

# Moving Evidence-Based Interventions to Populations:

## *A Case Study Using Social Workers in Primary Care*

*Scott Miyake Geron, Ph.D. and Bronwyn Keefe, MSW, MPH*

Evidence-based practice has been defined as the “conscientious, explicit and judicious use of current best evidence” (Kerridge, Lowe, & Henry, 1998) and is quickly emerging as one of the most important movements to improve the efficiency and effectiveness of clinical care. Initially applied to medicine (Cochrane, 1972; Sackett, Rosenberg, Muir Gray, Haynes, & Richardson, 1996; West, 2000), evidence-based practice is now influencing fields as diverse as nursing (Sackett et al., 1996), psychiatry (Drake et al., 2001), and social work (Gambrill, 2001). Evidence-based practice informs clinical efforts through a number of research approaches (Sackett et al., 1996; Rychetnik, Hawe, Waters, Barratt, & Frommer, 2004), such as evidence-based reviews, meta-analyses, expert opinion, and randomized controlled trials (Bartels et al., 2002). Proponents in medicine have claimed that by incorporating the best evaluated methods of health care, evidence-based practice leads to improvements in clinicians’ knowledge, teaching methods, communication with patients, and, most important, patient outcomes (Kerridge et al., 1998).



One of the challenges in evidence-based practice is to generalize the results of the clinical intervention to populations or conditions different from those originally targeted (Flaherty, Morley, Murphy, & Wasserman, 2002). Typically, in medical practice, where much of the work so far has been done, research on evidence-based clinical practice focuses on specific patient conditions or illnesses like COPD, or congestive heart failure, using defined protocols and trained health professionals, typically nurses or physicians (Lisansky & Clough, 1996; Kunik et al., 2001). The narrow focus of the protocols on specific patient diseases or conditions allows for more precise testing (in gen-



INSTITUTE FOR  
GERIATRIC  
SOCIAL WORK  
BOSTON UNIVERSITY  
SCHOOL OF SOCIAL WORK

232 Bay State Road  
Boston, MA 02215  
[www.bu.edu/igsw](http://www.bu.edu/igsw)  
Phone: (617) 358-2626  
Fax: (617) 358-2636  
E-mail: [igsw@bu.edu](mailto:igsw@bu.edu)

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eral, the more limited, focused, and standardized the intervention, the easier it is to control in a statistical sense, and the easier it is to evaluate). From a research point of view, this type of specification makes sense, as it eliminates many confounding factors. The gradual build-up of evidence in support of a particular clinical practice occurs when the same procedure is used to address the same problem or condition in a related, but different patient or client population (e.g., a different age group), while still following the precise protocols originally found to be effective. One factor limiting the testing of evidence-based clinical practice is the common reluctance of the originators of the protocol to change the parameters considered essential to the integrity or success of the original intervention.

From a policy point of view, this process of developing evidence in support of a clinical intervention is problematic for two reasons. First, the narrow focus of most clinical studies, while desirable from a research point of view, may work against the interests of policy change, since policy makers are more likely to support general programs that address multiple patient conditions or illnesses (e.g., Medicaid waiver programs and Medicare Home Health Programs), rather than clinical interventions that are specific to a particular disease or condition (Kane, Kane, & Ladd, 1998). This is especially true if the desired aim is to expand reimbursement options to support the clinical intervention. Second, the strict adherence to original protocols tested in clinical studies often makes it hard to expand the focus of these interventions to populations or conditions that would make the interventions attractive to policy makers. The paradox is that the needs of research for specificity, control, and interventions focused on particular patient diseases or conditions are at cross purposes with the needs of policy for research findings that show clinical interventions that are population-based, generalizable

across different patient groups and multiple conditions, and amenable to administration by different professionals.

