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Implementing Evidence-Based Social Work Practice

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Recently, social work has been influenced by new forms of practice that hold promise for bringing practice and research together to strengthen the scientific knowledge base supporting social work intervention. The most recent new practice framework is evidence-based practice. However, although evidence-based practice has many qualities that might attract social workers to adopt it, use in practice is limited. Accordingly, attention is being given to determine effective strategies for the dissemination, adoption, and implementation of evidence-based practice. This article examines the implementation literature, describes alternative strategies for implementation of evidence-based practice in social work, describes an implementation study to illustrate concepts discussed, and specifies needed research.

Keywords: *evidence-based practice; implementation; dissemination; social work practice*

Social work policy, administration, and direct practice based on scientific knowledge rather than authority, tradition, or common sense can lead to better outcomes for clients. Those doubting this claim need only peruse the systematic reviews and meta-analyses included in the Cochrane Collaboration and the Campbell Collaboration libraries. Also see American Psychological Association (2005),

A sizeable body of scientific evidence drawn from a variety of research designs and methodologies attests to the effectiveness of psychological practices. The research literature on the effect of psychological interventions indicates that these interventions are safe and effective for a large number of children and youth (Weisz, Hawley & Doss, 2004; Kazdin & Weisz, 2003), adults (Barlow, 2004; Nathan & Gorman, 2002; Roth & Fonagy,

2004; Wampold et al., 1997) and older adults (Zarit & Knight, 1996; Duffy, 1999) across a wide range of psychological, addictive, health, and relational problems. More recent research indicates that compared to alternative approaches, such as medications, psychological treatments are particularly enduring (Hollon, Stewart, & Strunk, in press). Further, research demonstrates that psychotherapy can and often does pay for itself in terms of medical costs offset, increased productivity, and life satisfaction (Chiles, Lambert, & Hatch, 2002; Yates, 1994). (p. 6)

Unfortunately, available scientific knowledge is too often underutilized by social workers (Kirk, 1990; Mullen, in press; Mullen & Bacon, 2004; Weissman & Sanderson, 2001). The gap between what has been learned through scientific research and what is used in social work policy, administration, and direct practice has been a concern throughout social work's modern history (Hess & Mullen, 1995; Kirk & Reid, 2002).

This gap is not found only in social work, but it is also a troubling situation throughout the health and human services. It is widely recognized that there is a discrepancy between what research has demonstrated to be effective and what is actually found to be occurring in practice (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005; Panzano & Herman, 2005; Torrey & Gorman, 2005). In the influential report *Bridging Science and Service*, the U.S. National Advisory Mental Health Council concluded that

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many people are unable to obtain, for themselves or for one close to them, appropriate, state-of-the-art treatment for a mental illness. All too often, clinical practices and service system innovations that are validated by research are not fully adopted in treatment settings and service systems for individuals with mental illnesses. The substantial disparity between what is known through research and what is actually provided in routine care is not limited to mental illnesses. (National Institute of Mental Health [NIMH], 1999, p. 7)

This gap has been identified again in the recent NIMH report *The Road Ahead*, when it notes,

Simply creating an inventory of evidence-based treatments will not result in their broad implementation in practice. In fact, it has been well documented that, for various reasons, health care delivery systems do not implement interventions that have been shown to be effective in a small number of settings and were published in journal articles. A key question the Workgroup grappled with was, how can NIMH enhance the likelihood that effective interventions are implemented and sustained in real-world settings? (U.S. Department of Health and Human Services, 2006, p. 7)

In recent years, social work has been influenced by new forms of practice that hold promise for bringing practice and research together so as to strengthen the scientific knowledge base supporting social work intervention. The most recent of these new practice frameworks is evidence-based practice (EBP). However, although EBP has many qualities that might attract social workers to adopt it as a practice framework, its current use in practice is limited (Mullen & Bacon, 2004). Accordingly, increased attention is being given to determine effective strategies for the dissemination, adoption, and implementation of EBP in social work practice. This article examines the implementation literature, describes alternative strategies for the implementation of EBP in social work practice, describes a pilot implementation study we have recently completed to illustrate concepts discussed, and specifies needed research.

Because EBP is a new practice framework that is poorly understood by social work educators and practitioners, we first describe what is meant by EBP (Bledsoe et al., in press; Mullen & Bacon, 2004; Rubin & Parrish, in press; Weissman et al., 2006).

EBP, EMPIRICALLY SUPPORTED INTERVENTIONS (ESIs), AND PRACTICE GUIDELINES

Evidence-based practice, empirically supported interventions (also called empirically informed interventions and evidence-based practices), and practice guidelines

are terms that are frequently, although inappropriately, interchangeably used (Rubin & Parrish, in press). This is unfortunate because each refers to distinctly different ideas. Different implementation strategies apply depending on which of these innovations are referenced. Before discussing implementation strategies, this section briefly describes each of these concepts.

EBP¹

EBP is a way of doing practice—a way of assessing, intervening, and evaluating based on a set of assumptions and values. EBP was originally developed in medicine as a way of training medical residents for a new form of medical practice (Evidence-Based Medicine Working Group, 1992; Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996; Straus, Richardson, Glasziou, & Haynes, 2005). The original emphasis was on teaching medical residents critical-assessment skills so as to strengthen the scientific base used by physicians in decision making. During the past decade, EBP has received widespread attention throughout the health care professions (Gray, 2001).

