowledge and low-motivation groups will be more likely to use it (Moorman 1990). Simple implementation plans that focus on concrete steps toward a goal (Keller 2006; Keller and Lehmann 2008) and demonstration videos on the Internet can increase consumers' perception that actions are easy to implement in addition to their confidence in completing them. For example, providing recipes that incorporate healthful ingredients may help consumers see how they can change their eating behaviors to become healthier. Past behaviors (success or failure) and current health status can also shape a person's perception regarding how likely it is that he or she can implement health behaviors (Karademas, Sideridis, and Kafetsios 2008).

Implications for Practice

Ineffective communication between providers and patients is at the root of many issues related to consumers' decisions about their health. Poor communication can affect the quality of medical history taken, the quality of care received, patient understanding and adherence to recommendations, and litigation for malpractice (e.g., Flocke, Miller, and Crabtree 2002). In contrast, effective communication can promote patient involvement, leading to improved outcomes (Barry 2002). More emphasis should be placed on developing skills among providers and medical students for listening to patients and facilitating patient engagement. Shared goal setting and decision making based on an understanding of the patients' perspective can help providers

make patient-centered recommendations that are more likely to lead to higher levels of adherence.

New models of care can help ensure that providers have sufficient time and resources to facilitate critical discussions with patients. For example, the patient-centered medical home (PCMH) concept aims to improve efficiency and patient outcomes using care teams and electronic medical records to facilitate continuity and integration of care (Masters et al. 2010; Mirabito and Berry 2010). In the PCMH, providers can help patients weigh the likelihood, costs, benefits, and drawbacks of various outcomes in the context of patient preferences. Communication aids such as decision boards that compare treatment options can help providers present information to facilitate patients' involvement in decisions about their care (Barry 2002).

Implications for Public Policy

Public policy can be used to help minimize environmental constraints on consumers making healthful choices. Some relatively simple changes to social service programs could decrease the participation cost, stimulating targeted consumers to engage in more healthful behaviors. For example, free immunization clinics could be set up in locations that are easily accessible by public transportation. Policies that restrict the availability of unhealthful foods and ensure the availability of healthful foods on school campuses facilitate students' healthful eating. Building codes that provide safe and accessible stairways encourage exercise. Infrastructure such as parks, safe walking and biking paths, and neighborhoods that facilitate walking for daily activities such as shopping can help develop habits of healthful living.

Public policies can also facilitate decision making by ensuring that the right information is presented in the right way. The current emphasis on public reporting of facility and physician performance data (Lindenauer et al. 2007) is based on the hope that if such information is readily available, both providers and consumers can make more effective value-based decisions. Current Center for Medicare and Medicaid Services policies require facilities and providers to report specific quality measures to be eligible for reimbursement from Medicare and/or Medicaid. Policies may be necessary to provide guidance on how such data are made available to consumers and providers. Standards for disclosures could help consumers understand the risks when providers do not follow recommended processes of care (e.g., timely treatment of patients who have chest pain).

Public policy can also support the redesign of health care delivery by continuing to provide certification for practices that adopt features of the PCMH model. Payment reform policies should reward providers for the quality of care they provide. Health care administrators should consider pay-for-performance compensation plans for providers based on the quality and value of patient outcomes and for care practices that have proved to be more cost effective. Provider licensure programs could acknowledge completion of training in effective communications skills.

Finally, public officials should consider policies that reward consumers for making healthful choices. In the private sector, some employers reduce health insurance premiums for employees who complete a lifestyle health risk (e.g., stress levels, physical activity, eating patterns, tobacco and alcohol use, other health behavior information) and biometrics (e.g., body mass index, blood glucose, cholesterol levels) appraisals and achieve health goals. Policy makers should consider avenues that reward consumers for reducing health risks (e.g., not using tobacco, drinking in moderation; see Table 1).

Further Research

There are several avenues for research that could help overcome the barriers that consumers face in making decisions about their health. It is important to gain more insights into how consumers make trade-offs between health goals and other life goals. With the benefits of segmentation in mind, it would be helpful to learn more about how consumers who are and want to be involved in their health care differ from those who are less interested and less involved.

