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Public Health Approaches to Family Maltreatment Prevention: Resetting Family Psychology's Sights From the Home to the Community

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The authors review recent trends within the family maltreatment research field toward a public health approach, discuss the rationale for community-level interventions for family maltreatment, and sketch the history and development of community-level prevention approaches. Next, to illustrate the both the logistic and the scientific challenges of such work, the authors discuss the development and testing of an empirically guided, research–community partnership for the prevention of family maltreatment, the United States Air Force's NORTH STAR initiative (New Orientation to Reduce Threats to Health From Secretive Problems That Affect Readiness). Finally, recommendations are made for effective and disseminable family maltreatment prevention interventions.

Keywords: domestic violence, child maltreatment, family violence, community-based interventions, public health

Family maltreatment is a major public health problem, affecting tens of millions of American families each year. National surveys suggest that partner physical aggression occurs in 12 to 20% of American families (Caetano, Cunradi, Schafer, & Clark, 2000; Straus & Gelles, 1990), with severe parent-to-child violence occurring in 5% of American families (Straus, Hamby, Finkelhor, Moore, & Runyan, 1998; Straus, 1990). Rates are higher among selected subpopulations. Slep and O'Leary (2005) found, in a large, generalizable sample of families with young children, that 90% of families reported some physical aggression by an adult to either the partner or a child in the past year; 24% reported severe partner physical aggression and 13% reported severe parent-to-child aggression. Emotionally aggressive acts are even more common than physical aggression (Straus et al., 1998; Straus, 1990). Child neglect is the most common form of maltreatment among substantiated cases (Administration for Children, Youth, and Families, 2004), accounting for over 60% of 2002 cases. Nearly 1,500 intimate partner homicides occurred in 2005, and such killings accounted for approximately 11% of murders between 1976 and 2005 (Fox & Zawitz, 2007). The physical, psychological, and social consequences of family maltreatment are enormous, and many of these consequences occur even with relatively commonplace and minor acts, including spanking (e.g., Gershoff, 2002; Repetti, Taylor, & Seeman, 2002).

The public health implications of family maltreatment, in part, led to the current United States funding priorities for domestic violence research. As noted in the Violence Against Women Act of 1994, the National Research Council advised that domestic violence research, previously included in the portfolios of many funding agencies with priority areas other than violence, be jointly managed by the Department of Health and Human Services (DHHS) and the Department of Justice. DHHS determined that the Centers for Disease Control and Prevention (CDC)—the lead public health agency in the country—was the most appropriate federal agency to coordinate and manage family violence research. The CDC's research agenda is developed from and uses a public health perspective (e.g., Hammond, 2003; Whitaker, Lutzker, & Shelley, 2005). Some might argue that this alone is sufficient reason for psychologists studying family maltreatment to adopt a public health perspective:

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Understanding the perspective and being conversant in the language of the major funding agency are helpful in successfully competing for grant funding. However, we believe that there are other important substantive reasons to adopt such an approach. We argue that the tenets of a public health approach are complementary to those of empirical family psychology. Furthermore, the priorities of a public health approach help to balance some of the potential pitfalls of psychological approaches and vice versa, suggesting that the products of an integrated approach might hold particular promise for reducing rates of family maltreatment.

A Public Health Approach to Family Violence

According to Arias and Ikeda (2006), the objectives of public health with respect to family violence are the identification and control "of factors that affect morbidity and mortality among men and women across the life span" (p. 174). Although public health historically focused on infectious disease, the field has shifted to behavioral, psychosocial, and sociocultural factors (Schneiderman & Speers, 2001). This expansion of the public health perspective increases its applicability to family violence and extends a bridge from public health to psychology. Also, the public health perspective has broadened from one emphasizing the role of government policy to include the "development and dissemination of [family violence] interventions at the community level" (Arias & Ikeda, 2006, p. 175). The four phases of the public health model espoused by the CDC for understanding and reducing family maltreatment include (a) problem description, (b) risk and protective factor research, (c) preventive intervention development and evaluation, and (d) broad implementation (Mercy, Rosenberg, Powell, Broome, & Roper, 1993).

Although some aspects of public health approaches are more distinct from those of psychology—its inherently multidisciplinary approach and emphasis on community-level implementation—the four phases of the model are quite familiar, as they overlap considerably with the Institute of Medicine's prevention intervention research cycle recommended for developing effective preventions for mental disorders (Mrazek & Haggerty, 1994). Defining and measuring the extent of the phenomena, identifying risk and protective factors, and developing and testing potentially efficacious interventions are squarely within psychologists' strengths. Public health's imperative to get interventions out of the clinic and into the community may be its single most important offering to psychologists conducting violence research and developing violence interventions.

Family Maltreatment Demands a Community-Level Response

Approximately 10 years ago, we began a small, archival data-analysis project with the officials directing public health research and policy on family maltreatment in the United States Air Force (USAF). The purpose of the project was to develop a surveillance system to estimate rates of unreported maltreatment. As we continued working with these officials, we began to see how essential a public health view of family maltreatment is to successfully reduce the scope of maltreatment.