This paper presents an example of a study that attempts to address the needs of both research and policy in the evaluation of an evidence-based practice. This study builds upon an evidence-based model of care with the goal of expanding this model to a broader population base. At the core of this research intervention is the use of Problem-Solving Therapy (PST). In a review of evidence-based practices in geriatric mental health, PST was identified as an effective treatment for geriatric depression (Bartels, Haley, & Dums, 2002). Williams et al. (2000) conducted a large clinical trial comparing the effects of paroxetine hydrochloride, PST, or placebo with adults over 60 who had minor depression or dysthymia. The authors found that both paroxetine and PST improved mental health functioning when compared to placebo. The effectiveness of PST has been evaluated in multiple randomized controlled trials in community settings and the most salient findings from these studies is that, in addition to depression, PST is an effective treatment for many other mental health conditions (Hegel & Arean, 2003; Catalan et al., 1991; Mynors-Wallis et al., 2000; Dowrick et al., 2000). Problem-solving therapy has also been successfully used in interventions with caregivers of medically and cognitively impaired elders (Teri, Logsdon, Uomoto, McCurry, 1997; Grant, Elliott, Giger Newman, Bartolucci, 2001). PST has been found to be effective in treating major depression in younger adults, older adults, medical patients, and mildly retarded adults (Alexopoulos & Chester, 2003). A recent study conducted by Alexopoulos, Raue, & Arean (2003) found PST to be more effective than supportive therapy in reducing depressive symptoms and disability in elderly patients with executive dysfunction. Furthermore, PST has been found to be an effective treatment for a vari-

ety of behavioral disorders, including schizophrenia (Lieberman, Eckman, & Marder, 2001; Medalia, Revheim, & Casey, 2001), childhood autism (Bernard-Opitz, Sriram, & Nakhoda-Sapuan, 2001), attention deficit disorder (Barkley, Edwards, Laneri, Fletcher, & Metevia, 2001), and substance abuse (Zanis, Coviello, Alterman, & Appling, 2001). PST has also been found to be effective in the self-management of medical conditions, such as diabetes (Cook, Herold, Edidin, & Briars, 2002), cancer (Schwartz et al., 1998; Allen, Shah, Nezu, Nezu, Ciambrone, & Hogan, 2002; Sahler et al., 2002), and chronic pain (Ahles, Seville, Wasson, Johnson, Callahan, & Stukel, 2001). PST has served as a primary component for multifaceted interventions aimed at reducing depression among older adults. The Hartford

Foundation funded IMPACT study was a national multi-site study that examined the effects of a multifaceted, stepped care intervention on older adults with major depression and dysthymia. About 1,800 primary care patients were randomized to usual care or to the IMPACT intervention that provided education, care management, and antidepressant medication or PST (Unutzer, 2002). This multifaceted model of care was effective in reducing depression among older adults (Unutzer, 2002). Enguidanos, Davis, and Katz (2003) conducted a clinical trial with depressed older adults in a geriatric care management program using a stepped care treatment program that included PST and/or antidepressant medication, and found that the symptoms of depression lessened in older adults who received the integrated treatment. In conclusion, PST has been shown to be an effective evidence-based treatment for depression and other mental health disorders in older adults.

This study employs a randomized controlled trial (RCT) to test a social work intervention with frail older adults in pri-

mary care. The intervention is designed to reduce unnecessary hospitalization and improve patient outcomes. The study population is a group of home-dwelling older adults with multiple chronic conditions, a recent history of unnecessary hospitalizations, and no more than mild cognitive impairment. A master's-level social worker located in a primary care office is conducting the intervention. The main goal of the study is to test the effectiveness of a social work intervention in a primary care setting. Another goal of the study is to expand the evidence-based practice model in four respects in order to meet broader policy objectives of the study: (1) expand the target population to include a frail older population with multiple chronic illnesses, a group of interest to policy makers because of its high medical-utilization costs; (2) expand targeted outcomes to include psychosocial issues in addition to depression; (3) alter the intervention team to include master's-level social workers rather than nurses; and (4) expand the intervention protocol to include care management, a potentially reimbursable component in the new Medicare legislation.

## Importance of Integrating Social Workers into a Primary Care Setting

The vast majority of older people who receive health care obtain it in the context of a visit to their primary care provider. The rising costs of inpatient care and incentives within the Medicare prospective payment system combine to motivate health care providers to find outpatient alternatives to inpatient treatment (Bodenheimer, Wagner, & Grumbach, 2002). Advances in technology and a new generation of pharmacological advances also allow outpatient treatment of more illnesses (physical and psychological) that formerly could only be treated in the hospital, and the primary care practice often is that outpatient setting.

The primacy of primary care as a loca-



tion of health care for frail older adults makes it an ideal setting in which to identify and treat mental health and psychosocial problems among this population. Declines in mental health funding, and the proven reluctance of elders, relative to younger adults, to seek specialty mental health services (Unutzer, 2002) are additional factors that suggest primary care as an appropriate setting for addressing mental health and psychosocial issues. Moreover, the link between mental health and physical health are now well established. Untreated mental illness has been associated with increased health care costs, increased use of primary care visits and consultations, and longer hospital stays, even after adjusting for pre-existing medical comorbidities (Unutzer, 1999). Recent studies have shown significant improvements in related care and patient outcomes for older adults when depression treatments are integrated into a primary care practice (Oxman & Dietrich, 2002).

