

# The Future of eHealth Research: A Qualitative Study

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## BACKGROUND

The field of eHealth is emerging and holds promise for improving the accessibility, impact, and reach of evidence-based programs for health behavior change and chronic disease management. eHealth is defined as the use of technology-based applications to enable health and healthcare.

## OBJECTIVE

Interviews were conducted with leaders (stakeholders) in the field of eHealth during 2002 and 2003 to elicit opinions regarding the existing challenges and future course of research on eHealth applications.

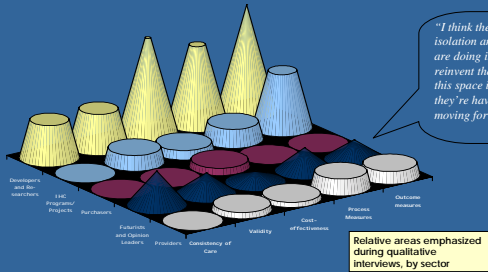


## METHODS

- 38 semi-structured interviews, each including one to five stakeholders and two investigators.
- Participants were stakeholders with the following affiliations/roles:
  - Established developers/researchers of interactive health communications (IHCs)
  - Projects/programs that have implemented eHealth applications
  - Health plan representatives
  - Technology and health care futurists
  - Opinion leaders in Information Technology
  - Physician organizations/provider groups
  - Purchasers (public/private coalitions)/larger employers
  - Consumer groups
  - Data collectors
  - Pharmaceuticals
- Interviews were audiotaped and transcribed. Qualitative analysis was conducted using NVIVO software.

## RESULTS

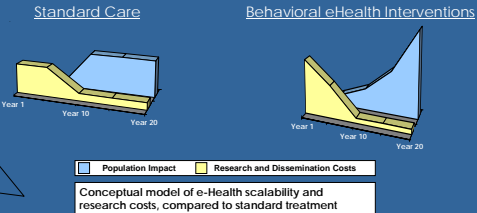
### Theme 1: Consensus and Standardization



"I think the most critical [challenge] is not working in isolation and certainly understanding what other people are doing in this arena... We certainly don't want to reinvent the wheel. So what other people are doing in this space in terms of research and the findings that they're having are certainly critical in terms of us moving forward." -- eHealth Opinion Leader

"It seems to me, when you look at this issue from an outcome perspective, the most impactful and effective approaches to the intervention tend to be a combination of multiple technologies.... If you make... a combination where there is still a direct connection between provider and patient, or subject, and that there is more information provided through multiple technologies, then all of a sudden I think you're going to see outcomes." -- eHealth Researcher

### Theme 2: Perspectives on Quality, Value, and Future Potential



Once investments are made in development and evaluation, the value of eHealth lies in its ease of dissemination and ability to reach a large audience for little incremental cost. From a public health perspective, even if applications are slightly less effective than standard (more expensive) care, the potential for population-level change is high.

## CONCLUSIONS

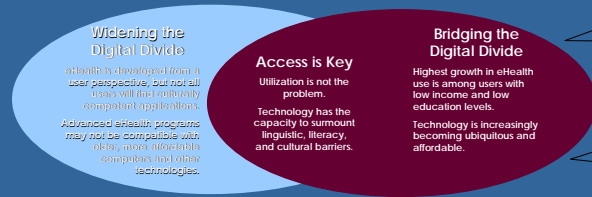
- Demonstrating outcomes is essential to establishing eHealth quality and effectiveness, but process measures are crucial to informing the validity of results. Among researchers and developers, there was dissatisfaction with existing measures of both process and outcome. Consensus and standardization of measurement is a priority.
- Traditionally underserved populations will particularly benefit if access to technology is ensured, and there are greater possibilities for improved access to healthcare.
- Building infrastructure to support widespread dissemination is crucial and multifaceted. Future challenges for health systems are to align technologies with existing workflow and reimbursement incentives, ensure technical interoperability, and enhance consistency of care.

### Theme 3: Evaluation Approaches

eHealth-Specific Threats to Quality Research	
<b>Selection Bias</b>	• Recruiting representative populations of interest is limited by users' access and technological literacy.
<b>Confounding and Effect Measure Modification</b>	• Controlling for unknown confounders (baseline severity of condition, co-morbidity) is especially difficult when evaluating discrete eHealth interventions, quasi-experimental designs, case-control studies, and field trials that may not accurately measure impact.
<b>History</b>	• Healthcare and technology are in a constant state of rapid change, which may change participants' experience during the course of a trial or evaluation.
<b>Attrition</b>	• Differential attrition can occur across condition or across level of technological proficiency.
<b>Contamination</b>	• As eHealth programs become more ubiquitous, it will be challenging to find an unexposed control population.

"I would say... from identification of person with the disease, to watching out for regression to the mean, for looking for a matched patient population, for being able to accurately portray the decrease in utilization, to making sure that the economic impact can be really documented and isn't just an increase in opportunity cost, there's just a host of problems that most of the research is still facing." -- eHealth Developer/Researcher

### Theme 4: Health Disparities



"I don't think we're lessening this divide because the underserved are also underserved as far as their access and time to go on the web." -- Program Implementer

"The people who are most likely to benefit from these systems right now are the people who are most underserved because they don't have other resources to go to." -- eHealth Developer/Researcher



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