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TITLE: Blister Packaging Medication to Increase Treatment Adherence and Clinical Response: Impact on Suicide-related Morbidity and Mortality

PRINCIPAL INVESTIGATOR: Peter M. Gutierrez, Ph.D.

CONTRACTING ORGANIZATION: Denver Research Institute
Denver, CO 80220

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PREPARED FOR: U.S. Army Medical Research and Materiel Command
Fort Detrick, Maryland 21702-5012

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Denver Research Institute
Denver, CO 80220

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U.S. Army Medical Research and Materiel Command
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**14. ABSTRACT**
 year one involved hiring and training staff, preparing all regulatory documents and submitting them for approval, initiating participant recruitment, baseline assessment, and follow-up. Year two focused on recruiting for and completing the feasibility phase of the study, making necessary protocol amendments prior to the full-trial phase of the study, initiating recruitment and baseline data collection for the full trial phase.

**15. SUBJECT TERMS**
Personnel; Regulatory approvals; Assessments; Quarterly reports, budget and tracking

**16. SECURITY CLASSIFICATION OF:**

<table>
<thead>
<tr>
<th>a. REPORT</th>
<th>b. ABSTRACT</th>
<th>c. THIS PAGE</th>
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<tbody>
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USAMRMC

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Annual Report to Department of Defense

(Fiscal Year 2011: September 29, 2010-September 28, 2011)

“Blister Packaging Medication to Increase Treatment Adherence and Clinical Response: Impact on Suicide-related Morbidity and Mortality”

DoD Award: W81XWH-09-1-0723

Table of Contents:

<table>
<thead>
<tr>
<th>Section</th>
<th>Page Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>2</td>
</tr>
<tr>
<td>Body</td>
<td>2-4</td>
</tr>
<tr>
<td>Key Research Accomplishments</td>
<td>4</td>
</tr>
<tr>
<td>Reportable Outcomes</td>
<td>4-5</td>
</tr>
<tr>
<td>Conclusion</td>
<td>5</td>
</tr>
<tr>
<td>References</td>
<td>N/A</td>
</tr>
<tr>
<td>Appendices</td>
<td>6-23</td>
</tr>
<tr>
<td>Supporting Data</td>
<td>N/A</td>
</tr>
</tbody>
</table>
Introduction:

The focus of this study is to see if recently discharged psychiatric inpatients will have better treatment adherence and subsequently clinical outcomes as a result of having their medications placed into blister packs as opposed to standard pill bottle packaging. Previous research supports a range of benefits to blister packaging medications for at-risk patients (Liorca, 2008; Bosworth et al., 2005; Dolder, Lacro, & Jeste, 2003). Non-adherence, defined as "not having a prescription filled, not taking enough medication, taking too much medication, not observing the correct interval between doses, not observing the correct duration of treatment and taking additional non-prescribed medication" (Bosworth, Oddone, & Weinberger, 2005, p. 149), is a significant issue for those with psychiatric illness. Moreover, studies suggest that psychiatric symptoms interfere with adherence and partial adherence is associated with poorer psychiatric outcomes, including suicide. Specifically, those who are non-adherent are at 4-7 times greater risk of death (Liorca, 2008). Blister packaging, a structured means of dispensing medications (Bosworth et al., 2005) is expected to increase adherence, and decrease subsequent poor outcomes in the high risk population of psychiatric inpatients. Furthermore, this relatively simple intervention can be accomplished in any treatment setting and does not require any specialized training on the part of those administering the program. The specific aims of this study are to: examine if blister packaging medication significantly increases medication adherence; determine if Blister Packaging decreases self-poisoning behavior; determine if Blister Packaging medications decrease overall symptom distress; determine if Blister Packaging medications reduces additional negative medical and psychiatric outcomes; and finally to see if Blister Packaging medications reduces health care utilization.

Body:

Statement of Work

Task 1. Project Start-up (months 1-3) Completed

1a. Hire research assistant, pharmacy technician, and pharmacist (month 1)
   - All study personnel were hired by January 2010 (month 4)
1b. Train staff (month 2)
   - All study personnel were trained by April 2010 (month 7)
1c. Orient inpatient staff to study logistics (month 3)
   - Accomplished by month 7

Task 2. Participant recruitment (months 4-27) in progress:

2a. Introducing study to appropriate patients being discharged from the psychiatric inpatient unit at the Denver VA Medical Center (VAMC) (months 4-27)
   - Participant recruitment began in month 9
2b. Securing consent to participate (months 4-27)
   - Participant consent process began in month 9
2c. Recording contact information (months 4-27)
   - Participant contact information collected and recorded immediately after consent signed; begun in month 9
2d. Creating participant data base (month 4)
The master database was set up in month 6.