Formal systems for identifying and addressing maltreatment, although necessary, are only able to detect a small minority of cases (see Azar & Wolfe, 2006). Sedlak and Broadhurst (1996) found in a large national survey that 72% of child maltreatment cases known to mandatory reporters and other community sentinels and meeting substantiation criteria were not known to child protective services. Furthermore, cases that come to the attention of a professional are certainly a minority of the incidents that occur in homes. Intimate partner violence (IPV) may be even more difficult to detect, as there is no mandated reporting of IPV. Victims seem most likely to be identified to formal systems when seeking services at domestic violence shelters or medical attention at emergency rooms, whereas perpetrators seem most likely to be identified through police involvement. Of course, these avenues of detection will miss most IPV incidents.

Whereas even the best detection systems are fairly weak, the motivations for family members to keep maltreatment to themselves are strong. Many people in families marked by aggressive relationships do not consider the behavior to be maltreatment and thus do not report it to professionals even when presenting for therapy (Ehrensaft & Vivian, 1996; O'Leary, Vivian, & Malone, 1992). In more severe cases, victims may fear reprisal and negative consequences to the perpetrator or the relationship (U.S. Department of Justice, 1998). Perpetrators may fear involvement in the child welfare system, involvement of the criminal justice system, or other serious negative consequences. In some of our ongoing work, based on a recent survey of 80,000 adults, we found that fewer than 2% of respondents who reported substantial levels of partner or child maltreatment reported that anyone else in a more formal system (e.g., medical provider, counselor, child protective services worker, police) knew that they were experiencing marital or parenting problems, let alone that maltreatment was occurring.

It seems likely that no detection system would ever be able to sensitively and specifically identify nearly all maltreating families. In that way, an intervention that can only be delivered after maltreating families have been identified and directed to participate in treatment is unlikely to be successful in reducing the overall prevalence of maltreatment, even if the intervention is extremely effective. This is because the vast majority of victims and perpetrators of family maltreatment will never be formally identified, leaving even a hypothetical 100% effective intervention to have a negligible effect on prevalence.

The inadequacies of detection systems and treatment-focused approaches can seem discouraging. Yet these inadequacies reveal only part of the limitations inherent in a treatment-based system. Even if detection systems could be perfected and perfectly effective treatments developed, how could systems respond to all of the individuals and families needing services? Not only do formal systems lack the capacity to meet the needs of a client base several orders of magnitude larger than the current one, but also society

would have a very difficult time devoting the resources that would be required to expand service delivery systems to the extent that would be necessary to treat all families with partner or child maltreatment.

Thus, any intervention for family maltreatment that has the potential to reduce the prevalence of maltreatment substantially must occur at the community level. Community-level intervention can take many forms, from public service announcements to reality television shows demonstrating empirically supported parenting interventions (Campbell, 2005) to empirically supported Web-based interventions available to all (e.g., Christensen, Griffiths, & Jorm, 2004) to school-based skills training (e.g., Foshee et al., 2005). Community-level intervention does not need to be universal. However, it is unlikely that interventions that are very selectively targeted to specific individuals could be considered to operate at the level of the community. Thus, the reach of the intervention is critical—enough people who naturally interact with each other must be touched by the intervention so that the participation of others helps support the benefit to each individual.

Once the imperative for community-level intervention is accepted, the flaws of detection and service delivery systems become far less important. If interventions are administered at the community level, not only are treated individuals' risks reduced but also a larger proportion of the community is touched and their risk reduced. The risk profile of the community and presumably the effect the community has on its members is also altered. For example, if an intervention targets mothers' attributions for children's misbehavior (e.g., Bugental et al., 2002), then each treated mother might think more adaptively about her child's behavior. If several mothers who live near each other and interact with each other are treated, it is likely that this modified way of thinking about children's behavior will impact dynamics at play dates, library playgroups, and other settings where families with young children gather. A more adaptive tone will be set and the local culture will shift toward a model that supports this way of thinking. In this way, some mothers who never participated may begin to alter their ways of thinking about their children, which would, in turn, reduce their risk of abuse without ever directly experiencing an intervention. This is the tremendous potential of community-level intervention.

Of course, there will always be a place for intensive individual and group interventions that take place in traditional settings. A public health perspective merely places these traditional approaches to clinical interventions at one end on the continuum of care. Adopting a public health perspective means carefully considering how the important elements of traditional, empirically supported services that reduce risk for maltreatment can be (a) modified to meet the needs of both those who may be at risk for maltreating others but have not yet perpetrated maltreatment as well as those who have maltreated others but perhaps have been able to avoid formal detection and (b) packaged in a way that they could be implemented at the community level.

