Advancing eHealth: Opportunities & Challenges for the Health e-Technologies Initiative

Findings from Interviews & Surveys of Opinion Leaders & Stakeholders

 Prepared for:

THE ROBERT WOOD JOHNSON FOUNDATION

 and

HEALTH e-TECHNOLOGIES INITIATIVE NPO

 Prepared by:

White Mountain Research Associates, L.L.C.

 Authors:

Seth Emont, PhD, MS
Nancy Emont, PhD, MA
# TABLE OF CONTENTS

**Executive Summary** ................................................................. 3  
**Background** ............................................................................. 9  
**Rationale and Assessment Goals** ........................................ 12  
**Methods** .................................................................................. 15  
**Results** .................................................................................... 18  
  
  *Phase I – Findings from Pre-Interview Survey and Interviews of Opinion Leaders*  
  *Phase II – Findings from Surveys of Stakeholders on the “Value Added” of eHealth Tools for End Users*  
**Key Recommendations** ........................................................... 33  
**Appendix** ................................................................................ 38  
  
  *Key Opinion Leaders Interviewed*  
  **Phase I**  
  *Interview Guide*  
  *Pre-Interview Survey: Resources for Building and Sustaining the Field of eHealth – Mean Ratings*  
  *Pre-interview Survey: Other Possible Resources Suggested by Opinion Leaders for Building the Field of eHealth*  
  *Pre-interview Survey: Suggested Topics for Commissioned Papers on eHealth*  
  **Phase II**  
  *Surveys for Key Stakeholders*
EXECUTIVE SUMMARY

In February 2002, the Robert Wood Johnson Foundation (RWJF) launched the Health e-Technologies Initiative (HETI). The goals of HETI are to expand the body of knowledge about the efficacy, costs, cost-effectiveness and overall quality of eHealth applications currently in use for health behavior change and chronic disease management and to expand the body of knowledge about how to evaluate, compare and improve them. Foundation and National Program Office (NPO) staff are currently exploring follow-on activities in which HETI may play a role to support further research in eHealth and the potential for synergy with other national initiatives and programs. While RWJF is not planning to fund a “full fledged” continuation of the Health e-Technologies Initiative as originally conceived, Foundation staff is interested in exploring follow-on activities that would help to sustain and spread the contributions that the Health e-Technologies Initiative has made to the field. Input from key experts in the field can help to identify and define other programming options and provide guidance to Foundation and NPO staff for the kinds of programming, research support and technical assistance activities that could help move the field of eHealth forward.

To assist the Foundation and NPO in exploring potential HETI follow-on activities, White Mountain Research Associates, L.L.C. (WMRA) conducted an assessment based on the input of eHealth experts and end users of eHealth applications. Assessment activities were divided into two distinct phases. Phase I addressed the Health e-Technologies Initiative’s unique niche and brand value in the field, potential field building activities, the most promising strategies to assure the initiative’s products will have maximal impact on the field, and networking activities. For this phase of the assessment, WMRA conducted interviews with 30 opinion leaders in the field of eHealth. In Phase II of the assessment, WMRA and the NPO surveyed a second, smaller group of seven key stakeholders to explore the “value added” of eHealth tools in engaging consumers and improving the quality of health care delivery. All tools used to collect this information (interview guides, pre-interview survey, surveys for key stakeholders) are provided in the Appendix.

Findings from Phase I indicated the continued need for both evidence-based eHealth research as well as activities focusing on provider and consumer engagement. Opinion leaders agreed that the Health e-Technologies Initiative is filling a unique niche by pursuing the science/evidence base behind eHealth.
technologies and should continue along these lines. A number of opinion leaders thought that this area of research is still very young and a strong evidence-base of rigorous evaluations of eHealth applications should still continue to be a priority. Many of the opinion leaders stated that improving the evidence base specifically around eHealth applications for consumer online health behavior change programs, patient-provider communication, patient access to electronic records, chronic disease management programs, and administrative transaction capability (prescribing, appointment scheduling, referrals) is critical for advancing eHealth. Opinion leaders also acknowledged the need for activities that address literacy and linguistic barriers and information and support for identifying, implementing, and disseminating tools that can engage consumers in assessing quality and performance.

Findings from Phase II were consistent with the consumer-oriented findings from Phase I. Respondents from our health care provider and health plan administrator sectors stressed that, in order for them to use eHealth tools in conjunction with their patients, the tools must be easy for providers to understand, save providers time, be reimbursable, be easy for their patients to understand and accessible to them, be private and secure, and contain credible and evidence-based information. Responses from consumers were, for the most part, consistent with those of providers. Consumers stressed that usability of eHealth tools depends on how easy they are to understand, how easily accessible they are, cost (i.e., they should be inexpensive or free), credibility and timeliness of the health information, security and privacy, how relevant and tailored the information is to patients’ needs, and the ability to communicate with providers or other patients with similar health needs.

eHealth experts identified many challenges to building and sustaining the field of eHealth and stressed the importance of addressing those challenges in order for eHealth to move forward. For example, they identified a critical need to standardize platforms for diffusion of technology in the delivery of eHealth programs (particularly within health care). They also noted that eHealth research is not yet accepted as “mainstream” research and there is, therefore, a lack of implementation support for eHealth applications (from expertise to policy issues to financing structure) and negative incentives for commercialization by academicians. A related issue is that the technology changes faster than the research being conducted and there is the perception that the market is “clogged” with eHealth products that struggle to reach the marketplace. There is a need for research translation of eHealth applications as well as a lack of understanding around consumer demand, particularly for
technology that is not tailored (i.e., “if we build it, will they use it?”). Experts also noted that there are a number of barriers that health care providers face in using online communications (e.g., lack of reimbursement, integration of eHealth applications into routine clinical care delivery). Finally, but perhaps most fundamentally, our experts noted that there is a lack of a clear definition around what “eHealth” really is.

The eHealth experts we interviewed generally believed that RWJF’s Health e-Technologies Initiative is in a unique position within the eHealth field, given its focus on building the evidence base around eHealth applications. Experts and stakeholders underscored the need to continue to build the evidence base around eHealth applications because of a lack of measurable standards and guidelines by which health plan administrators, providers and consumers can make informed decisions about their value and effectiveness. Additionally, continued efforts to provide opportunities for creative, non-academic research/solutions in this nascent field are critical to moving the field forward. In response to the growing needs of the field, however, eHealth experts also suggested ways in which HETI could expand beyond its initial charter to include other field building activities, technical assistance, and the research-to-practice translation that is critical to engaging end users in improving the quality of health care delivery.

Major findings generated from the interviews and surveys with opinion leaders and stakeholders in eHealth and the set of program recommendations that follow are summarized according to key field building activities, products, services and technical assistance that could be provided by the NPO, and the “value added” of eHealth tools in engaging consumers and providers in improving the quality of health care delivery.

Key Field Building Activities

Evidence-based research as a continued priority – Many of the experts emphasized that there is a strong need to improve the evidence base around eHealth applications through more rigorous research and evaluation of eHealth and web-based technologies.
Harvesting and synthesis – A number of experts recommended that HETI continue to harvest the findings from its grantees as well as to create syntheses from these studies for use by various stakeholders (e.g., researchers, consumers, providers, policy makers, potential funders, and eHealth partners).

Technological and organizational boundary spanning – HETI can be a powerful voice across a number of stakeholders, serving as an “honest broker,” thereby, encouraging collaborative (not competitive) efforts for targeting eHealth research and interventions.

Establishing the business case – HETI can play a role by examining reimbursement issues, return on investment and cost-benefit analysis for eHealth applications (where it is also critical to bring insurance companies into the fold).

The need for measurable standards, criteria and guidelines for eHealth applications development – HETI could play a prominent role in generating a set of basic definitions and measurable standards around “eHealth” in the development of applications and websites.

Integrate eHealth into Existing/Future RWJF initiatives – This idea was underscored by many of the opinion leaders and HETI and RWJF have begun to do this already (i.e., eHealth support to fight childhood obesity, Project HealthDesign). One expert noted that the Foundation should review its major programming efforts and determine how eHealth could play a role in supporting these programs.

Translational research and technology adoption – One of the biggest barriers around dissemination and adoption of eHealth applications is the translational issue. Information technology experts need to be integrated at ground level with the work of behavioral health scientists.
to create truly integrated solutions (e.g., video, making websites “sticky,” enabling real-time use of patient information during patient encounters). Likewise, researchers can help commercial entities understand what components should be included in improving the quality of eHealth applications.

**Small development grant opportunities and technical assistance** – Several experts noted the need for funding small development grants—and not large research grants—that would allow health care systems and researchers to refine products and provide scientific support. To complement this activity, HETI also could organize a virtual pool of experts and eHealth scholars who could consult with potential grantees to implement, expand, and refine applications.

**Development of “full spectrum” eHealth tools** – Several experts mentioned the idea of disseminating a suite of tools focused on eHealth, including decision support, behavior change, health care tools, and personal health records. This dissemination effort also would include partnerships to get tools into the hands of communities, providers, and consumers not naturally adopting Internet-based technologies on their own.

**Provider and Consumer Engagement in Improving the Quality of Health Care**

**Reaching underserved populations** – eHealth experts emphasized that interactive health communications might be better able to reach underserved populations than more traditional health communication and education methods. However, issues of literacy/health literacy and cultural relevance, for example, and how they relate to accessibility and ease of navigation, will be important to address. There is a need for resources that allow flexibility in programming, tailoring, and understanding how best to reach people through these media. The notion of “usability” is critical here and applies to the diversity of people who are using or would use the Internet, computer or other types of electronic technologies.
Development of a quality assurance mechanism for consumer-based eHealth applications – Consumers need and want to know how to access quality, evidence-based eHealth applications and providers are hesitant to support eHealth technologies that are not evidence-based. Consumers and providers alike want applications that are easy to understand and use, easily accessible, low cost, timely, credible, and secure.

Personal health records (PHRs) as a byproduct and driver of care processes – Although in a nascent stage, we can use PHRs to empower consumers to gain access to their health care information and to receive personalized “care alerts” and support for chronic illness (similar in scope to the goal of the Markle Foundation’s Connecting for Health™ initiative to network PHRs – www.connectingforhealth.org). Using PHRs in this way will require an examination of PHR characteristics, critical success factors, and how PHRs might be put into play in support of better health outcomes and consumer activation at lower costs. HETI can provide support in this area, particularly through its continued involvement with Project HealthDesign (www.projecthealthdesign.org).

