Final Progress Report for Research Projects Funded by Health Research Grants

Instructions: Please complete all of the items as instructed. Do not delete instructions. Do not leave any items blank; responses must be provided for all items. If your response to an item is "None", please specify "None" as your response. "Not applicable" is not an acceptable response for any of the items. There is no limit to the length of your response to any question. Responses should be single-spaced, no smaller than 12-point type. The report **must be completed using MS Word**. Submitted reports must be Word documents; they should not be converted to pdf format. Questions? Contact Health Research Program staff at 717-783-2548.

1. **Grantee Institution:** Albert Einstein Healthcare Network

2. **Reporting Period (start and end date of grant award period):** 1/1/11 - 06/30/13

3. **Grant Contact Person (First Name, M.I., Last Name, Degrees):** Mary Klein, PhD

4. **Grant Contact Person's Telephone Number:** 215-456-7216

5. **Grant SAP Number:** 4100054839

6. **Project Number and Title of Research Project:** 1 – Goal Intention Reminding for Treatment of Post-Acute Traumatic Brain Injury

7. **Start and End Date of Research Project:** 1/1/11-06/30/13

8. **Name of Principal Investigator for the Research Project:** Tessa Hart, PhD

9. **Research Project Expenses**.

   9(A) Please provide the total amount of health research grant funds spent on this project for the entire duration of the grant, including indirect costs and any interest earned that was spent:

   $49,498.94

   9(B) Provide the last names (include first initial if multiple individuals with the same last name are listed) of **all** persons who worked on this research project and were supported with health research funds. Include position titles (Principal Investigator, Graduate Assistant, Post-doctoral Fellow, etc.), percent of effort on project and total health research funds expended for the position. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name, First Name	Position Title	% of Effort on Project	Cost
Hart	Principal Investigator	5%	$12,249
Vaccaro	Project Coordinator	5%	$ 2,841
Bognar	Research Asst	5%	$ 3,842
Hays	Research Asst	10%	$ 2,544

9(C) Provide the names of **all** persons who worked on this research project, but who *were not* supported with health research funds. Include position titles (Research Assistant, Administrative Assistant, etc.) and percent of effort on project. For multiple year projects, if percent of effort varied from year to year, report in the % of Effort column the effort by year 1, 2, 3, etc. of the project (x% Yr 1; z% Yr 2-3).

Last Name, First Name	Position Title	% of Effort on Project
None		

9(D) Provide a list of **all** scientific equipment purchased as part of this research grant, a short description of the value (benefit) derived by the institution from this equipment, and the cost of the equipment.

Type of Scientific Equipment	Value Derived	Cost
None		

10. Co-funding of Research Project during Health Research Grant Award Period. Did this research project receive funding from any other source during the project period when it was supported by the health research grant?

Yes_____ No____x_____

If yes, please indicate the source and amount of other funds:

11. Leveraging of Additional Funds

11(A) As a result of the health research funds provided for this research project, were you able to apply for and/or obtain funding from other sources to continue or expand the research?

Yes____x_____ No_____

If yes, please list the applications submitted (column A), the funding agency (National Institutes of Health—NIH, or other source in column B), the month and year when the application was submitted (column C), and the amount of funds requested (column D). If you have received a notice that the grant will be funded, please indicate the amount of funds to be awarded (column E). If the grant was not funded, insert "not funded" in column E.

Do not include funding from your own institution or from CURE (tobacco settlement funds). Do not include grants submitted prior to the start date of the grant as shown in Question 2. If you list grants submitted within 1-6 months of the start date of this grant, add a statement below the table indicating how the data/results from this project were used to secure that grant.

A. Title of research project on grant application	B. Funding agency (check those that apply)	C. Month and Year Submitted	D. Amount of funds requested:	E. Amount of funds to be awarded:
#H133A120037, Hart (PI), 2012-2017, "Moss Traumatic Brain Injury Model System." *	☐NIH x Other federal (specify:NIDRR_) ☐ Nonfederal source (specify:_)	Aug 2012	$532,745	$447,500

*The specific sub-project that was funded to continue the work started under the current grant, is entitled *Use of SMS Messaging to Promote Emotional Health for People With Traumatic Brain Injury: A Randomized Controlled Trial.*

11(B) Are you planning to apply for additional funding in the future to continue or expand the research?