Inevitably, intervening at a community level requires accessing and usually partnering with communities. This undoubtedly involves working with a diverse array of professional and lay stakeholders. It may involve harnessing previously unexploited vectors (e.g., commercial broadcast television [Sanders, Cann, & Markie-Dadds, 2003; Sanders, Montgomery, & Brechman-Toussaint, 2000]). Successfully acting at the community level involves engaging and altering systems. Thus, the potential impact of a public health approach to family maltreatment is in the context of a number of formidable challenges and territory that is new for most clinical researchers in psychology.

The challenges in determining how to best package key elements of efficacious interventions for community-level implementation are tremendous (e.g., Kerner, Rimer, & Emmons, 2005). Psychology researchers typically describe moving interventions from a laboratory to a clinic. In the case of community-level approaches, the control and small scale of the laboratory is left behind. Even initial efforts require partnering with others.

Considering (a) how to best package intervention content to make it interesting and accessible to previously untargeted individuals and (b) how to then convey that information to ensure its impact is optimized must also occur from the outset. Finally, working with partners and many potential clients requires resources, both financial and otherwise. Below, we detail the impact of these challenges on some of our work and describe how we have addressed them.

Contrasting Two Complementary Conceptualizations of Public Health Approaches

Public health approaches to family violence have typically identified primary prevention (Arias & Ikeda, 2006) as the approach most likely to afford the largest impact. This emphasis on primary prevention of family violence has been quite clear from the CDC's recent annual funding announcements. Arguably, the most important public health gains have come from preventative actions such as inoculations. At the moment, however, primary prevention of partner violence requires especially careful threading of a needle. The literature on dating violence suggests partner violence begins nearly as soon as partner relationships form (e.g., Foshee et al., 1996): Prevalence rates of physical partner aggression in middle school dating relationships are over 50% (Arriaga & Foshee, 2004) and in high school dating relationships are over 30% (Cascardi, Avery-Leaf, O'Leary, & Slep, 1999). This highlights the challenge of conducting true primary prevention with individuals at elevated risk for partner abuse prior to its onset. Ideally, individuals at highest risk would be exposed to effective preventative interventions prior to involvement in dating relationships. Of course, interest in such programs is reduced when they are less relevant to people's lives, as is the case for relationship skills taught to people who have not begun to have romantic relationships.

Despite the challenge, the literature reveals a growing number of potentially effective primary prevention initiatives that, at least in principle, could be disseminated to all at-risk families in a community. Bugental et al. (2002) found that adding an attribution retraining component (i.e.,

training mothers to entertain benign causes for their children's difficult behavior) to a nurse home visitation program for at-risk mothers with new babies resulted in significantly lower rates of child abuse compared with the nurse home visitation program alone. Olds and colleagues (e.g., Olds, Eckenrode, & Kitzman, 2005) have several decades of research demonstrating reductions in child abuse, among a host of other positive outcomes, for mothers with babies participating in their selected nurse home visitation program. With respect to partner violence, the Prevention and Relationship Enhancement Program (PREP), a relationship skill and communication training program originally designed for premarital couples, resulted in fewer instances of physical aggression 5 years after program completion for couples participating premaritally compared with a matched control group (Markman, Renick, Floyd, Stanley, & Clements, 1993). In principle, all of these efforts could be administered to all at-risk couples or parents in a community. Typically, however, because of the expense of such initiatives, programs such as these are made available to couples or parents at highest risk rather than all families who might benefit. Although this is a reasonable decision, it is likely that some of the positive momentum that can occur when a community is nearly saturated with a particular intervention, to the point where its active ingredients can seep into the culture, is curtailed with much more limited dissemination. Family psychology researchers are particularly well suited to begin considering whether effective prevention programs can retain their positive impact while being made less costly to implement. Couple Commitment and Relationship Enhancement (Couple CARE; Halford, Sanders, & Behrens, 2001) is an example of a relationship and communication skills program that has been tested (with respect to relationship satisfaction, not violence specifically) in a format involving no face-to-face contact with a provider (Halford, Moore, Wilson, Farrugia, & Dyer, 2004). These sorts of alterations could make effective primary prevention programs better prepared for community-level administration.

It is also worthwhile to consider an additional approach to community-level intervention that is complementary to primary prevention and might also hold great promise to reduce family violence. This approach focuses on community-based interventions that would only indirectly target family violence through their impact on risk or protective factors. In this approach, whether family violence has or has not occurred is not a critical distinction. Part of the premise is that programs and services directly targeting family violence likely exist in most communities and that additional gains can be made by reducing risk and enhancing protective factors a small amount for nearly everyone in the community. Thus, the goal is to improve communication skills or parenting for the community as a whole. The assumption is that if the entire population makes a small improvement, for some people, this improvement will result in a lessened risk of family violence. With this approach, it is essential that interventions be relatively inexpensive to administer to large numbers of people. Approaches using media and the Internet are particularly appealing for their potential to reach many people with little to no added per-person costs. Although there is some history of this approach being used successfully with adolescent substance use, which is described in more detail below (Hawkins, Catelano, & Associates, 1992), it is only beginning to be applied to family maltreatment. The Triple P Positive Parenting Program (Sanders, 1999), a multilevel, population-based behavioral parenting intervention, is being implemented as part of a randomized controlled trial evaluating its impact on child maltreatment. Preliminary results are quite encouraging (Prinz & Sanders, 2007). Also, we are applying this approach in a trial we are currently conducting with the USAF.

