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Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT)

Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) aims to prevent suicide among older primary care patients by reducing suicidal ideation and depression. It also aims to reduce their risk of death. The intervention components are (1) recognition of depression and suicidal ideation by primary care physicians, (2) application of a treatment algorithm for geriatric depression in the primary care setting, and (3) treatment management by health specialists (e.g., nurses, social workers, psychologists). The treatment algorithm assists primary care physicians in making appropriate care choices during the acute, continuation, and maintenance phases of treatment. Health specialists collaborate with physicians to monitor patients and encourage patient adherence to recommended treatments. Patients are treated and monitored for 24 months.

Implementation of the program relies on educating primary care physicians to recognize symptoms and apply a clinical algorithm based on depression treatment guidelines for older patients from the American Psychiatric Association, the Agency for Healthcare Research and Quality, and the Texas Department of Mental Health. The recommended first line of treatment is citalopram, a selective serotonin reuptake inhibitor (SSRI). If citalopram does not achieve the desired result, other medications may be added or substituted. Interpersonal psychotherapy may also be used in addition to or instead of pharmacological treatment.

Descriptive Information

Areas of Interest	Mental health promotion Mental health treatment
Outcomes	<p>Review Date: January 2012</p> <ul style="list-style-type: none"> 1: Depression 2: Suicidal ideation 3: Mortality rate <p>Review Date: March 2007</p> <ul style="list-style-type: none"> 1: Depression 2: Suicidal ideation

Outcome Categories	Mental health Suicide
Ages	55+ (Older adult)
Genders	Male Female
Races/Ethnicities	White Race/ethnicity unspecified
Settings	Outpatient
Geographic Locations	Urban Suburban Rural and/or frontier
Implementation History	PROSPECT has been implemented by its developer in 20 primary care practices in New York City and Westchester County, New York, and in Philadelphia and Pittsburgh, Pennsylvania.
NIH Funding/CER Studies	Partially/fully funded by National Institutes of Health: Yes Evaluated in comparative effectiveness research studies: Yes
Adaptations	No population- or culture-specific adaptations of the intervention were identified by the developer.
Adverse Effects	No adverse effects, concerns, or unintended consequences were identified by the developer.
IOM Prevention Categories	Indicated

Quality of Research

Review Date: January 2012

Documents Reviewed

The documents below were reviewed for Quality of Research. The [research point of contact](#) can provide information regarding the studies reviewed and the availability of additional materials, including those from more recent studies that may have been conducted.

Study 1

[Alexopoulos, G. S., Reynolds, C. F., III, Bruce, M. L., Katz, I. R., Raue, P. J., Mulsant, B. H., et al. \(2009\). Reducing suicidal ideation and depression in older primary care patients: 24-month outcomes of the PROSPECT Study. American Journal of Psychiatry, 166\(8\), 882-890.](#)

[Gallo, J. J., Bogner, H. R., Morales, K. H., Post, E. P., Lin, J. Y., & Bruce, M. L. \(2007\). The effect of a primary care practice-based depression intervention on mortality in older adults: A randomized trial. Annals of Internal Medicine, 146\(10\), 689-698.](#)

Supplementary Materials

[Bao, Y., Alexopoulos, G. S., Casalino, L. P., Ten Have, T. R., Donohue, J. M., Post, E. P., et al. \(2011\). Collaborative depression care management and disparities in depression treatment and outcomes. Archives of General Psychiatry, 68\(6\), 627-636.](#)

[Bogner, H. R., Cary, M. S., Bruce, M. L., Reynolds, C. F., III, Mulsant, B., Ten Have, T., et al. \(2005\). The role of medical comorbidity in outcome of major depression in primary care: The PROSPECT Study. American Journal of Geriatric Psychiatry, 13\(10\), 861-868.](#)

[Bogner, H. R., Morales, K. H., Post, E. P., & Bruce, M. L. \(2007\). Diabetes, depression, and death: A randomized controlled trial of a depression treatment program for older adults based in primary care \(PROSPECT\). Diabetes Care, 30\(12\), 3005-3010.](#)