Yes_____ No____x_____

If yes, please describe your plans:

12. Future of Research Project. What are the future plans for this research project?

This research will be extended via extramural funding as described above (federal grant application was successful). We are also considering a manuscript in a peer-reviewed journal based on the qualitative and quantitative findings.

13. New Investigator Training and Development. Did students participate in project supported internships or graduate or post-graduate training for at least one semester or one summer?

Yes_____ No___x_____

If yes, how many students? Please specify in the tables below:

	Undergraduate	Masters	Pre-doc	Post-doc

Male				
Female				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
Hispanic				
Non-Hispanic				
Unknown				
Total				

	Undergraduate	Masters	Pre-doc	Post-doc
White				
Black				
Asian				
Other				
Unknown				
Total				

14. Recruitment of Out-of–State Researchers. Did you bring researchers into Pennsylvania to carry out this research project?

Yes_____ No____x_____

If yes, please list the name and degree of each researcher and his/her previous affiliation:

15. Impact on Research Capacity and Quality. Did the health research project enhance the quality and/or capacity of research at your institution?

Yes_____ No___x_____

If yes, describe how improvements in infrastructure, the addition of new investigators, and other resources have led to more and better research.

16. Collaboration, business and community involvement.

16(A) Did the health research funds lead to collaboration with research partners outside of your institution (e.g., entire university, entire hospital system)?

Yes_____ No___x_____

If yes, please describe the collaborations:

16(B) Did the research project result in commercial development of any research products?

Yes_____ No___x_____

If yes, please describe commercial development activities that resulted from the research project:

16(C) Did the research lead to new involvement with the community?

Yes_____ No___x_____

If yes, please describe involvement with community groups that resulted from the research project:

17. Progress in Achieving Research Goals, Objectives and Aims.

List the project goals, objectives and specific aims (as contained in the grant agreement). Summarize the progress made in achieving these goals, objectives and aims for the period that the project was funded (i.e., from project start date through end date). Indicate whether or not each goal/objective/aim was achieved; if something was not achieved, note the reasons why. Describe the methods used. If changes were made to the research goals/objectives/aims, methods, design or timeline since the original grant application was submitted, please describe the changes. Provide detailed results of the project. Include evidence of the data that was generated and analyzed, and provide tables, graphs, and figures of the data. List published abstracts, poster presentations and scientific meeting presentations at the end of the summary of progress; peer-reviewed publications should be listed under item 20.

This response should be a DETAILED report of the methods and findings. It is not sufficient to state that the work was completed. Insufficient information may result in an unfavorable performance review, which may jeopardize future funding. If research findings are pending publication you must still include enough detail for the expert peer reviewers to evaluate the progress during the course of the project.

Health research grants funded under the Tobacco Settlement Act will be evaluated via a performance review by an expert panel of researchers and clinicians who will assess project work using this Final Progress Report, all project Annual Reports and the project's strategic plan. After the final performance review of each project is complete, approximately 12-16 months after the end of the grant, this Final Progress Report, as well as the Final Performance Review Report containing the comments of the expert review panel, and the grantee's written response to the Final Performance Review Report, will be posted on the CURE Web site.

There is no limit to the length of your response. Responses must be single-spaced below, no smaller than 12-point type. If you cut and paste text from a publication, be sure symbols print properly, e.g., the Greek symbol for alpha (α) and beta (ß) should not

print as boxes (☐) and include the appropriate citation(s). DO NOT DELETE THESE INSTRUCTIONS.

Specific Aims:
(1) To examine the effects of an intervention designed to promote goal attainment (GI) compared to goal discussion and review alone (GR), on a range of goal-relevant measures including Goal Attainment Scaling and standardized measures of emotional function and social participation;
(2) To gather qualitative data on the feasibility and acceptability of the GI treatment so as to improve its content and procedures for future research; and
(3) To explore relationships among treatment effects, if any, and process variables such as goal domains selected, number of implementation intentions created, number of messages received, and strength of self-rated motivation.

