Supporting Statement A for

CLINICAL MYTH-TERIES: A VIDEO GAME ABOUT CLINICAL STUDIES

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LIST OF ATTACHMENTS

A.1 Circumstances Making the Collection of Information Necessary

According to A42 USC § 285b–2 - Information and Education, the Director of the Institute (NHLBI) shall collect, identify, analyze, and disseminate on a timely basis, through publications and other appropriate means, to patients, families of patients, physicians and other health professionals, and the general public, information on research, prevention, diagnosis, and treatment of heart, blood vessel, lung, and blood diseases, the maintenance of health to reduce the incidence of such diseases, and on the use of blood and blood products and the management of blood resources. In carrying out this section, the Director of the Institute shall place special emphasis upon the utilization of collaborative efforts with both the public and private sectors to—
(1) increase the awareness and knowledge of health care professionals and the public regarding the prevention of heart and blood vessel, lung, and blood diseases and the utilization of blood resources; and
(2) develop and disseminate to health professionals, patients and patient families, and the public information designed to encourage adults and children to adopt healthful practices concerning the prevention of such diseases.

This information collection request relates to the collection of data for the evaluation of a video game to help children (potentially patients) learn about clinical studies. Two types of evaluations are planned: a formative evaluation to understand game-play/usability, and a pre/post randomized data collection to measure change in knowledge. Contract Number HHSN268201200044C executed between the NHLBI and NERI, clearly states in Article H.12 that OMB clearance must be obtained prior to conducting surveys or interviews.

A1.1 Background

While US regulations dictate that new drugs must be rigorously tested for safety, more than 70% of drugs used in children are never tested in children (Boleyn, 2010; Children and Clinical Studies, 2011). There are important implications resulting from this gap. There is a rapid rise in prescription medication use in adolescents – it is the highest amongst any US population group (2010) (Bradford Health Services, 2010). According to a recent CDC report (Gu, 2010), by 2007-2008, “one out of every five children used at least one or more prescription drugs compared with 9 of every 10 adults aged 60 and over.” Understanding the consequences of prescription drug use in children is consistent with the public health goals of promoting and protecting long term health, and clinical trials are the appropriate mechanism to determine safety and efficacy. For

conditions such as HIV, where drug combinations are essential for prolonging health outcomes (and for which numerous trials have been conducted), the adolescent population has been identified as "the missing cohort" (AVAC, 2004). Conditions such as heart disease in infants, children, and adolescents are a large yet underappreciated problem with real consequences for quality of life, morbidity and mortality (NHLBI, 2002), with over 1 million adults alive today because of repairs to heart defects which occurred during childhood (NHLBI 2002)". There is a pressing need for clinical research to be conducted in this population, yet the gap in knowledge for the adolescent population remains large. This is not surprising given that:

- Ninety-five percent of the adult public support studying new and existing medical treatments, devices and medications in humans, yet only a fraction (3-5%) actually participate in clinical studies themselves (NCI, 2005).
- Only one in four U.S. adults (25%) would consider allowing their children to participate in clinical research studies (Gullo, 2004).
- Minority communities remain skeptical of clinical research and express increased rates of fear, distrust and lack of information about the health care system and clinical trials (Swanson and Ward, 2009).

These figures illuminate the very real importance of trials, and the paradoxical concern about participating in trials. Not only is this a concern for current research activities, but the frequency with which new strategies are being developed for treating diseases indicates that understanding and participating in trials in the future is increasingly important. Lack of knowledge and high levels of distrust (particularly emphatic in minority populations) about clinical studies contributes to low rates of participation in many types of studies (perhaps excluding cancer trials). We recognize that there is need to educate parents (who have ultimate responsibility) and children (who must provide assent in most cases, and be comfortable with the decision). This product aims to complement the successful Children and Clinical Studies web campaign, which addresses parent's concerns and misconceptions about clinical studies by adding a resource specifically for the potential participant (adolescents).