The remainder of this article focuses on our experiences in this USAF trial as an illustrative example. The aim is to highlight both the challenge and the promise of adapting existing, empirically supported interventions to public health applications. We share our experiences in developing and pilot testing a public health approach to a family maltreatment intervention we are now evaluating in a randomized controlled trial with the USAF. Finally, we provide some recommendations for integrating family psychology and public health approaches to family violence.

NORTH STAR

Once we were convinced of the potential benefits of viewing family maltreatment intervention from a public health perspective, our work with the USAF evolved toward the development of an empirically grounded, community-level approach to reduce risk for family maltreatment. It is important to note from the outset that almost all of our experiences in conducting community prevention with these military communities are similar to those of researchers using comparable prevention frameworks with civilian communities (e.g., Greenberg, 2004). Thus, although the structure of the USAF may make it hospitable for an empirically guided framework, the fact that NORTH STAR was conducted at military bases and with military partners has almost no effect on the generalizability of the process and experiences reported here.

In surveying the literature, we found that some of the major challenges that this sort of approach to health and prevention faced had been well laid out. The emphasis on population health and reducing relative risk for multiple disorders through proactive and multilevel interventions that arose in the 1970s and 1980s had come with innumerable challenges for traditional treatment research methodology that were now being met. In the 1970s and 1980s, a few randomized, controlled trials—the gold standard in intervention research—of multilevel communitywide initiatives targeting heart disease (Farquhar et al., 1977; Fortmann, & Killen, 1995; Murray, 1995; Puska et al., 1985) and tobacco use (COMMIT Research Group, 1995a, 1995b) began. These studies were monumental and extraordinarily expensive undertakings because (a) the unit of randomization was the community, not the individual, and (b) substantial fidelity challenges were presented by communities' varying sizes, geography, characteristics, and unique needs. Further,

data collection challenges were plentiful because multiple components targeted multiple subpopulations, and myriad sampling strategies, measurement strategies, and dependent variables were required. Data analysis and interpretation were difficult because of the varied implementations, components, subpopulations, and targets.

Two overarching public health implications became apparent. First, public health could not be advanced if the strategies, no matter how effective, could not be sustained by the communities themselves once the research study was over (Altman, 1995). Second, many researchers (e.g., Hawkins, Catalano, & Arthur, 2002) argued that studies using invariant packages cannot flexibly fit communities' unique characteristics and needs.

The advances in prevention science and in family maltreatment in the last 15 years have been critical in preparing the family maltreatment field to successfully adopt a public health perspective. The understanding of risk and protective factors has increased (e.g., Heyman & Slep, 2001; Stith, Smith, & Penn, 2004), as did the number of prevention programs and strategies with demonstrated efficacy to improve identified risk and protective factors (e.g., PREP [Renick, Blumberg, & Markman, 1992]; Incredible Years [Webster-Stratton, 2001]). Just as important, the sustainability and dissemination of community-level intervention became design targets or areas of inquiry in their own right (Elliott & Mihalic, 2004; Greenberg, 2004; Pentz, 2004).

Building on similar advances in the area of substance use, Hawkins, Catalano, and associates (1992) developed a simple but ingenious way to resolve the paradox How can one scientifically study effectiveness if the programs that communities implement are not invariant? The solution was to design randomized controlled trials that used an invariant process but that also allowed for selection of specific targets and strategies potentially unique to the communities involved. This solution, adopted by Hawkins, Catalano, and colleagues in their Communities That Care (CtC) approach, was not only scientifically viable but also resulted in excellent community acceptability and promising prevention outcomes (Hawkins, 2001).

Hawkins, Catalano, and colleagues have had success with their four-stage, flexible, science-based approach to community intervention for adolescent problems (e.g., drug and alcohol use, teen pregnancy). In CtC (Hawkins, Catalano, & Associates, 1992), prevention science and community action are merged through the following stages: (a) community mobilization, (b) assessment, (c) strategic plan development, and (d) evaluation. Mobilization referred to engaging a group of leaders and stakeholders and convincing them of the merits of adopting a data-based approach using empirically supported activities directed toward specific risk factors found to be prominent within the community. Assessment involved collecting data to describe the risk and protective factor profile of the community. Within the planning stage, community boards were taught how to use the data gathered in the assessment phase to prioritize needs and leverage points within the community and identify empirically supported strategies targeting those leverage points. The model recommended that communities select multiple strategies for each high priority risk or protective factor that would operate at different levels, thereby increasing the likelihood of a measurable community-level change. During the evaluation stage, the community board was guided in how to plan and monitor the implementation of each chosen strategy to ensure adequate fidelity (e.g., set minimum performance standards and monitor against those). In this phase, community boards were also trained in the use of process data and fresh assessment data to gauge the impact of each strategy and refine the implementation as indicated. CtC is currently conducting its first efficacy trial; previous intervention communities, however, have been able to achieve some impressive and diverse outcomes, including significant improvement in cognitive skills, a 30% reduction in school problems, and a nearly 30% decrease in drug and assault charges (Hawkins, 1996). The initial results led the United States government to purchase the rights to CtC, and it is now publicly available free of charge (Substance Abuse and Mental Health Services Administration, 2007). In conclusion, although the results of randomized, controlled trials are not yet available (but are forthcoming), the CtC approach appears to be an appealing model for empirically driven, coordinated, locally tailored community intervention.