As described by Mills, Montori, and Guyatt (2004),

Although the concepts of evidence based medicine (EBM) have been developing since clinical trial publications became available—the formal construct of devising a clinical question and searching available evidence with a critical eye toward applying it to patient problems has evolved in the last 20 years—the term evidence-based medicine first appeared in a description of the McMaster University internal medicine residency program—and the first published use of this term was in 1991 (Guyatt, 1991).

Subsequently, the *Journal of the American Medical Association* published a series of 32 articles entitled *User's Guides* that made available the fundamental concepts of EBP—and were followed by a number of texts that further developed these principles. (pp. 188-189)

Because of its origin in health care, the language used to describe EBP reflects the health care fields of practice. Three highly compatible definitions of EBP are,

the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients. (Sackett et al., 1996, p. 71)

the integration of best research evidence with clinical expertise and patient values. (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000, p. 1)

the integration of best research evidence with clinical expertise, and patient values. Where:

Best research evidence refers to clinically relevant research, often from the basic health and medical sciences, but especially from patient-centered clinical research into the accuracy and

precision of diagnostic tests (including the clinical examination); the power of prognostic markers; and the efficacy and safety of therapeutic, rehabilitative, and preventive regimens.

Clinical expertise means the ability to use clinical skills and past experience to rapidly identify each patient's unique health state and diagnosis, individual risks and benefits of potential interventions, and personal values and expectations.

Patient values refers to the unique preferences, concerns, and expectations that each patient brings to a clinical encounter and that must be integrated into clinical decisions if they are to serve the patient. (Institute of Medicine, 2000, p. 147)

EBP is typically described as involving six steps (Gibbs, 2003; Sackett et al., 2000; Straus et al., 2005). In the real practice world, however, these steps may not be pursued in the following order:

1. Convert information needs into an answerable question. An initial assessment of the client must be done to determine what questions are important. The assessment should be used as a basis for a well-formulated question that must be not only answerable but also phrased in a way that a search of existing research literature can be conducted to answer this question. The question can be about assessment, description, prevention, or intervention.
2. Track down the best evidence to answer the question.
3. Critically appraise the evidence for its validity (closeness to the truth), impact (size of the effect), and applicability (usefulness in practice).
4. Integrate the critical appraisal with practice experience and client's strengths, values, and circumstances.
5. Evaluate effectiveness and efficiency in exercising Steps 1 to 4 and seek ways to improve on them next time.
6. Teach others to follow the same process.

At each step in the process, the practitioner's expertise, experience, and constraints (e.g., practical, financial, ethical) are considered together with practitioner and client values and preferences.

This approach has been adopted by many of the health care professions. It has been adapted for use in health care policy, procurement, and management where the focus is on populations rather than individual clients. J. A. Muir Gray (2001, xxi—xxiii) proposes that there are three key steps in evidence-based health care: finding and appraising the evidence, developing the capacity of individuals and organizations to use the evidence wisely, and getting the evidence into practice.

ESIs

ESIs are specific interventions (e.g., assessment instruments, treatment and prevention protocols, etc.) determined to have a reasonable degree of empirical support (e.g., two randomized, controlled clinical trials conducted by different investigatory teams; Chambless et al., 1996; Chambless et al., 1998; Roth & Fonagy, 2004). In health and mental health, ESIs most often are called EBPs or

empirically supported treatments (Bledsoe et al., in press; Drake, Merrens, & Lynde, 2005; Weissman et al., 2006). At times they are called empirically informed interventions. To avoid confusion, we adopt the term ESIs in the remainder of this article, intending to encompass the terms EBP and empirically supported or informed treatments.

It is important to realize that EBP and ESIs are complimentary when brought together. Fundamentally, EBP is a process that includes finding empirical evidence regarding the effectiveness and/or efficiency of various intervention options (or for assessment instruments their psychometric properties) and then determining the relevance of those options to specific client conditions, circumstances, and preferences. The search process should result in the identification of ESIs when they exist. This information is then critically considered in making the final intervention plan.

There are a growing number of ESIs relevant to social work. For example, there are now approximately 20 psychotherapies for the treatment of psychiatric disorders for which there is clear evidence of efficacy for specific problems or populations (Roth & Fonagy, 2004). There is also a range of community mental health programs that have empirical support for beneficial effects with the severely mentally ill (Drake et al., 2005). Since the early 1990s, various efforts have been made to systematically examine the empirical evidence supporting interventions and to classify the level and strength of this evidence. Many interventions of relevance to social work practice are now known to be efficacious, and for some there is effectiveness evidence. Attention has now turned to how to implement these in routine social work practice as discussed below.

Practice Guidelines

Related to the efforts to classify practices by level and strength of empirical support is a parallel development—the publication of practice guidelines—sometimes called best practices. These practice guidelines are described by the Institute of Medicine as “systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances” (Field & Lohr, 1990, p. 38).

Since the early 1990s, professional organizations and government agencies have formulated practice guidelines for various clinical conditions such as depression and schizophrenia (American Academy of Child and Adolescent Psychiatry, 1998; American Psychiatric Association, 1993, 1994, 1997; US Preventive Services Task Force, 2002). These guidelines prescribe how practitioners should assess and treat clients. Sometimes the guidelines are

based on research findings, sometimes not; that is, often research studies are not available, and, therefore, the guidelines are based on "professional consensus." Rosen and Proctor (2003) provide a review of practice guidelines in social work. Recent research indicates that practice guidelines are not yet widely used in routine social work practice (Mullen & Bacon, 2004). Accordingly, as with ESIs, attention is now turning to dissemination and implementation strategies.