Although much research exists on health communication, more work identifying ways to reduce the effort required to process health information is needed. Given the many sources of health information, and particularly the increased use of social media, it is important to gain a better understanding of how consumers integrate information from various sources and the potential impact of different sources (e.g., consumer-generated information).

With the increased emphasis on transparency of performance and cost information, it is important to know what performance information consumers want and need. Although there is a large body of research literature on consumers' use of performance ratings of consumer products (e.g., for films, cars), there is little research on consumers' use of ratings of providers and health services. How do consumers use performance and cost information? How does this vary by circumstance (e.g., a consumer moving to a new city vs. a consumer recently diagnosed with diabetes)? What sources do consumers find most credible? How do consumers integrate performance data from the Center for Medicare and Medicaid Services and other payers with word-of-mouth evaluations?

Research is needed to understand how consumers communicate about their health. Specifically, we recommend assessing how consumers interpret different risk-related words (e.g., Cox, Cox, and Mantel 2010) and determining the words consumers use to describe how they feel. Such information could be obtained through qualitative interviews with patients and from content analyses of health social media. Care should be taken to understand how context (e.g., Karelitz and Budescu 2004) and presentation format (e.g., Schlosser 2010) can affect interpretations.

Barrier 3: Consumer Maintenance of Healthful Behaviors

Consumers who surmount the first two barriers to health-related behaviors (barriers to understanding and decision making) also face a third barrier: the challenge of maintaining the healthful behaviors that have been learned and chosen. Despite the success that social marketing and education campaigns have had over the past century in improving Americans' health (for a review, see Ward and Warren

2007), current trends in the health-related behaviors of consumers illustrate the difficulty of accomplishing long-term change. For example, despite the widespread public awareness of the value of healthful eating and exercise and the dangers of smoking, obesity has reached epidemic proportions, physical activity has been decreasing, and the rate of tobacco consumption is still unacceptable (Orleans 2000). Current approaches to health education and promotion focus on behavioral determinants related to health, with particular attention to the adoption of a health behavior (Fishbein et al. 2001), but they fail to focus on maintenance as the overall goal of the programs.

One approach to the challenge of maintaining healthful behaviors is to appreciate that enduring changes in behavior tend to occur gradually, as the Stages of Change Model (Prochaska, Norcross, and DiClemente 1994) and research on the hierarchy of effects suggest. Another approach is to encourage consumers to take a more long-term perspective about their health. Rather than the typical short-term perspective, with its emphasis on the prevention of relapses, a "figure-ground reversal" may be necessary; in other words, the focus might be better placed on the promotion of maintenance rather than prevention of relapses (Orleans 2000).

An approach with both practical and theoretical implications would involve thinking more generally about the category of practices intended to accomplish long-term healthful behavior maintenance. Just as some medications use time-release technologies enabling a drug to be released continually into a patient's system over a long period of time, we suggest that the time-release concept may also be applied in the behavioral realm. We propose using the term "time-release practices" to refer to the entire range of practices initiated at the individual or institutional levels to maintain ongoing consumers' health-enhancing behaviors.

An implication of this term is that there is something that must be done—or "released"—on a continuing basis to accomplish long-term health maintenance. In the perspective of behavior modification (for a review, see Miltenberger 2008), old bad behaviors can be extinguished through negative reinforcements or punishment; new good behaviors can be conditioned through positive reinforcements. If these reinforcements can occur on a continuing basis (e.g., changes in insurance rates), long-term healthful lifestyle maintenance can be achieved. From the perspective of the biopsychosocial approach, which "integrates sociocultural factors into a patient-centered approach to health care" (Chin, Monroe, and Fiscella 2000, p. 325), changes in cultural norms and support from societal institutions may often be essential to help create this continuing presence of helpful reinforcements.