Engaging consumers where they live – Access and availability of eHealth tools for consumers can be increased by integrating them into community settings. This idea very much parallels the Foundation’s current support of regional demonstrations to improve health care quality by engaging providers and patients through its Aligning Forces for Quality initiative (www.forces4quality.org).

eHealth tools to enhance the provider-patient relationship – eHealth tools can help motivate and reinforce necessary behavior changes in patients so they become more active participants in their own health care, thereby enhancing the collaborative relationship between provider and patient. eHealth tools also provide alerts and reminders to clinicians during a visit that potentially can result in cost savings and improved quality.
BACKGROUND

Over the past five years, “eHealth” has been increasingly recognized as an essential tool for improving quality and reducing costs among health care organizations and employers. The federal government also has promoted and supported the adoption of information technology in health care, including utilization of electronic health records, improvements in provider education, and expansion of health informatics.\(^1\) eHealth technologies also have been widely used to engage consumers in chronic disease self-management support strategies through the use of online, health behavior change interventions.\(^2\) In fact, the US Department of Health and Human Services recently released a summary report on the potential value and utility of eHealth tools for consumers, particularly for populations that experience health disparities.\(^3\) In 2001, the National Cancer Institute and The Robert Wood Johnson Foundation (RWJF) co-sponsored a “research dialogue” with the goal of identifying opportunities for improving research on eHealth behavior change and disease management interventions. Among the key recommendations provided, the expert panel identified the importance of disseminating evidence-based information (on effective eHealth interventions, methods for assessing eHealth interventions, and results of intervention assessments), utilizing a cross-disciplinary approach to establish methods and standards for eHealth interventions and assessments, and collaborating with the private sector on eHealth intervention research.\(^4\)

While eHealth was thought to emerge in industry and marketing, the convergence of the Internet and health care has created new opportunities for the migration and application of eHealth to health care information technology—so that eHealth encompasses more than just the intersection between the Internet and medicine. eHealth might be better defined by how it is used as suggested by Eysenbach in the Journal of Medical Internet Research:

---

“eHealth is an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies. In a broader sense, the term characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide by using information and communication technology.”


In response to this need, RWJF launched the Health e-Technologies Initiative: Assessing New Tools for Chronic Disease Management and Health Behavior Change initiative in February 2002. The initiative’s tagline was recently changed to “Building the Science of eHealth” to reflect the national program’s emphasis on fostering systematic research on eHealth applications for health behavior change and chronic disease management. The goals of the Health e-Technologies Initiative are to expand the body of knowledge about the efficacy, costs, cost-effectiveness and overall quality of those eHealth applications currently in use for health behavior change and chronic disease management, and to expand the body of knowledge about how to evaluate, compare and improve them. To achieve these goals, the national program has documented a number of accomplishments, including the release of two Calls for Proposals supporting research that explores methodological and design questions relating to the evaluation of eHealth applications for health behavior change and chronic disease management, systematic outcome evaluations of existing eHealth applications for health behavior change and chronic disease management, and evaluation of the effectiveness of technology-based tools for enhancing provider-patient communication, accessing personal medical data, and obtaining supplemental sources of health information.

David Ahern, PhD, HETI National Program Director

---

6 Health e-Technologies Initiative: Building the Science of eHealth Project Year Four Proposal (2/1/05 – 1/31/06), Grant #48413 (RWJF internal document).
To encourage rigorous and systematic research of eHealth applications, the national program also has sponsored the “Best eHealth Research Paper” session each year at the eHealth Developers’ Summit, convened annual meetings of its grantees, cosponsored along with the NIH a national conference on eHealth methodology, consulted with other Foundation-sponsored national programs, and advanced the national recognition and profile of the Initiative through presentations, publications and participation at key national meetings on eHealth.
RATIONAL AND ASSESSMENT

While RWJF is not planning to fund a “full fledged” continuation of the Health e-Technologies Initiative as originally conceived, Foundation staff is interested in exploring support for follow-on activities that would help to sustain and spread the contributions that the Health e-Technologies Initiative has made to the field. The Health e-Technologies Initiative’s continuing goals include providing ongoing direction and technical assistance to all its grantees (especially the dissemination and translation of research findings into practical use), deploying the initiative’s Resource and Communications Center, integrating with other Foundation-sponsored initiatives, continuing to support nationwide eHealth research, presentations, activities and funding opportunities, and establishing new national partners to further advance the field of eHealth research. As the Health e-Technologies Initiative continues with these activities, Foundation and National Program Office staff are exploring follow-on activities in which the Health e-Technologies Initiative may play a role to support further programming and research in eHealth and its potential for synergy with other national initiatives and programs. For example, the Foundation awarded a synergy grant to the Health e-Technologies Initiative to conduct a terrain mapping of the field of eHealth with respect to current activities and its potential role in the prevention of childhood obesity.

Based on the RWJF Roots & Wings Committee Report, specific follow-on strategies for the Health e-Technologies Initiative might be broadly divided into two categories: stimulating the research and funding “pipeline”; and synthesizing and translating research into practice and policy implementation for end users. The first category might encompass activities such as helping to sustain and foster systematic research on eHealth applications and leveraging these activities with other major funders, as well as hosting a national meeting of funders to plot future backing for the kinds of work supported via the Health e-Technologies Initiative. The second category might include continued work in translating positive research findings into practice and policy (i.e., based both on the work and products of the grantees and

---

9 Health e-Technologies Initiative internal document on accomplishments to date, 2005.
research conducted by the initiative itself), building capacity in the field, expanding eHealth networks, or expanding synergistic activities with other Foundation national initiatives based upon strategic goals from the Quality Health Care, Disparities, and Pioneer interest areas.

Given the increasing popularity of eHealth applications and the ground swell of support for fostering best practices in eHealth, the Foundation and the NPO are interested in exploring potential follow-on activities that would integrate the Health e-Technologies Initiative with other Foundation initiatives and continue to help move the eHealth field forward. Input from opinion leaders and other stakeholders in the field can help identify and define other programming priorities and provide guidance to Foundation and NPO staff for the kinds of programming, research support and technical assistance needs that the Health e-Technologies Initiative could provide.

Assessment Goals

RWJF and the HETI NPO asked White Mountain Research Associates, L.L.C. (WMRA) to assist them in exploring potential follow-on activities for the Health e-Technologies Initiative. The goals of this assessment were to:

- assess the contributions of the Health e-Technologies Initiative to the field of eHealth research for behavior change and chronic disease management;
- identify and explore options for follow-on program activities and resources that would help to sustain and spread the contributions that the Health e-Technologies Initiative has made to the field; and
- explore the potential role of the Health e-Technologies Initiative in supporting and informing the Foundation’s current team strategies.

To address these assessment goals, the evaluation team and Foundation staff generated the following key questions:

1) What unique niche does the Health e-Technologies Initiative fill in the field of eHealth? Also, what is the value of the brand?

2) What types of resources, leadership, supports, technical assistance, networking, or learning and program activities
would be useful for field building purposes based on input from eHealth experts?

3) What are the most promising strategies to assure that the Health e-Technologies Initiative’s accomplishments and products will have maximal impact on the field? Conversely, what are the major barriers to sustaining the program’s benefits and results?

4) To what extent has the National Program Office networked with other major eHealth funding agencies and stakeholders and various RWJF national initiatives and programs to help leverage and promote the “science” of eHealth?

5) What are the perspectives of end users/stakeholders—consumers, providers, and health plan administrators—on the utility of eHealth tools for enhancing patient-centered care and improving health care quality?

Originally, Foundation and NPO staff also wished to answer the following questions: “How have the grantees’ research products been leveraged and how have these products and findings been disseminated to various markets (health care, consumer, commercial)? What would be useful strategies for dissemination in the future?” However, given the Foundation’s recent focus on health care quality improvement at the community level (e.g., Aligning Forces for Quality), Foundation and NPO staff decided to drop these questions from the assessment and, instead, re-focus on the role of providers and consumer engagement in improving the quality of health care. To that end, “real world” perspectives on the utility of eHealth tools for enhancing patient-centered care and improving health care quality were solicited from a smaller group of end users/stakeholders—consumers, providers, and health plan administrators.
METHODS

Assessment activities were divided into two distinct phases. The first phase explored potential field building activities and the second phase explored the “value added” of eHealth tools in engaging consumers and improving the quality of health care delivery.

**Phase I.** To address the first four assessment questions, the assessment team conducted interviews with 30 opinion leaders in the field of eHealth. A list of these experts was generated by the Health e-Technologies Initiative National Program Office and staff at The Robert Wood Johnson Foundation. Experts represented various sectors invested in eHealth, including the commercial sector (i.e., eHealth companies, health care organizations, technology corporations), academic institutions, federal government agencies, nonprofit organizations, philanthropies (e.g., Markle Foundation and California HealthCare Foundation), and other eHealth investors. We also interviewed several Health e-Technologies Initiative grantees, National Advisory Committee Members, and a selected number of experts in the area of eHealth to better understand their perspectives on progress made in the field, possible opportunities, strengths and gaps in field building (particularly related to their perceptions of “building the science of eHealth”), and types of strategic leadership and funding that will be needed to advance the field.

An interview guide was developed for a 30-45 minute interview with each opinion leader. A set of core questions was generated and additional questions tailored to each type of “sector” (e.g., field experts, major funders). Questions and topics followed the general concepts about using ideas in building a field addressed by Hirschhorn and Gilmore (2004) in their Practice Matters: The Improving Philanthropy Project paper series.\(^{11}\)

The interview guide addressed the following topics:

- Top research and programmatic priorities for building the field of eHealth
- Types of products, services, and technical assistance that might be offered to support eHealth

\(^{11}\) Hirschhorn L, Gilmore TN. Ideas in Philanthropic Field Building: Where They Come from and How They Are Translated into Actions. Practice Matters: The Improving Philanthropy Project. The Foundation Center (call no.: 510 FC PRA #6), March 2004.
The role of patient-centered services and engaging consumers to use technology and the types of resources needed to help build this area of eHealth

Unique niche filled by the Health e-Technologies Initiative

Branding of the Health e-Technologies Initiative

Most promising strategies to assure that the Health e-Technologies Initiative’s accomplishments and products will have maximal impact on the field

Major barriers to sustaining the program’s benefits to the field

Learning and leadership opportunities important to sustain the eHealth field

In preparation for the interview, all interviewees were sent, via e-mail, a pre-interview survey to solicit their opinion on resources for building the evidence base around eHealth applications, supporting virtual communities of interest, addressing diverse populations, and resources and technical assistance for the eHealth field.

Interviewees were asked to rate an array of possible resources on the following four dimensions using a Likert scale of 0 to 10:

- **Potential value to the field of eHealth** (“0” is “little to no value” and “10” is “great value to the field”)
- **Potential market demand** (“0” is “little or no demand” and “10” is “high market demand”)
- **Existing level of competition for resource** (“0” is “little or no competition for resource” and “10” is “highly competitive with providers currently filling these roles”)
- **Likelihood of sustainability in field without continued Robert Wood Johnson Foundation-based funding** (“0” is “No chance of sustainability” and “10” is “Certain chance of sustainability”)

The pre-interview survey also provided respondents with an opportunity to offer additional resources not already addressed through the list, as well as possible topics for commissioned white papers.

**Phase II.** To address the question on the practical application and “value added” of eHealth tools for end users (i.e., question #5 above), Foundation and NPO staff (with assistance from the Aligning Forces for Quality NPO) generated a small list of stakeholders representing the following sectors: consumers, health care providers, and health plan administrators. WMRA worked with Foundation and NPO staff to develop sector-specific surveys to address: the use of eHealth tools in health care
quality improvement, eHealth tools and patient-centered care, and facilitators of and barriers to their use by these end users. The NPO solicited feedback from 18 stakeholders and received completed surveys from seven respondents representing the consumer (n=3), health care provider (n=3), and health plan administrator (n=1) sectors. Respondents received a $200 honorarium for completing the survey. Completed surveys were then sent to WMRA staff for synthesis of findings.