IMPLEMENTATION

In this section, we describe the context of implementation, we distinguish between dissemination and implementation, we describe strategies for dissemination and implementation of EBP and ESIs, and we conclude with comments on what is reported regarding the effectiveness of implementation strategies, including attempts to specify explanatory concepts and processes.

Implementation in Context

Knowledge creation, diffusion, utilization, and implementation as areas of study and application were extensively developed in the last half of the 20th century (Glaser, Abelson, & Garrison, 1983; Rogers, 1995). It was in this larger framework that much of the work on implementation theory and research was developed in social work (Rothman & Thomas, 1993). Now, implementation can be considered to be one component of a larger area of study sometimes referred to as knowledge management, a discipline that has emerged focusing on how organizations can generate, communicate, and leverage their intellectual assets (Harvard Business Review, 1998). Rogers (1995) considers any idea, object, or practice perceived as new by organizational stakeholders as an innovation. Because EBP and ESIs can be considered innovations when applied to social work, valuable insights can be gained from the extensive literature examining implementation of innovations. Accordingly, there is an extensive literature pertaining to the adoption, diffusion, utilization, and implementation of innovations to draw on when considering how EBP and ESIs might be effectively implemented in social work (Rogers, 1995).

Distinguishing Between Dissemination and Implementation

In this article, we are most interested in the implementation of EBP and ESIs. However, there is a close link

between efforts to disseminate and efforts to implement EBP and ESIs. Although this article focuses on implementation, because of the close link with dissemination, we comment on dissemination to provide a broader context.

An NIMH (2005) program announcement calling for research on dissemination and implementation of EBP (including ESIs and practice guidelines) clarifies how these two processes differ. That announcement describes dissemination as the targeted distribution of information and intervention materials to a specific practice audience. The intent is to spread knowledge and the associated interventions. Implementation, in contrast, is described as the use of strategies to introduce or change interventions within specific settings. Implementation efforts must go beyond dissemination if they are to penetrate and change service delivery practices. Previous efforts in dissemination research have often been carried out under the assumption that interventions can be transferred into service settings without modification and that a unidirectional flow of information (e.g., publishing a guideline or manual) is sufficient to achieve practice change. Success of the transfer has been largely assessed based on structural measures (e.g., counts of personnel or contacts) or other outcome measures that do not specifically assess how the intervention was implemented or whether the implementation maintained fidelity to the original conceptualization and intent of the intervention. How interventions or models of practice can be transported to real-world practice settings is an implementation question. Conceptual frameworks that take into account the resources of local settings and the needs of multiple stakeholders are required to create and monitor successful implementation strategies.

Unfortunately, to date, efforts made to develop and test the outcomes of interventions far outweigh efforts to determine effective strategies for implementation of these interventions in practice contexts (Corrigan, Steiner, McCracken, Blaser, & Barr, 2001).

STRATEGIES FOR DISSEMINATION AND IMPLEMENTATION

Previously, we have described five broad strategies for dissemination and implementation of EBP and ESIs: (a) the teaching model, (b) direct implementation of ESIs, (c) a model combining evidence and stakeholder consensus, (d) combining staff training and organizational development, and (e) development of professional infrastructure as agent (Mullen, Bellamy, & Bledsoe, 2005). Next, each of these is described as adapted from Mullen et al. (2005).

Teaching Model

The EBP framework described above stresses an approach to implementation that primarily relies on teaching individual practitioners the evidence-based process in the context of formal education. Emphasis is on enhancing professional motivation to engage in lifetime learning and the teaching of necessary learning and application skills. As described above, this model is most often applied to individuals wishing to learn the process of EBP. As previously stated, this evidence-based approach first emerged as the clinical problem-based learning strategy that had been developed during the 1970s and 1980s at the McMaster Medical School (Evidence-Based Medicine Working Group, 1992; Guyatt, 1991; Rosenberg & Donald, 1995). This approach involves teaching individual professionals specific skills to convert information needs into search questions, to conduct efficient evidence searches, to correctly appraise evidence quality and strength, to integrate the information found, to self-evaluate how well the prior steps were conducted and methods for improving these steps in the future, and to teach others how to do EBP. More recently, emphasis has been placed on teaching skills for the integration of information from research evidence, client preferences and actions, and knowledge of the client's state and circumstances. In addition when practitioner motivation for engaging in EBP is absent, a first step in the teaching process is enhancing motivation for EBP. In social work, this approach is reflected in the work of Gambrill (2006) and Gibbs (2003). In these approaches, students and professionals are taught critical thinking and EBP knowledge, attitudes, and skills.

Implementation of EBP is seen as closely intertwined with the use of effective teaching methods. Accordingly, in the classic evidence-based medicine text *Evidence-Based Medicine: How to Practice and Teach EBM*, Straus et al. (2005) include extensive information about their experience with effective and ineffective EBP teaching methods. They observe,

From what we've done, seen or heard about, we've noticed that although there may be as many ways to teach EBM as there are teachers, most of these methods fall into one of three categories or teaching modes: role-modeling evidence-based care; teaching clinical medicine using evidence; and teaching specific EBM skills. (p. 200)

Although all three modes reportedly are useful, they note, "We find that using evidence in our practice and teaching (Modes 1 and 2) gives us more legitimacy and realism when we teach our learners about the specific EBM skills (Mode 3)" (p. 202). Straus et al. describe

techniques for teaching EBP in different settings, curricula areas, and educational events.