NERI was invited to submit a proposal for and won the award of a Phase II small business initiative (SBIR) to continue the research initiated under the Phase I project topic entitled: Innovative Tools, Techniques, and Software for the Screening, Recruitment, and Follow-up of Participants in Pediatric Research. As a condition of the contract, NERI is to produce and

evaluate a serious video game. The evaluation will be performed by a total of two hundred and eighty (280) adolescents. Thirty (30) adolescents will participate in a focus group to provide general usability information. Two hundred and fifty (250) adolescents will participate in a randomized trial to determine if there is a change in knowledge about clinical studies after playing the video game. In accordance with HHSAR 352.201-70, Paperwork Reduction Act, the Contractor (NERI) shall not proceed with surveys or interviews until such time as Office of Management and Budget (OMB) Clearance for conducting interviews has been obtained by the Contracting Officer's Technical Representative (COTR) and the Contracting Officer has issued written approval to proceed.

A.2 Purpose and Use of the Information Collection

This information collection request relates to the collection of data for the evaluation of a video game about clinical studies. Two types of evaluations are planned: a formative evaluation to understand game-play/usability, and a pre/post randomized data collection to measure change in knowledge.

For the formative evaluation (conducted with members of the target audience of adolescents 8-14 years), the data collected will provide information on the artwork and design, balance and control and support materials which appeal to the target audience.

For the randomized trial (conducted with the target audience of adolescents 8-14 years), each respondent will provide some basic demographic information, take a pre-test to assess knowledge about clinical studies, attend a game playing session and then after playing the video game, take a post test to once again assess knowledge about clinical studies.

The demographic data will contain items such as:

- Gender*;
- Age*;
- Race/ethnicity*

*these demographic questions are required when conducting NIH research.
The demographic data will not obtain information about what types of clinical studies they took part in, if any, but will help us to understand any differences in pre- and post- testing. The pre- and post- tests will gather information about knowledge related to clinical studies, terminology,

and misperceptions about clinical research with the purpose of refining the game to provide an educational and engaging game consistent with the product goals.

A.3 Use of Information Technology and Burden Reduction

Data will not be stored at NIH and as such, it was determined that a PIA would not be performed. Data are stored at NERI using the following procedures. Personal identifiers will never be stored with the survey data collected from this study. The pre- and post- tests will be conducted online using laptops that NERI will set up for the evaluation. Data will be collected through a secure data survey tool. All study data will be identified by an ID number only.

A.4 Efforts to Identify Duplication and Use of Similar Information

There are no video games similar to this game for this topic. Therefore, there is no duplication of efforts.

A.5 Impact on Small Businesses or Other Small Entities

There is no impact on small business or other small entities as this information collection is from individual adolescents. No small businesses or other small entities will be involved in reporting the data collected from this study.

A.6 Consequences of Collecting the Information Less Frequently

The intent of this information collection is to collect the data from the respondents only once. Each respondent will be enrolled and consented for one (1) information collection only. There are no plans to re-contact any of the respondents who enroll or ask for any additional information or repeat information from them.

A.7 Special Circumstances Relating to the Guidelines of 5 CFR 1320.5

There are no known special circumstances concerning this IC relating to the Guidelines of 5 CFR 1220.5.

A.8 Comments in Response to the Federal Register Notice and Efforts to Consult Outside Agency

A notice was published in the Federal Registar (Vol. 77, No. 114, Page 35407, June 13, 2012) and allowed 60 days for comment. No comments were received.

The following individuals comprise the scientific advisory panel for Clinical Myth-teries and will complete a review and provide input on the information collection instruments.

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A.9 Explanation of Any Payment of Gift to Respondents

The participants providing input on the Usability Testing Focus Groups will receive a payment of $25. The participants enrolling in the randomized trial video game evaluation will receive a payment of $50.

During the Phase I pilot study, we provided respondent payments (gift cards) in the amount of $25.00 per participant for attending a 90 minute usability testing group session. This cost was carefully reviewed by our IRB during Phase I (particularly as it concerned a vulnerable population). This amount was deemed appropriate and reasonable. For the Phase II usability testing focus groups (90-minute discussion) we will, again, provide a respondent payment of $25.00.

Participants in the randomized trial evaluation will be asked to complete an online demographics questionnaire and will be scheduled for a time that is convenient to attend a game playing session. As a study participant, they will be asked to take a pre-test online, and then either review standard materials or play the serious video game for 30-45 minutes. After they play the serious game, we will ask them to complete a post-test online and an open-ended set of qualitative questions (content analysis) to gather more detailed information about game experience and recommendations. Because there are several components to participation in the evaluation, we propose to provide a gift card for $50 for completing the study (a demographics form, participation in the assigned study arm, two surveys (pre/post) and brief open ended responses). This payment was calculated based on NERI's extensive experience collecting primary data (always with careful IRB review).