## Overview of the Intervention

At the core of the study's social work intervention is the use of intensive Problem-



Solving Therapy (PST), as noted, a validated behavioral change approach shown to be effective in treating depression. Similar to other behavioral change methods (Lorig & Laurin, 1985; Lorig, 1993; Wagner, Austin, & Von Korff, 1996), PST teaches patients to address current life difficulties by reducing large problems to smaller sections and identifying specific steps toward positive change (D'Zurilla & Nezu, 1987). Theoretically, PST incorporates key elements of social cognitive theory (Bandura, 1986; Bandura, 1997) but also has roots in empowerment models of practice (Anderson, Funnell, Butler, Arnold, Fitzgerald, & Feste, 1995), motivational interviewing (Botelho & Skinner, 1995; Miller, 1996; Schilling, El-Bassel, Finch, Roman, & Hanson, 2002),

behavioral change theory (Wagner, Austin, & Von Korff, 1996; Wagner, Austin, Davis, Hindmarsh, Schaefer, & Bonomi, 2001), and social work problem-solving methods (Perlman, 1957). Particularly salient is Bandura's concept of self-efficacy, which refers to the individual's belief that he or she can actually perform an action or behave in a certain way. This belief is strongly related to the successful outcome of the individual's action.

Primary care practices are well positioned to improve the health outcomes of their frail elderly patients by providing physical and mental health care in a community setting as part of their regular regimen. Frail elders with chronic illness are frequent patients at primary care physician offices, often with a range of psychosocial and physical problems, from social isolation to minor depression to dementia. And, while recent studies have shown significant improvements in related care and patient outcomes for older adults when depression treatments are integrated into a primary care practice (Oxman & Dietrich, 2002), these busy medical offices do not generally have the capacity to provide such treatment or to coordinate care or link patients to other services that may enhance their independent living and improve health outcomes. Integrating a social work intervention that includes PST and care management into primary care settings is one way to address fragmentation among service delivery systems. For a number of reasons, then, an evidence-based intervention addressing depression and other psychosocial issues is sorely needed.

A brief, protocolized care management intervention is being provided to patients in the intervention group who decline to participate in PST. In line with the process of PST, the social worker will assist the patient in generating a problem list, and will then help the patient select a problem and identify the necessary steps to resolve the problem. The social worker will encourage the patient to

A number of RCTs have also noted increases in self-reported indicators of quality of life among elder patients receiving social work interventions

identify possible solutions and will assist in providing solutions when needed. Unlike PST, these sessions will involve direct assistance from the social worker and will address problems defined by the physician, the patient, or the social worker. Patients may choose to enroll in PST at any point during the case management sessions, but a limit of eight visits with the patient (for care management or PST or both) will be provided.

If an emergent issue is identified at the onset of the case or at any time during the intervention, the social worker will stop the PST and provide immediate assistance in addressing that issue before resuming the intervention steps. Emergent issues are defined as any situation where the patient is at risk for imminent harm, self-inflicted or from others. In these cases, and contrary to the PST intervention, the social worker may work with the patient's family or caregiver independent of the patient to provide limited assistance to address the emergent issues. This assistance could include providing referrals or providing help in locating resources.

Participants randomly assigned to the intervention group will be offered up to eight PST sessions with the social worker, with each session averaging about 45 minutes. At session four, the social worker will determine if the patient meets discharge criteria, which is defined as the successful resolution of two problems during PST sessions plus independent application and resolution of at least two problems outside of the sessions. If patients do not meet discharge criteria, up to four additional PST sessions are provided. PST sessions are conducted either in the primary care office or at the patient's home (if the patient is unable to get to the office), with follow-up sessions typically completed by telephone. Patients are strongly encouraged to come to the primary care clinic for social work services when possible. Some patients experience mobility and transportation problems requiring the social worker to make home visits to conduct the intervention.

## Design of the Study

This study is designed as a randomized controlled trial. Eligible respondents are randomly assigned to either the social work intervention group or the control group (who receive usual care). Data for the clinical trial is being gathered through in-person interviews (by phone or face-to-face) with experimental and control group subjects.

