

HopeLab

A Model for Developing and Evaluating Video Games or Other **Technology-Based Solutions to Improve the Health and Quality of Life of Young People With Cancer or Other Chronic Illnesses**

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About HopeLab

- Non-profit founded in 2001
- Based in Palo Alto, California
- 26 full-time employees
- Expertise in research, medical science, psychology, video game technology, language translation, nutrition, communications, health policy and law, organizational development

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Our Mission

To combine rigorous research with innovative solutions to improve the health and quality of life of young people with chronic illness.

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Re-Mission™: The Idea

HopeLab was created around the idea that harnessing the power of video game technology to fully engage young people with cancer about their disease held promise.

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Our Model

- Review available research
- Consult subject-matter experts
- Consult young people with chronic illness
- Identify critical needs to be addressed
- Rationally engineer innovative solution based on information gathered
- Evaluate impact of solution through rigorous scientific research methods

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Applying Our Model: Why Cancer?

What review of research revealed about cancer in adolescents:

- Historically understudied
- Comparatively poor outcomes:
 - + adherence to medical regimens
(responsibility/control/autonomy)
 - + critical psychological and social period
(social acceptance/isolation)
 - + perceived invulnerability

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Applying Our Model: Why a Video Game?

A review of research about video game interventions revealed :

- Broadly appealing technology
- Easily targeted to deliver precise issues/information
- Interactivity (show vs. tell, do vs. say) can illustrate:
 - + systems-level relationships
 - + contingencies/consequences
 - + connections between behavior and health/biology
- User-adaptive
- Distributable

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Applying Our Model: Consulting Experts

Who we consulted:

- Oncologists
- Nurses
- Cell biologists
- Psychologists

How they contributed:

- Medical terminology in game accurate
- Game objectives address medically valid problems
- Game design embeds psychological concepts that relate directly to desired behaviors

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Applying Our Model: Consulting Young People

Who we consulted:

- Teens and young adults with cancer
- Teen and young adult gamers

What they told us:

- Game must be honest.
 - + Depiction of cancer and its effects should be real
 - + Purpose of cancer therapies should be made clear
 - + Depiction of treatment side effects should be frank
- Game must be edgy and fun.

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Engineering the Game

2002 – 2004 Collaboration with game developers

- Original design concept created with Terminal Reality
- Major development done with RealTime Associates
- Cinematic support from Treanor Brothers Animation

2004 Study version completed in October

2005 Outcomes Study

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Our First Product: Re-Mission™

Player's pilot a nanobot, **Roxxi**, through the bodies of fictional cancer patients to **destroy cancer cells**, defend against bacterial infections, and grapple with the often life-threatening side effects common in young people with cancer.

7 Cancers

ALL, AML, brain tumor, Ewing's sarcoma, Hodgkin's, NHL, osteosarcoma

19 Patients

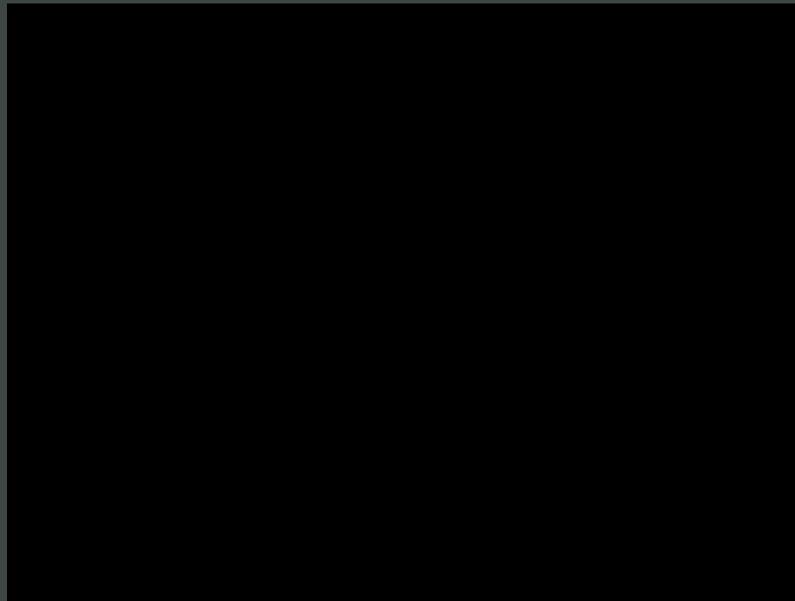
Diverse backgrounds, various disease stages and tumor sites

20 Levels

Control metastases, fight infections, manage pain. Bonus: experimental immunotherapy



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What We Learned

- A patient-centered, evidence-based approach to rationally engineer product design is feasible
- It's not easy
- Video games can be a powerful force for good

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And...

Re-Mission™ works – giving teens and young adults a sense of power and control over cancer.

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What's Next for Re-Mission™

- Get the game into the hands of as many young people with cancer as possible; **available free** to young people with cancer
- Online community building: www.re-mission.net
- Other distribution strategies
 - + Clinicians
 - + Patient support and advocacy groups

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What's Next for HopeLab

- Ongoing work in cancer through Re-Mission™
- Obesity
- Sickle-cell disease
- Autism
- Major depressive disorder

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