[Raue, P. J., Morales, K. H., Post, E. P., Bogner, H. R., Ten Have, T., & Bruce, M. L. \(2010\). The wish to die and 5-year mortality in elderly primary care patients. American Journal of Geriatric Psychiatry, 18\(4\), 341-350. !\[\]\(4fe57c3593bf1b21d272ae7ac8dfaf77_img.jpg\)](#)

Outcomes

Outcome 1: Depression

Description of Measures

Depression was assessed using the Hamilton Depression Rating Scale (HDRS), a 24-item clinician-administered measure. Higher total scores indicate greater depression severity. Patients participated in in-person interviews at 12 and 24 months and telephone interviews at 4, 8, and 18 months after entry into the study.

Assessments were conducted by trained program staff who did not participate in the patients' treatment.

Key Findings

Participants in the study, patients ages 65 and older with major or minor depression, were screened in primary care practices and randomly assigned to receive either PROSPECT or usual care. Participants had major depression (as defined in the DSM-IV) or minor depression (defined as three or four depressive symptoms in the DSM-IV), an HDRS score of 10 or more, and a symptom duration of at least 1 month. Physicians in usual care practices received videotapes and printed material on geriatric depression and its treatment and were informed by letter of the patients' depression diagnosis and suicidal ideation, when it was present.

Findings on the severity of depression included the following:

- Compared with the usual care group, the intervention group had significantly decreased severity of depression from baseline to 4-month ($p < .001$), 8-month ($p < .001$), 12-month ($p = .006$), and 24-month assessment ($p = .007$). No significant group differences were found at 18-month assessment.
- Among participants with major depression, those in the intervention group had significantly decreased severity of depression from baseline to 4-month ($p < .001$), 8-month ($p = .004$), 12-month ($p = .02$), 18-month ($p = .03$), and 24-month assessment ($p = .01$) compared with those in the usual care group.
- Among participants with minor depression, those in the intervention group did not differ significantly from those in the usual care group at any assessment.

Findings on the remission of depression (i.e., HDRS score of less than 7) included the following:

- A significantly greater percentage of participants in the intervention group than in the usual care group had remission of depression at 4-month ($p = .05$) and 8-month assessment ($p = .02$). No significant group differences were found at the remaining assessments.

	<ul style="list-style-type: none"> • Among participants with major depression, a significantly greater percentage of those in the intervention group than in the usual care group had remission of depression at 4-month ($p = .01$), 8-month ($p = .01$), and 24-month assessment ($p = .02$). No significant group differences were found at 12- and 18-month assessment. • Among participants with minor depression, those in the intervention group did not differ significantly from those in the usual care group at any assessment.
<p>Studies Measuring Outcome</p>	<p>Study 1</p>
<p>Study Designs</p>	<p>Experimental</p>
<p>Quality of Research Rating</p>	<p>3.6 (0.0-4.0 scale)</p>
<p>Outcome 2: Suicidal ideation</p>	
<p>Description of Measures</p>	<p>Suicidal ideation was assessed using the Scale for Suicide Ideation (SSI). The SSI is a 19-item clinician-administered scale that measures the presence and intensity of suicidal ideation. Patients participated in in-person interviews at 12 and 24 months and telephone interviews at 4, 8, and 18 months after entry into the study. Assessments were conducted by trained program staff who did not participate in the patients' treatment.</p>
<p>Key Findings</p>	<p>Participants in the study, patients ages 65 and older with major or minor depression, were screened in primary care practices and randomly assigned to receive either PROSPECT or usual care. Participants had major depression (as defined in the DSM-IV) or minor depression (defined as three or four depressive symptoms in the DSM-IV), an HDRS score of 10 or more, and a symptom duration of at least 1 month. Physicians in usual care practices received videotapes and printed material on geriatric depression and its treatment and were informed by letter of the patients' depression diagnosis and suicidal ideation, when it was present.</p> <p>Compared with participants in the usual care group, those in the intervention group were less likely to report suicidal ideation at 4-month ($p = .04$) and 8-month assessment ($p = .005$). Effect sizes for</p>