The CtC model was a good fit to (a) the strengths of the USAF and (b) the state of the art in family maltreatment and related fields. We identified several necessary elements for effective community-level intervention, most of which already existed within the USAF or within the scientific literature. The first element was a team of positional and prevention leaders charged with monitoring and addressing community functioning and who could access viable service delivery system infrastructures. Each USAF installation has a multidisciplinary team of professionals in place who work directly with base leadership (i.e., the integrated delivery system [IDS] team) that fulfills this role. The strength of this team was that it represented every helping agency on the base and was, at least on paper, intimately connected with base leadership, which should facilitate action. Most of the agencies represented formally include prevention programming, community outreach, or both in their activities, which suggests that they would have some staffing resources that could be directed toward empirically supported activities.

The second necessary element was an accurate and frequently updated surveillance system in place to track (a) the prevalence of maltreatment and any other problems to be addressed and how these problems are distributed within the community and (b) the status of the community on important risk and protective factors. Without this information, communities cannot set priorities, knowledgably target potential threats, or exploit areas of strength. A corollary need was knowledge about risk and protective factors that specified which factors are linked to which problems and for whom. We believe that, although not as developed as in some areas, sufficient evidence had been garnered to identify many prominent risk and protective factors for family maltreatment (see Heyman & Slep, 2001; Stith et al., 2004).

The USAF conducts a biennial needs assessment that could be an adequate source of such data. This anonymous, Web-based survey is administered to large, representative samples at each base. The survey includes brief, psychometrically sound scales assessing a variety of individual (e.g., personal coping, depressive symptoms), family (e.g., relationship satisfaction), workplace (e.g., support from leadership, workgroup cohesion), and community variables (e.g., community cohesion, community safety). Some of these variables have been empirically identified as risk or protective factors for at least one form of family maltreatment (e.g., relationship satisfaction, social support), whereas others have not been explored in the literature (e.g., spouse's support for respondent's job or career, workgroup cohesion). In addition to these variables, the USAF agreed to include extensive self-report measures of family maltreatment, alcohol problems, drug misuse, and suicidality. With the inclusion of these measures, we believed the USAF's assessment could provide the IDS teams with sufficiently strong data on problems including family maltreatment and risk and protective factors to guide effective action planning. To facilitate the IDS teams' understanding of their data, we developed feedback report templates that graphically and verbally explained problem prevalences, the strength of risk and protective relations, and the base's specific risk or protective factor profile. Reports were kept brief and were provided in both paper and electronic formats.

The third necessary element was empirically supported intervention strategies that could (a) improve functioning on important risk and protective factors and (b) be effectively implemented on a community level. A cursory review of the literature with respect to the risk and protective factors for family maltreatment shows that substantial strides in this area have been made in the last 2 decades. As examples, several parent training programs have good empirical support and had been packaged for dissemination (e.g., Incredible Years, [Webster-Stratton, 2001], Triple P [Sanders, 1999]), and several programs targeting couples' communication and conflict resolution skills were similarly well developed (e.g., PREP [Markman et al., 1993], Couple CARE [Halford et al., 2005]). What the USAF was lacking, however, was knowledge of which strategies or programs had empirical support. Therefore, in preparation for this work, we conducted exhaustive literature reviews of interventions targeting each of the factors analyzed in the USAF's community needs assessment. As CtC had done, we then assembled a guidebook (Slep & Heyman, 2006) that compiled basic information about each program, including a summary of the program, ways in which it had been implemented, the resources required, the strength of empirical support for the program, and how to obtain more information about the program. The current version of the guidebook includes a wide variety of activities, from Web-based interventions (e.g., MoodGym [Christensen et al., 2004], RELATE [Busby, Holman, & Taniguchi, 2001]) to DVD-based programs (e.g., Incredible Years [Webster-Stratton, 2001], Couple CARE [Halford et al., 2005]) to college classes (e.g., Stress and the Healthy Mind [Schiraldi & Brown, 2002]) to activities (e.g., community gardening, walking clubs).

The fourth was the capacity to conduct ongoing evaluations of impact to refine implementation. The IDS teams included individuals with the necessary skills and training to conduct casual evaluations of process, fidelity, and outcome. Typically, these teams included at least one master's level social worker or psychologist and multiple people with sophisticated computer skills. What the IDS teams did not have was the time and knowledge necessary to design evaluations that balanced competing needs, were feasible, and would result in useful data. To meet these needs, we developed a series of World Wide Web evaluation planning tools that walked the team step by step through the evaluation planning process for any given activity in the guidebook, recommending possible measures and methods and providing sample data structures that could be downloaded.