The list of interviewees, the interview guide for opinion leaders, the pre-interview survey with mean ratings, and surveys for key stakeholders/end users are included in this report in the Appendix.
RESULTS

Phase I – Findings from Pre-Interview Survey and Interviews with Opinion Leaders

For Phase I of the assessment, 30 eHealth experts were recruited from academic settings (n=14), the commercial sector (n=6), government agencies (n=4), philanthropy (n=2), and other settings (i.e., not-for-profit organizations, eHealth partners, think tanks, n=4). Ten of these experts also are Health e-Technologies Initiative grantees, six are Health e-Technologies Initiative National Advisory Committee members, and one is a national program director for an RWJF-funded initiative. The response rate to the pre-interview survey was 70% (n=21).

Pre-Interview Survey: Ratings of eHealth Resources

Opinion leaders’ ratings of possible resources to help build and sustain the field of eHealth were compared across four dimensions – value to the field, market demand, level of competition, and likelihood of sustainability. In general, resources that were ranked the highest, based on their potential value to the eHealth field, were those that addressed building the evidence base around eHealth, diverse populations, and technical assistance for the field. Resources for supporting virtual communities of interest (e.g., networks of researchers or end users) were viewed as not as important as building the evidence base in adding value to the eHealth field. Please refer to the Appendix for mean scores.

Specific resources for building the evidence base which were ranked the highest included: support for chronic disease management programs; patient access to electronic records; patient-provider communication; establishing the business case; and consumer online health-behavior change programs. Building the evidence base around these eHealth applications also was viewed by experts as having a high market demand along with a high likelihood of sustainability in the field without continued RWJF investment.
All four resources addressing *diverse populations* were viewed as having high potential value to the field of eHealth. Specifically, these resources, in order of rank, included: addressing literacy and linguistic barriers; increasing access of technology to underserved populations; developing culturally sensitive applications; and efforts to reach underserved populations. However, relative to resources to build the evidence base around eHealth applications, these resources were ranked lower in terms of their potential market demand and likelihood of sustainability in the field without continued RWJF investment.

Opinion leaders also indicated the value of *technical assistance* for those actively engaged in the eHealth field. Assistance with establishing strategic public and private partnerships for eHealth application development and dissemination and with translating research findings into eHealth products and practice was highly ranked. In addition, experts indicated a need for information and support for identifying and implementing tools to engage consumers in assessing quality and performance (e.g., when selecting providers). Assistance around information on funding sources for research on eHealth applications and emerging eHealth technologies also was highly ranked.

As part of technical assistance resources, activities that could help *enhance and disseminate* various eHealth technologies were also highly ranked. Resources that could support chronic disease management programs, patient-provider communications, consumer online health behavior change programs, and patient access to electronic records were viewed as most critical for dissemination efforts.

Additional suggestions from opinion leaders for possible resources for building and sustaining eHealth and for commissioned papers are included in the Appendix.

**Interviews with Opinion Leaders: Exploring Health e-Technologies Initiative’s Niche in Field**

According to our respondents, RWJF’s *Health e-Technologies Initiative* is the only program in this area that works to build the evidence base for eHealth applications. The field of eHealth is still in its infancy and a strong foundation for evidence-based research should continue to be a priority. Experts and stakeholders underscored the need to continue to invest in the science around eHealth applications because of a lack of
measurable standards and guidelines by which health plan administrators, providers and consumers can make informed decisions about their value and effectiveness.

Another unique aspect of RWJF’s Health e-Technologies Initiative is its non-traditional funding stream. Research in eHealth is more vulnerable than other more established fields because of a lack of consensus around science and methodology. As a result, it is more difficult to secure peer review funding (particularly from federal agencies) because of conservative reviews and the fact that the field is not “mainstreamed.” Respondents stressed that it is critical for RWJF to stay involved because eHealth, as a field of research, needs a jumpstart and is not yet perceived as being credible and is lacking standards of acceptable, rigorous science to make it more easily integrated into the review processes of federal funding agencies.

Finally, many opinion leaders stated that RWJF/HETI has the flexibility to fund more creative research. The Foundation is in a unique position to broaden funding in the area beyond the academic setting. Experts noted that eHealth technology is moving faster than research at most academic institutions. Including the perspectives of not-for-profit and commercial sectors could lead to more creative, sustainable, and timely solutions that incorporate eHealth technologies.

**Interviews with Opinion Leaders: Exploring Resources to Build the Field of eHealth**

Experts identified a number of priorities for program activities and resources that could help to build and sustain the field of eHealth. Their input was rich and varied and their recommendations are organized according to: field building priorities; products, services, and technical assistance; consumer engagement (particularly for underserved populations); and, challenges to program sustainability.

**Priorities for building the field of eHealth.** According to our respondents, HETI is filling a unique niche by pursuing the science/evidence base behind eHealth technologies. A large number of the experts we interviewed thought that this area of research is still very young and a strong evidence base of rigorous evaluations of eHealth and web-based technologies should still continue to be a priority.
There is a need to improve the prospect of dissemination and adoption of evidence-based practices. What role can technology play in improving the adoption of evidence-based practice through such areas as knowledge management systems, expert systems, and technology/learning collaboratives? Similarly, research is needed on technology transfer and forecasting: What predicts the uptake of technology?

The majority of our respondents stated that there is a need for measurable standards and guidelines that should be met in development of eHealth applications/websites. Many sites do not meet usability criteria (e.g., health literacy, cultural relevance). It may be possible to convene a multidisciplinary team for this – for example, engineers, health behaviorists, language specialists – that asks how we actually do usability testing. This testing should be done with likely users and should engage experts in the federal government and commercial and academic sectors. This also could include building consumer health information standards and developing tools for evaluating quality of web health information.

Sharing knowledge and resources across various public- and private sector organizations and stakeholders was a key concept mentioned by a number of experts. HETI can be a powerful voice across a number of stakeholders, serving as an “honest broker,” and thereby, encourage collaborative (not competitive) efforts for targeting eHealth research and interventions. HETI also could set up “match making” meetings or summits among researchers, program developers, the commercial sector, and funding agencies/angel investors, perhaps even hosting a funders forum or investors circle. RWJF is viewed as a trusted third party that can provide credibility to health care technologies and support collaborative efforts across the public and private sectors.

Several interviewees suggested that training programs for the next generation of eHealth scholars could be established for field building purposes. As an example, transdisciplinary sites could be housed around the country in places with an existing infrastructure and offer training in, for example, public health, behavior science, medicine, software development, consumer health informatics, applied clinical informatics, information science, and psychology. A less expensive alternative to formal training programs would be to host a series of basic and topical workshops in eHealth around the country.

Products, services and technical assistance. Several experts mentioned the idea of disseminating a suite of tools focused
on eHealth, including decision support, behavior change, health care tools, and personal health records. This dissemination effort also would include partnerships to get tools into the hands of communities and individuals not naturally adopting Internet-based technologies on their own.

Several experts saw the value of providing a platform for in-person and/or virtual meetings (e.g., webinars, chatrooms) for experts to exchange ideas around special topics (e.g., research challenges, working with underserved populations, policy objectives for moving eHealth forward, consumer engagement). Another expert suggested developing a think tank for new eHealth delivery tools for small media (cell phones, TV, radio), new applications and smart technologies. The think tank could meet periodically to help spur new applications and ideas.

Several experts noted a need for funding small development grants—and not large research grants—that would allow health care systems and researchers to refine products and provide scientific support. To complement this activity, HETI also could organize a virtual pool of experts and eHealth scholars who could consult with eHealth application developers and researchers to help refine, implement, and expand eHealth applications.

Consumer engagement. One of the most challenging issues facing eHealth researchers, developers, and providers is engaging diverse and underserved populations. Many of our experts highlighted literacy and readability as the most important areas of focus, while others emphasized the need for cultural tailoring of e-interventions. There does not appear to be a well-coordinated effort to address the research-to-practice gap—and what is actually known about, for example, the influence of demographics and psychosocial factors or access to technology on consumer engagement is extremely limited. There does not seem to be even a basic model across cultural groups for addressing these issues (e.g., language, literacy, health literacy, information-seeking skills).

Although experts acknowledged the importance of harvesting lessons learned from current/past research from the Health e-Technologies Initiative as well as from the larger eHealth community, they also cautioned that this is a bigger question than just applying our current applications to underserved populations and stressed the importance of examining larger cultural and geographic issues. Nonprofit and government agencies should work in areas where the market will not necessarily go, since commercial vendors may not put time and resources into creating the best user interfaces for underserved populations because of limited profit.
resources into creating the best user interfaces for underserved populations because of limited profit. A number of experts noted that it is important for philanthropy to serve as a “broker” in forging alliances with community-based and public health agencies. There are a number of areas to consider as priorities and these are noted throughout this document (e.g., usability, tailoring, health literacy, cultural relevance, accessibility).

Our experts agreed on the importance of developing a quality assurance mechanism for consumer-based eHealth applications. Initial steps toward achieving quality assurance for consumers include: convening a working group to discuss a process for implementing such a mechanism (OBSSR is pursuing this as part of their “consumer demand” initiative); maintaining neutrality while working with advocacy groups who want to push their products; financial considerations around what is endorsed and not endorsed; and appropriate bodies to convene and still be credible to the public. An important caveat, noted by one of the interviewees, is that accreditation or rating of web-based health applications may not be a good idea because regulation may compromise the belief that the web is a “free space” and accreditation is highly unlikely to be enforceable if a website gets a poor rating—sites are not supervised and may not comply anyhow. Still, another expert cautioned, “The danger is that we wouldn’t want another unique accrediting body out there. We already have URAC, JCAHO, and NCQA, which serve as accrediting bodies – probably NCQA would be the right place to put this.”

Improving the understanding and usability of eHealth websites was a common recommendation among our experts. Here, the notion of “usability” applies to the diversity of people who are using or would use the Internet, computer or other types of electronic technologies. Most websites are not very usable because of lack of tailoring to the user, low literacy, and low cultural relevance. Involving consumers as full partners in whatever is designed in the future is critical. There is also little work around consumer needs and how they can connect to technology (i.e., interoperability from the consumer perspective).

Although in a nascent stage, personal health records (PHRs) can be used to empower consumers by granting them access to their health care information and also receiving personalized “care alerts” and support for chronic illness. Using
PHRs in this way will require an examination of PHR characteristics, critical success factors, and how PHRs might be put into play in support of better health outcomes and consumer activation at lower costs.

**Access and availability of eHealth tools for consumers can be increased by integrating these tools into community settings.** It is also important to enlist individuals who are working with communities to engage them in using leading-edge technologies that would be most relevant and best serve their communities. This idea very much parallels the Foundation’s current support of regional demonstrations to improve health care quality by engaging providers and patients through its *Aligning Forces for Quality* initiative.

**Interviews with Opinion Leaders: Challenges to Program Sustainability**

Our experts suggested a number of challenges to sustaining eHealth programs, many of which parallel the findings from a recent study conducted by Ahern et al. (2006) on the strengths and challenges in eHealth evaluation research for health behavior change and chronic disease management. To begin, there are a number of interoperability issues to consider including data interoperability (downloading/uploading information that is understood/shared), software logic interoperability (call data correctly and apply business rules from various servers), and presentation of information (for example, presenting lab results from various systems). A number of field experts noted the critical need to standardize platforms for diffusion of technology in the delivery of eHealth programs (particularly within health care). It’s not just enough to look at enabling technology, but it is also important to examine policy issues around exchange of data, and privacy and security concerns, as well. Also, many current products do not connect with the primary care system, so that implementation is a big challenge (around cost, expertise, and quality of products). A complex systems strategy that addresses how and what is implemented is needed.