Progress:
Aim (1) was achieved with a small sample (n = 4 in each of the two groups). As detailed further in the 2013 Annual Report, data were analyzed for measures including Goal Attainment Scaling (GAS) and standardized measures of emotional function and social participation. Table 1, copied from the previous report, shows that there was no significant difference between treatment groups for the GAS change scores using non-parametric t-test (Mann-Whitney U). On the PART-O, which measures extent of societal participation, 2 subscales showed a significantly larger positive change in the GI group compared to the GR group: Social Interaction and Community Activity. The 3rd subscale, Productivity, showed no significant group differences (all values shown in Table 1). Notably, the GI intervention was targeted mainly to social and community activity, and not to activities related to productivity (e.g., paid or volunteer work). Thus, it is possible that differential activity levels prompted by the GI treatment accounted for these differences, even though they were not detected by the GAS scale. With respect to emotional function, neither the GSI (general severity index of the BSI) nor the Anger Expression Index of the STAXI-2 showed differential improvement by treatment group (Table 1).

In the service of Aim 1, we also completed the development of the MossGoal web application, a secure site from which SMS messages may be pre-programmed to be sent at specified days and times, and time-stamped replies to those messages stored.

Aim (2) was achieved. We received uniformly positive feedback from "debriefing" sessions with participants. All participants in the GI condition persisted with reading and replying to the messages and all reported positive aspects of doing so. Three of the 4 said that they thought being reminded of their intentions had contributed to changes in their behavior over the 8 weeks. For example, one participant reported that she was going to the gym and socializing with neighbors much more often than before (both activities targeted in her implementation intentions). Another, whose implementation intentions had revolved around management of her irritability, said that she had gone from fighting with her sister numerous times per week to having one fight in a month's time. A third said he had better remembered to follow through with his intention to "hold his tongue" rather than say things that might make new acquaintances feel uncomfortable. The only 1 of the 4 who reported no direct behavior change said that she "thought about" her intentions to interact more with people as the result of receiving the

messages and that she considered that to be positive, but was unsure as to whether she had followed through behaviorally or not. None of the 4 reported serious negative reactions to receiving the messages, although 2 mentioned that it got repetitive to see the same messages multiple times and 1 reported having a hard time keeping up with the needed replies. We interpreted these findings to indicate that this type of intervention is feasible for people with significant cognitive, affective and behavioral limitations following TBI. We used the funding provided under this grant to develop a manual for intervention that was modified for a successful application for extramural funding.

Aim (3) was not achieved. As reported previously and summarized below, recruitment difficulties precluded a sample large enough to perform meaningful analyses among treatment effects and other variables. At the point where it became clear that this aim was not achievable, the resources of the project were directed to obtaining extramural funding to support this line of research rather than attempting to recruit a larger sample.

Recruitment problems: We enrolled only 8 of a planned sample of 30 persons. Halfway through the 2nd year, we secured an IRB modification to expand the recruitment to include persons nearing discharge from outpatient brain injury treatment at either of the Moss campuses involved in the study, regardless of whether they had been receiving counseling to address goal areas addressed in the study. While this was intended to help catch up on recruitment, it also raised the possibility that participants who were otherwise eligible would not have relevant goals to address in the experimental treatment (which did happen). Thus this modification did not help substantially with recruitment efforts.

Altogether we screened approximately 90 potential participants for this project. Of those, 18 were excluded for a history of serious mental illness (e.g., schizophrenia, bipolar disorder), 18 because their TBI was too mild and/ or insufficiently documented, 4 because they do not speak English, 3 because treating clinicians could not identify goals related to the study intervention, 6 because the participant was being discharged to another intensive treatment program, and 11 due to probable psychiatric instability/ no means of contact post discharge. Of those initially deemed eligible, 2 declined participation and 12 provided informed consent; some others could not be contacted before they left the clinical system. Two of those who provided informed consent later decided to withdraw from the study, and another 2 were seen for the first part of the intervention but were withdrawn because they did not have goals relevant to the study, i.e., goals to increase social activity or manage their moods. We do not believe that the study was unappealing to potential participants, rather the "lesson learned" is that the inclusion criteria should have been more specific in defining a problem that participants should want to change before enrolling in such a study. We do not believe that the study would have benefited from relaxing the primary exclusions such as prior history of mental illness or psychiatric instability at discharge.