Implications for Practice

The concept of time-release practices could stimulate innovation on the part of many participants involved in health behavior maintenance. For example, for physicians, attention to time-release practices might help establish an effective, high-quality patient–physician relationship that focuses on establishing a healthful lifestyle.

For provider organizations, time-release solutions could involve developing innovative practices, such as Internet-based interventions (Winett et al. 2005) and mobile technologies (Kaplan 2006), to improve long-term health outcomes. For example, health providers such as Hello Health are using social media tools to build an online social network with their patients for treatment (Hawn 2009). Because online communication is less expensive than personal visits, these new models for health care can be used not only to cure diseases but also to improve the long-term health of its members. For entrepreneurs and other businesses, an awareness of the category of time-release practices might stimulate the development of new information technology products and services (e.g., mobile device applications) that could support time-release practices (Winett et al. 2005).

Implications for Public Policy

Public policies that appreciate the importance of time-release practices can contribute to the use and development of these practices. The Department of Health and Human Services and other governmental organizations could take the lead in promoting "menus" of time-release practices to guide consumers and practitioners and stimulate entrepreneurs. Organizations that develop innovative time-release practices could be acknowledged in "top-ten lists" of effective time-release practices and other forms of publicity as a means of raising awareness of these practices and their importance.

Tax and incentive programs could be helpful in encouraging the development of new products and service innovations to support the maintenance of healthful behaviors. For example, investment credits might help focus entrepreneurial efforts on research and development of new products, such as reminder devices, software, and phone applications that incorporate time-release practices.

Institutional and legal constraints inhibiting the growth of innovative models for online health care should be minimized. Insurers typically do not cover online visits to physicians (Hawn 2009), which may prevent consumers from taking full advantage of these cost-effective networks to maintain health. Clear guidelines for protecting privacy of online communications must be established so more health providers have confidence in using social media for health care.

Further Research

Further research should determine which health behavior maintenance practices are most effective in different situations for different consumer segments. The development of a taxonomy of time-release practices could help identify what may be "released" over time that would be particularly helpful for health behavior maintenance (e.g., reinforcement over time through continuing group support). The development of new metrics to measure changes in consumer health could be helpful in identifying factors affecting long-term health.

New theoretical frameworks and investigative methods could be applied to this issue. For example, integral theory (Esbjöm-Hargens 2009), an all-inclusive framework that observes key insights from different disciplines and paradigms, could help researchers identify variables that are

important in time-release practices. Research on intertemporal discounting (Kees et al. 2006) could help identify what must be released for long-term behavior maintenance to be achieved. Self-determination theory (Moller, Ryan, and Deci 2006), which considers consumers' intrinsic tendencies to behave in an effective and healthful way, might encourage the identification of psychological factors influenced by time-release practices. Emotional intelligence—the ability to perceive, use, understand, and regulate emotions (Mayer and Salovey 1997)—could offer insights into the role of emotions and cognitions in the maintenance of a health behavior (Peter and Brinberg, forthcoming). Participatory and community-action research (Ozanne and Anderson 2010; Ozanne and Saatcioglu 2008) might offer new lenses to study the effectiveness of time-release solutions.

Other questions that further research could address include the following: How can long-term support for lifelong changes be provided? What are the determinants of consumer intertemporal discount rates? What are the roles of individual personality differences, contextual states, and health issues on intertemporal discount rates? How can health interventions be customized by level of intertemporal discounting? How can the value of more permanent long-term health outcomes be communicated? Which incentives work best as consumers move closer to attaining their goals?

Conclusion

Encouraging consumers to lead healthier lives is a complex task that involves numerous stakeholders and requires overcoming a wide variety of barriers. We focus on three consumer barriers—understanding, decision-making, and maintenance of healthful behaviors—and review existing and needed knowledge helpful in overcoming these barriers. We advocate a social marketing approach for segmenting consumers and identifying challenges faced by each segment. By implementing recommended practices and policies, we hope to see a world in which making health decisions is not debilitating and consumers and providers can partner together to adopt a long-term perspective for improving health.