“On the delivery side, we don’t set the bar high enough. eHealth is an extension of health services research where the bar is set relatively low around pursuing an idea that’s interesting, but not requiring a sustainable solution. We spend a lot of money, prove the idea is effective, but the model ends when the funding ends – then there is a total disconnect with how it actually works in practice! We need to set the bar high enough so that the product is sustainable and works in practice.”

---

Since eHealth research and evaluation face unique design and methodological challenges, particularly around internal and external validity, **current study sections/panels may not see the strengths of these studies** (e.g., process and outcome analysis, real-time use, dose and duration of use, and content use) because they are accustomed to reviewing traditional clinical trial models/research. A possible solution to overcoming this barrier is to develop a core concept in design and methodology that could be adopted as a guideline for facilitating the review of these non-traditional studies. Researchers are also worried more about IRB issues since this is an emerging field and IRB review panels are not typically familiar with this type of research.

Another challenge in this area is the synapse that exists between program development and implementation (from expertise, to policy issues, to financing structure). Experts feel that a greater alignment between the evidence base and application implementation is needed (as long as the payors are at the table), which also can bring academic rigor to the marketplace.

In the university setting, researchers develop and test technologies that will never be commercialized because, in part, they believe that their capacity to compete for more grant dollars depends upon the proprietary nature of what they’re doing and, if it were commercialized, other people would have access to the technologies they are using to continue to get grant money. There is also a stigma associated with nonacademic settings and an incentive for academicians to focus on grant making and scholarly work rather than translation. **Technology-based solutions that focus on effectively translating best practices into effective adoption and implementation is one possible solution here.**

Even though a number of web-based programs are effective and available, **until there is reimbursement for online communication, clinicians will not utilize this as a strategy in their routine practice.** Why is so little of that used in the average physician’s practice? Large systems can afford the technology, but according to one expert, 60-70% of the American public gets care from small practice groups and penetration of electronic medical records in these groups is only about 10%. Physicians are not utilizing these tools because they cannot make money from it and the perception is that it costs too much to implement and maintain. However, this may be a misperception, since there are a number of vendors that can provide low-cost electronic medical records to clinicians now. It may all come down to reimbursement. Insurers will not pay for...
eHealth tools until they are sure these tools are cost-effective. Sustainability will come after insurers know they work and at a lower cost than the current disease management services. In addition, providers may not be well-versed in using technology-based approaches to ongoing patient care.

A number of experts expressed concern over defining eHealth as a field. The more eHealth is thought of as a field, the less user-driven it becomes. Rather, many experts viewed eHealth as a tool to an end. For example, what eHealth tools would help us gain greater access to real-time decision support and how can these tools be used to support coordinated care or informal caregiving? A related issue is the need to increase awareness of what eHealth really is. Even among practitioners of eHealth, there is disagreement over what eHealth is and what it is not and why we think this is an approach that makes sense. **We need to help define and shape what eHealth is.**

Our experts also noted that researchers are not trained in product development nor do they have expertise in (or are weak in) research translation. **The interface between researchers and product developers really needs to be enhanced and HETI can play a role here.**

A lot of technology exists out there, but it may not be effective for behavioral change, particularly without tailoring. The Foundation/HETI should consider programming opportunities related to this issue. One field expert noted that most of the people in this field are operating under the assumption that, “if we build it, they will use it.” Baseline assumptions are not understood nearly enough with minority populations. Nor is it well understood how underserved populations utilize the Internet. This is further complicated by the reality that vendors may not put time and resources into creating the best user interface for underserved populations because they will not be paid for it. **There is a need to pull together all of the programs that address cultural competence, limited English proficiency (LEP), limited health literacy (LHL), and health care access and provide this as a resource available in the public domain.**

A major challenge, particularly in the technology arena, is that **research takes time but technology development outpaces it.** Solutions noted by experts include faster grant turn-around time and the utilization of leading edge technology and new media (e.g., IPods, text messaging). We need to give people a reason to get on the Internet. What can we build for people who are in greatest need? We are currently not building anything that is engaging. We also need to be open to the fact that
individuals will use different technologies (kiosks, iPods, PDAs, cell phones, computers).

Finally, on the one hand, there exists the perception that the market is “clogged” with eHealth products and more research is needed to determine which ones are more effective with specific patient populations along with development of benchmarking tools—possibly even an accreditation/approval process for these products. However, this issue is complicated by the very real difficulty in getting products from the lab into the marketplace. There is limited funding on the marketing and distribution side of eHealth applications and marketing does not fall within the expertise of developers. So, on the other hand, there is a pool of research-based applications that struggle to reach the marketplace.

Interviews with Opinion Leaders: Name Association/Branding

Because this area of inquiry was of minor interest to Foundation and NPO staff, questions around name association and branding were addressed only if the primary areas of interest were adequately explored through the interviews. Although opinions were mixed, experts generally appeared to be satisfied with the name “Health e-Technologies Initiative” and what the name conveys. Below is a selection of quotes reflecting the various opinions about the name “Health e-Technologies Initiative.”

• “HETI is a clever name and is catchy.”
• “[The name is] not really differentiating – so, what does it really stand for?”
• “The name is recognized and [HETI] ought to stick with it.”
• “[I don’t] know what ‘Health e-Technologies Initiative’ means. [It] can mean anything from a smart insulin pump to a decision support tool on the web for choosing a hospital.”
• “[It’s] not what you call it, but what it comes to mean! It could take a few years for the name and reputation to stick. It’s an extremely general name. If they’re trying to build focus, they need a more focused name.”
• “Insiders know what the term means. The brand is RWJF, so whatever they call it is not important.”
“Not a distinctive brand – a lot of noise in the field. A consumer would not understand what the brand stands for – there is brand confusion everywhere.”

“e-anything is not good. This is a great time to re-brand and re-introduce yourself in a new way.”

“The name isn’t bad (for academics), but it is kind of neutral.”

Phase II – Findings from Surveys of Stakeholders on the “Value Added” of eHealth Tools for End Users: Provider Engagement and Patient-Centered Care

As described above, this phase of the assessment solicited perspectives from a small group of end users/stakeholders—consumers, providers, and health plan administrators—on the utility of eHealth tools for enhancing patient-centered care and improving health care quality. Findings were summarized by each of these three sectors. It is important to note that, because this group of experts was small—the size of a small focus group—these findings should be interpreted with caution.

Health Care Providers. Health care providers stressed that, in order for them to use eHealth tools in conjunction with their patients, the tools must:

> be easy for providers to understand;
> save providers time;
> be reimbursable;
> be easy for their patients to understand and accessible to them; and
> contain evidence-based information.

The two most important factors that would lead providers to use eHealth tools were their evidence-based content and minimal disruption to their practice when integrating these tools. One provider noted, “Having evidence to support the efficacy of the tool helps sell the product.” The importance of evidence-based information in the use of eHealth tools among these providers was consistent with the emphasis placed on evidence-based information among the larger group of opinion leaders interviewed in Phase I of this assessment.

Conversely, providers indicated that they would hesitate to use eHealth tools that decrease their productivity, do not provide any
added benefit to their practice such as improved patient outcomes, or don’t save time. However, if these barriers to using eHealth tools were appropriately addressed, providers see the benefits of using eHealth tools to monitor their patients’ chronic illnesses with disease management programs, support clinical decision-making, and access their patients’ personal health records. As one provider noted, “[eHealth tools] would improve the patient/provider interaction [and] have the potential to decrease unnecessary testing and reduce health care costs.”

Providers also were asked about the role that eHealth tools for consumers might play in improving the quality of health care. Providers indicated that eHealth tools could improve health care quality by educating the consumer about chronic illness and by enhancing a collaborative relationship between the provider and the patient. eHealth tools also help motivate and reinforce necessary behavior changes in patients so they become more active participants in their own health care. eHealth tools also provide alerts and reminders to clinicians during a visit, which can result in cost savings and improved quality (e.g., ePrescribing). However, eHealth tools must be marketed to consumers appropriately (e.g., cultural relevance, reading level) to initially engage consumers. None of the providers believed that eHealth tools for consumers would have any unintended consequences on health care quality.

Finally, providers were asked to describe any specific program strategies for increasing consumer access to eHealth tools that might enhance quality health care and that could be potentially supported by a philanthropy like RWJF (for example, specific projects or programs, meetings, think tanks, white papers, research efforts, best practices, or measurement tools). One provider emphasized the need for place-based interventions and “engaging consumers where they live” to increase access and availability of eHealth tools to consumers (e.g., kiosks in community centers). This idea very much parallels the Foundation’s current support of regional demonstrations to improve health care quality by engaging providers and patients, such as through its Aligning Forces for Quality initiative. A second provider noted the importance of eHealth tools geared towards behavior modification and readiness to change for patients with high risk behaviors and certain chronic diseases coupled with provider education on motivating patients to change behavior. This provider also noted that widespread use of ePrescribing and electronic health records could reduce health care costs and improve safety, suggesting a program dissemination role for the NPO.
Consumers. Responses from consumers were, for the most part, consistent with those of providers. Consumers stressed that usability of eHealth tools depends on:

- how easy they are to understand;
- how easily accessible they are;
- cost (i.e., they should be inexpensive or free);
- credibility and the timeliness of the health information;
- security and privacy;
- how relevant and tailored the information is to patients’ needs; and
- the ability to communicate with providers or other patients with similar health needs.

When consumers were asked which of those factors were most important in their decision to use eHealth tools, responses were mixed. However, two of the three consumer respondents indicated that the most important reason that they might use an eHealth tool is its credibility and timeliness of health information. As one consumer noted, “If consumers are to rely on information, they must have confidence that the information is accurate, evidence-based, and current.” Consumer respondents also reiterated the importance of cost, ease of use and security/privacy.

Concerns of credibility, complexity, cost, relevance, and privacy also were cited as reasons consumers might hesitate to use eHealth tools. However, if these concerns were addressed to their satisfaction, our consumer respondents said that they would be likely to use eHealth tools in order to manage and view their own medical records online as well as share them with their providers. They also would like to communicate with their health care providers via electronic means. Respondents also indicated that they would like eHealth tools to help them compare quality of health care between facilities as well as pre-screen health care facilities based on insurance or Medicaid/Medicare acceptance.

When consumers were asked about the role that eHealth tools might play in improving the quality of health care, their responses were very consistent with those of providers. Consumers indicated that eHealth tools lead to improved patient-provider collaboration and better self-management by enhancing consumer education and improving provider-to-provider and provider-to-patient communications (e.g., clarity and accessibility). Consumers also noted that an added benefit of eHealth technologies is the facilitation of data collection useful for public reporting and tracking population-based outcomes.

“Patients with information about their own conditions and health status are more likely to take an active interest in their care. It may be trite, but information is empowering.”

“Until the privacy problem is resolved, it will be hard to get consumers to trust this technology.”
When asked about unintended consequences of using eHealth tools on health care quality, they were most concerned about privacy of their health and personal information, particularly with electronic health records. However, consumers believed that eHealth tools are useful for engaging consumers to participate in their health care decisions and to be more proactive with their health concerns.