In addition, we have reviewed recommendations specifically related to children as a vulnerable population. The IOM Report on Ethical Conduct of Research in Children (2004) provides general guidelines for outpatient study which involves <2 hours at $25, and 2-<4 hours at $50. Because the evaluation respondent activities are more involved than the participatory evaluation (online screening, online pretest, scheduled 45 minute game session, online post test and online qualitative responses) we proposed that $50.00 would be an appropriate payment by gift card. The respondent payments and process (gift card) will be carefully reviewed by the NERI IRB.

A.10 Assurance of Confidentiality Provided to Respondents

All respondents in the proposed research project are informed that information regarding their participation in the study is secure to the extent permitted by law. This is accomplished during the time of recruitment for participation, at the time of the administration of the informed consent form, prior to conducting the focus groups and obtaining web based data. As the population is not legally able to sign an informed consent, a parent or guardian will be required to sign for the adolescent. The adolescent will be given an informed assent and allowed to decide on their

participation. Respondents will be given a copy of the informed consent and the informed assent with a toll-free telephone number and the name of a NERI Institutional Review Board (IRB) person to contact to answer any questions that may arise regarding their rights as a research subject, including security of their information. The informed consent form will further contain the name and toll-free telephone number for NERI staff person that is trained to answer any questions that may arise regarding the participation. Assurances that information regarding participation in the study is secure to the extent permitted and emphasis on the voluntary nature of responses will be made at prior to data collection.

During the enrollment period, contact information for the subjects will be collected. This information will be maintained on paper only, in a locked cabinet within a locked area at NERI. Once participation has taken place and the study is completed, the contact information will be stored in compliance with NIH regulations and shredded within the required time frame after the study is completed.

The informed consent form is attached in Attachment 1. The informed assent form is attached in Attachment 2. The activity discussion guide is attached in Attachment 3. The notice of approval from the Internal Review Board is attached as Attachment 4. The Screening and pre- and post-evaluation questions are accached in Attachment 5.

A.11 Justification for Sensitive Questions

There will be no sensitive information collected as part of this Information Collection.

A.12 Estimates of Hour Burden Including Annualized Hourly Costs

The data collection will take place in 2 phases. The first phase will involve 30 adolescents (10 per focus group) taking part in one of three (3) identical ninety (90) minute (90/60) focus groups. Each adolescent will attend one (1) focus group only. The second phase will consist of two hundred and fifty (250) adolescents who will provide demographic data, take a pre test, take part in a video game session or read standard materials and then take a post test. The hourly burden for these two hundred and fifty (250) adolescents is 1.3 hours (80/60). This information collection will only occur once with each subject. Therefore the estimated total annual hourly burden for these respondents is 370 hours.

A.12 - 1 ESTIMATES OF HOUR BURDEN					
Form Name	**Type of Respondents**	**Number of Respondents**	**Frequency of Response**	**Average Time per Response**	**Annual Hour Burden**
Qualtative Focus Group Discussion Guide and screener	Adolescents (Wave one)	30	1	90/60 (1.5 HOURS)	45
Screen pre post eval	Adolescents (Wave two)	250	1	80/60 (1.33 HOURS)	333
Totals		280			378

A.12 - 2 ANNUALIZED COST TO RESPONDENTS					
Type of Respondents	Number of Respondents	Frequency of Response	Average Time per Respondents	Hourly Wage Rate	Respondent Cost
Adolescents – Wave one	30	1	90/60 (1.5 HOURS)	$10.00	$450.00
Adolescents – Wave two	250	1	80/60 (1.33 HOURS)	$10.00	$3333.33
Totals	280				$3783.00

A.13 Estimate of Other Total Annual Cost Burden to Respondents or Record Keepers

There are no capital costs associated with this data collection to respondents or record keepers.

A.14 Annualized Cost to the Federal Government

The estimated annualized cost to the Federal government for this information collection is: $42,342. Table A.14-1 (below) is the breakdown of how the costs were obtained.