The key components of the intervention are the following:

- Place a master's-level social worker in a large primary care office.
- Build a patient-centered, collaborative, interdisciplinary primary-care team by placing the social worker at the office, and involving the person in the care of patients with physicians, nurses, and other health care professionals.
- Train master's-level social workers to use PST and care management to address depression and other psychosocial issues.
- Identify a diverse cohort of frail, older patients experiencing difficulties in managing their multiple chronic conditions (as evidenced by unscheduled hospital admissions or emergency room visits) and assess the impact of PST and care management on the patients' functioning, depression, and other health outcomes as well as service utilization and cost.
- Conduct a randomized controlled trial to test the social work intervention with a sample of frail older adults with multiple chronic conditions.
- Collect data from patients in the study in control and treatment groups at the first encounter, at four months, and at 12 months, and perform statistical analysis comparing treatment subjects to controls.

**Research Site.** This intervention is being conducted in a primary care clinic of a managed care organization in a large metro-

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politan area. The medical office has approximately 16 primary care physicians who serve an average of 30,000 patients, approximately 15 percent, or 4,500, of whom are 65 or older. The medical office offers family medicine, gynecology, internal medicine, laboratory, mammography, member health education, pediatrics, and a pharmacy.

**Subjects.** An estimated 524 subjects will be enrolled in the study over a two-year period. Subjects will reflect the overall enrollment of the managed care organization's members: approximately 40 percent of the members are Latino, 13 percent Asian, 32 percent white, and 14 percent African American, and many of the senior members have income levels below the poverty line.

Subjects must meet the following criteria to be eligible to participate in the study:

- Current patients at the medical office
- 65 years of age or older
- Diagnosed as having two or more chronic medical conditions
- Documented as having at least one emergency room visit or unscheduled hospital admission in the past 6 months
- Cognitively intact (as measured by a score of 7 or less on the Short Portable Mental Status Questionnaire)

The primary target population for this intervention is patients who have a history of high health care utilization. The rationale for choosing this group is to target those patients who are incurring the highest costs for utilization in order to see the greatest change. The rationale for requiring at least one visit to the emergency room or hospital in the past 6 months is to capture a frail population who are demonstrating difficulty in managing their condition. Finally, patients must be cognitively intact in order to participate in PST because the intervention is based on cognitive behavioral theory, which is inappropriate for patients with severe cognitive impairment.

This study is using master's-level social

workers to provide PST and care coordination instead of nurses or depression clinical specialists, who have been used in the past (Saur et al., 2002; Oishi et al., 2003) for a number of reasons. First, recent reviews suggest that social workers possess specialized training in providing psychosocial assessment, care management, and information and referral services, all of which are critical components of the proposed intervention. Also, a growing number of empirical studies are using social workers to test psychosocial and care management interventions in the context of primary care because recent randomized clinical trials employing social workers to provide such interventions have found social workers to be effective in reducing the following: (1) emergency visits (Rosen, Proctor, & Staudt, 1999; Claiborne & Vandenburg, 2002); (2) length of hospital stay (Williams, Williams, Zimmer, Hall, & Podgorski, 1987; Nikolaus, Specht-Leible, Bach, Oster, & Shlierf, 1999; Claiborne & Vandenburg, 2002); (3) hospital admissions (Rubin, 1992; Rosen, 1999); (4) overall costs per patient (Williams et al., 1987; Nikolaus et al., 1999; Rosen, 1999); and (5) nursing home placement (Williams et al., 1987; Nikolaus et al., 1999). A number of RCTs have also noted increases in self-reported indicators of quality of life among elder patients receiving social work interventions (Morrow-Howell, Proctor, & Dore, 1998; Burns, Nichols, Martindale-Adams, & Graney, 2000; Rizzo & Rowe, 2003).

The integration of the social worker into the primary care practice is an important part of the study. The medical office has provided office space for the social worker to meet privately with the patient. Meeting with the patient within the primary care setting will do the following: (1) increase exposure of the clinical care team to the social worker; (2) provide increased opportunities for the social worker to interact with the primary care team; and (3) allow the patient to interact with the social worker within a familiar envi-

ronment. The social worker's involvement in the primary care office is being documented through daily activity logs of encounters with primary care physicians, including number of interactions with patients and staff, and course of action.