**Task 3. Baseline assessment (months 4-27) in progress:**

3a. Administering assessment protocol to all participants prior to discharge from hospital (months 4-27)
   - Baseline assessments began in month 9.
3b. Creating assessment data base (month 4)
   - The database was set up in month 6.
3c. Entering baseline assessment data (months 4-27)
   - Process begun in month 9.

**Task 4. Preparing year one quarterly reports (months 3, 6, 9, 12) completed**

- We submitted our 1st and 2nd quarterly reports and were exempt from the 3rd.

**Task 5. Follow-up assessments (months 5-39) in progress:**

5a. Making phone calls to administer follow-up protocols to each participant at one month intervals post-discharge (months 5-39)
   - A feasibility phase was added to the protocol and initiated in month 9. Five participants were recruited, but one dropped out. Follow-up assessments by phone were conducted at 2 and 4 weeks post-discharge. Only one of these participants completed both assessments. The others did not return phone calls, had pharmacy issues, or were readmitted to the hospital. As a result, a second feasibility phase to address these identified challenges was added in month 11 and is pending local IRB approval.
5b. Mailing checks or making checks available to participants following each completed assessment phone call (months 5-39)
   - Checks were mailed beginning in month 9.
5c. Reviewing participants' VA medical records for clinic visits and in-patient admissions on a monthly basis (months 5-39)
   - Initiated in month 9.
5d. Entering follow-up assessment data (months 5-39)
   - Initiated in month 10.
5e. Checking entered data against raw data (months 9, 13, 17, 21, 25, 29, 33, 37, 39)
   - Initiated in month 10.
5f. Correcting data entry errors identified in 5e (months 10, 14, 18, 22, 26, 30, 34, 38, 40)
   - Initiated in month 11.

**Task 6. Preparing year two quarterly reports (months 15, 18, 21, 24) completed**

**Task 7. Data analyses (months 39-43): in progress:**

7a. Correcting data entry errors identified in 5e (month 40)
7b. Conducting statistical analyses to test primary and secondary hypotheses (months 40 - 43)
Overall project timeline:
Year 1 — Complete Task 1; initiate Tasks 2-5
  • Task 1 accomplished by month 7; tasks 2-5 initiated by month 11.
Year 2 — Complete Tasks 4 and 6; Continue Tasks 2, 3, and 5
Year 3 — Complete Tasks 2, 3, and 8; Continue Task 5.
Year 4 — Complete Tasks 5, 7, and 9

The initial feasibility phase resulted in a number of changes to the study protocol, all of which have been approved by local regulatory bodies as well as HRPO. Problems with the pharmacy's packaging and dispensing of medications also needed to be addressed. Specifically, the original procedures did not allow enough time to accomplish these tasks prior to patient discharge. Changes made in communication flow now allow the pharmacy adequate time to package an initial 2-week or one month supply (second feasibility phase vs. full trial) of their prescribed medications. Participants are then sent home with a pre-paid envelope in which they are to return all old prescriptions to the pharmacy. After making these changes, we decided that it would be important to test out our new procedures and processes by adding a second feasibility phase and extending it to an additional 20 participants. Although this second feasibility phase will make the timeframe before full recruitment begins longer than anticipated, we believe that it is justifiable.

In the most recent amendment, we added the Denver Research Institute to the current HIPAA B form because they will be receiving participant’s PHI in order to send out checks for participant payments. We also listed the SafeVet and Lithium studies as exclusionary criteria for our study; these two studies are also investigational, therefore we cannot have participants overlap in these studies. In addition, several of the forms that the local IRB review group, COMIRB, uses have been updated, so we updated our documents so that they are consistent with the current versions. We are removing Dr. Rings as a study coordinator because his fellowship ended and he left the VA.

Recruiting participants for the full-phase trial of the study is underway as is baseline and follow-up assessment.

Key Research Accomplishments:

• Finished recruiting participants for the feasibility phase of the study.
• Recognized important procedural issues that would be helpful to fix and received regulatory approval on these minor modifications.
• Began recruiting for the full-phase trial of the study.
• Baseline and follow-up assessments underway.

