International Fire Service Journal of Leadership and Management

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International Fire Service Journal of Leadership and Management

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Dr. John Granito Award for Excellence in Fire Leadership and Management Research

The Dr. Granito Award

Fire Protection Publications (FPP) and the *International Fire Service Journal of Leadership and Management (IFSJLM)* headquartered on the campus of Oklahoma State University (OSU) are proud to announce the creation of the **Dr. John Granito Award for Excellence in Fire Leadership and Management Research (the Dr. Granito Award)**. The award will be presented at the *IFSJLM* Research Symposium that supports the Journal held annually in July at the IFSTA Validation Conference. The award honors Dr. John Granito. John is one of the premier fire and public safety consultants in the United States. Just a few of his many Fire, Rescue, and Emergency Services research projects include: Oklahoma State University-Fire Protection Publications Line of Duty Death Reduction project (3 years); Centaur National Study (3 years); Research Triangle Institute/National Fire Protection Association/International City/County Management Association project (4 years); Fire Department Analysis Project (FireDAP) of the Urban Fire Forum (13 years); *Combination Department Leadership* project, University of Maryland, Maryland Fire & Rescue Institute (4 years); Worcester Polytechnic/International Association of Fire Fighters/International Association of Fire Chiefs/ National Institute for Occupational Safety and Health *Fire Ground Performance Study* (current). He has participated in more than 400 fire department studies. John also has strong ties to academia. He served in a number of academic positions for almost 30 years, including 16 years at the State University of New York at Binghamton. He is Professor Emeritus and Retired Vice President for Public Service and External Affairs at SUNY Binghamton, which is consistently ranked in the top public universities by *U.S. News and World Report*. John has published numerous articles, chapters, and technical papers, served as co-editor of the 2002 book published by the International City/County Management Association entitled, *Managing Fire and Rescue Service*, and is a Section Editor of the NFPA® 2008 *Fire Protection Handbook.* Dr. Granito was the first recipient of the award that honors him and his service to the fire service and to academia. Each year the recipient of the Dr. Granito Award will present the Keynote Address at the annual *IFSJLM* Research Symposium.

Nomination Form

Fire Protection Publications (FPP) and the *International Fire Service Journal of Leadership and Management (IFSJLM)* headquartered on the campus of Oklahoma State University (OSU) are accepting nominations for the **Dr. John Granito Award for Excellence in Fire Leadership and Management Research (the Dr. Granito Award).** The award is presented at the Research Symposium that supports the *International Fire Service Journal of Leadership and Management (IFSJLM)* held annually in July at the IFSTA Validation Conference.

The nominee should have made a significant contribution to the advancement of fire leadership and management through his/her scholarly/academic writing. The Dr. Granito Award is not necessarily a life-time achievement award, although such individuals certainly should be in a prominent position to be nominated. The nominee can be a person who, although early in their career as a practitioner/scholar or academic, has made a seminal contribution to the fire leadership and management literature.

To nominate an individual for the Dr. Granito Award, please submit by 15 January of the symposium year: (1) this form (or a copy of it), (2) no more than a one-page single-spaced letter explaining why you believe the person is deserving of the award, and (3) a copy of the nominee's resume or curriculum vitae. Send the materials to: Dr. Granito Award, Dr. Bob England, Editor, *International Fire Service Journal of Leadership and Management*, Department of Political Science, 237 Murray Hall, Oklahoma State University, Stillwater, Oklahoma 74078.

I nominate _____ for the **Dr. John Granito Award for Excellence in Fire Leadership and Management Research.** To support the nomination, I have included a letter of recommendation and a resume or curriculum vitae (CV) of the nominee. (A nomination is not accepted without the supporting letter and resume/CV.)

