Role of eHealth in Childhood Obesity Prevention and Reduction

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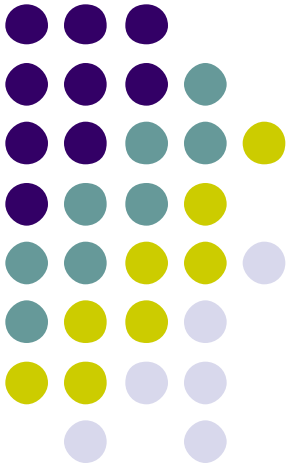

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Project Purpose

- Identify and discuss potential benefits and opportunities for eHealth in childhood obesity prevention and reduction
- Focus on low SES and culturally diverse communities
- Assess unintended consequences, if any, in the use of eHealth

Methods

- Conducted systematic review of the published literature
- Convened an interdisciplinary panel of experts and used a modified Delphi consensus method to explore perspectives via:
  - written responses to a standardized set of questions
  - convening a face-to-face meeting of panel members

Panel Members

Included:

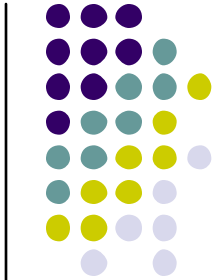
- High School Student
- eHealth Researchers
- Pediatricians
- Dietician
- eHealth Developers
- Pediatric Psychologist
- Technology Futurist
- Healthcare Providers of Linguistically and Culturally Diverse Populations

What is eHealth?

Emerging interactive technologies (i.e., Internet, interactive TV, interactive voice response systems, kiosks, internet-enabled cell phones and personal digital assistants [PDAs], CD-ROMs, DVDs) that enable health improvement and health care services.*

*Eng TR: *The eHealth Landscape: A Terrain Map of Emerging Information and Communication Technologies in Health and Health Care.* Princeton, NJ, Robert Wood Johnson Foundation, 2001.

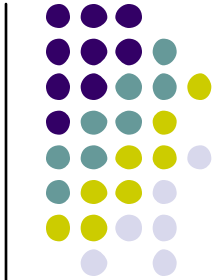
Why eHealth for Childhood Obesity Prevention and Reduction?



- Increasing incidence and prevalence of overweight and obesity in children
- Ubiquity of technology in their lives – “Digital Natives”*

*Prensky M: *Digital Natives, Digital Immigrants.* On the Horizon 2001.

Technology Use by Children



	Adults	Teens
Own Cell Phone	73%	67%
Own Digital Camera	55%	43%
Own Video Camera	43%	37%
Play Video Games	40%	83%
Own Laptop	30%	32%
Own MP3 Player	20%	45%
Own PDA or Blackberry	11%	7%

Rainie L: *Digital Natives: How today's youth are different from their 'digital immigrant' elders and what that means for libraries*. Pew Internet and American Life Project, 2006.

Technology Use by Children

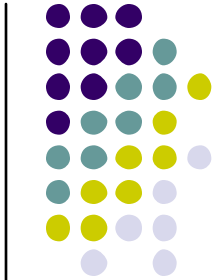
- No difference in the percent of whites, African-Americans and Hispanics teens who have ever gone online.*
- White (87%) and Hispanic (89%) teens, however, are more likely to be online than their African-American counterparts (77%).**
- All three groups of teens are more likely to be online than the U.S. adult population (66%), including their parents.**

*Rideout V, Roberts DF, Foehr UG: *Generation M: Media in the Lives of 8 - 18 Year-olds.* Menlo Park, CA, The Henry J. Kaiser Family Foundation, 2005.
**Lenhart A, Madden M, Hitlin P: *Teens and Technology: Youth are leading the transition to a fully wired and mobile nation.* Washington, DC, Pew Internet and American Life Project, 2005.

Key Findings – Literature Review

- Evidence of efficacy for eHealth programs on weight management, nutrition, physical activity in adult populations
- eHealth programs for children are at an early stage of development:
  - Computer game improved fruit and vegetable intake
  - Reduced sedentary behaviors with TV restriction
  - Increased exercise with the reward of TV time
  - Video game in schools increased physical activity
- Further research is needed, especially amongst children from traditionally underserved populations

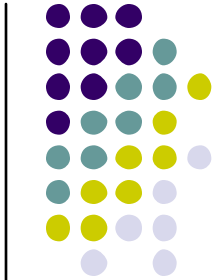
Key Findings – Literature Review



"Screen Time"

- No standard definition
- Concern that technology use exacerbates sedentary behavior – associated with passive TV viewing
- Active vs. passive screen time
- Eating and TV viewing
- Eliminating technology use will not automatically lead to increased activity

Key Findings – Panel Responses



Challenges

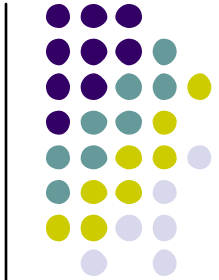
- Ensuring eHealth doesn't add to the problem
- Digital divide – feasibility for use by underserved populations
- Lack of cultural competency in design
- Manufacturing "fun"

Key Findings – Panel Responses

Opportunities

- Scalability if proven effective
- Potential for access by traditionally underserved populations
- Build programs for technologies people already own
- Cost of technology diminishing over time
- Potential partnerships

Key Findings – Panel Responses



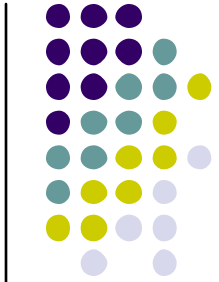
Overarching Themes

- Interventions must fit into the ecology of children's daily lives.
- Formative research is critical to reaching underserved communities.
- eHealth programs should not be stand-alone interventions

Future Directions

- Development of eHealth applications to assist families with food choices/options and improving nutrition.
- Foster development of “middleware” technologies that other developers could access to stimulate creation of eHealth programs for obesity prevention and reduction.
- Support systematic evaluation of and applied research for video games to determine their potential for increasing physical activity amongst youth.

Study Limitations



- Sample bias
- Exploration of ideas and concepts
- Theory-generative, not theory-testing

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