We were struck with Straus et al.'s (2005) observation that, in spite of the fact that EBM has been taught for nearly 30 years and that these authors are among the most experienced of the teachers, little is known (based on research) about how to effectively teach EBM. In their introduction to the teaching methods chapter, they write,

We'd like to draw upon high-quality evidence from educational research to guide our recommendations about what works and what doesn't in teaching EBM. However, little research has been conducted to date on how best we can teach the knowledge, attitudes, and skills of practicing and teaching EBM. Thus, the suggestions in this chapter are primarily based on the teaching experiences we've had ourselves or collected from others. (p. 200)

Although Straus et al. discuss variations in teaching methods depending on setting, this is restricted to teaching medical residents rotating through inpatient services and outpatient clinics. There is a notable lack of attention to teaching EBP outside of these formal educational contexts, such as in community settings and human service agencies. It is for this reason that we undertook a small-scale, exploratory pilot study that sought to implement in three social service organizations aspects of the teaching approach to implementation of EBP. In this study, our aim was to examine the feasibility of teaching experienced social work professionals the philosophy and process of EBP in the day-to-day context of organizational practice. Lessons learned from this experience are incorporated into our concluding discussion of promising strategies for implementing EBP in social work.

Direct Implementation of ESIs

A second dissemination and implementation strategy with widespread support in the United States is sometimes called the Top Down strategy. As noted by Walter, Nutley, and Davies (2005), two major approaches to dissemination and implementation of best practices have been used, namely, macro and micro, or what we call top-down and bottom-up strategies. In top-down strategies, findings are disseminated for use by frontline practitioners through agency directives, guidelines, manualized interventions, accreditation requirements, algorithms, tool kits, and so forth. In this approach, specialized tools are developed, such as application kits, manuals, and guidelines, with the specific purpose of using these tools while engaging in broad-scale efforts to disseminate and facilitate local adoption of specific practices that have been identified without direct initial input from agencies

or practitioners. Instead, stakeholder groups are asked to sign on to and support training in these techniques.

National- and state-level efforts have been undertaken to disseminate and support implementation of ESIs (e.g., Carpinello, Rosenberg, Stone, Schwager, & Felton, 2002; Chorpita et al., 2002; Drake et al., 2001; Magnabosco, 2006; National Institutes of Health, 2004; Tanenbaum, 2005). The Implementing Evidence-Based Practice Project (Mueser, Torrey, Lynde, Singer, & Drake, 2003) is promoting adoption of six specific EBPs for assisting mentally ill adults. Magnabosco (2006, p. 1) reports results of an effort to identify and classify state-level implementation activities and strategies employed across the eight states participating in the Evidence-Based Practices Project. Since 2001, the EBP Project has been investigating the implementation of evidence-based mental health practices in state public mental health systems for adult persons with serious mental illness. She notes that

a key objective of the *Project* has been to collect data that help to better understand barriers and facilitators to the implementation of ESIs in mental health service delivery, as well as how stakeholders in community-based and state agencies interact to implement, achieve and sustain evidence-based service delivery cultures. (p. 4)

As noted by Magnabosco, the project has yielded “valuable insights into implementation strategy characteristics and effectiveness” (p. 1). Nevertheless, the effectiveness of the top-down strategy remains to be demonstrated, especially in the context of social work organizations.

This implementation strategy has been carefully reviewed by Fixsen et al. (2005). Based on their comprehensive review of implementation research, Fixsen et al. propose that this implementation strategy, to be successful, should involve identifiable phases, including (a) exploration and adoption, (b) program installation, (c) initial implementation, (d) full operation, (e) innovation, and (f) sustainability. They suggest that implementation should begin with a deliberate and careful selection of qualified practitioners, training in the core components of the ESI, continuing consultation and support as the ESI is being implemented, evaluation of practitioner performance, program evaluation to determine if intended outcomes are being achieved with the clients receiving the new ESI, ongoing provision of facilitative administrative supports needed for implementation, and purposeful intervention into the environmental systems to support delivery of the ESI. These core components are viewed as integrated and compensatory. This means that should one core component be weak, such as pre-service training, it is possible that another component

can make up the shortfall, for instance, by increasing consultation and coaching during service delivery. These authors view successful implementation to be a function of interrelated, multilevel influences emanating from the larger environment, the agency, and the core implementation components themselves.

Although the effectiveness of the top-down strategy remains to be demonstrated, especially in the context of social work organizations, recent work on the availability, responsiveness and continuity (ARC) model described by Glisson and Schoenwald (2005) offers an innovative organizational and community intervention option intended to support the top-down implementation of multisystemic therapy (MST), a well-tested ESI. Glisson and Schoenwald have demonstrated some success with this model, which is guided by three principles: (a) implementation of ESIs is a social and a technical process, (b) mental health services are embedded in layers of context that include individual providers, organizations, and the community, and (c) effectiveness is determined by the fit between the organization and the core technology. The ARC employs change agents at the organizational and interorganizational levels to address barriers to fit prior to, during, and following implementation of the ESI. Although this model has not been widely applied, it is currently being tested in a National Institutes of Health–funded randomized, controlled trial comparing MST alone to the MST and ARC combined approach (Glisson & Schoenwald, 2005). Results from earlier studies suggest that the intervention can improve organizational climate and reduce case manager turnover (Glisson, Dukes, & Green, 2006).