References

Ajzen, Icek and Martin Fishbein (1980), *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice Hall.

Anderson, Emily E. and Ana S. Iltis (2008), "Assessing and Improving Research Participants' Understanding of Risk: Potential Lessons from the Literature on Physician–Patient Risk Communication," *Journal of Empirical Research on Human Research Ethics,* 3 (3), 27–37.

Andreasen, Alan R. (2006), *Social Marketing in the 21st Century*. Thousand Oaks, CA: Sage Publications.

Barry, Michael J. (2002), "Health Decision Aids to Facilitate Shared Decision Making in Office Practice," *Annals of Internal Medicine*, 136 (2), 127–35.

Becker, Marshall H. (1974),"The Health Belief Model and Personal Health Behavior," *Health Education Monographs*, 2 (4), 324–508.

Bodenheimer, Thomas, Kate Lorig, Halsted Holman, and Kevin Grumbach (2002), "Patient Self-Management of Chronic Disease in Primary Care," *Journal of the American Medical Association*, 288 (19), 2469–75.

Charles, Cathy, Amiram Gafni, and Tim Whelan (1997), "Shared Decision-Making in the Medical Encounter: What Does It Mean? (Or, It Takes at Least Two to Tango)," *Social Science & Medicine*, 44 (5), 681–92.

Chen, Haipeng and Akshay R. Rao (2007), "When Two Plus Two Is Not Equal to Four: Errors in Processing Multiple Percentage Changes," *Journal of Consumer Research*, 34 (3), 327–40.

Chin, Nancy P., Alicia Monroe, and Kevin Fiscella (2000), "Social Determinants of (Un)Healthy Behaviors," *Education for Health*, 13 (3), 317–28.

Cialdini, Robert B. and Noah J. Goldstein (2004), "Social Influence: Compliance and Conformity," *Annual Review of Psychology*, 55 (February), 591–621.

Cox, Anthony D., Dena Cox, and Susan Powell Mantel (2010), "Consumer Response to Drug Risk Information: The Role of Positive Affect," *Journal of Marketing*, 74 (July), 31–44.

Dutta-Bergman, Mohan J. (2004), "Primary Sources of Health Information: Comparisons in the Domain of Health Attitudes, Health Cognitions, and Health Behaviors," *Health Communication*, 16 (3), 273–88.

Esbjörn-Hargens, Sean (2009), "An Overview of Integral Theory: An All-Inclusive Framework for the 21st Century," Resource Paper No. 1, Integral Institute (March).

Fishbein, Martin, Harry C. Triandis, Frederick H. Kanfer, Marshall H. Becker, Susan E. Middlestadt, and Anita Eichler (2001), "Factors Influencing Behavior and Behavior Change," in *Handbook of Health Psychology*, Andrew Baum, Tracy Revenson, and Jerome Singer, eds. Mahwah, NJ: Lawrence Erlbaum Associates, 3–17.

Flocke, Susan A., William L. Miller, and Benjamin Crabtree (2002), "Relationships Between Physician Practice Style, Patient Satisfaction, and Attributes of Primary Care," *Journal of Family Practice*, 51 (10), 835–40.

Fox, Susannah (2010), "The Power of Mobile," Pew Internet and American Life Project, (September 13), (accessed September 25, 2010), [available at http://pewinternet.org/Commentary/2010/September/The-Power-of-Mobile.aspx].

——— and Sydney Jones (2009), "The Social Life of Health Information," Pew Internet and American Life Project, (June 11), (accessed September 17, 2010), [available at http://www.pewinternet.org/Reports/2009/8-The-Social-Life-of-Health-Information.aspx?r=1].

Hawley, Sarah T., Brian Zikmund-Fisher, Peter Ubel, Aleksandra Jancovic, Todd Lucas, and Angela Fagerlin (2008), "The Impact of the Format of Graphical Presentation on Health-Related Knowledge and Treatment Choices," *Patient Education and Counseling*, 73 (3), 448–55.