Dissemination of Findings: The PI organized a Symposium on the use of the GAS method to measure individualized goals in rehabilitation research, in which the design and findings of the funded study were presented to a sizable audience at the Annual Meeting of the American Congress of Rehabilitation Medicine. Two other researchers who are using the GAS, including one from New Zealand, were invited to participate as symposium speakers. Full reference: Hart T, Sander A, McPherson K. Goal Attainment Scaling as assessment and treatment: Concepts and

applications for brain injury rehabilitation. Symposium presented at Joint Conference of the American Congress of Physical Medicine and Rehabilitation and the American Society of Neurorehabilitation, Vancouver, October, 2012.

Application for Extramural Funding: The PI submitted an extramural grant application in 8/12 which relied heavily on the preliminary data from the funded project, including qualitative and quantitative findings from participants, and the "MossGoal" web application. This application was approved for funding, which began 10/1/12. Full reference: National Institute on Disability and Rehabilitation Research, #H133A120037, Hart (PI), 2012-2017, "Moss Traumatic Brain Injury Model System." The specific sub-project that was funded to continue the work started under the current grant, is entitled *Use of SMS Messaging to Promote Emotional Health for People With Traumatic Brain Injury: A Randomized Controlled Trial.* This project will run for the full 5 years of the grant cycle and will extend the methodology developed in the current grant to examine the effects of a novel SMS-based treatment for depression and anxiety following TBI.

Table 1. Change scores (mean, range) for P and SO ratings from baseline to 8-week evaluation, by treatment group. Positive scores indicate improvement in a given domain. NS = not significant. *denotes measure that was statistically significant between groups.

Measure	Goal Intention Reminding (n = 4)	Goal Review (n = 4)	Group Differences
Goal Attainment Scaling	1.25 (0-2)	1.5 (0-3)	p = .76 (NS)
Social Interaction*	0.21 (-.14 - .57)	-.57 (-.86 - -.15)	*p = .02*
Community Activity*	0.19 (-.39 - .57)	-.70 (-1.0 - -.50)	*p = .02*
Productivity	-.17 (-1.0 – 1.0)	-.16 (-1.33 - .34)	p = .88 (NS)
BSI (Emotional Status)	-1.0 (-9 – 11.0)	1.5 (-1.0 – 7.0)	p = .77 (NS)
AX Index (Anger Expression	7.0 (2.0 – 12.0)	1.0 (-6.0 – 8.0)	p = .24 (NS)

18. Extent of Clinical Activities Initiated and Completed. Items 18(A) and 18(B) should be completed for all research projects. If the project was restricted to secondary analysis of

clinical data or data analysis of clinical research, then responses to 18(A) and 18(B) should be "No."

18(A) Did you initiate a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

__x___Yes
_____No

18(B) Did you complete a study that involved the testing of treatment, prevention or diagnostic procedures on human subjects?

__x___Yes
_____No

If "Yes" to either 18(A) or 18(B), items 18(C) – (F) must also be completed. (Do NOT complete 18(C-F) if 18(A) and 18(B) are both "No.")

18(C) How many hospital and health care professionals were involved in the research project?

__5__ Number of hospital and health care professionals involved in the research project

18(D) How many subjects were included in the study compared to targeted goals?

__30____Number of subjects originally targeted to be included in the study
__8____Number of subjects enrolled in the study

Note: Studies that fall dramatically short on recruitment are encouraged to provide the details of their recruitment efforts in Item 17, Progress in Achieving Research Goals, Objectives and Aims. For example, the number of eligible subjects approached, the number that refused to participate and the reasons for refusal. Without this information it is difficult to discern whether eligibility criteria were too restrictive or the study simply did not appeal to subjects.

18(E) How many subjects were enrolled in the study by gender, ethnicity and race?