Finally, we concluded that sustainability had to be built into the entire process for it to ultimately result in a reduction in family maltreatment. If the ongoing effort of the researchers is essential to the continuation of interventions, the programs are unlikely to be retained once a study is over. Furthermore, it would be difficult for such interventions to propagate to other communities without a corresponding increase in the size of the research team. Relatively little is known about what factors predict an intervention being continued after a research initiative (e.g., Gomez, Greenberg, & Feinberg, 2005). We believe that for interventions to be sustained, multiple stakeholders must be convinced of their effectiveness and value relative to other possible expenditures. Expensive training requirements are both a financial and a human resource barrier that hinders sustainability. Thus, all of our training materials and other resources were made available on the World Wide Web without the need for in-person consultation. Furthermore, as is detailed below, we incorporated activities (e.g., cross-base teleconferences and electronic mailing lists) that we thought might increase engagement and investment.

Building on the CtC approach, our overall framework was one in which each IDS team brought together (a) data on their community's functioning (e.g., maltreatment rates, risk and protective factor levels) and on the strength of key risk and protective effects and (b) information on empirically supported activities that target risk and protective factors. Teams would formulate and carry out action plans with built-in fidelity, process, and outcome evaluations.

In 2003, we began a pilot implementation of this approach, named NORTH STAR (New Orientation to Reduce Threats to Health From Secretive Problems That Affect Readiness) with four USAF installations. As detailed above, we developed training materials and resources detailing this data-driven approach to action planning (Slep, Heyman, & Nelson, 2006) and summarizing all empirically supported activities addressing important risk and protective factors on which the USAF routinely collected data (Slep & Heyman, 2006). Although our long-term plan was to develop mate-

rials so that the program, if successful, could be self-sustaining, initially we completed an in-person 3-day training at each base, during which IDS members and leaders learned about the model, reviewed their data, and drafted initial action plans.

During the action planning process, the IDS teams identified the problems that were of greatest concern to the community (informed by the prevalences) and identified the risk or protective factors with the greatest likelihood of reducing the prevalences. After two or three risk or protective factors were isolated, the team then identified approximately two empirically supported activities from the guidebook that (a) improved the targeted factor and (b) seemed like a good fit to the community in terms of resources and likely interest. Resulting action plans specified the targeted risk or protective factors; selected activities or programs; and detailed implementation plans specifying who would be targeted, what the settings would be, how the program would be delivered, and what preliminary plans were in place for evaluating the programs. These draft plans were then submitted to installation leadership for approval. Leadership was generally quite supportive, although potential barriers to the implementation of the plans were discussed. We then continued to provide weekly and as-needed telephone support and annual visits.

IDS members were assessed prior to and after receiving the NORTH STAR training. Participants' ratings of efficacy and outcome expectancies—their estimations of their ability to use the data the USAF collects on community functioning to create a community action plan—improved significantly after receiving their NORTH STAR training, $t(49) = 2.57$, $p < .05$, as did their beliefs that their efforts would be effective $t(49) = 3.63$, $p < .001$. Participants were pleased with the NORTH STAR approach to prevention ($M = 4.38$ [out of 5], $SD = 0.57$), NORTH STAR training ($M = 4.56$, $SD = .51$), and NORTH STAR materials ($M = 4.44$, $SD = .65$).

Thus, the launch of this new community prevention framework was successful: IDS teams understood and liked the training and materials and were able to use those materials to assemble strong action plans. All of the action plans included a focus on at least some forms of family maltreatment. On the bases, the IDS teams examined the relation of their prevalence and risk factor data to identify up to three factors to target (e.g., parent–child relationship quality, couple relationship satisfaction, and depressive symptoms). They then selected typically three empirically supported activities that targeted the selected risk factors to build a detailed implementation plan around. Activities selected included Triple P (Sanders, 1999), Incredible Years (easily disseminated with DVD-based versions and workbooks; Webster-Stratton, 2001), PREP (Markman et al., 1993), and the book *Feeling Good (*Burns, 1999; Smith, Floyd, Scogin, & Jamison, 1997). Implementation plans specified numbers of people to be reached and identified at-risk groups if suggested by the data, indicated how the intervention would be delivered, and detailed plans for tracking fidelity and outcomes.

Given that IDS teams were mandated to develop and implement community action plans in conjunction with installation leadership, we naively thought the remaining challenges would focus on fidelity of implementation and on evaluation. We had assumed that some of the challenges in translating plans and good intentions into actions that exist in civilian communities would be lessened in a community founded on following mandates. We soon learned, however, that although there was a requirement for an installation community action plan, there was a great deal of variability in the expectation that it would be implemented. Although at some installations, there was an expectation that the action plan will be implemented as approved, at other installations, completing the action plans was the end goal, with no expectation of implementation. Further, because the IDS was no one's primary responsibility, time, continuity, and follow through were significant barriers to overcome. Over the course of the pilot study, it became clear that if expectations for action and change were low, little action would take place. It further became clear that teams lacking sophistication in obtaining budgetary and other resources struggled more than did others. There is no standing IDS budget with which to implement community action plans, and some IDS teams were able to make a strong case for resources in a resource-poor environment whereas others were not.