Annualized Cost to the Federal Government			
NERI Costs			

Personnel	Task	Hours	Estimated total cost (in Dollars)
Project Manager	Recruitment	15	641.00
Project Manager	Focus Groups	5	214.00
Project Manager	Randomized Trial	10	428.00
Administrative Support	Recruitment	25	478.00
Administrative Support	Preparation and support	10	191.00
Center for Quality Research Personnel	Focus Group / Game session Preparation	70	2,200.00
Scientific Advisory Board	Review and approve materials	24	3,000.00
Gaming Company (Wisdom Tools)	Focus Group preparation and attendance	16	268.00
Total Personnel Costs			7,420.00
Other Costs			
Gaming Company (Wisdom Tools)	Travel to Focus Group		2,980.00
Materials and printing			6,000.00
Computers for evaluation			8,992.00
Cost to Respondents (Table A.12-2)			3783.00
Respondent payments			13,250.00
Total Other Costs			35,005.00
Total Costs			42,425.00

A.15 Explanation for Program Changes or Adjustments

This is a new collection of information. There are no changes or adjustments.

A.16 Plans for Tabulation and Publication and Project Time Schedule

The primary objective of this study will be to show a greater improvement in knowledge in the group who play the serious video game compared to the group assigned to standard of care. A

sample size of 250 will be targeted. Participants will be randomized in a 2:1 ratio of intervention (N=167) to control (N=83) in order to provide greater power for secondary analysis within the intervention group. Assuming 20% attrition, this leaves 134 participants assigned to video game and 66 to standard of care. This sample size provides 80% power to detect an effect size of 0.4 standard deviations using a one-sided t-test at level 0.05, or 90% power to detect an effect size of 0.5. These are considered moderate effect sizes. A 0.5 effect size is equivalent to a difference of one-half of one standard deviation in the change in the number of questions answered correctly by participants in the two groups. A difference of this size is large enough to be considered of practical importance. A much smaller difference would be considered of lesser importance.

This randomized trial is designed to address the hypotheses:

- Hypothesis 1: Adolescents who play Paper Kingdom are significantly more likely to demonstrate interest in clinical research (willingness to participate, share information, interest in learning more).
- Hypothesis 2: Adolescents who play Paper Kingdom are more likely to report increased knowledge about the specific learning objectives defined in the game (who participates, what is involved, what are the benefits of research).
- Hypothesis 3: Adolescents with more video game experience assigned to the video game group will have a larger increase in knowledge compared to subjects with less video game experience in the same group.
- Hypothesis 4: Adolescents in the older age group will experience greater change in knowledge (because they are more likely to be game savvy).
- Hypothesis 5: Adolescents in the older age group will report less interest in the game play because of greater exposure to commercial games with intensive combat.
- Hypothesis 6: There will be no difference by gender in knowledge change (overall and by age group).
- Hypothesis 7: Racial/ethnic minority subjects will report greater change in knowledge (overall and by age group).

To address these Hypotheses, all study subjects will complete a questionnaire about attitudes towards clinical studies and take a test of knowledge about clinical studies: prior to any intervention (“pre-test”) and after completing their assigned intervention (“post-test”). The subjects assigned to the intervention group will complete a questionnaire soliciting their opinions about the video game usability and functionality.

The data collected will be used first to enhance the product (video game) and secondly to report on the outcome of the video game as a learning tool.

The following schedule assumes an OMB approval on December 1, 2012.

A.16 - 1 Project Time Schedule

Activity	Time Schedule	Contract Date
Focus groups recruitment	2 months after OMB approval	February 2013
Focus groups completed	4 months after OMB approval	April 2013
Focus group data integration	Immediately after Focus Group Completion	April 2013
Recruitment for randomized trial	5 months after OMB approval	May 2013
Randomized trial completed	12 months after OMB approval	December 2013
Final Report	18 months after OMB approval	March 2014

A.17 Reason(s) Display of OMB Expiration Date is Inappropriate

OMB expiration date will be places in the upper right hand corner of each document and on the top of each computer screen for electronic questionnaires.

A.18 Exceptions to Certification for Paperwork Reduction Act Submissions

No exceptions noted.

LITERATURE CITED

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