Combining Evidence and Stakeholder Consensus

The third strategy modifies the Top Down approach by combining evidence (e.g., in ESIs) with stakeholder consensus in an attempt to deal with the absence of evidence when dealing with complex social problems and the context that must be taken into account when seeking local applications. An example is the Texas Benefit Design Initiative (Cook, 2004). This is a hybrid strategy designed to deal with gaps in empirically based knowledge about effective interventions, the unevenness of knowledge about how best to implement interventions, the need to involve stakeholders in decision making, especially in the context of limited resources, and the need to adapt knowledge to local conditions. The project sought to combine best evidence with community consensus in designing a package of psychosocial rehabilitation services for people using public mental health services. Experts in six areas of service reviewed the evidence in each area and presented their findings at 2-day

consensus conferences that included more than 200 citizens from Texas. On the second day of the conference, a consensus panel of 40 of these individuals met to deliberate the quality of the evidence regarding each service area and what was known about implementation issues. Based on this deliberation, the consensus panel formulated service package principles and recommendations for service package organization and implementation. The consensus panels included stakeholder group representatives from consumer and family organizations, service providers and provider groups, advocates, state-level administrators, researchers, and other interested parties. Pilot sites in four Texas regions were formed, and a second-level consensus meeting was held in each of the sites to review the principles and recommendations developed during the first phase. These local consensus groups then formulated specific benefit package designs for local application (Cook, 2004).

This is a complex strategy addressing many aspects of the implementation process. It would appear to have many promising features when feasible. Nevertheless, follow-up data are required to assess the long-term effectiveness of this implementation strategy.

Combining Staff Training and Organizational Development

We have described above the teaching of EBP as one approach to implementation of EBP. When the EBP framework is applied to work in organizations, it is generally recognized that implementation strategies must go beyond the teaching of individual staff members. In addition, the organizational context must be addressed. For example, at the policy and management levels of application, Gray (2001) identifies two key interrelated objectives that must be achieved for successful implementation of evidence-based health care, namely development of individual skills for performance of evidence-based processes (policy makers, managers, etc.) and development of the culture, systems, and structures within organizations supporting evidence-based processes. Gray argues that implementation strategies must be directed toward achievement of both objectives. Similarly, Panzano and Herman (2005, p. 245) see an organization's adoption of an ESI as a three-phase process: an initiation phase (awareness of a need, problem, opportunity; search for solutions; evaluation of potential solutions for fit); a decision to implement the ESI, and an implementation in which a plan is developed and the innovation is ultimately routinized and assimilated. Reflecting this implementation strategy, two approaches emphasize a combined

approach involving both staff training and organizational development using teams.

Interactive staff training. The first, interactive staff training, has been developed by Patrick Corrigan and Stanley McCracken (1997). When this model is applied to EBP dissemination and implementation, the primary task is staff training, which results from the interaction of educational and organizational approaches. Here, the educational approaches derive from learning theory and are designed to help individual practitioners acquire the principles and skills of EBP (McCracken & Corrigan, 2004). Organizational approaches "teach individual staff members how to work as a team and develop evidence-based treatment programs that are user-friendly and meet consumer needs" (Corrigan & McCracken, 1997, p. 250). The educational and organizational interventions are interactive in this model. Based on this model and their review of the literature, McCracken and Corrigan propose a number of guidelines for disseminating and adopting EBP innovations. Although they identify many specific practice options, there are five principles: (a) engage and prepare the organization, (b) form a working alliance with the treatment team, (c) develop a user-friendly program based on identified program-development priorities and the innovation, (d) use established educational principles in training, and (e) implement the program in a stepwise manner and plan for maintenance (pp. 245-246).

Related to this approach is the work of Johnson and Austin (2006), who note that one of the challenges facing efforts to incorporate research evidence into organizational practice is the absence of "an evidence-based organizational culture within human service agencies" (p. 75). They identify multiple strategies and case examples for creating such an organizational culture. They cite three strategies for incorporating evidence into organizational cultures: (a) agency-university partnerships to identify the data to support EBP, (b) staff training (in the agencies and on campuses) that features problem-based learning approaches to support the introduction and utilization of EBP, and (c) the modification of agency cultures to support and sustain EBP.

Outcomes and objectives orientation. The second approach, which combines practitioner training and organizational development, is proposed by Aaron Rosen and Enola Proctor (2003). In this approach, practitioners are trained to use a critical-thinking process in which they learn to specify outcomes sought, intermediate objectives to be achieved so as to attain these outcomes, and self-evaluation skills (Rosen, 1993). Having learned these

processes, practitioners are prepared to critically and selectively use the ESIs and practice guidelines that are made available to them by the agency. In addition, organizational barriers and necessary organizational supports are identified and addressed as part of the implementation strategy. Implementation of this approach requires a series of steps:

1. Select a social work organization providing direct services to clients;
2. Work with administrators, supervisors, practitioners to identify important and frequently sought client outcomes;
3. Search and identify ESIs appropriate to achieving those agency selected outcomes;
4. Train practitioners how to use these ESIs;
5. Train practitioners in an approach to practice that is problem focused, outcomes oriented, intervention specific, evaluated;
6. Practitioners apply ESIs as appropriate for individual client situation, values, preferences, and resources.

This implementation strategy has benefited from research conducted by Rosen, Proctor, and colleagues. In addition, it is our understanding that this approach to implementation is now being used and evaluated at the George Warren Brown School of Social Work, Washington University (Edmond, Megivern, Williams, Rochman, & Howard, 2006; Howard, McMillen, & Pollio, 2003). Evidence regarding the effectiveness of this strategy is awaited.