**Health Plan Administrator.** As noted earlier in the report, only one health plan administrator completed this survey. However, this individual’s responses were consistent with those of providers and consumers. For example, when asked what kinds of evidence about eHealth tools in general would be important to a health plan administrator in order to invest in them for enrollees/patients, our respondent indicated that eHealth tools must:

- contain credible information;
- be easy to understand and navigate;
- be easily accessible; and
- be private and secure.

Our respondent noted that eHealth tools and health-related websites must be transparent with no perceived conflict of interest. This idea is consistent with the response of one of our providers who also cautioned that provider buy-in of eHealth tools could be hindered by pharmaceutical industry sponsorship.

On a related issue, this individual also noted that consumer access to quality and cost and outcomes data on providers can be made more widely available through sponsorship of community wide outcomes tracking—and, that this probably can only be done by an unbiased third party such as RWJF. “If it were spearheaded by a health plan or a hospital, it would be seen as having ulterior motives and the results would always be suspect. A community wide approach would also spur plans and providers to stop competing on issues that are not of value to consumers and refocus on consumer-centric measures such as cost of care, results, and patient safety metrics.” This idea is consistent with the Foundation’s objectives for the Aligning Forces for Quality demonstration sites.

This respondent also noted that most large health plans are developing eHealth-related resources in-house “…so it is less likely such a plan would turn to a vendor for a complete solution, as opposed to providing a subset of information such as a link to a site that has wellness content. Health plan sites are meant to be one-stop shops for members—sites for medical information and access to the plan’s disease management programs, as well as a

“Once [eHealth tools] are widespread, I believe people will do the same due diligence before an elective procedure or treatment that they do now when selecting a financial plan or buying a car. It will always be consultative interaction with a trained health professional, but that is a giant leap from the traditional passive role of the individual in seeking medical care.”
business site that allows members to view claims, review their certificates of coverage, or find network providers.”

One of the biggest barriers to investing in IT and other electronic tools to support quality improvement initiatives in health care delivery is the lack of a single, highly functional system. This individual noted that for some eHealth tools, like electronic medical records (EMRs), “there are dozens of EMRs out there, none of which has much of a track record. Providers are rightly concerned that a major investment in one would be lost if in three years the system is obsolete. This is another reason to support a community wide initiative to select and implement one or two systems so everyone is on the same page.” A similar concern about obsolescence of eHealth tools was expressed by one of the consumer respondents who stressed the importance of monitoring sites and updating information to assure the consumer that the information is reliable, credible, and medically accurate. The respondent also acknowledged that, while tailoring eHealth tools to diverse populations is an important goal, it remains a major challenge. This individual noted that, “...as tools become more effective for members in general there will be benefits to all groups.”

When asked about the role that eHealth tools might play in improving the quality of health care, this respondent reiterated many of the same ideas as our consumers and providers – that eHealth tools could benefit health care quality in terms of patient safety (e.g., clinical decision tools) and tracking outcomes and monitoring treatments. Again, the importance of making data available electronically for public reporting and tracking population-based outcomes was underscored by this health plan administrator.
KEY RECOMMENDATIONS

The eHealth opinion leaders and other stakeholders interviewed and surveyed during the course of this assessment provided significant insight into the current state of the field of eHealth and offered extremely thoughtful recommendations for moving the field forward and the potential role that the Health e-Technologies Initiative might play in that process. The program recommendations that follow are summarized according to key field building activities, products, services and technical assistance that could be provided by the NPO, and the “value added” of eHealth tools in engaging consumers and providers in improving the quality of health care delivery.

Field Building Activities

Evidence-based research as a continued priority – A number of opinion leaders thought that this area of research is still very young and a strong evidence-base of rigorous evaluations of eHealth and web-based technologies should still continue to be a priority. Poor methodology also minimizes researchers’ credibility. So, measurement and methodology are critical issues to tackle. As one expert noted, “The field is too young! We need to invest for a longer period of time. It is not likely that these things will sustain easily without continued strong investment for the next 5-10 years. A realistic timeframe is about 15 years – 5 years startup, 5 years consolidation, and 5 years to transfer to independent maintenance. Anything less is totally unrealistic.”

Harvesting and synthesis – A number of experts recommended that HETI continues to harvest the findings from its grantees as well as to create syntheses from these studies for use by various stakeholders (e.g., researchers, policy makers, potential funders, and eHealth partners). A number of experts were hungry for this information and thought that a communications and dissemination effort is critical at this stage to “bring it all together.” RWJF can provide a compendium of research to inform researchers and other experts about past and ongoing research and the results of evaluations, thereby enhancing networking among experts in the field.
Technological and organizational boundary spanning – Sharing knowledge and resources across various public- and private sector organizations and stakeholders was a key concept mentioned by a number of experts. HETI can be a powerful voice across a number of stakeholders, serving as an “honest broker,” thereby, encouraging collaborative (not competitive) efforts for targeting eHealth research and interventions.

Establishing the business case – A number of opinion leaders and health care providers raised the issue of reimbursement for eHealth-related services. As one expert noted, “The eHealth movement has to fess up to the fact that if there’s no business case, there’s no eHealth. Without addressing reimbursement issues, eHealth joins the long line of quality improvement studies with randomized trials showing efficacy that never get disseminated.” HETI can play a role by examining reimbursement issues, return on investment and cost-benefit analysis for eHealth applications (where it is also critical to bring insurance companies into the fold).

The need for measurable standards, criteria and guidelines for eHealth applications development – HETI could play a prominent role in generating a set of basic definitions around “eHealth” and guidelines and measurable standards that should be met in development of eHealth applications/websites, thereby helping to move eHealth forward.

Technical Assistance Activities

Integrate eHealth into existing/future RWJF initiatives – This issue was underscored by many of the opinion leaders and the Health e-Technologies Initiative and RWJF have begun to do this already (i.e., eHealth support to fight childhood obesity, Project HealthDesign). One expert noted that the Foundation should review its major programming efforts and determine how eHealth could play a role in supporting these programs—particularly around provider and consumer engagement.

Translational research and technology adoption – One of the biggest barriers that we have heard around dissemination of grantees’ products is the translational issue, where it is
important to enhance the interface between researchers and product developers. Researchers are not trained to translate their findings for use in the marketplace and product developers commonly do not integrate evidence-based research into product design. Information technology experts need to be integrated at ground level with the work of behavioral health scientists to create truly integrated solutions (e.g., video, making websites “sticky,” enabling real-time use of patient information during patient encounters). Likewise, researchers can help commercial entities understand what components should be included to improve the quality of eHealth applications.

**Small development grant opportunities and technical assistance** — Several experts noted the need for funding small development grants—and not large research grants—that would allow health care systems and researchers to refine products and provide scientific support. To complement this activity, HETI also could organize a virtual pool of experts and eHealth scholars who could consult with potential grantees to implement, expand, and refine applications.

**Development of “full spectrum” eHealth tools** — Several experts mentioned the idea of disseminating a suite of tools focused on eHealth, including decision support, behavior change, health care tools, and personal health records. This dissemination effort also would include partnerships to get tools into the hands of communities, providers, and consumers not naturally adopting Internet-based technologies on their own.

**Provider and Consumer Engagement in Improving the Quality of Health Care**

**Reaching underserved populations** — There does not appear to be a well-coordinated effort to address the research-to-practice gap—and what is actually known about, for example, the influence of demographics and psychosocial factors or access to technology on consumer engagement is extremely limited. There does not seem to be even a basic model across cultural groups for addressing these issues (e.g., language, literacy, health literacy, information-seeking skills). A number of field experts noted the importance of studying how the richness of interactive health communications might be better able to reach underserved populations than more traditional methods. People with low
literacy will have difficulty navigating systems and accessing the Internet. There is a need for resources that allow flexibility in programming and understanding how best to reach people through these media.

The notion of “usability” is critical here and applies to the diversity of people who are using or would use the Internet, computer or other types of electronic technologies. Most websites are not very usable because of lack of tailoring to the user, low literacy, low cultural relevance, and language issues. There is also little work around consumer needs and how they can gain access and connect to technology. One expert noted, “Virtually anything RWJF wants to do will be a contribution since the field is wide open.”

**Development of quality assurance mechanism for consumer-based eHealth applications** – Consumers need to know how to access quality, evidence-based eHealth applications and providers are hesitant to support eHealth technologies that are not evidence-based. Consumers and providers alike want applications that are easy to understand and use, easily accessible, low cost, timely, credible, and secure.

**Personal health records (PHRs) as a byproduct and driver of care processes** – Although in a nascent stage, we can use PHRs to empower consumers to gain access to their health care information and to receive personalized “care alerts” and support for chronic illness (similar in scope to the goal of the Markle Foundation’s Connecting for HealthSM initiative to network PHRs). Using PHRs in this way will require an examination of PHR characteristics, critical success factors, and how PHRs might be put into play in support of better health outcomes and consumer activation at lower costs. HETI can provide support in this area, particularly through its continued involvement with Project HealthDesign.

**Engaging consumers where they live** – Many communities (i.e., communities defined by geography or populations) are disconnected from the eHealth application/technology community. Access and availability of eHealth tools for consumers can be increased by integrating them into community settings. It is also important to enlist individuals who are working with communities to engage them in using leading-edge technologies that would be most relevant and best serve their communities. This idea very much parallels the Foundation’s current support of regional demonstrations to improve health
care quality by engaging providers and patients through its *Aligning Forces for Quality* initiative.

**eHealth tools to enhance the provider-patient relationship** – eHealth tools can help motivate and reinforce necessary behavior changes in patients so they become more active participants in their own health care and also enhance provider-to-patient and provider-to-provider communication. eHealth tools also provide alerts and reminders to clinicians during a visit that potentially can result in cost savings and improved quality. However, providers underscore the importance of marketing eHealth tools to consumers appropriately (e.g., cultural relevance, reading level) to initially engage consumers, suggesting a program dissemination role for HETI.
APPENDIX
Opinion Leaders Interviewed

**David B. Abrams, PhD** – Director, Office of Behavioral and Social Sciences Research (OBSSR), NIH, Bethesda MD

**Cynthia Baur, PhD** – Director of the Division of Health Communication and Marketing, National Center for Health Marketing, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services (at the time of the interview, Dr. Baur was a Senior Health Communication & e-Health Advisor, ODPHP, DHHS, Washington, DC)

**Elmer Bernstam, MD** – Assistant Professor, University of Texas-Houston, Houston, TX

**Patricia Flatley Brennan, RN, PhD, FAAN** – Moehlman Bascom Professor, School of Nursing and College of Engineering, University of Wisconsin-Madison, Madison, WI and National Program Director for RWJF’s Project HealthDesign

**Sophia W. Chang, MD, MPH** – Director, Chronic Disease Care Program, California HealthCare Foundation, Oakland, CA

**Kathryn H. Dansky, PhD** – Associate Professor, Health Policy & Administration, Pennsylvania State University, University Park, PA

**Mary Jo Deering, PhD** – Director for Informatics Dissemination, NCI Center for Bioinformatics, National Cancer Institute, National Institutes of Health, USDHHS, Rockville, MD