Hawn, Carleen (2009), "Take Two Aspirin and Tweet Me in the Morning: How Twitter, Facebook, and Other Social Media Are Reshaping Health," *Health Affairs*, 28 (2), 361.

Hibbard, Judith H., Jessica Greene, and Martin Tusler (2009), "Improving the Outcomes of Disease Management by Tailoring Care to the Patient's Level of Activation," *American Journal of Managed Care*, 15 (6), 353–60.

Hoch, Stephen J. and George Loewenstein (1991), "Time-Inconsistent Preferences and Consumer Self-Control," *Journal of Consumer Research*, 17 (March), 492–507.

Kaplan, Warren A. (2006), "Can the Ubiquitous Power of Mobile Phones Be Used to Improve Health Outcomes in Developing Countries?" *Globalization and Health*, 2 (9), 1–14.

Karademas, Evangelos C., Georgios D. Sideridis, and Konstantinos Kafetsios (2008), "Health-Related Information Processing and Recent Health Problems," *Journal of Health Psychology*, 13 (1), 28–38.

Karelitz, Tzur M. and David V. Budescu (2004), "You Say 'Probable' and I Say 'Likely': Improving Interpersonal Communication with Verbal Probability Phrases," *Journal of Experimental Psychology: Applied*, 10 (1), 25–41.

Kees, Jeremy, Scot Burton, J. Craig Andrews, and John Kozup (2006), "Tests of Graphic Visuals and Cigarette Package Warning Combinations: Implications for the Framework Convention on Tobacco Control," *Journal of Public Policy & Marketing*, 25 (Fall), 212–23.

Keller, Punam A. (2006), "Regulatory Focus and Efficacy of Health Messages," *Journal of Consumer Research*, 33 (June), 109–114.

——— and Donald R. Lehmann (2008), "Designing Effective Health Communications: A Meta-Analysis," *Journal of Public Policy & Marketing*, 27 (Fall), 117–30.

——— and Annamaria Lusardi (2012), "Employee Retirement Savings: What We Know and What We Are Discovering for Helping People to Prepare for Life After Work," in *Transformative Consumer Research for Personal and Collective Well-Being: Reviews and Frontiers*, David Glen Mick, Simone Pettigrew, Cornelia Pechmann, and Julie L. Ozanne, eds. London: Taylor & Francis/Routledge, forthcoming.

Kurz-Milcke, Elke, Gerd Gigerenzer, and Laura Martignon (2008), "Transparency in Risk Communication," *Annals of the New York Academy of Sciences*, 1128 (April), 18–28.

Lindenauer, Peter K., Denise Remus, Sheila Roman, Michael B. Rothberg, Evan M. Benjamin, Allen Ma, and Dale W. Bratzler (2007), "Public Reporting and Pay for Performance in Hospital Quality Improvement," *The New England Journal of Medicine*, 356 (5), 486–96.

Lipkus, Isaac M., Greg Samsa, and Barbara K. Rimer (2001), "General Performance on a Numeracy Scale Among Highly Educated Samples," *Medical Decision Making*, 21 (1), 37–44.

Luce, Mary Frances, James R. Bettman, and John W. Payne (2001), *Emotional Decisions: Tradeoff Difficulty and Coping in Consumer Choice*. Chicago: The University of Chicago Press.

Masters, Tamara, Debra L. Scammon, Michael K. Magill, Marlene J. Egger, Julie Day, Annie Sheets Mervis, and Andrada Tomoaia-Cotisel (2010), "Development and Analysis of Scales to Assess Patient Experience in Primary Care," working paper, David Eccles School of Business, University of Utah.

Mayer, John D. and Peter Salovey (1997), "What Is Emotional Intelligence?" in *Emotional Development and Emotional Intelligence: Educational Implications*, Peter Salovey and David J. Sluyter, eds. New York: Basic Books, 3–34.

Mick, David Glen (2006), "Meaning and Mattering Through Transformative Consumer Research," in *Advances in Consumer Research*, Vol. 33, Cornelia Pechmann and Linda Price, eds. Duluth, MN: Association for Consumer Research, 1–4.