Professional Infrastructure as Agent

The fifth approach focuses more broadly on the social work profession itself. Proctor (2004) describes a conceptual framework based on the position that for EBP and ESIs to be successfully implemented in social work as a profession, the professional infrastructure—including the research community, schools of social work, practice organizations—must focus on achieving multiple, component intermediate outcomes:

1. Identification and access of relevant and appropriate ESIs
2. Acceptance of the evidence and a decision to adopt ESIs
3. Implementation of ESIs
4. Evaluation of their usefulness

Proctor's concern is with how these objectives can be achieved across the profession. In the Proctor model, leverage points or potential interventions for attaining these intermediate outcomes are proposed. These interventions are specific to three areas of the practice infrastructure: (a) research, (b) training, and (c) organizational culture. For example, to attain the first outcome (identification and access of relevant and appropriate ESIs), Proctor proposes,

- The research infrastructure needs to produce ESIs, user-friendly packaging of evidence, and ways to disseminate.
- The training infrastructure needs to provide evidence-based professional curricula.
- The organizational culture infrastructure needs to provide for electronic or on-site materials, make accessible evidence-informed supervisors, and create interpersonal linkages to researchers.

Proctor bases her model on theories and research about diffusion of innovations, knowledge utilization, quality improvement, and Prochaska and Di Clemente's (1983) stages of change model. This strategy is by far the most ambitious and comprehensive approach to implementation of EBP and ESIs. It is specifically focused on social work and may serve as an important framework for the profession's consideration of a comprehensive implementation strategy.

WHAT IMPLEMENTATION STRATEGIES ARE EFFECTIVE?

Having identified various strategies for disseminating and implementing EBP and ESIs, we now examine what is known about the effectiveness of implementation strategies.

Gira, Kessler, and Poertner (2004) provide an overview of research reviews examining strategies to influence health care providers to use research evidence in their practice. Their purpose was to draw out lessons for social work and to foster the use of EBP and ESIs in social work from what had been learned in medicine and health care. They identified and summarized 12 reviews that examined a wide range of interventions, including distribution of printed educational materials ($n = 11$), continuing education ($n = 32$), educational outreach visits ($n = 18$), use of local opinion leaders ($n = 9$), audit and feedback ($n = 37$), physician profiling–peer feedback ($n = 12$), feedback and reminders ($n = 26$), continuous quality improvement ($n = 55$), general practitioner computing ($n = 30$), computerized information services ($n = 100$), computer-based clinical decision support systems ($n = 68$), and mass media interventions ($n = 17$). These authors conclude, "The literature from health care suggests that disseminating information alone is insufficient. Many interventions have been designed to improve practitioners' adherence to EBP guidelines and are differentially effective. To date, no intervention has demonstrated powerful effects" (pp. 77-78). These authors conclude that multiple strategies are needed, rather than relying on any single approach. This conclusion is consistent with the position taken in 2001 by Grimshaw et al.

Walter et al. (2005) set out to identify the core components that can be said to influence implementation outcomes. In accord with Pawson's (2002) work, these authors have proposed that it is not the implementation interventions per se that are of importance, but rather it is the underpinning reasons or resources they offer that explain implementation results. "It involves hypothesising the underlying mechanism or basic theories about how an intervention works" (Walter et al., 2005, p. 336). These authors present an update of their earlier review of the effectiveness of different mechanisms for the promotion of research use across the health, social care, criminal justice, and education sectors. Six mechanisms were identified and the evidence supporting each was examined using a narrative, qualitative approach to the analysis.

The Walter et al. (2005) review focuses on specific mechanisms that have been studied, but it does not place them in an organized conceptual framework. Mechanisms for research use include (a) dissemination or the simple distribution of research findings, (b) interaction that creates links between researchers and practitioners, (c) social influence using influential others to encourage research uptake, (d) facilitation by providing tangible support for the use of research, (e) reinforcement through feedback and rewards to encourage research use, and (f) multifaceted interventions that deploy multiple mechanisms. They concluded that, under some circumstances, each of these mechanisms can be expected to have some effect on either conceptual or instrumental implementation. However, it appears that the evidence is thin and, at best, suggestive. The two most promising mechanisms would appear to be interaction and facilitation.

Following a comprehensive review of the literature related to innovations in service organizations drawing from diverse disciplines, Greenhalgh, Robert, Macfarlane, Bate, and Kyriakidou (2004), like Walter et al. (2005), recommend that the next generation of research should be theory driven and focus on explicit hypotheses that link interventions and outcomes, or the mechanisms that are responsible for success or failure in a particular context. These authors further propose a complex conceptual model of innovation, including implementation and the processes that must precede implementation through a complex exchange through linkages among resource systems, knowledge purveyors, change agencies, and the user system.

Johnson and Austin (2006) note that one of the challenges facing efforts to incorporate research evidence into organizational practice is the absence of "an evidence-based organizational culture within human service agencies" (p. 75). They identify multiple strategies and case examples for creating such an organizational culture.

They cite three strategies for incorporating evidence into organizational cultures: (a) agency-university partnerships to identify the data to support EBP, (b) staff training (in the agencies and on campuses) that features problem-based learning approaches to support the introduction and utilization of EBP, and (c) the modification of agency cultures to support and sustain EBP.

Fixsen et al. (2005) report the most comprehensive review and synthesis of EBP and ESI implementation strategies to date. Their conclusions are in general agreement with those of Gira et al. (2004). Fixsen et al. are skeptical about the utility of strategies that primarily or exclusively rely on dissemination of practice guidelines, policy statements, or educational information or that exclusively rely on practitioner training. They argue for longer-term, multilevel implementation strategies and the need for more research to identify the functional components or core implementation mechanisms (p. 26).