## Study Hypotheses and Variables of Interest

The following hypotheses are being tested by the intervention:

1. Frail older adults with multiple chronic conditions receiving the Social Work in Primary Care intervention will demonstrate improved self-efficacy to perform specific targeted self-management actions as compared to those receiving usual care.
2. Depressed, frail older adults with multiple chronic conditions receiving the Social Work in Primary Care intervention will have lower rates of depression as compared to those receiving usual care.
3. Frail older adults with multiple chronic conditions receiving the Social Work in Primary Care intervention will experience fewer declines in physical functioning as compared to those receiving usual care.
4. Frail older primary care practice patients receiving the Social Work in Primary Care intervention will report increased satisfaction with the services they receive as compared to those receiving usual care.
5. Frail older adults with multiple chronic conditions receiving the Social Work in Primary Care intervention will be less likely to use acute care services as compared to those receiving usual care, as demonstrated by fewer emergency room visits and hospital admissions.
6. The cost-utility ratio (CUR) for the Social Work in Primary Care

Intervention is expected to be less than \$50,000/quality adjusted life years (QALY).

7. Frail older adults with multiple chronic conditions receiving the Social Work in Primary Care intervention will be less likely to be admitted to a nursing facility in the 12 months following study enrollment as compared to those receiving usual care.

Patient characteristics are independent variables that will be examined for their influence on the intervention. These characteristics include the participant's age, gender, marital status, ethnicity, education level, income level, diagnoses, living arrangement, social support, and cognitive status. Living situation will capture both types of housing and household composition. Social support will be assessed by asking for the patient's primary caregiver. Ethnicity refers to African American, Latino, Asian-Pacific Islander, Caucasian, Native American, other, or unknown.

As noted, cognitive status is important because PST has been proven to be most effective with cognitively intact clients, and, in this study, patient's with moderate or severe cognitive impairment will be excluded from participation. Cognitive status is being assessed with the Short Portable Mental Status Questionnaire (Pfeiffer, 1975). The aim of PST and other behavior change strategies is to increase the participant's self-efficacy to manage his/her chronic illnesses. Thus, the intervention is expected to have a direct effect on self-efficacy and problem-solving skills, which, when generalized by the patient to other health and social problems, will lead to the principal outcomes in the study.

Patient outcomes are being measured using the Physical Functioning Domain from the SF-36 (Ware, & Sherbourne, 1992; Ware, Kosinski, & Keller, 1996; Katz, Larson, Phillips, Fossel, & Liang, 1992), the Geriatric Depression Scale Short Form (Sheikh & Yesavage, 1985), a Patient Satisfaction





Measure developed by the study's principal investigator, and the European Quality of Life Scale (Anonymous, 1990). The instruments have been pre-tested by research assistants to ensure face validity and comprehension. The research assistants conducted test interviews among geriatric care managers in the medical office, professionals who are experts on the target population and in the bio-psychosocial issues experienced by this population. The instrument was then pre-tested with members of the target population to further assess appropriateness and clarity of the instrument.

The Social Work in Primary Care intervention is expected to have an indirect effect on patterns of health care utilization, as a result of improved self-efficacy and problem-solving skills among patients, and subsequent improvements in patient outcomes. It is also anticipated that reductions in unnecessary health care utilization may have a reciprocal beneficial effect on patient outcomes.

The medical office maintains accurate and extensive clinical records for all members, and these records will be used to obtain utilization variables of interest in this study for both treatment and control patients. The key utilization variables that will be analyzed are emergency room visits, inpatient hospital days, skilled nursing facility days, physician visits, and home health visits. To assess cost-effectiveness of the intervention, cost-utility ratios (CURs), a form of cost-effectiveness, will be assessed. CURs are based on the QALY utility scale (0=death, 1=optimal health) as measured by the EuroQol (Coons, Rao, Keininger, & Hays, 2000; Lawrence & Fleishman, 2004; Sapin, Fantino, Nowicki, & Kind, 2004). One major advantage of CURs is that they provide an unofficial standard for "worthwhile" interventions—\$50,000 per QALY. Ratios below that level are considered to be cost-effective and are likely to be funded by policy makers.

The Social Work in Primary Care intervention is expected to have a direct effect on provider behavior, as seen in improved satisfaction of the PCP and other key staff. This effect will be measured in the following ways: (1) focus groups; (2) physician and nurse contact log; (3) social work logs; and (4) physician and nurse satisfaction questionnaires.