	<p>these findings were small (odds ratio = 2.2) and medium (odds ratio = 3.1), respectively. No significant group differences were found at 12-, 18-, or 24-month assessment.</p> <p>Among participants with major depression, those in the intervention group were less likely to report suicidal ideation at 4-month ($p = .05$), 8-month ($p = .002$), and 24-month assessment ($p = .04$) compared with those in the usual care group. Effect sizes for these findings were small (odds ratio = 2.5) and medium (odds ratio = 4.2 and 3.2), respectively. No significant group differences were found at 12- or 18-month assessment.</p>
Studies Measuring Outcome	Study 1
Study Designs	Experimental
Quality of Research Rating	3.6 (0.0-4.0 scale)
Outcome 3: Mortality rate	
Description of Measures	Mortality rate was assessed using the National Center for Health Statistics National Death Index (NDI) Plus. The sites implementing PROSPECT verified the vital status information obtained from the NDI by matching the identifying information for each individual and confirming status with physician reports of death.
Key Findings	Participants in the study, patients ages 65 and older with major or minor depression, were screened in primary care practices and randomly assigned to receive either PROSPECT or usual care. Participants had major depression (as defined in the DSM-IV) or minor depression (defined as three or four depressive symptoms in the DSM-IV), an HDRS score of 10 or more, and a symptom duration of at least 1 month. Physicians in usual care practices received videotapes and printed material on geriatric depression and its treatment and were informed by letter of the patients' depression diagnosis and suicidal ideation, when it was present. At 5-year follow-up (median of 52.8 months after entry into study), participants with major depression in the intervention group had a significantly lower mortality rate than their counterparts in the usual care group ($p = .005$). Among participants with minor depression or no depression, no significant group differences were found at 5-year follow-up.

Studies Measuring Outcome	Study 1
Study Designs	Experimental
Quality of Research Rating	3.5 (0.0-4.0 scale)

Study Populations

The following populations were identified in the studies reviewed for Quality of Research.

Study	Age	Gender	Race/Ethnicity
Study 1	55+ (Older adult)	71.6% Female 28.4% Male	67.6% White 32.4% Race/ethnicity unspecified

Quality of Research Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the Quality of Research for an intervention's reported results using six criteria:

1. Reliability of measures
2. Validity of measures
3. Intervention fidelity
4. Missing data and attrition
5. Potential confounding variables
6. Appropriateness of analysis

For more information about these criteria and the meaning of the ratings, see [Quality of Research](#).

Outcome	Reliability of Measures	Validity of Measures	Fidelity	Missing Data/Attrition	Confounding Variables	Data Analysis	Overall Rating
1: Depression	4.0	4.0	2.0	4.0	3.5	4.0	3.6
2: Suicidal ideation	4.0	4.0	2.0	4.0	3.5	4.0	3.6

3: Mortality rate

3.5

4.0

2.5

3.5

3.5

4.0

3.5**Study Strengths**

The reliability and validity of the measures have been adequately documented to be at acceptable levels. A clear algorithm and other materials were available to guide clinicians, and clinicians were supervised. The study used intent-to-treat analyses, which accounted for missing data and attrition. Major potential confounding variables were appropriately addressed; randomization procedures were rigorous, and there were no major baseline differences between the groups. Appropriate and thorough analyses were used with the longitudinal data.

Study Weaknesses

No systematic fidelity instrument was used, and there is no documentation describing how fidelity was established or maintained over the course of the study.

Review Date: March 2007

Documents Reviewed

The documents below were reviewed for Quality of Research. The [research point of contact](#) can provide information regarding the studies reviewed and the availability of additional materials, including those from more recent studies that may have been conducted.

Study 1

[Alexopoulos, G. S., Katz, I. R., Bruce, M. L., Heo, M., Ten Have, T., Raue, P., et al. \(2005\). Remission in depressed geriatric primary care patients: A report from the PROSPECT Study. *American Journal of Psychiatry*, 162\(4\), 718-724.](#)

[Bruce, M. L., Ten Have, T. R., Reynolds, C. F. III, Katz, I., Schulberg, H. C., Mulsant, B. H., et al. \(2004\). Reducing suicidal ideation and depressive symptoms in depressed older primary care patients: A randomized controlled trial. *Journal of the American Medical Association*, 291\(9\), 1081-1091.](#)

Supplementary Materials

Alexopoulos, G. S., & the PROSPECT Group. (2001). Interventions for depressed elderly primary care patients. *International Journal of Geriatric Psychiatry*, 16, 553-559.