Reportable Outcomes:

Insufficient data have been collected to test study hypotheses. No presentations at professional meetings have been made on the study during this reporting period. A book chapter describing the background for the study, methodological overview, and potential impact of the findings is in press:
ABSTRACT:

Medication overdoses account for substantial numbers of cases of self-directed violence (SDV) in several segments of the United States (US) population. The purpose of the study described in this chapter is to determine if medication administration via blister packaging is associated with an increase in treatment adherence and a decrease in intentional overdoses among a high risk population of patients either discharged from psychiatric inpatient units or receiving care in outpatient mental health or substance abuse clinics. As such the research aims of the project to be described are as follows: 1) To explore whether blister packaging medication decreases overall symptom distress; 2) To explore whether blister packaging medication reduces additional negative medical and psychiatric outcomes (e.g., emergency department admissions, psychiatric hospitalizations); and 3) To explore whether blister packaging medication reduces health care utilization (e.g., clinic visits). If hypotheses are supported, findings from this study will provide evidence that this means of dispensing prescription medications decreases suicide risk through two mechanisms. Specifically, it is expected that increasing adherence will result in a decrease in symptoms reported as well as overall psychological distress. This alone would be expected to decrease an individual's suicide risk. Also, creating appropriate means restriction should result in reduced morbidity and mortality resulting from intentional and accidental overdoses. The theoretical and empirical background, rationale, methods, and measures described in this chapter should help clinicians to appreciate the potential utility of blister packaging medications for their high-risk patients and provide researchers with a promising line of study in the realm of suicide means restriction.

Conclusion:

Participant recruitment for the feasibility phase of the clinical trial is complete. Necessary changes to the protocol based on those findings have been made and approved by all regulatory bodies. Full trial recruitment and data collection are underway. Interest from the field in the project is strong, and information about this work is being disseminated.

References:

N/A
Appendices:

A1. Peter Gutierrez, Ph.D. CV
Appendix Pages: 7-20

A2. Most Recent Changes
Appendix Pages: 22-23
DATE: 8-26-11

NAME: Peter M. Gutierrez

ADDRESS: VA VISN 19 MIRECC
1055 Clermont Street
Denver, Colorado 80220

PHONE: 303-378-5562

E-MAIL: peter.gutierrez@va.gov

EDUCATION:

<table>
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<td>Ph.D., Clinical Psychology</td>
<td>1997</td>
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<td>Ann Arbor, MI</td>
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<td>M.A., Clinical Psychology</td>
<td>1994</td>
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<tr>
<td>B.A., Psychology, <em>Summa Cum Laude</em></td>
<td>1991</td>
<td>Winona State University</td>
<td>Winona, MN</td>
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AREAS OF SPECIALIZATION AND RESEARCH INTERESTS:

Suicide risk factors, assessment, and prevention. Young adult suicidality. Cultural validity of assessment tools and suicide risk models. Scale development and psychometric evaluation.

PROFESSIONAL EXPERIENCE:

7/1/09-                                      Associate Professor, University of Colorado School of Medicine, Department of Psychiatry.
6/9/08-                                      Licensed Clinical Psychologist, Colorado #3203.
2008-                                        Clinical/ Research Psychologist, Denver VA Medical Center, Mental Illness Research and Education Clinical Center.
2008-2009                                    Visiting Associate Professor, University of Colorado Denver School of Medicine, Department of Psychiatry.
2007-2008                                    Research Psychologist, Denver VA Medical Center, Mental Illness Research and Education Clinical Center.
2006-2008                                    Adjoint Associate Professor, University of Colorado Denver School of Medicine, Department of Psychiatry.
2006-2007 Research Consultant, Denver VA Medical Center, Mental Illness Research and Education Clinical Center.

2002-2007 Associate Professor, Northern Illinois University, Department of Psychology.

2002-2006 Assistant Chair, Northern Illinois University, Department of Psychology.

1996-2002 Assistant Professor, Northern Illinois University, Department of Psychology.

1995-1996 University of Michigan, University Center for the Child and Family, Psychology Intern (APA Accredited through University's Captive Consortium).

1993-1995 University of Michigan Medical Center, Division of Child and Adolescent Psychiatry, Department of Psychiatry, Psychology Intern (APA Accredited through University's Captive Consortium).