AN IMPLEMENTATION PILOT STUDY

Recently, we have completed a small-scale pilot study examining implementation of EBP in three New York City social agencies. This study was designed to examine questions about how social work organizations and practitioners can be helped to engage in EBPs. Because of the value of comparison across sites, we have set out to build that comparison by including three quite different social work agencies.

Design

The study used a social intervention research methodology, providing for a process of intervention design, piloting, and redesign based on feedback (Rothman & Thomas, 1993). Four sequential phases were implemented. In Phase 1, background research was conducted to inform the development and design of the dissemination project. This included conducting a literature review to find what is known about dissemination and implementation strategies and interviewing local research experts who were actively engaged in disseminating and/or implementing EBP. The results of the literature review and interviews have been reported (Bellamy, Bledsoe, & Traube, 2006).

In Phase 2, exploratory meetings with administrators of potential social work agency partners were conducted to determine interest in collaboration. Also, included in this phase were interviews with social work practitioners in those agencies to explore their current knowledge of EBP, what would motivate them to engage in EBP,

how they would like to learn EBP, and what they perceive to be barriers to learning and implementing such practice. Three agencies were selected to participate in the study. Agencies partnered with the university-based research team to design the intervention using agency practice staff, administrator knowledge, and data collected from Phase 1. The results of this phase have been reported (Mullen et al., 2005).

In Phase 3, the research team, together with agency administrators, supervisors, and clinicians, implemented, monitored, adjusted, and evaluated the intervention. The intervention was the process designed and agreed to by all participants in the partnership for disseminating and implementing EBP within a specific area of the agency program selected by the agency team. The results of this phase will be reported in several publications in preparation.

Phase 4, which will occur after we have completed the analysis, will include modifications of the intervention based on the evaluative process and findings. During Phase 4, the information from the evaluation will be used to propose ways in which the program intervention, the implementation strategy, and the evaluation design should be modified for future applications. This phase will also include formal reporting of project findings.

Although we have not yet completed all of our planned analyses, we draw from our experiences in this section to describe the implementation strategy used and to identify lessons learned.

Implementation Strategy

The strategy that we adopted for use in this pilot emerged from a careful review of the literature, interviews with experts (Phase 1), discussions with agency staff, and considerations of the research team resources. The outcomes and objectives strategy as described above was our original point of departure (Rosen, 1993). This strategy had been suggested to us by Rosen and Proctor during the initial planning stages.

Also, we had favorable experiences with the teaching strategy outlined above. We had been using this method teaching graduate social work students the assumptions, values, and skills of EBP using the text authored by Leonard Gibbs (2003). It seemed to us that our students liked the framework and showed that they were able to learn the skills within the context of a 7-week course meeting once a week for 2 hours (Mullen et al., in press). However, we were mindful that our students expressed frustration because they were not able to use EBP learned in the classroom in their field practicum

assignments because of lack of agency staff understanding and support. As described above, this teaching was restricted to Mode 3 (didactic, classroom-based skills training) and did not use Modes 1 and 2 (role-modeling EBP and teaching practice using evidence).

In our discussions with agency staff, it became clear that they had negative experiences with funding and regulatory agencies' attempts to impose ESIs on agency practice. There was no interest in the top-down approach as described above or in the research team taking responsibility for identifying ESIs for the practitioners to learn (as is the case for the objectives and outcomes strategy described above). It became clear as well that the agency administrators and supervisors preferred learning EBP in teams rather than one-on-one. Teams were seen as a way to capitalize on each other's competencies and perspectives and a way to share the learning burden. Teams also expressed an organizational commitment rather than individual practitioner commitments.

In our explorations with the agencies, the implementation strategy most desired by the agencies needed to combine staff training and organizational development, approximating the principles articulated above under the interactive staff-training strategy (Johnson & Austin, 2006; McCracken & Corrigan, 2004). Our focus became primarily staff training directed at helping individual practitioners acquire the principles and skills of EBP using a team approach so as to develop evidence-based treatment programs that are user-friendly and meet consumer needs (McCracken & Corrigan, 2004). We adopted the strategies proposed by Johnson and Austin (2006) for incorporating evidence into organizational cultures: (a) agency-university partnerships to identify the data to support EBP, (b) staff training that features problem-based learning approaches to support the introduction and utilization of EBP, and (c) modification of agency cultures to support and sustain EBP.

Lessons Learned—First Impressions

We plan to report results of this pilot study in future publications, with attention to implementation of the team format and the specific skills-training modules. The training modules and training resources developed for this pilot are available at <http://www.columbia.edu/cu/musher/>. We will report baseline data that describe practitioner attitudes toward and understanding of EBP and ESIs and practitioner use of research. We will report posttraining data specifying changes in baseline variables, practitioner assessment of the training program modules, and intentions to use EBP in the future.

Here, we briefly and impressionistically comment about our experiences as these pertain to the implementation strategies described above.