Miller, Claire C. (2010), "Social Networks a Lifeline for the Chronically Ill," *The New York Times*, (March 24), (accessed July 28, 2010), [available at http://www.nytimes.com/2010/03/25/technology/25disable.html].

Miltenberger, Raymond (2008), *Behavior Modification: Principles and Procedures*, 4th ed. Florence, KY: Thompson Wadsworth Publishing.

Mirabito, Ann M. and Leonard L. Berry (2010), "Lessons That Patient-Centered Medical Homes Can Learn from the Mistakes of HMOs," *Annals of Internal Medicine*, 152 (3), 182–85.

Moller, Arlen C., Richard M. Ryan, and Edward L. Deci (2006), "Self-Determination Theory and Public Policy: Improving the Quality of Consumer Decisions Without Using Coercion," *Journal of Public Policy & Marketing*, 25 (Spring), 104–116.

Moorman, Christine (1990), "The Effects of Stimulus and Consumer Characteristics on the Utilization of Nutrition Information," *Journal of Consumer Research*, 17 (December), 362–74.

National Committee on Quality Assurance (2007), "NCQA to Require Quality Measurement, Improvement of All Health Plans," *redOrbit*, (February 15), (accessed February 4, 2010), [available at http://www.redorbit.com/news/health/842217/ncqa_to_require_quality_measurement_improvement_of_all_health_plans/index.html].

Orleans, C. Tracy (2000), "Promoting the Maintenance of Health Behavior Change: Recommendations for the Next Generation of Research and Practice," *Health Psychology*, 19 (Supplement 1), 76–83.

Ozanne, Julie L. and Laurel Anderson (2010), "Community Action Research," *Journal of Public Policy & Marketing*, 29 (Spring), 123–37.

——— and Bige Saatcioglu (2008), "Participatory Action Research," *Journal of Consumer Research*, 35 (3), 423–39.

Parascandola, Mark, Jennifer Hawkins, and Marion Danis (2002), "Patient Autonomy and the Challenge of Clinical Uncertainty," *Kennedy Institute of Ethics Journal*, 12 (3), 245–64.

Patient Protection and Affordable Care Act (2010), Public Law No. 111-148; 124 Statute 119-1025, (accessed on March 28, 2010), [available at http://www.gpo.gov/fdsys/pkg/PLAW-111publ148/pdf/PLAW-111publ148.pdf].

Peter, Paula C. and David Brinberg (forthcoming), "Learning Emotional Intelligence: An Exploratory Study in the Domain of Health," *Journal of Applied Social Psychology.*

Poynor, Cait and Kelly L. Haws (2009), "Lines in the Sand: The Role of Motivated Categorization in the Pursuit of Self-Control Goals," *Journal of Consumer Research*, 35 (5), 772–87.

Prochaska, James O., John C. Norcross, and Carlo C. DiClemente (1994), *Changing for Good: The Revolutionary Program That Explains the Six Stages of Change and Teaches You How to Free Yourself From Bad Habits.* New York: W. Morrow.

Rogers, Ronald W. (1975), "A Protection Motivation Theory of Fear Appeals and Attitude Change," *Journal of Psychology*, 91 (1), 93–114.

Schlosser, Ann (2010), "What Are My Chances? The Persuasive Implications of Using Larger (vs. Smaller) Ratios and Visualization in Public Service Advertisements," presentation at the Society for Consumer Psychology Winter Conference, St. Petersburg, FL (February 27).

Ward, John W. and Christian Warren, eds. (2007), *Silent Victories: The History and Practice of Public Health in Twentieth-Century America.* Oxford: Oxford University Press.

Winett, Richard A., Deborah F. Tate, Eileen S. Anderson, Janet R. Wojcik, and Sheila G. Winett (2005), "Long-Term Weight Gain Prevention: A Theoretically Based Internet Approach," *Preventive Medicine*, 41 (2), 629–41.