PUBLICATIONS:


BOOK/CHAPTERS:


PAPER PRESENTATIONS:


Gutierrez, P. M., & Lineberry, T. United States Army Medical Research and Materiel Command United States military suicide research: Activities and opportunities. Panel presentation at the American Association of Suicidology conference, Portland, OR, April 14, 2011.


Gutierrez, P. M. Redefining diversity: The chronically suicidal veteran as one example. Presidential address at the American Association of Suicidology conference, Boston, MA, April 17, 2008.


Gutierrez, P. M. Change is good: What the past 40 years tell us about the future. Presidential address at the American Association of Suicidology conference, New Orleans, LA, April 12, 2007.

Gutierrez, P. M. Suicide in the young adult population. Presented at the Department of Veterans Affairs Employee Education System’s Evidence-Based Interventions for Suicidal Persons conference, Denver, CO, February 8, 2007.


Schumacher, M., & Gutierrez, P. M. Bipolar spectrum traits and suicide risk. Presented at the American Association of Suicidology conference, Broomfield, CO, April 15, 2005.


Brausch, A. M., & Gutierrez, P. M. Does this magazine make me look fat? Media's impact on body image, depression, and eating. Presented at the Midwestern Psychological Association Conference, Chicago, IL, May 1, 2004.

Muehlenkamp, J. J., Swanson, J., & Gutierrez, P. M. Differences between self-injury and suicide on measures of depression and suicidal ideation. Presented at the Midwestern Psychological Association annual meeting, Chicago, IL, May 9, 2003.

Kaplan, M., Schultz, D., Gutierrez, P. M., Sanddal, N., & Fernquist, N. Suicide research: Working with a mentor. Panel presentation at the American Association of Suicidology annual conference, Santa Fe, NM, April 24, 2003.


POSTER PRESENTATIONS:


Swanson, J. D., & Gutierrez, P. M. Gender, social support, and student suicidality. Poster presented at the American Association of Suicidology conference, Seattle, WA, April 30, 2006.


Osman, A., Linden, S., Gutierrez, P. M., Barrios, F. X., Kopper, B. A., & Forman, K. Validity of the Adolescent Psychopathology Content Scales (APS) in Pediatric Medical Institute for Children.


Kopper, B. A., Osman, A., Linehan, M. M., Barrios, F. X., Gutierrez, P. M., Bagge, C. L. Validation of the Adult Suicide Ideation Questionnaire and the Reasons for Living Inventory in an adult psychiatric inpatient sample. Presented at the annual convention of the American Psychological Association, Boston, MA August 22, 1999.


Gutierrez, P. M., & Hagstrom, A. H. Uses for the Multi-Attitude Suicide Tendency Scale. Presented at the American Association of Suicidology annual conference, Bethesda, MD, April 17, 1998.


GRANTS AND AWARDS:

3/11-2/13 Department of Defense, Military Operational Medicine Research Program, grant; Consultant (PI Steven Vannoy, Ph.D., MPH); $1,354,386 for Development and Validation of a Theory Based Screening Process for Suicide Risk.

3/11-3/15 Department of Defense, Military Operational Medicine Research Program, grant; Co-Investigator; $3,400,000 for A Randomized Clinical Trial of the Collaborative Assessment and Management of Suicidality vs. Enhanced Care as Usual for Suicidal Soldiers.

9/10-9/13 Department of Defense, Military Operational Medicine Research Program, grant; Principle Investigator: jointly with Thomas Joiner, Ph.D., Florida State University; $8,500,000 (additional $8,500,000 going to FSU) for Military Suicide Research Consortium.

9/09-9/13 Department of Defense, Military Operational Medicine Research Program, grant; Principle Investigator; $1,173,408 for Blister Packaging Medication to Increase Treatment Adherence and Clinical Response: Impact on Suicide-related Morbidity and Mortality.

5/09-5/10 Colorado TBI Trust Fund Education grant; $8427 to support the hosting of a conference of national experts in suicide safety planning and TBI rehabilitation.

5/08-5/09 Colorado TBI Trust Fund Education grant; $5,000 to support the hosting of a conference of national experts in assessment of TBI and suicide risk and the role of executive dysfunction in linking the two problems.