We encountered the biggest challenges in implementing strong psychological interventions at the community level (Calonge, 2005). Many people need to be convinced of the potential impact of a well-designed action plan and, even when they are, there are competing responsibilities and priorities and a diffusion of responsibility. It is difficult to maintain momentum, which primes conditions for a competing priority to supersede the implementation of the action plan. We had thought the preexisting structure in the USAF would help lessen the impact of these natural dynamics. They may have been lessened, but they were not lessened sufficiently as to have installations be able to easily act on their plans.

Not surprisingly, the pre–post results from the pilot study were mixed. We used multilevel modeling to examine the changes in each preidentified problem at our four bases from the first (2003) to the second (2006) community assessment. The outcomes were prevalences of self-reported maltreatment (including both acts and impacts) that matched the USAF's criteria for substantiatable family maltreatment (Heyman & Slep, 2006). As shown in Table 1, there was a significant decrease between 2003 and 2006 (time effect) on child emotional abuse (as well on suicidality and use of illicit drugs)[1] but not on other types of maltreatment.

In the spring of 2007, we began a randomized trial

[1] In addition, prevalences of male-to-female partner emotional abuse and female-to-male physical abuse increased significantly, but both of these effects were due solely to one base's 2006 rates matching those of the other three bases whereas its 2003 rates were extremely low on these variables.

Table 1
Pre- and Postintervention Maltreatment Prevalences at Four NORTH STAR Pilot Bases

Maltreatment	2003			2006			Time *F*	Base *F*	Denominator *df*
	M	*SD*	*n*	*M*	*SD*	*n*			
Child maltreatment									
Physical abuse	0.07	0.26	1,319	0.06	0.23	2,193	2.52	1.87	3507
Emotional abuse	0.10	0.31	1,082	0.03	0.18	1,989	54.58***	10.63***	3066
Partner maltreatment									
Male-to-female physical abuse	0.02	0.13	2288	0.02	0.15	3,428	0.4	8.76***	5711
Female-to-male physical abuse	0.01	0.11	2443	0.02	0.16	3,421	8.11**	4.10**	5859
Male-to-female emotional abuse	0.07	0.26	1675	0.13	0.34	1,460	10.40***	13.91***	3130
Female-to-male emotional abuse	0.08	0.27	1962	0.07	0.25	2,040	2.28	1.24	3997

Note. Numerator *df* was 3 for base *F* and 1 for time *F*. NORTH STAR = New Orientation to Reduce Threats to Health From Secretive Problems That Affect Readiness.
** $p < .01$. *** $p < .001$.

evaluating NORTH STAR at 24 bases randomly assigned to use the NORTH STAR approach or to operate as usual. To try to address the barriers to action we discovered in the pilot, we developed more accountability checks, made the need for resources more explicit, and continued to search for the easiest to implement (in terms of money, time, and expertise required) empirically supported interventions we could find.

Given the uneven enactment of action plans in the pilot study, we met with our USAF partners to discuss processes for regularly checking on the progress of action plans. We identified two viable pathways through which such accountability could occur: (a) base leadership could require that the action plan targets be achieved and (b) their supervisors (the major command IDS team) could monitor the enactment of the base action plans. When we completed our training visit, we explained to the base leaders what to expect and instructed the base IDS teams to present specifics of their action plans, timelines, goals, and progress at each quarterly update meeting. We also asked the major command IDS teams to request and expect to see these same specifics when presentation slides were forwarded to them. We have developed a newsletter that is distributed to IDS members and leaders at all participating bases and their major commands to try to (a) maintain the momentum of the original training meeting, (b) maintain visibility to help remind leaders to hold the teams accountable, and (c) build a sense of community among bases participating in intervention.

We emphasized the need for resources (both financial and human resources), beginning with our initial efforts to identify volunteer bases to participate in the study. This need was repeated immediately prior to randomization and launch so that bases could change their minds and pull out of the project (although no bases withdrew). This explicitness has helped at some bases. However, leadership changes (which are constant in the USAF) still left many of our bases without requested resources. At this point in the trial, however, all 12 bases have secured at least some financial and staff resources to enact their plans. Fortunately, the need for resources to support the required action plans is not unique to NORTH STAR; systems within the USAF are also moving toward making these resources more available to all USAF IDS teams.

Given the ongoing difficulty in securing prevention resources, we revised the activities guidebook to include every identifiable Web-based and low-cost or no-cost intervention with evidence of effectiveness. We learned that interventions that seem reasonable in terms of cost or personnel hours in more typical intervention contexts can quickly become burdensome when communities are trying to deliver the intervention to 2,000 individuals or families. Generally, the bases participating in the trial have been most attracted to Web-based interventions and activities that do not require high start-up costs for training and materials.