[Brown, G. K., Bruce, M. L., & Pearson, J. L. \(2001\). High-risk management guidelines for elderly suicidal patients in primary care settings. *International Journal of Geriatric Psychiatry*, 16, 593-601.](#)

Bruce, M. L., & Pearson, J. L. (1999). Designing an intervention to prevent suicide: PROSPECT (Prevention of Suicide in Primary Care Elderly: Collaborative Trial). *Dialogues in Clinical Neuroscience*, 1, 100-112.

[Coyne, J. C., Brown, G., Datto, C., Bruce, M. L., Schulberg, H. C., & Katz, I. \(2001\). The benefits of a broader perspective in case-finding for disease management of depression: Early lessons from the PROSPECT Study. *International Journal of Geriatric Psychiatry*, 16\(6\), 570-576.](#)

[Gallo, J. J., Bogner, H. R., Morales, K. H., Post, E. P., Ten Have, T., & Bruce, M. L. \(2005\). Depression, cardiovascular disease, diabetes, and two-year mortality among older, primary-care patients. *American Journal of Geriatric Psychiatry*, 13\(9\), 748-755.](#)

[Mulsant, B. H., Alexopoulos, G. S., Reynolds, C. F. III, Katz, I. R., Abrams, R., Oslin, D., et al. \(2001\). Pharmacological treatment of depression in older primary care patients: The PROSPECT algorithm. *International Journal of Geriatric Psychiatry*, 16\(6\), 585-592.](#)

PROSPECT Study: Intervention practice treatment manual and the health specialist's role. (2000, June). Unpublished document.

[Raue, P. J., Alexopoulos, G. S., Bruce, M. L., Klimstra, S., Mulsant, B. H., Gallo, J. J., et al. \(2001\). The systematic assessment of depressed elderly primary care patients. *International Journal of Geriatric Psychiatry*, 16, 560-569.](#)

[Reynolds, C. F. III, Degenholtz, H., Parker, L. S., Schulberg, H. C., Mulsant, B. H., Post, E., et al. \(2001\) Treatment as usual \(TAU\) control practices in the PROSPECT Study: Managing the interaction and tension between research design and ethics. *International Journal of Geriatric Psychiatry*, 16, 602-608.](#)

Schulberg, H. C., Bryce, C., Chism, K., Mulsant, B. H., Rollman, B., Bruce, M., et al. (2001). Managing late-life depression in primary care practice: A case study of the health specialist's role. *International Journal of Geriatric Psychiatry*, 16, 577-584.

[Schulberg, H. C., Post, E. P., Raue, P. J., Ten Have, T., Miller, M., & Bruce, M. L. \(2007\). Treating late-life depression with interpersonal psychotherapy in the primary care sector. *International Journal of Geriatric Psychiatry*, 22, 106-114.](#)

Outcomes

Outcome 1: Depression	
Description of Measures	Depression was measured using the Structured Clinical Interview for Axis I DSM-IV Disorders (SCID-IV) and the Hamilton Depression Rating Scale (HDRS), a 24-item clinician-administered measure.
Key Findings	In a randomized controlled trial comparing PROSPECT with treatment as usual, patients with major depression in PROSPECT experienced greater decreases in depression between baseline and 12 months ($p < .001$). PROSPECT patients also were more likely to experience remission and to have earlier remission. With remission defined as an

	HDRS score of less than 10, 40% of the PROSPECT patients with major depression had a cumulative probability of remission at 4 months, compared with 23% of patients receiving usual treatment. At 12 months, 51% of PROSPECT patients had experienced remission of depression, compared with 49% of patients receiving usual treatment.
Studies Measuring Outcome	Study 1
Study Designs	Experimental
Quality of Research Rating	3.7 (0.0-4.0 scale)