Nominator Name: _____

Address: _____

_____

Zip/Postcode: _____

Contact Information:

Telephone: _____

Email: _____

Message from Dr. Robert England

Editor, *International Fire Service Journal of Leadership and Management (IFSJLM)* and Professor of Political Science at Oklahoma State University

Welcome to Volume 6 of *IFSJLM*. This issue marks the second year of our transition from a biannual to an annual issue of the "Red Journal." Typically, readers should expect to see the annual edition released in September or October. When the issue goes to press, however, is largely dependent on when external peer reviewers accept four or more articles for publication. Regardless of the number of articles, the volume will be available no later than the end of the calendar year.

Volume 6 introduces two new features to the Journal. First, after reprinting the now traditional keynote address delivered by the recipient of the Dr. John Granito Award for Excellence in Fire Leadership and Management Research, a new section called "Fireground News" is presented. This section contains one or more articles presented at the *IFSJLM* Research Symposium (RS) held annually in July at the International Fire Service Training Association (IFSTA) Validation Conference. These reports contain information useful to the well-being, safety, and/or professionalization of the fire service. As editor of *IFSJLM*, I decide which reports are presented at the Research Symposium and subsequently which are published in the Journal. The second new section of *IFSJLM* introduced in Volume 6 is called "The Academic Workshop." This section will feature articles written by masters and doctoral students that highlight the use of a method, research design, or conceptual framework applied to the fire service. With the growth of graduate programs in fire leadership and management in the United States, a growing number of students will prepare papers that can guide research efforts **even if the student has not taken the project to the field and gathered data or tested her or his research question(s) directly**. In essence, these papers represent solid research designs that can help other students conceptualize and formulate how to study fire leadership and management problems. Articles in this section are peer reviewed.

Fourth Annual Dr. John Granito Award for Excellence in Fire Leadership and Management Keynote Address presented at Research Symposium 2011(RS 11) by **Edward T. Dickinson**, MD, NREMT-P, FACEP, Professor of Emergency Medicine in the Perelman School of Medicine of the University of Pennsylvania.

Is There a Doctor in the (Fire) House?

Introduction

The unique and traditionally independent realms of the fire service and medicine are now forever intertwined. The interface of medicine and the modern fire service includes medical direction and oversight of emergency medical services (EMS) operations, responder education, field response, health and safety, occupational medicine, research, and a broader interaction with the civilian medical community. But what specifically can (and should) an individual physician bring to the fire service in 2012? The answer is — they should do what they do best.

Few, if any, doctors can be all things to all fire departments. This is a very important reality check for both the physician and the fire department. The fund of knowledge necessary for a single physician to effectively orchestrate all potential department needs (EMS oversight, responder education, field response, health and safety, occupational medicine, research, and as a liaison with the civilian medical community) would require both extensive formal training and extraordinary talent. It is best if all parties come to terms with this limitation at the outset of their relationship. For some physicians, this may require some judicious ego attenuation. At the end of the day, the most solid foundation of the physician/fire department relationship is built upon a clear delineation of the specific duties that an individual physician will perform for the fire department.

I count myself fortunate that my own career in emergency services actually began 33 years ago in the volunteer fire service. Indeed, it was my intense involvement in fire, rescue, and EMS during my college years that changed my career path from law to medicine. My own experiences as a firefighter, paramedic, training officer, and assistant fire chief, coupled with my love and respect for the fire service and its traditions, have unquestionably shaped my own beliefs and biases as to what physicians can offer the fire service in 2012. Similarly, my experience has humbled me to understand that even as a doctor who "grew up" in the fire service, I too have limitations as to what service I can provide to my fire departments. My personal approach is to do what I do well and what I can consistently deliver to my department members (EMS medical oversight, provider education, field response, and research), and delegate to other health professionals those responsibilities that I know they can do better than I can.

Medical Direction and EMS Oversight

The most common physician interaction with the modern fire service is the role of department medical director and the provision of medical oversight of EMS operations. A physician medical director is ultimately responsible for the depth, breath, and quality of patient care provided by an agency's emergency medical technicians (EMTs) and paramedics. In most cases, local or state regulations mandate that each department have a medical director. Beyond this letter of the law, it is the ethical, moral, and professional duty of an EMS medical director to assure that the patient care provided by those working under the delegated authority of his or her medical license is not only good, but **excellent**. The ultimate subjective measure of the EMS system is that you as the medical director would be comfortable with any of your department members caring for your own family members in a life-threatening medical emergency.