2005 Shneidman Award for Significant Contributions to Suicide Research, American Association of Suicidology.

2003 Outstanding Young Alumni, Winona State University.

PROFESSIONAL SERVICE:

4/09- Associate Editor, Suicide and Life-Threatening Behavior, Thomas Joiner, Ph.D., Editor-in-Chief.
4/09-4/11  Past-president, Board position, of the American Association of Suicidology.


5/07-10/08  Member of the International Advisory Board for the Australian National Study of Self Injury (ANESSI), Professor Graham Martin, Director.

4/07-4/09  President of the American Association of Suicidology.

3/06-3/07  Reviewer for National Registry of Evidence-based Programs and Practices, Substance Abuse and Mental Health Services Administration.

4/05-4/07  President-Elect of the American Association of Suicidology.

2/04-4/09  Consulting Editor and Editorial Board member, Suicide and Life-Threatening Behavior, Morton M. Silverman, M.D., Editor-in-Chief.

11/02-6/06  Member, Illinois Suicide Prevention Strategic Planning Task Force, Illinois Department of Public Health.

3/02-1/06  Member, American Association of Suicidology Institutional Review Board.

4/00-4/03  Director, Research Division, American Association of Suicidology.


1998-2002  Member, North Central Association Outcomes Endorsement Team for Auburn High School, Rockford, IL.

7/98-4/00  Chair, Publications Committee, American Association of Suicidology.

1998-2006  Director, Adolescent Risk Project, Auburn High School, Rockford, IL. Combined research and suicide risk screening project.

1997-2006  Faculty Associate of the Center for Latino and Latin-American Studies at Northern Illinois University.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS:

2010-  International Academy for Suicide Research, Fellow

2007-  Colorado Psychological Association

2003-2010  International Academy for Suicide Research, Associate Member

1999-  APA Div. 12, Section VII, Clinical Emergencies and Crises
1998-2010  APA Div. 53, Society of Clinical Child and Adolescent Psychology
1997-2007  Midwestern Psychological Association
1996-      American Association of Suicidology
Change Form - PAM 007

Date: July 26, 2011
Protocol #: 10-0214
PI Name: Peter M. Gutierrez, Ph.D.
Contact Person: Rebecca Leitner
Phone #: (303) 399-8020 ext. 2404
Project Title: Blister Packaging Medication to Increase Treatment Adherence and Clinical Response: Impact on Suicide-Related Morbidity and Mortality

Describe the Change

Check ALL that apply:

- Application Form
- Protocol
- Consent Form Revision
- Assent Form Revision
- VA Consent Form(s)
- Advertisement/Revised Advertisement
- Documents Used with Subjects
- Personnel Change
- Performance Site Change
- Project Title Change
- Investigational Brochure or Package Insert
- Other

Descriptions of Change (please include a list of and include a copy of all attached documents):

We are adding the Denver Research Institute to the current HIPAA B form because they will be receiving participant’s PHI in order to send out checks for participant payments. We will also be listing the SafeVet and Lithium studies as exclusionary criteria for our study; these two studies are also investigational, therefore we cannot have participants overlap in these studies. In addition, several of the forms that COMIRB uses have been updated, so we have updated our documents so that they are consistent with the current versions. We are removing Dr. Rings as a study coordinator because his fellowship is ending and he is leaving VA.

Forms that are being changed:

1. Consent Form
   a. New version date
   b. Specified procedures for outpatients by adding “Alternatively, if you will be returning to the VA for the baseline assessment you can bring your old medications and drop them off at the pharmacy then.”

2. HIPAA Form B
a. In addition to having the “U.S Army Medical Research and Material Command” we also listed the “Denver Research Institute (DRI)” on the top of page two on the HIPAA form

3. Protocol
   a. Added exclusionary criteria regarding participation in other MIRECC investigational studies
   b. Added language to describe how participant payments by check will be made
   c. Updated the version date

4. COMIRB Application
   a. Added exclusionary criteria regarding participation in other MIRECC investigational studies
   b. Added language to describe how participant payments by check will be made
   c. Removed Dr. Rings as a study coordinator because his fellowship is ending and he is leaving VA.
   d. Updated the version date

5. Attachments coinciding with the COMIRB Application
   a. Attachments we use: C, D, F, J, L, M, O
   b. Some of the attachments had new version dates, so we updated the attachment versions we had
   c. Updated the amendment date

6. Chart Extraction Form
   a. Added exclusionary criteria regarding participation in other MIRECC investigational studies