## Data Collection

Data is being collected from patients in the control and treatment groups at the first encounter, at four months, and at 12 months. Trained master's-level research assistants are conducting the screening telephone interview, the baseline assessment, and all follow-up assessments. This information is being collected via participant self-reports. Diagnoses are verified through the medical office's electronic patient records. The screening interview takes approximately 5-10 minutes, while the baseline and follow-up interviews will last approximately 20-30 minutes. Baseline measures are conducted via telephone within 48 hours of receipt of signed informed consent. Follow-up measures also being collected via telephone surveys at four and 12 months. In addition, medical service use data will be collected from the medical office databases described above.

This study has received IRB approval from all participating institutions. Patients identified as eligible via telephone screening will receive an in-depth explanation of the study by the research assistant. Upon arrival at the clinic for their usually scheduled appointment, the eligible patients are given an informed consent sheet describing study participation. The patients are asked to review the consent form before their physician arrives in the office. Patients interested in participating in the study are asked to sign an informed consent form that will have been carefully reviewed with them by the research assistant, with any questions answered by their physician



## Conclusion

With a future of increasing public costs for health care, fragmentation in the system of care, and pressures on health care providers to treat patients on an outpatient basis and in ambulatory settings, the development of cost-effective interventions to address multiple chronic illnesses and psychosocial needs of frail older adults in primary care is urgently needed. One promising approach is the integration of evidence-based interventions addressing psychosocial issues in primary care and the use of ancillary services such as care coordination and care management.

Evidence-based medicine is defined as “the integration of best research evidence with clinical expertise and patient values” (Tickle-Degnen & Bedell, 2003). For depression, a growing body of research on effective psychosocial treatments is available, yet few older adults receive evidence-based treatments for depression in primary care (Unutzer, 2002), and little is known about the effectiveness of expanding these evidence-based models to address issues other than depression among older adults. Guidelines for treating mental health issues have been written and provided to primary care practices, and yet many of these illnesses are still untreated. In addition, current primary care providers lack the time and training to address depression and other psychosocial issues. Critics of evidence-based medicine believe that its practice may require time and resources not available to busy clinicians (Straus & McAlister, 2000). The different priorities and capacities of primary care providers, on the one hand, and mental health providers, on the other, in serving the aging population can further complicate the implementation of evidence-based treatments (Bartels et al., 2002). For this reason, it makes sense to have an interdisciplinary team working together to apply evidence-based practice, within the specific disciplines of each team member.

This article summarizes a research study that has integrated a social worker within the primary care setting in order to expand upon a tested evidence-based practice for depression to a population-based social work intervention, which also includes care management. The aims of the study are to maintain fidelity with the original core components of the intervention, but to expand its scope to increase the chances of making an impact on public policy. Some of the challenges faced in translating this evidence-based model for a broader population include: (1) fine-tuning the eligibility criteria to target a large group of cognitively intact frail elders who can benefit from PST; (2) modifying the discharge criteria to accurately document the successful completion of PST; and (3) identifying the criteria for successful adaptation by practicing social workers for an intervention employed generally by nurse practitioners or mental health specialists. These challenges illustrate the obstacles that are necessary to overcome when expanding evidence-based practices to different populations and settings. Furthermore, it shows that it is necessary to be flexible when embarking on new trials that are aiming to expand the scope of proven evidence-based practices, and demonstrates the potential difficulties in attempting to exactly replicate the procedures and/or findings of previous studies to these different populations. It is important to address these challenges and move towards the ultimate goal of impacting policy. Finally, through wider application of evidence-based practices among older adults, this study aims to impact policy by (1) demonstrating that interventions using geriatric social workers are as effective as or more effective than other interventions using more expensive workers (such as nurses or physicians); and (2) documenting that integrating social workers in primary care leads to improved patient outcomes, increased provider satisfaction, and cost-effective care.

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## About the Authors

Scott Miyake Geron,  
Ph.D.  
Director and Principal  
Investigator  
Associate Professor of  
Social Welfare Policy  
and Research

Bronwyn Keefe,  
MSW, MPH  
Assistant Director and  
Co-Principal  
Investigator

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## About the Institute

The Institute for Geriatric Social Work (IGSW) is dedicated to advancing social work practice with older adults and their families. Located at Boston University School of Social Work, IGSW will build upon the School's historical commitment to the aging field and current strength in gerontological teaching, research and training.

Institute for Geriatric  
Social Work  
Boston University  
School of Social Work  
Phone: 617-358-2626  
Fax: 617-358-2636  
E-mail: [igsw@bu.edu](mailto:igsw@bu.edu)  
[www.bu.edu/igsw](http://www.bu.edu/igsw)

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