To follow up on the pilot study, we are currently conducting a randomized controlled trial evaluating NORTH STAR. As part of the randomized controlled trial, we are testing hypotheses about predictors of implementation. We are examining installation-level predictors (e.g., how regularly the IDS team meets, their visibility on base) and properties of the activities (e.g., cost, mode of administration) that were to be implemented. In this way, we hope to learn more about what it takes to prepare an intervention to be disseminated and implemented at a community level.

Conclusions and Recommendations

The potential impact of applying a public health perspective to research-based interventions to lessen risk for family maltreatment is tremendous. Reducing this risk for the relatively small number of clients who come to mental health clinics and private practitioners' offices is important and a worthy goal. However, the potential of broadening that impact in a way that can touch many times more families is even more inspiring. In recent decades as a field, psychologists have become substantially more adept at developing effective interventions. It is the right time, therefore, to consider what needs to be done to adapt both intervention approaches and dissemination frameworks so they are compatible with community-level intervention.

This transition will be most successful if the need for community-level applicability from the earliest design stages of interventions is considered. If an intervention

could be delivered in-person or remotely, both methods need to be investigated to determine whether they are equally effective (e.g., Halford et al., 2004). If information can be conveyed live or through some other medium, both methods must be evaluated in multiple ways. If psychologists are creative, it is likely that some interventions could be adapted for the Web with the possibility of interacting via instant messaging with a centrally located consultant, which would mean a remote county in Alaska could offer the intervention just as easily as the county in which the developer is located could. It is possible that paraprofessionals, including case workers and child care providers, could be trained to disseminate materials and facilitate structured exercises. These providers could potentially be trained at low or no cost over the Web. Likewise, Web-based video will soon make remote contact between facilitators and participants easy, economical, and feasible, substantially reducing traditional intervention barriers of time, distance, and cost. Of course, the efficacy of these dissemination means need to be evaluated and cannot be assumed from the efficacy of the initial trials of a more traditional application.

Creativity and flexibility should be brought not only to psychological interventions themselves but also to the ways people are trained in the use of effective interventions. If psychologists are creative about technology and packaging, it likely that a great deal of information currently packed into treatment manuals and workshops could be just as effectively disseminated through other means. Changes like these would not only increase psychologists' ability to distribute the interventions effectively but would also make the interventions more accessible to those in remote locations with limited training time and/or budgets.

As with all new endeavors, the more grounded one is in the final goal, the more likely one is to achieve it. Our experience has been that the up-front costs necessary for a community to launch a program matter more than the continued costs necessary to keep it going once instituted and found to be effective. If interventions are to have that potential community-wide impact, they must be packaged affordably. This is not just about establishing the cost-effectiveness of interventions or pricing training and materials in a way that seems fair given development costs and their potential impact. Traditional cost-effectiveness studies consider whether the costs of a program are less than the costs to society if the program is not enacted. The challenge we have found is that even with cost-effective programs, the costs of failing to act are rarely, if ever, fully borne by the entity being asked to pay the up-front costs of the program. The more that programs can be designed so that the up-front costs are manageable, the more easily they will be to get in the hands of the public.

A related challenge is determining who the customers for the intervention being developed or adapted are and ensuring that the features that would be important to those customers are incorporated. This reasoning should also extend to evaluation data. If the most likely customers of a dating violence intervention, for example, are school systems, having packaged curricula, exercises, and quizzes will be important. It will also be important that the necessary training of teachers be consistent with the in-service opportunities available in most school districts. When initially developing this dating violence intervention, it would be wise to consider other phenomena related to dating violence that might also be affected by the content of the program: Would peer aggression be impacted? General conflict resolution? Communication skills? All of these are of interest to school officials. If one program has data on all of these outcomes and another does not, the more thoroughly investigated program will be the one that is more attractive to the decision makers.

Of course, the sorts of public health approaches described in this article are not a panacea for family maltreatment. Both primary prevention and indirect, community-level interventions have their own inherent limitations. It is likely that some individuals at the highest risk will be among the least likely to access any intervention activity. Thus, these more psychological approaches to public health interventions for family maltreatment still need to operate in concert with effective policies and systems approaches. A good example of how such comprehensive public health approaches can impact problem behaviors is illustrated in work on underage drinking (e.g., Holder, 2004–2005), where stringent policies, improved enforcement, parent-focused strategies, and interventions targeting teems combine to result in substantial public health benefit. Within such a comprehensive approach, individuals who opt out of activities designed to decrease their risk levels are still impacted through changes in policies and enforcement systems.

It will be challenging to build interventions in ways that not only support but also facilitate community-level application. Feasibility and sustainability must be considered from the outset. Building interventions that will remain effective in real-world settings, however, is what must be done to use all that family psychology has to offer to reduce rates of family maltreatment. In our view, the potential impact provides enough motivation to face the challenges.

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