Although most fire departments that provide emergency medical services already have a relationship with a medical director, that relationship can almost always be made better. There are several classic pitfalls that can occur in the relationship between an EMS medical director and a fire department. It is the responsibility of the department to properly orient the EMS medical director to the unique aspects of a given fire agency as well as enlightening the doctor as to the fundamental "culture" of the fire service in general. Failure to do so runs the risk of having a medical director who lacks adequate engagement and the necessary commitment to give a fire department.

The worse case scenario for a department EMS medical director is "Dr. Rob R. Stamp" (also known as doctor rubber stamp). Shamefully, there are both physicians and fire departments who want their relationships to be no more than the provision of signatures on necessary documents to fulfill some legal obligations. This practice must be eradicated just like the use of booster lines on car fires, because it too places lives at risk.

I am honored that I was recently asked to be involved in the development of a new and concise publication recently published by the Department of Homeland Security and the Federal Emergency Management Agency under a contract with the International Association of Fire Chiefs that should serve as an invaluable resource for both the physician EMS medical director

and the hierarchy of the fire department. The *Handbook for EMS Medical Directors* is a **must** read for all EMS medical directors in the United States. It provides a wealth of both general and specific information that will be of help to both the neophyte and experienced physician EMS medical director. The document also provides agency officers and administrators an insight into the potential benefits of an optimally engaged medical director.

Provider Education

A fire-based physician must understand that opportunities to educate department members occur not only in the classroom but also at 6:45 a.m. with a cup of coffee in your hand sitting in the station's day room discussing the last tour's interesting calls with two paramedics. Both venues are equally valuable to the physician and the department members. The classroom or didactic settings allow for the necessary uniform dissemination of information to many members at one time.

The value of the informal, spontaneous small-group setting is that it is here where some of the most effective case-based teaching occurs. It is also in this setting where the physician medical director has the opportunity to detect gaps in provider knowledge and then make sure that those gaps are not only closed with the couple of providers in the small group but are incorporated in department-wide education. The other benefit of the small informal educational interaction is that it can be a source of instant information about emerging clinical situations on the streets that may necessitate an urgent need to educate the entire membership.

Physician Field Response

Many EMS medical directors ride with their units in the field on a regular basis as part of their administrative and supervisory duties. Not all physicians are initially comfortable in the out-of-hospital environment. However, an increasing number of EMS physicians were themselves EMTs, firefighters, or paramedics before attending medical school and completing their residency training. No physician should be simply thrown into the field. For a physician to be an asset rather than a liability to a fire department in emergency field operations, he or she must be fully trained, oriented, and equipped to the function as part of the fire department within the incident command system. It has been the experience of many EMS agencies that well-trained prehospital physicians are particularly beneficial in complex, prolonged rescue situations, multiple-casualty incidents, and large-scale rehab operations.

In the next several years the fire service and all other EMS providers in the United States are going to see an increased presence of trained EMS physicians extending true medical practice into the field. In 2010, "Emergency Medical Services" was approved by the American Board of Medical Specialists as the newest medical subspecialty. Thus, in the "house of medicine," the provision of prehospital oversight and the actual delivery of hands-on prehospital care by a physician are now recognized at the same level of medical subspecialization as an oncologist or a cardiologist. Beginning in 2013, physicians who complete either an approved EMS fellowship or who can demonstrate preexisting, long-standing expertise and practice experience as an EMS medical director will be eligible to take the subspecialty exam in EMS that will be administered by the American Board of Emergency Medicine. This is going to be a win-win situation for both dedicated EMS physicians and fire departments and other EMS agencies that they serve as medical directors.