Gender:
__4___Males
__4___Females
_____Unknown

Ethnicity:
___1__Latinos or Hispanics
___7__Not Latinos or Hispanics
_____Unknown

Race:
_____American Indian or Alaska Native

___1__Asian
___2__Blacks or African American
_____Native Hawaiian or Other Pacific Islander
__5___White
_____Other, specify:_____
_____Unknown

18(F) Where was the research study conducted? (List the county where the research study was conducted. If the treatment, prevention and diagnostic tests were offered in more than one county, list all of the counties where the research study was conducted.)

Montgomery County, PA

19. Human Embryonic Stem Cell Research. Item 19(A) should be completed for all research projects. If the research project involved human embryonic stem cells, items 19(B) and 19(C) must also be completed.

19(A) Did this project involve, in any capacity, human embryonic stem cells?
_____Yes
__x___ No

19(B) Were these stem cell lines NIH-approved lines that were derived outside of Pennsylvania?
_____Yes
_____ No

19(C) Please describe how this project involved human embryonic stem cells:

20. Articles Submitted to Peer-Reviewed Publications.

20(A) Identify all publications that resulted from the research performed during the funding period and that have been submitted to peer-reviewed publications. Do not list journal abstracts or presentations at professional meetings; abstract and meeting presentations should be listed at the end of item 17. **Include only those publications that acknowledge the Pennsylvania Department of Health as a funding source** (as required in the grant agreement). List the title of the journal article, the authors, the name of the peer-reviewed publication, the month and year when it was submitted, and the status of publication (submitted for publication, accepted for publication or published.). Submit an electronic copy of each publication or paper submitted for publication, listed in the table, in a PDF version 5.0.5 (or greater) format, 1,200 dpi. Filenames for each publication should include the number of the research project, the last name of the PI, and an abbreviated title of the publication. For example, if you submit two publications for Smith (PI for Project 01), one publication for Zhang (PI for Project 03), and one publication for Bates (PI for Project 04), the filenames would be:

Project 01 – Smith – Three cases of isolated
Project 01 – Smith – Investigation of NEB1 deletions
Project 03 – Zhang – Molecular profiling of aromatase
Project 04 – Bates – Neonatal intensive care

If the publication is not available electronically, provide 5 paper copies of the publication.

Note: The grant agreement requires that recipients acknowledge the Pennsylvania Department of Health funding in all publications. Please ensure that all publications listed acknowledge the Department of Health funding. If a publication does not acknowledge the funding from the Commonwealth, do not list the publication.

Title of Journal Article:	Authors:	Name of Peer-reviewed Publication:	Month and Year Submitted:	Publication Status (check appropriate box below):
1. None				☐Submitted ☐Accepted ☐Published

20(B) Based on this project, are you planning to submit articles to peer-reviewed publications in the future?

Yes___x_____ No_____

If yes, please describe your plans:

We are considering a manuscript focusing on "lessons learned" from use of the GAS technique, feasibility data regarding the SMS reminding method and preliminary findings from comparison of the treatment group outcomes with the small randomized sample used in this study.

21. Changes in Outcome, Impact and Effectiveness Attributable to the Research Project. Describe the outcome, impact, and effectiveness of the research project by summarizing its impact on the incidence of disease, death from disease, stage of disease at time of diagnosis, or other relevant measures of outcome, impact or effectiveness of the research project. If there were no changes, insert "None"; do not use "Not applicable." Responses must be single-spaced below, and no smaller than 12-point type. DO NOT DELETE THESE INSTRUCTIONS. There is no limit to the length of your response.

None.

22. Major Discoveries, New Drugs, and New Approaches for Prevention Diagnosis and Treatment. Describe major discoveries, new drugs, and new approaches for prevention, diagnosis and treatment that are attributable to the completed research project. If there were

no major discoveries, drugs or approaches, insert "None"; do not use "Not applicable." Responses must be single-spaced below, and no smaller than 12-point type. DO NOT DELETE THESE INSTRUCTIONS. There is no limit to the length of your response.

None.