**Suzanne F. Delbanco, PhD** – Chief Executive Officer, The Leapfrog Group, Washington, D.C.

**Don E. Detmer, MD, MA** – President and Chief Executive Officer, American Medical Informatics Association, Bethesda, MD

**Carol C. Diamond, MD, MPH** – Managing Director, Health Program, Markle Foundation, New York, NY

**Thomas Eng, VMD, MPH** – President, Evalumetrix LLC and eHealth Institute, Bellevue, WA

**M. Chris Gibbons, MD, MPH** – Associate Director, Johns Hopkins Urban Health Institute (UHI), Director, Center for Community Health (CCH), Assistant Professor of Public Health and Medicine, Johns Hopkins Medical Institutions, Baltimore, MD
Robert S. Gold, PhD, DrPH, FAAHB – Dean, College of Health and Human Performance, University of Maryland, College Park, MD

Harold Goldberg, MD – Professor of Medicine, University of Washington, Seattle, WA

Linda Harris, PhD – Senior Communication Scientist, National Cancer Institute, Bethesda, MD

Ivan Juzang – President and Founder, Motivational Educational Entertainment Productions, Inc., Philadelphia, PA

Gary L. Kreps, PhD – Eileen and Steve Mandell Endowed Chair in Health Communication, Professor and Chair, Department of Communication, George Mason University, Fairfax, VA

Jonathan A. Morell, PhD – Senior Policy Analyst, The Altarum Institute, Ann Arbor Michigan

David B. Nash, MD, MBA – Chairman, Department of Health Policy, Thomas Jefferson University, Jefferson Medical College, Philadelphia, PA

Linda Neuhauser, DrPH – Clinical Professor, Community Health and Human Development, School of Public Health, University of California-Berkeley, Berkeley, CA

Kurt Ribisl, PhD – Associate Professor, Health Behavior and Health Education, School of Public Health, University of North Carolina, Chapel Hill, NC

Dirk G. Schroeder, ScD, MPH – Executive Vice-President, DrTango, Inc. & HispaniCare, Roswell, Georgia

Joshua Seidman, PhD – President, Center for Information Therapy, Washington, DC

Nirav R. Shah, MD, MPH – Assistant Professor of Medicine, NYU School of Medicine, New York, NY

Buzz Stewart, PhD, MPH – Associate Chief Research Officer, Center for Health Research & Rural Advocacy, Geisinger Health System, Danville, PA

Victor J. Strecher, PhD, MPH – Professor and Director, Center for Health Communications Research, Department of Health Behavior and Health Education University of Michigan School of Public Health, Ann Arbor, MI
Debbe Thompson, PhD – USDA/ARS Scientist/Nutritionist - Child Obesity, Assistant Professor of Pediatrics, Children's Nutrition Research Center, Baylor College of Medicine, Houston, TX

K. "Vish" Viswanath, PhD – Department of Society, Human Development and Health Harvard School of Public Health, Department of Medical Oncology, Dana Farber Cancer Institute, Boston, MA

Jonathan (Jon) Wald, MD – Associate Director, Information Systems/Clinical Informatics Research and Development, Partners HealthCare System, Boston, MA

Eric Zimmerman, MPH, MBA – Principal, Eric Zimmerman & Associates, San Rafael, CA
## Key Contacts Interview Guide

<table>
<thead>
<tr>
<th>Name of Person Interviewed and Position/Title</th>
<th>Organization</th>
<th>Type of Organization (check all that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>{ } Academic Institution</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } Commercial (e.g., eHealth companies, developers of IHCs, health care organizations, technology corporations, pharmaceutical and medical device companies)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } Government Agency</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } He-T grantee</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } He-T National Advisory Committee Member</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } Partner in eHealth Tech (e.g., eHealth Initiative, eHealth Institute)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } Philanthropy or Other “Investor” (e.g., RWJ, Markle, and California HealthCare Foundations)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } RWJF National Program - please specify: _________________</td>
</tr>
<tr>
<td></td>
<td></td>
<td>{ } Thought leader in health care</td>
</tr>
</tbody>
</table>

### Call background/protocol:

“Good morning/afternoon, my name is ____________ from White Mountain Research Associates. As I described in my recent e-mail to you, I am working on a project with The Robert Wood Johnson Foundation to explore the types of resources—including supports, technical assistance, networking, and learning and program activities—that you think would be useful for building and sustaining the field of eHealth. I’d also like to discuss possible opportunities, strengths and gaps in field-building—particularly related to your perceptions of ‘building the science of eHealth’—and types of strategic leadership and funding that you think will be needed to advance the field.”

**Additional background for funding agencies only:**

“Since [your institution/name of institution] also provides program- and/or research-related support in eHealth, we are also interested in your organization’s plans for future funding in this area and/or areas of eHealth that you think should be funded but not necessarily by your organization.”

“I assure you that all of your comments will remain confidential. I will be compiling a report which contains all comments in aggregate form only—without any reference to individuals—unless, of course, you have specific examples, recommendations, or quotes for which you would like to be acknowledged.”

“Do you have any questions before we begin?”
PART A

Background

What is your current position at ________________? (_____________________ position)
What percentage of your time would you estimate you spend on eHealth applications and/or research? ______

Exploratory Issues

- Specific area of expertise/focus within eHealth, including current eHealth program and/or research activities

PART B

Potential field-building activities

“As I mentioned, the Robert Wood Johnson Foundation is interested in feedback on program activities and resources that will help advance the field of eHealth. First, I’d like your opinion on the types of program activities that may help to build the field of eHealth. This builds on the survey you completed for us prior to this interview.”

Exploratory Issues

- What would you consider to be the top 3 priorities for building the field of eHealth? These could include a combination of research and programmatic priorities. (reference pre-interview survey they completed)
- If you could envision a resource center to support eHealth...
  - ...what products would you see this center providing (e.g. hard copy/electronic resources, standardized measures)?
  - ...what services would you see this center providing (e.g., technical assistance, speakers bureau)?
  - ...what types of technical assistance would you see this center providing (e.g., hosting chat rooms, extranets, listservs)?
- What about the role of patient-centered services or engaging consumers to use technology? What types of resources would help to build this area of eHealth?

If funding agency, probe on following:

Is your organization planning on providing future funding for eHealth applications? If so, in what areas? If not, why not?
**Health e-Technologies Initiative niche in the eHealth field and branding**

Are you familiar with the Robert Wood Johnson Foundation’s *Health e-Technologies Initiative*? (The *Health e-Technologies Initiative* provides investigator-initiated grants in the area of eHealth research. The goals of *Health e-Technologies Initiative* are to expand the body of knowledge about the efficacy, costs, cost-effectiveness and overall quality of those eHealth applications currently in use for health behavior change and chronic disease management, and to expand the body of knowledge about how to evaluate, compare and improve them).

<table>
<thead>
<tr>
<th>Exploratory Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>· Compared to other eHealth initiatives you are familiar with (e.g., eHealth Institute, eHealth initiative), do you think that <em>Health e-Technologies Initiative</em> fills a unique niche in the eHealth field? If “yes”, what value does <em>Health e-Technologies Initiative</em> bring to the field in terms of the initiative’s unique positioning in the field? If “no”, why not?</td>
</tr>
<tr>
<td>· What do you associate with the name “<em>Health e-Technologies Initiative</em>”? (probe further on tagline “building the science of eHealth”)(also, potentially probe on dimensions of brand equity → Differentiation: how distinctive is the brand in the marketplace?; Relevance: how relevant is the brand to the consumer?; Esteem: how highly does the consumer regard the brand?; Knowledge: how well does the consumer understand what the brand stands for?)</td>
</tr>
</tbody>
</table>
PART D

Promising Strategies and Barriers to Program Sustainability

A key goal of any Robert Wood Johnson Foundation initiative is to identify strategies for sustainability in the field and address potential barriers to achieving sustainability.

Exploratory Issues

- What do you think are the most promising strategies to assure that Health e-Technologies Initiative accomplishments and products will have maximal impact on the field?
- What do you see as the major barriers to sustaining the program’s benefits to the field?
- What kinds of learning and leadership opportunities do you think would be important to sustain the eHealth field? (e.g., conferences, webinars, funders workshops, commissioned papers, expert technical assistance, testimony, policy papers, consensus statements, speakers bureau)
- Of the products and services you mentioned earlier, which do you think are likely to be sustained without continued funding and support from RWJF?

PART E

Closing

Is there any other information that you think would be useful for me to know about building the field of eHealth, in general, or more specifically about the RWJF’s Health e-Technologies Initiative?

“Thank you so much for your time today. Good bye.”
Pre-Interview Survey on Resources for Building and Sustaining the Field of eHealth

Mean Ratings (n=21; response rate = 70%)

<table>
<thead>
<tr>
<th></th>
<th>Rating Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential value to the field of eHealth</td>
<td>Rate each item on a scale of 0 to 10, where “0” is “little to no value” and “10” is</td>
</tr>
<tr>
<td></td>
<td>“great value to the field.”</td>
</tr>
<tr>
<td>Potential market demand</td>
<td>Rate each item on a scale of 0 to 10, where “0” is “little or no demand” and “10” is</td>
</tr>
<tr>
<td></td>
<td>“high market demand.”</td>
</tr>
<tr>
<td>Existing Level of Competition for This Resource</td>
<td>Rate each item on a scale of 0 to 10, where “0” is “little or no competition for this resource” and “10” is “highly competitive with providers currently filling these roles.”</td>
</tr>
<tr>
<td>Likelihood of Sustainability in Field Without Continued Robert Wood Johnson Foundation-based Funding (for example, ability to become embedded in government budgets and/or through fees for products and services):</td>
<td>Rate each item on a scale of 0 to 10, where “0” is “No chance of sustainability” and “10” is “Certain chance of sustainability.”</td>
</tr>
</tbody>
</table>
## Possible Resources for Building the Field of eHealth