Research

It is the responsibility of a fire service physician to not only foster and encourage participation in research in his or her department, but also to assure that both internal and exogenous research (especially medical research) is appropriately interpreted and integrated into the relevant practices of the department. It is not that physicians are better than others conducting research. Rather, they bring a different perspective and a critical eye to research based on constant exposure to the peer-review process of the medical literature. By their nature, academic physicians are particularly dogmatic in their evaluation and interpretation of research.

There are several truisms about research. First, research is a remarkably powerful tool with profound political, funding, logistical, and patient-care ramifications for the fire service. The second reality is that there is both good research (controlled, objective, and relevant) and bad research (sloppy, uncontrolled, biased, and irrelevant). If good research is the basis for change, then most often good and appropriate change can occur. However, if bad research is the basis for change, then beware — garbage in-garbage out.

The statement "We're going to do 'X' because that is what the research says" used to be confined to traditional medicine. Now the statement is commonly heard in the firehouse, not just in regards to medical interventions but also as it relates to advances in rescue and fire-suppression techniques. This is the age of "evidenced-based practice." The premise of evidenced-based practice is that we should base our standard operating procedures (SOPs), protocols, and guidelines upon those things that research has demonstrated is the best, most effective intervention. When evaluating the relevance of "evidence-based research," there are two quotes that must always be considered:

1. "Don't try to outsmart your common sense." (Lee Brice)

2. "Just because it has not been studied, does not always mean it's bad." (Ed Dickinson)

These two quotes are in fact linked. The first quote speaks for itself. The second may be less obvious, but here is an example and the linkage with common sense. For years it has been taught that that the sequence to control extremity bleeding has been to apply direct pressure on the wound, elevate the limb, and use a tourniquet if the bleeding remains uncontrolled. Direct pressure is such common sense that it has not been challenged as the first intervention to control bleeding. Recent combat data has shown that modern tourniquets are highly effective in stopping bleeding and have a low morbidity. Thus, national bleeding-control guidelines (and certification/testing standards) now state that direct-wound pressure should be followed by a tourniquet if bleeding persists. Limb elevation (an intuitively beneficial intervention based on hydraulics and gravity) has been eliminated. Proponents state that limb elevation was eliminated because evidence-based research found it was not effective in controlling bleeding. The reality is that the effect of elevating a bleeding limb has never been studied, and this simple and time-honored intervention has simply never been shown **not** to be effective. There is a big difference between something being shown by research to be ineffective versus having no research that has proven effectiveness.

Finally, when physicians themselves embark on internal research involving their own fire department, there are two classic pitfalls to be avoided. The first is lacking the fundamental understanding of precisely what are the important questions to be studied in the fire service. The second is not being able to adapt classic medical research paradigms to the logistical and cultural realities of the fire service. Both of these pitfalls can be readily avoided by always approaching departmental research as a collaborative effort between the physician, the department hierarchy, and the members themselves.

Essential Care and Feeding of the Fire Service Physician

The optimal integration of a physician into the fire service is not a chance occurrence. The fire department that makes a physician feel welcome, properly orients him or her to the department and the broader culture of the fire service, and strives to help him or her accomplish his or her designated duties will be rewarded with a doctor who is truly engaged and will be a true asset to the department.

About the Author

Edward T. Dickinson received his M.D. from State University New York Stony Brook in 1989 and is currently professor and director of EMS field operations for the Department of Emergency Medicine in the Perelman School of Medicine of the University of Pennsylvania. He serves as the medical director for the Malvern, Radnor, and Berwyn Fire Companies and the Haverford Township Paramedics in Pennsylvania. Dr. Dickinson is the author of *Fire Service Emergency Care* and coauthor of *Emergency Incident Rehabilitation*, both joint BRADY-IFSTA textbooks.

"Fireground News" is a new section of the "Red Journal" that contains research presented at the *IFSJLM* Research Symposium (RS) held annually in July at the International Fire Service Training Association (IFSTA) Validation Conference. These reports offer information useful to the well being, safety, and/or professionalization of the fire service. As editor of *IFSJLM*, I decide which reports are presented at the Research Symposium and subsequently which are published in the Journal. The following article was presented at Research Symposium 2011 (RS11) on July 9, 2011, in Tulsa, Oklahoma.