23. Inventions, Patents and Commercial Development Opportunities.

23(A) Were any inventions, which may be patentable or otherwise protectable under Title 35 of the United States Code, conceived or first actually reduced to practice in the performance of work under this health research grant? Yes_____ No___x_____

If "Yes" to 23(A), complete items a – g below for each invention. (Do NOT complete items a - g if 23(A) is "No.")

a. Title of Invention:

b. Name of Inventor(s):

c. Technical Description of Invention (describe nature, purpose, operation and physical, chemical, biological or electrical characteristics of the invention):

d. Was a patent filed for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?
Yes_____ No___

If yes, indicate date patent was filed:

e. Was a patent issued for the invention conceived or first actually reduced to practice in the performance of work under this health research grant?
Yes_____ No___
If yes, indicate number of patent, title and date issued:
Patent number:
Title of patent:
Date issued:

f. Were any licenses granted for the patent obtained as a result of work performed under this health research grant? Yes_____ No___

If yes, how many licenses were granted?_____

g. Were any commercial development activities taken to develop the invention into a commercial product or service for manufacture or sale? Yes___ No___
If yes, describe the commercial development activities:

23(B) Based on the results of this project, are you planning to file for any licenses or patents, or undertake any commercial development opportunities in the future?

Yes_____ No_____x_____

If yes, please describe your plans:

24. Key Investigator Qualifications. Briefly describe the education, research interests and experience and professional commitments of the Principal Investigator and all other key investigators. In place of narrative you may insert the NIH biosketch form here; however, please limit each biosketch to 1-2 pages. *For Nonformula grants only – include information for only those key investigators whose biosketches were not included in the original grant application.*

BIOGRAPHICAL SKETCH

NAME Tessa Hart, PhD	POSITION TITLE Institute Scientist, Moss Rehabilitation Research Institute
eRA COMMONS USER NAME (credential, e.g., agency login)	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	MM/YY	FIELD OF STUDY
Clark University, Worcester, MA	BA	05/76	Psychology
University of Houston, Houston, TX	MA	05/83	Clin. Neuropsychology
University of Houston, Houston, TX	PhD	08/85	Clin. Neuropsychology

B. Positions and Honors

Positions

1997- Adjunct Professional Staff, Dept. Psychiatry, Albert Einstein Medical Center, Philadelphia, PA
1999- Institute Scientist, Moss Rehabilitation Research Institute, Philadelphia, PA
2002- Director, Traumatic Brain Injury Clinical Research Laboratory, MossRehab/ MRRI; Director, Moss Traumatic Brain Injury Model System
2011- Research Professor, Department of Rehabilitation Medicine, Jefferson Medical College of Thomas Jefferson University

Honors

1975-1976 Psi Chi, National Honor Society in Psychology; Phi Beta Kappa (Clark University)
2006 Pioneer Award for Outstanding Research (Brain Injury Association of PA)
2006 Fellow, American Congress of Rehabilitation Medicine
2008 Solomon Award, NYU/Rusk Rehabilitation Center
2008 J. Stanley and Helene M. Cohen Award for Outstanding Research Contributions, Albert Einstein Healthcare Network
2008, 2010, 2013 Mitchell Rosenthal Award for Best Scientific Publication, Traumatic Brain Injury Model Systems
2009 Second Place, Best Poster Competition, Joint Conference of the American Congress of Physical Medicine and Rehabilitation and the American Society of Neurorehabilitation (co-author)
2010 Lifetime Achievement Award, American Congress of Rehabilitation Brain Injury Interdisciplinary Special Interest Group
2011 Leonard Diller Award for Scholarly Contributions to Neurorehabilitation, American Psychological Society, Division 22 (Rehabilitation Psychology)
2012 President, American Psychological Society, Division 22 (Rehabilitation Psychology)
2012 First Place, Best Poster Competition, Santa Clara Valley Brain Injury Conference: Building on the Legacy of Coma to Community (co-author)
2012 Norington Medal, Australasian Faculty of Rehabilitation Medicine
2013 Fellow, American Psychological Association