<table>
<thead>
<tr>
<th>Build the Evidence Base Around eHealth Applications</th>
<th>Potential Value to eHealth Field</th>
<th>Potential Market Demand</th>
<th>Existing Level of Competition for This Resource</th>
<th>Likelihood of Sustainability in Field</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve the evidence base around eHealth applications (i.e., quality, credibility, and effectiveness of eHealth applications) for…</td>
<td>0 = little to no value</td>
<td>0 = little or no demand</td>
<td>0 = little or no competition</td>
<td>0 = no chance of sustainability</td>
</tr>
<tr>
<td>- consumer online health behavior change programs</td>
<td>8.3</td>
<td>7.6</td>
<td>5.3</td>
<td>6.2</td>
</tr>
<tr>
<td>- patient-provider communication</td>
<td>8.4</td>
<td>8.1</td>
<td>4.9</td>
<td>6.5</td>
</tr>
<tr>
<td>- patient access to electronic records</td>
<td>8.5</td>
<td>7.7</td>
<td>5.1</td>
<td>7.0</td>
</tr>
<tr>
<td>- chronic disease management programs</td>
<td>8.6</td>
<td>8.0</td>
<td>6.3</td>
<td>7.2</td>
</tr>
<tr>
<td>- administrative transaction capability (prescribing, appointment scheduling, referrals)</td>
<td>6.9</td>
<td>8.1</td>
<td>6.3</td>
<td>8.1</td>
</tr>
<tr>
<td>Maintain an ongoing review of the evidence on eHealth related to…</td>
<td>0 = little to no value</td>
<td>0 = little or no demand</td>
<td>0 = little or no competition</td>
<td>0 = no chance of sustainability</td>
</tr>
<tr>
<td>- quality improvement</td>
<td>7.9</td>
<td>7.3</td>
<td>4.8</td>
<td>5.8</td>
</tr>
<tr>
<td>- establishing the business case</td>
<td>8.4</td>
<td>8.0</td>
<td>5.1</td>
<td>6.7</td>
</tr>
<tr>
<td>- tailoring of products to culturally, racially/ethnically diverse populations</td>
<td>7.6</td>
<td>6.8</td>
<td>4.2</td>
<td>5.7</td>
</tr>
<tr>
<td>Consensus and standardization of measurement tools</td>
<td>8.2</td>
<td>6.3</td>
<td>3.4</td>
<td>5.0</td>
</tr>
<tr>
<td>Consensus &amp; standardization of reporting results from eHealth trials</td>
<td>7.6</td>
<td>6.0</td>
<td>3.3</td>
<td>4.1</td>
</tr>
<tr>
<td>Development of credible information sources on research tools</td>
<td>7.1</td>
<td>5.7</td>
<td>3.6</td>
<td>4.3</td>
</tr>
<tr>
<td>Development of credible information sources on eHealth applications</td>
<td>7.4</td>
<td>6.3</td>
<td>4.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Possible Resources for Building the Field of eHealth</td>
<td>Potential Value to eHealth Field</td>
<td>Potential Market Demand</td>
<td>Existing Level of Competition for This Resource</td>
<td>Likelihood of Sustainability in Field</td>
</tr>
<tr>
<td>---------------------------------------------------</td>
<td>---------------------------------</td>
<td>-------------------------</td>
<td>-----------------------------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td></td>
<td>0 = little to no value</td>
<td>10 = great value</td>
<td>0 = little or no demand</td>
<td>10 = no chance of sustainability</td>
</tr>
<tr>
<td></td>
<td>10 = high market demand</td>
<td></td>
<td>0 = highly competitive with providers currently filling these roles</td>
<td>10 = certain chance of sustainability</td>
</tr>
</tbody>
</table>

**Support Virtual Communities of Interest**

Establish a network for eHealth *researchers* (e.g., listservs, online collaborative spaces, Extranets) | 6.5 | 5.1 | 3.4 | 4.8
Establish a network for eHealth application *end users* (e.g., listservs, online collaborative spaces) | 5.7 | 5.0 | 3.6 | 4.2
Establish a network for funders | 7.3 | 6.2 | 2.8 | 4.8

**Address Diverse Populations**

Increase access of technology to underserved populations | 8.1 | 5.3 | 3.6 | 4.1
Develop culturally sensitive applications | 8.1 | 5.8 | 3.4 | 4.2
Address literacy and linguistic barriers | 8.3 | 6.6 | 3.3 | 4.6
Research that assesses efforts to reach specific populations (including ethnic and racial minorities, older adults, low-income families and disabled people) | 8.1 | 6.0 | 3.6 | 4.5

**Resources and Technical Assistance for the Field of eHealth**

Information and support for identifying and implementing tools that can engage consumers in assessing quality and performance (for example, when selecting providers or choosing HSAs) | 7.4 | 7.5 | 4.9 | 6.9
Enhance and disseminate various eHealth technologies:
- consumer online health behavior change programs | 7.3 | 6.9 | 6.5 | 6.4
- patient-provider communication | 7.6 | 7.2 | 6.3 | 6.8
### Possible Resources for Building the Field of eHealth

<table>
<thead>
<tr>
<th>Resource</th>
<th>Potential Value to eHealth Field</th>
<th>Potential Market Demand</th>
<th>Existing Level of Competition for This Resource</th>
<th>Likelihood of Sustainability in Field</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0 = little to no value</td>
<td>10 = high market demand</td>
<td>0 = little or no competition</td>
<td>10 = certain chance of sustainability</td>
</tr>
<tr>
<td></td>
<td>10 = great value</td>
<td></td>
<td>10 = highly competitive with providers currently filling these roles</td>
<td></td>
</tr>
<tr>
<td>- patient access to electronic records</td>
<td>7.1</td>
<td>7.2</td>
<td>5.2</td>
<td>7.4</td>
</tr>
<tr>
<td>- chronic disease management programs</td>
<td>7.8</td>
<td>7.7</td>
<td>6.1</td>
<td>7.3</td>
</tr>
<tr>
<td>- administrative transaction capability (prescribing, appointment scheduling, referrals)</td>
<td>6.4</td>
<td>7.8</td>
<td>6.4</td>
<td>7.7</td>
</tr>
<tr>
<td>Commissioned papers on eHealth research: Specific topic(s)?: ____</td>
<td>7.2</td>
<td>6.1</td>
<td>4.2</td>
<td>4.9</td>
</tr>
<tr>
<td>Assistance with translating research findings into eHealth products and practice</td>
<td>7.8</td>
<td>5.8</td>
<td>4.2</td>
<td>5.3</td>
</tr>
<tr>
<td>Assistance with establishing strategic public and private partnerships for eHealth application development and dissemination</td>
<td>7.9</td>
<td>6.3</td>
<td>4.1</td>
<td>4.8</td>
</tr>
<tr>
<td>Opportunities for leadership development (e.g., training)</td>
<td>6.7</td>
<td>5.8</td>
<td>3.8</td>
<td>5.1</td>
</tr>
<tr>
<td>Learning opportunities (e.g., eHealth conferences; webinars)</td>
<td>6.9</td>
<td>6.6</td>
<td>5.7</td>
<td>6.2</td>
</tr>
<tr>
<td>Information on funding for research on eHealth applications</td>
<td>7.4</td>
<td>7.0</td>
<td>4.6</td>
<td>5.2</td>
</tr>
<tr>
<td>Information on funding for emerging eHealth technologies</td>
<td>7.4</td>
<td>7.0</td>
<td>4.7</td>
<td>5.3</td>
</tr>
<tr>
<td>Technical assistance with evidence-based eHealth applications</td>
<td>6.1</td>
<td>5.9</td>
<td>3.6</td>
<td>4.7</td>
</tr>
<tr>
<td>Technical assistance with eHealth applications research</td>
<td>6.6</td>
<td>6.0</td>
<td>3.6</td>
<td>4.9</td>
</tr>
<tr>
<td>Speakers bureau (pool of available experts, work groups, advocacy)</td>
<td>5.9</td>
<td>5.7</td>
<td>4.5</td>
<td>5.4</td>
</tr>
<tr>
<td>Resources to spread emerging eHealth technologies</td>
<td>6.7</td>
<td>6.3</td>
<td>3.9</td>
<td>4.9</td>
</tr>
<tr>
<td><strong>AVERAGE SCORE</strong></td>
<td><strong>7.4</strong></td>
<td><strong>6.6</strong></td>
<td><strong>4.5</strong></td>
<td><strong>5.6</strong></td>
</tr>
<tr>
<td><strong>STANDARD DEVIATION</strong></td>
<td><strong>0.8</strong></td>
<td><strong>0.9</strong></td>
<td><strong>1.1</strong></td>
<td><strong>1.1</strong></td>
</tr>
</tbody>
</table>
Other Possible Resources Suggested by Opinion Leaders to Build the Field of eHealth

- Benchmarking tools for quality improvement
- Building consumer health information standards
- Development and dissemination of standards for interoperability in eHealth applications - helping developers build applications that can interoperate, and helping purchasers make the right buying decisions
- Development and testing of alternative technologies
- Development of usability guidance for developers & assessors of eHealth technologies – these guidelines would include key principles, models, practical advice, and standards about engaging diverse uses in collaborative design and assessing the usability of web (& other eHealth technologies). This work could be done by a small, interdisciplinary workgroup that would examine existing guidance/research and solicit opinions from diverse users, funders, developers & evaluators.
- Funding for basic and applied eHealth research, eHealth development, and dissemination of eHealth applications (funding is main concern for researchers given decreasing federal funding levels)
- Identify opportunities to integrate quality eHealth applications into commercial HIT systems
- Networks and leadership development
- Public sector and private sector insurance paying for online visits
- As an alternative to the usual conference approach, sponsor small "leadership summits" on key eHealth issues with interdisciplinary groups
- Developing tools for evaluating quality of web health information
- Development of funding mechanisms to facilitate more rapid development, testing, and communication of emerging ideas and technologies (i.e., shorten the process to 1-2 months for funding decisions, followed by quicker development, testing, and reporting; this needs to happen to keep pace with rapidly emerging technologies so that we remain competitive and avoid falling behind)
- Grants for eHealth commercialization
- Improved disease management programs
- Promote standards-based eHealth applications
- Research that accelerates the success of eHealth products and programs at driving adoption and utilization by health care providers
- Creation of a "think tank" to facilitate communication and linkages between the various disciplines required to develop, test, and disseminate eHealth programs
- Educate consumers about the value of eHealth applications
- Explore (through a white paper or workgroup proceedings) the value of inter- and transdisciplinary approaches to past and future development of eHealth technologies; define specific principles, models, and practical steps to improving inter-and transdisciplinary processes.
- Publishing best practices for integrating personal health technology into care delivery practice
- Research that accelerates the success of eHealth products and services in engaging consumers
Suggested Topics for Commissioned Papers on eHealth

- Access and cost are the big issues
- Health behavior among minority populations in the eHealth era
- Online health information quality, effect of online information with unsupervised searching
- Recruitment, generalizability, effectiveness, theoretical frameworks, assembling an effective team, pros and cons of various technologies, barriers, public perception, usability issues
- Role for eHealth in schools
Questions for Field Experts on Use of e-Health Tools
(Health Plan Administrator)

Background and Instructions

The chief aims of Health e-Technologies Initiative (HETI), a national program of the Robert Wood Johnson Foundation (RWJF), are to expand the body of knowledge about the efficacy, costs, cost-effectiveness and overall quality of those eHealth applications currently in use for health behavior change and chronic disease management, and to expand the body of knowledge about how to evaluate, compare and improve them. HETI and RWJF staff are interested in exploring solution-oriented approaches to engaging consumers to use eHealth tools. For the purposes of this survey, eHealth tools include programs or functions that use such information technology (IT) as the Internet, wireless communications, CDroms, DVDroms, kiosks, personal digital assistants, etc. which can engage patients/consumers to make informed decisions about the healthcare they receive, as well as motivate them to take action.

We would appreciate your feedback on the following questions. We use the terms “patient” and “consumer” somewhat interchangeably below.

Please limit your responses to no more than 3-4 pages total using this document and e-mail this completed document to Judy Phalen (jphalen@partners.org) at HETI by Thursday, February 22, 2007. You can reach Judy at 617-525-6167 if you have any questions. Thank you for taking the time to complete these questions. Your feedback is very important to us!