- Our prior experience (pilot study), which involved teaching graduate social work students EBP, showed that Mode 3 teaching is very effective in creating an understanding of EBP and providing an introduction to EBP skills. However, it is a limited strategy for developing EBP skills because of the lack of practicum application opportunities in real-world practice contexts. As Weissman et al. (2006) have argued, the gold standard for training in the use of ESIs is a combination of class and practicum training (Modes 1, 2, and 3). It is doubtful that didactic classroom teaching of EBP alone will provide depth or sustainability of EBP.
- The pilot study suggests that the top-down implementation strategy generally does not work unless prior training using the EBP teaching strategy is provided. In our experience, practitioners wanted and needed to develop skills in critical assessment and develop motivation for EBP before they would consider adopting an ESI. However, we found that by the end of the program, practitioners were rather highly motivated to identify (or have identified for them) specific ESIs and to receive training in their use as relevant to their practice context. This suggests that the top-down approach may be a very effective implementation strategy if it is preceded by attention to training in EBP and organizational intervention.
- The university-agency partnership used in this pilot was highly regarded by all. Indeed, some of the practitioners viewed on-going partnerships as essential to sustain EBP in the agencies. University staff members were seen as facilitators, especially in terms of bringing expertise in research retrieval and assessment to the agency teams.
- Related to the above was the general sense expressed by nearly all team members that although it was useful to train practitioners in the skills of research retrieval and assessment, this was not a realistic expectation in terms of what could be expected in routine practice. The reasons expressed were that most practitioners do not have nor necessarily want to acquire the research knowledge and skills needed to critically appraise the research literature. And even for those who do have the skills, adequate time is not available, and access to fee-based Internet databases is limited.

Our experiences suggest that all of the implementation strategies described above have a place so long as they are appropriately sequenced and adapted to local circumstances. Proctor's professional infrastructure as agent is a broad implementation framework that brings these strategies together, suggesting that for the social work profession to adopt EBP and ESIs, there needs to be system change.

CONCLUSION

We hesitated to report our pilot study research in this article because it has many limitations and it can not be considered representative. However, we decided to

include a brief overview because so little empirical research has been published in social work evaluating implementation of EBP or ESIs. Research is needed to evaluate the implementation strategies described above. Little is currently known about their relative effectiveness. Fixsen et al. (2005) report, "While it is encouraging to see some examples of experimental research on implementation strategies, the few examples pale in comparison to the need for clear and effective strategies to move science to service and transform human service systems nationally" (p. 21).

If the objective of research is to identify implementation strategies that work, then attention must be given to separating the examination of the implementation intervention from the intervention program being implemented. Fixsen et al. (2005) have described implementation as a set of activities designed to put into practice a well-defined activity or program. Implementation processes are purposeful and described in sufficient detail to allow independent observers to detect the presence and strength of the specific set of implementation activities. When conducting implementation research, two sets of activities and outcomes need to be defined and conceptually differentiated. The first set of activities and outcomes pertains to the EBP or ESI being implemented, namely the intervention-level activity and outcomes of that activity. The second set of activities and outcomes is those associated with the effort to implement the chosen intervention, namely the implementation-level activity and outcomes. These two sets of activities and outcomes are linked but are driven by unique theoretical frameworks and similarly require independent research and evaluation. Klein and Sorre (1996) distinguish between implementation effectiveness and innovation effectiveness measures. A similar idea is reflected by Panzano and Herman (2005) when they note that implementation effectiveness is indicated by the accurate, committed, and consistent use of a practice by practitioners (e.g., fidelity and assimilation), whereas innovation effectiveness is measured by the benefits that accrue to stakeholders (improved outcomes attributable to the innovation).

A major problem facing those attempting to implement EBP and ESIs is the absence of an integrating conceptual framework that would facilitate a better understanding of what is involved when planning implementation. Greenhalgh et al. (2004) conclude that implementation studies to date have taken a pragmatic rather than an academic approach, are difficult to distinguish from research on change management generally, and lack sufficient process information. They recommend that future implementation research focus on the question, "By what processes are particular innovations

in health service delivery and organization implemented and sustained (or not) in particular contexts and settings, and can these processes be enhanced?" (p. 620). These researchers suggest that what is needed is in-depth, mixed-methodology studies aimed at both process and impact.

There is a special need for research that will specify and test the core implementation components and processes such as those proposed in prior research, but there is a need to further develop and empirically test the validity and efficacy of these nascent models. Indeed Fixsen and his colleagues (2005) proposed 15 hypotheses for further research that, if studied, would help to further specify the core components as they are conceptualized in their model.

The recently released program announcement from the NIMH (2005), which calls for dissemination and implementation research, lists illustrative questions that need to be addressed. These questions focus on analysis of factors influencing the creation, packaging, transmission, and reception of valid health research knowledge, ranging from psychological and sociocultural factors affecting individual practitioners, consumers, primary caregivers, and other stakeholder groups to investigations addressing large service-delivery systems and funding sources. Many different studies that are needed to further develop the nascent field of EBP implementation research are outlined in the program announcement. Indeed, NIMH is assigning significant resources to dissemination and implementation research. According to the report *The Road Ahead*, 24 grants totaling nearly \$6 million were awarded in fiscal year 2005 to investigate theory-based and empirically supported models of dissemination and implementation, which represented approximately 11% of research funding through the Clinical Epidemiology Branch, Division of Services and Intervention Research (U.S. Department of Health and Human Services, 2006, p. 37).

EBP and the use of ESIs in social work seem to be gaining momentum. It is likely that both developments will be on social work's agenda in the years ahead. How these new practice forms can best be implemented in social work education and practice remains an open question until further research is reported. Alternative implementation strategies are now available for use, but little is known about how they can be used singly or in combination to achieve intended outcomes with minimal harm to the profession and clients.

NOTE

1. This section is adapted from Mullen, Bellamy, and Bledsoe (in press).

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