Outcome 2: Suicidal ideation

Description of Measures	This outcome was measured using the Scale for Suicidal Ideation (SSI). The scale was dichotomized to indicate current suicidal ideation versus no current suicidal ideation.
Key Findings	In a randomized controlled trial, unadjusted rates of suicidal ideation decreased 12.9% among patients receiving PROSPECT (from 29.4% to 16.5%), compared with a 3.0% decrease (from 20.1% to 17.1%) among patients receiving treatment as usual ($p = .01$).
Studies Measuring Outcome	Study 1
Study Designs	Experimental
Quality of Research Rating	3.7 (0.0-4.0 scale)

Study Populations

The following populations were identified in the studies reviewed for Quality of Research.

Study	Age	Gender	Race/Ethnicity
Study 1	55+ (Older adult)	71.6% Female 28.4% Male	67.6% White 32.4% Race/ethnicity unspecified

Quality of Research Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the Quality of Research for an intervention's reported results using six criteria:

1. Reliability of measures
2. Validity of measures
3. Intervention fidelity
4. Missing data and attrition
5. Potential confounding variables
6. Appropriateness of analysis

For more information about these criteria and the meaning of the ratings, see [Quality of Research](#).

Outcome	Reliability of Measures	Validity of Measures	Fidelity	Missing Data/Attrition	Confounding Variables	Data Analysis	Overall Rating
1: Depression	4.0	4.0	3.0	3.5	3.5	4.0	3.7
2: Suicidal ideation	4.0	4.0	3.0	3.5	3.5	4.0	3.7

Study Strengths

The study design was rigorous. Researchers used outcome measures with well-established reliability and validity. Appropriate strategies were used to address attrition and missing data. Analyses were well powered, and the analytic approach was exceptional.

Study Weaknesses

There may be some limits to generalizability due to the provision of medication and other care without charge during the study. The study design may have limited fidelity; for example, 36% of patients identified as receiving the "interpersonal therapy only" condition also used antidepressive medication.

Readiness for Dissemination

Review Date: March 2007

Materials Reviewed

The materials below were reviewed for Readiness for Dissemination. The [implementation point of contact](#) can provide information regarding implementation of the intervention and the availability of additional, updated, or new materials.

PROSPECT Study: Intervention practice treatment manual and the health specialist's role. (2000, June). Unpublished document.

PROSPECT Study: Physician education [VHS]

Readiness for Dissemination Ratings by Criteria (0.0-4.0 scale)

External reviewers independently evaluate the intervention's Readiness for Dissemination using three criteria:

1. Availability of implementation materials
2. Availability of training and support resources
3. Availability of quality assurance procedures

For more information about these criteria and the meaning of the ratings, see [Readiness for Dissemination](#).

Implementation Materials	Training and Support Resources	Quality Assurance Procedures	Overall Rating
3.5	2.8	3.3	3.2

Dissemination Strengths

The video and treatment manual are well structured, comprehensive, and clearly linked. The manual provides a practical guide to implementation. The treatment manual also provides clear, step-by-step direction for each phase of treatment, offering comprehensive guidance to the practitioner. Measures and protocol for monitoring treatment and information on common problems and suggested solutions are provided to support quality assurance.

Dissemination Weaknesses

Information in the treatment manual appendixes was not submitted for review. No information was submitted on available coaching or ongoing technical assistance for implementers. No information was submitted on using information derived from monitoring protocols to support quality assurance.

Costs

The cost information below was provided by the developer. Although this cost information may have been updated by the developer since the time of review, it may not reflect the current costs or availability of items (including newly developed or discontinued items). The [implementation point of contact](#) can provide current information and discuss implementation requirements.

Item Description	Cost	Required by Developer
Treatment manual	Free	Yes
Physician education video	Free	No
On-site training	Contact the developer	Yes
Technical assistance and consultation	Contact the developer	Yes
Quality assurance materials	Contact the developer	No

Replications

No replications were identified by the developer.

Contact Information

To learn more about implementation or research, contact:

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