1. eHealth Tools and Patient-Centered Care

There are a number of eHealth tools available to consumers that may help them to achieve improved health. For example, there are many websites that offer health information on a wide range of topics, interactive tools to help manage a health condition as well as correspond with others with similar issues, and communicate securely with a health care provider.

a) As a health plan administrator, what kinds of evidence about these eHealth tools in general would you want and need to know to invest in these tools for enrollees/patients (for example, user-friendliness, cost-effectiveness, privacy, security, interoperability, etc.)?

b) What factors do you think are driving or holding back decisions to invest in eHealth tools among health plan administrators in order to enhance patient-centered care?

c) Do you see eHealth tools as useful to engaging consumers to participate in their healthcare decisions or to be more proactive with their healthcare choices? If so, why? If not, why not?

d) What specific program efforts to utilize IT to enhance patient-centered care could be potentially supported by a philanthropy like RWJF (for example, you may describe specific projects or programs, meetings, think tanks, white papers, research efforts, best practices, tools, etc. that could be funded by a philanthropy such as RWJF)?
2. eHealth Tools and Quality Healthcare

Some policy- and other decision makers — including healthcare administrators, employers, and purchasers — would argue that investing in IT is critical to improving the quality of healthcare delivery. For example, IT can provide support for population management or clinical decision making at the point of care. Also, electronic tools hold promise in their potential to engage consumers by making them active participants in assessing quality and performance to drive and sustain the quality of care they receive (for example, through public reporting of performance).

a) As a health plan administrator, what do you think is driving or holding back decisions to invest in IT and other electronic tools to support quality improvement initiatives in healthcare delivery (for example, financial incentives, legal/regulatory issues, interoperability)?

b) What role, if any, do you think eHealth tools for consumers might play in improving healthcare quality?

c) Do you think eHealth tools for consumers might have any unintended consequences on healthcare quality?

d) What specific program efforts to utilize IT and other electronic tools that support quality improvement initiatives could be potentially supported by a philanthropy like RWJF (for example, you may describe specific projects or programs, meetings, think tanks, white papers, research efforts, best practices, tools, etc., that could be funded by a philanthropy such as RWJF)?

e) A major challenge in the development and dissemination of eHealth tools is the extent to which these tools can be tailored to diverse populations, particularly those populations that experience health disparities, such as racial and ethnic minorities and low-income patient populations. While eHealth tools may hold potential in eliminating disparities in health care, it’s also likely that underserved populations may have reduced or delayed access to the benefits of health IT. A number of factors need to be considered, too, which may impact the effectiveness of eHealth tools, including health literacy, cultural relevance, disabilities, age, and degree of patient engagement. As a health plan administrator, what kinds of information would be important to you to invest in eHealth tools or programs that might serve the needs of diverse populations? What would make you hesitate to invest in these types of tools?
Questions for Field Experts on Use of e-Health Tools  
(Consumer Version)

Background and Instructions

The chief aims of Health e-Technologies Initiative (HETI), a national program of the Robert Wood Johnson Foundation (RWJF), are to expand the body of knowledge about the efficacy, costs, cost-effectiveness and overall quality of those eHealth applications currently in use for health behavior change and chronic disease management, and to expand the body of knowledge about how to evaluate, compare and improve them. HETI and RWJF staff are interested in exploring solution-oriented approaches to engaging consumers to use eHealth tools. For the purposes of this survey, eHealth tools include programs or functions that use such information technology (IT) as the Internet, wireless communications, CDroms, DVDroms, kiosks, personal digital assistants, etc. which can engage patients/consumers to make informed decisions about the healthcare they receive, as well as motivate them to take action.

We would appreciate your input on the following questions. We use the terms “patient” and “consumer” somewhat interchangeably below.

Please e-mail this completed document to Judy Phalen (jphalen@partners.org) at HETI by Thursday, February 22, 2007. You can reach Judy at 617-525-6167 if you have any questions. Thank you for taking the time to complete these questions. Your feedback is very important to us!

1. eHealth Tools

There are a number of eHealth tools available to consumers that may help them to achieve improved health. For example, there are many websites that offer health information on a wide range of topics, interactive tools to help manage a health condition as well as correspond with others with similar issues, and communicate securely with a health care provider.

a) What would lead you to use these and other eHealth tools? (check all that apply)

1) ___ They are easy to understand and use.
2) ___ Assistance in using these tools is available to me.
3) ___ Getting access to them is convenient to me.
4) ___ Using them is free to me or doesn’t cost me a lot of money.
5) ___ The tools contain information or services that I want.
6) ___ They save me time.
7) ___ They save me money.
8) ___ I can interact with the tools.
9) ___ The health information/services provided is up-to-date and developed and reviewed by experts.
10) ___ It is easy for me to determine if the health information I obtain is up-to-date and reviewed by experts.
11) ___ The tools have a proven track record of helping others.
12) ___ My doctor or healthcare provider recommends it.
13) ___ My doctor or healthcare provider has access to it.
14) ___ I can communicate with my doctor or healthcare provider by using these tools.
15) ___ I can communicate with other people with similar health needs.
16) ___ The content/information available is specific to the person that I am (for example, my age, gender, lifestyle, health condition, ethnicity, or disability status).
17) ___ The content is in the language that I usually speak or read.
18) ___ I have access to this information whenever I need it.
19) ___ The technology that makes these tools run has the highest level of security to make sure that my personal health information will remain private.
20) ___ Other (please describe):

b) Of those reasons for using eHealth tools that you’ve checked in question 1a above, which would you rank as the three most important to you? Write their numbers below.

____
____
____

Why are these three reasons the most important to you?

c) What do you think would make consumers hesitate to use eHealth tools?

d) If your concerns in question 1c above were addressed to your satisfaction, which of the following would you make use of? (check all that apply)

1) ___ Looking up health information online.
2) ___ Using a lifestyle change program (for example, quitting smoking, losing weight, eating better).
3) ___ Managing my chronic illness.
4) ___ Being able to view my medical record online.
5) ___ Being able to view my child’s or elderly parent’s medical record online.
6) ___ Adding information (for example, vitamins and other supplements I take; participation in yoga, acupuncture or massage) to my electronic medical record.
7) ___ Gathering all my medical records into one electronic record that I keep and can share with other healthcare providers that I choose.
8) ___ Communicating with my doctor or healthcare provider with e-mail or other forms of electronic messaging.
9) ___ Being able to compare if my doctor/healthcare facility performs better than other doctors/healthcare facilities.
10) ___ Finding out which doctors and healthcare facilities take my insurance or will treat me if I am on Medicaid or Medicare.
11) ___ Finding out how much a particular procedure (for example, heart surgery) might cost me at different healthcare facilities.
12) ___ Other (please describe):
2. Quality Healthcare

Quality health care is defined by the Institute of Medicine as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”

a) What role, if any, do you think eHealth tools for consumers might play in improving healthcare quality?

b) Do you think eHealth tools for consumers might have any unintended consequences on healthcare quality? If so, please describe.

c) Do you see eHealth tools as useful to engaging consumers to participate in their healthcare decisions or to be more proactive with their health concerns? If so, why? If not, why not?
Questions for Field Experts on Use of E-Health Tools
(Healthcare Provider Version)

Background and Instructions
The chief aims of Health e-Technologies Initiative (HETI), a national program of the Robert Wood Johnson Foundation (RWJF), are to expand the body of knowledge about the efficacy, costs, cost-effectiveness and overall quality of those eHealth applications currently in use for health behavior change and chronic disease management, and to expand the body of knowledge about how to evaluate, compare and improve them. HETI and RWJF staff are interested in exploring solution-oriented approaches to engaging consumers to use eHealth tools. For the purposes of this survey, eHealth tools include programs or functions that use such information technology (IT) as the Internet, wireless communications, CDroms, DVDroms, kiosks, personal digital assistants, etc. which can engage patients/consumers to make informed decisions about the healthcare they receive, as well as motivate them to take action. We would appreciate your input on the following questions. We use the terms “patient” and “consumer” somewhat interchangeably below.

Please e-mail this completed document to Judy Phalen (jphalen@partners.org) at HETI by Thursday, February 22, 2007. You can reach Judy at 617-525-6167 if you have any questions. Thank you for taking the time to complete these questions. Your feedback is very important to us!

1. EHealth Tools

There are a number of eHealth tools available to consumers that may help them to achieve improved health. For example, there are many websites that offer health information on a wide range of topics, interactive tools to help manage a health condition as well as correspond with others with similar issues, and communicate securely with a health care provider.

a) What would lead you to use these and other eHealth tools in conjunction with your patients? (check all that apply)

1) ___ They are easy to understand and use.
2) ___ Assistance in using these tools is available to me.
3) ___ Getting access to them is convenient to me.
4) ___ The content/information is evidence-based.
5) ___ The tools have been proven to be effective.
6) ___ They save me time.
7) ___ Use of these tools would be a reimbursable service.
8) ___ Implementation of these tools will cost me little or no money.
9) ___ Integrating these tools into my practice will be minimally disruptive.
10) ___ These tools can operate on or be integrated into the different technological systems (for example, electronic medical records, personal digital assistants) that I currently use.
11) ___ The health information/services that I refer my patients to is up-to-date and developed and reviewed by experts.
12) ___ It is easy for me to determine if the health information/services that I refer my patients to is up-to-date and reviewed by experts.
13) ___ My patients would find these tools easy to use and understand.
14) ___ These tools are easily accessible to my patients.
15) ___ These tools are available at little to no cost to my patients.
16) ___ The content/information is tailored specifically to my patients’ demographics (for example, age, gender, lifestyle, educational/reading level, health condition, ethnicity, race, disability status, primary language spoken).

17) ___ My patients are interested in using these tools.

18) ___ The technology that makes these tools run has the highest level of security to make sure that my patients’ personal health information will remain private.

19) ___ Other (please describe):

b) Of those reasons for using eHealth tools that you’ve checked in question 1a above, which would you rank as the three most important to you? Write their numbers below.

____
____
____

Why are these three reasons the most important to you?

c) What do you think would make providers hesitate to use these eHealth tools?

d) If your concerns in question 1c above were addressed to your satisfaction, which of the following would you make use of? (check all that apply)

1) ___ Looking up health information online.

2) ___ Using electronic medical records (EMR).

3) ___ Monitoring my patients’ chronic illnesses with disease management programs.

4) ___ Communicating with my patients via e-mail or other forms of electronic messaging.

5) ___ Using electronic prescribing.

6) ___ Scheduling appointments with my patients.

7) ___ Providing my patients with electronic access to portions of their EMR (for example, lab results, immunizations).

8) ___ Allowing my patients to add information to their EMR (for example, vitamins and other supplements they take; participation in yoga, acupuncture or massage).

9) ___ Accessing my patients’ personal health records (i.e., electronic records that they have possession of that contain medical and health information from all the healthcare providers they use).

10) ___ Employing clinical decision support tools (for example, Epocrates).

11) ___ Other (please describe):

e) Of those that you’ve checked in question 1d above, which would you rank as the three most important to you? Write their numbers below.

____
____
____

Why are these three reasons the most important to you?
2. Quality Healthcare

Quality health care is defined by the Institute of Medicine as “the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge.”

a) What role, if any, do you think eHealth tools for consumers might play in improving healthcare quality?

b) Do you think eHealth tools for consumers might have any unintended consequences on healthcare quality? If so, please describe.

c) How, if at all, do you see eHealth tools as useful to engaging consumers to participate in their healthcare decisions or to be more proactive with their healthcare choices?

3. The Future of eHealth Tools

What specific program efforts to utilize eHealth tools for consumers in order to enhance quality healthcare could be potentially supported by a philanthropy like RWJF (for example, specific projects or programs, meetings, think tanks, white papers, research efforts, best practices, measurement tools)?