C. Peer-reviewed Publications (recent representative publications selected from list of >80)

1. **Hart T**, Fann J, Novack T. The dilemma of the control condition in experience-based cognitive and behavioral treatment research. Neuropsychological Rehabilitation, 18:1-21, 2008.
2. **Hart T**, Seignourel PJ, Sherer M. A longitudinal study of awareness of deficit after moderate to severe traumatic brain injury. Neuropsychological Rehabilitation, 19:161-176, 2009.
3. **Hart T,** Whyte J, Ellis C, Chervoneva I. Construct validity of an attention rating scale for traumatic brain injury. Neuropsychology, 23:729-735, 2009.
4. **Hart T.** Treatment definition in complex rehabilitation interventions. Neuropsychological Rehabilitation, 19:824-840, 2009.
5. Fann J, **Hart T**, Schomer K. Treatment for depression following traumatic brain injury: A systematic review of the evidence. Journal of Neurotrauma, 26:2383-2402, 2009.
6. **Hart T**, Dijkers M, Whyte J, Braden C, Trott C, Fraser R. Vocational interventions and supports following job placement for persons with traumatic brain injury. Journal of Vocational Rehabilitation, 32:135-150, 2010.
7. **Hart T**, Sherer M, Temkin N, Whyte J, Dikmen S, Heinemann AW, Bell K. Participant-proxy agreement on objective and subjective aspects of societal participation following traumatic brain injury. Journal of Head Trauma Rehabilitation, 25:339-348, 2010.
8. **Hart T**, Brenner L, Clark AN, Bogner JA, Novack TA, Chervoneva I, Nakase-Richardson R, Arango-Lasprilla JC. Major and minor depression following traumatic brain injury. Archives of Physical Medicine and Rehabilitation, 92:1211-1219, 2011.
9. **Hart T**, Vaccaro M, Hays C, Maiuro R. Anger self-management training for people with traumatic brain injury: A preliminary investigation. Journal of Head Trauma Rehabilitation, 27:113-122, 2012.
10. **Hart T**, Bagiella E. Design and implementation of clinical trials in rehabilitation research. Archives of Physical Medicine and Rehabilitation, 93 (8 Suppl. 2):S117-26, 2012.
11. **Hart T**, Hoffman JM, Pretz C, Kennedy R, Clark AN, Brenner LA. A longitudinal study of major and minor depression following traumatic brain injury. Archives of Physical Medicine and Rehabilitation, 93:1343-9, 2012.
12. **Hart T**, Brockway JA, Whyte J, Bell KR, Neuberger S, Chervonena I. Analyzing the ingredients of a telephone counseling intervention for traumatic brain injury. Disability and Rehabilitation, in press. [Epub ahead of print PMID: 23336123]
13. **Hart T**, Ferraro M, Myers R, Ellis CA. Opening the Black Box: Lessons learned from an interdisciplinary inquiry into the learning-based contents of brain injury rehabilitation. Archives of Physical Medicine and Rehabilitation, in press.
14. **Hart T**, Tsaousides T, Zanca J, Whyte J, Packel A, Ferraro M, Dijkers M. Toward a theory-driven classification of rehabilitation treatments. Archives of Physical Medicine and Rehabilitation, in press.

D. Research Support

<u>Ongoing Research Support</u> (partial list)

1RO1HD061400-01A2 2011-2016 (NIH/NICHD)
Anger Self-Management in Post-Acute Traumatic Brain Injury: A Multi-Center Clinical Trial
Hart (PI)
Three-center randomized clinical trial to compare the efficacy of a manualized psychoeducational treatment for problematic anger and irritability in TBI, compared to a generic psychotherapeutic approach.
Role: PI

H133A0120037 10/1/12-9/30/17 (NIDRR)
Moss Traumatic Brain Injury Model System
Hart (PI)
16-center network to study outcomes and treatments of traumatic brain injury (TBI) collaboratively and in a local program of clinical research.
Role: PI

RO1NS065980 2010-2015 (NIH/NICHD)
Longitudinal Multimodal Neuroimaging of Natural Recovery After Traumatic Brain Injury
Kim (PI)
The goal of this project is to examine recovery over the first year post TBI using neuroimaging techniques including DTI and to correlate changes in white matter function to changes in cognitive/ executive function.
Role: Co-I

H133A080053 10/1/08 – 9/30/13 (NIDRR)
Classification and Measurement of Medical Rehabilitation Interventions
Dijkers (PI)
The purpose of this project is to develop and test a theoretically based blueprint for classifying medical rehabilitation interventions on the basis of their active ingredients.
Role: Co-I