Ronald Jon Siarnicki, Executive Director, National Fallen Firefighters Foundation (NFFF)
Richard Gist, Ph.D., Principal Assistant to the Fire Chief, Kansas City (MO) Fire Department
Scott Raak, EMT-P, Assistant Division Chief, Medical Bureau Kansas City (MO) Fire Department

A Knowledge-Translation Model for Fire Service Behavioral Health: Everyone Goes Home® Firefighter Life Safety Initiative 13

Abstract

In conjunction with the United States Fire Administration's aggressive goals of reducing firefighter mortality and morbidity and in keeping with its missions of reducing the impact of occupational morbidity and mortality on the nation's firefighters and their families, the National Fallen Firefighters Foundation (NFFF) established its Everyone Goes Home® project in 2003. Preliminary consensus meetings involving representatives from a wide array of fire-service constituencies were distilled into 16 Firefighter Life Safety Initiatives (FLSIs), one of which (FLSI 13) addressed ensuring that behavioral-health needs of firefighters and their families could be effectively met. NFFF convened a series of expert panels to examine occupational behavioral health in the fire service and develop a framework for evidence-supported programs that could address industry needs in cost-effective and readily accessible fashions. This article reviews the findings and strategies that emerged from those sessions and summarizes key literature pertaining to the overall initiative and each of the component activities created to implement those strategies and advance the objectives of FLSI 13.

History and Genesis

The stress associated with occupations in fire services and emergency medical services (EMS) has been well chronicled in previous research (e.g., Adler et al., 2008; Halpern, Gurevicj, Schwartz, & Brazeau, 2008). Firefighters and emergency medical personal are exposed to potentially traumatic events (PTEs) with a degree of regularity that most people would not experience in a lifetime. These providers are tasked with performing in stressful, high-risk environments where control of chaotic and sometimes threatening elements may be limited (Landen & Wang, 2010).

Emergency workers have been found in some studies to exhibit an increased prevalence of post-traumatic stress disorder (PTSD), a condition often characterized by feelings of intense fear, horror, or helplessness following exposure to a traumatic event as compared to civilian populations (American Psychiatric Association, 2000). While clinically diagnosable PTSD has been the common unit of analysis in research, physical or emotional sequelae that fall below diagnosable thresholds are very commonly associated with exposure and often go untreated. Efforts to mitigate the psychological effects often associated with occupational exposure to

PTEs have been a driving force in the industry's efforts to address the mental health of firefighters and emergency medical responders.

The Birth of a Movement

Critical incident stress debriefing (CISD) programs were the first efforts at intervention to receive industry-wide promotion and remain the most widespread. Introduced in a trade magazine article in the early 1980s (Mitchell, 1983), CISD was designed as a small-group intervention proclaiming to eliminate or reduce the psychological impacts of traumatic events, to hasten recovery efforts associated with an event, to reduce or eliminate symptoms related to PTSD, and to identify individuals who may be candidates requiring additional professional intervention and follow-up (Mitchell, 2002; Mitchell & Everly, 1993). Based on claims of scientific evidence of efficacy and effectiveness, debriefing programs became de rigueur elements of fire department protocol and were included in a wide range of courses, prescriptions, and standards, including National Fire Protection Association® (NFPA®) 1500, *Standard on Fire*

Department Occupational Safety and Health Program (NFPA®, 2007). Many debriefing protocols included mandatory participation by firefighters and other personnel, especially after high-impact events.

Less than a decade following that initial report, the principal proponents of debriefing incorporated the International Critical Incident Stress Foundation (ICISF), an organization established to market and expand utilization of the practice and to generate a business of training and supporting "CISD teams" in the field. The service package was expanded to include a range of other activities and interventions and was redubbed *critical incident stress management* (*CISM*). This new formulation, which still continued to hold CISD as its signature feature, was presented as a comprehensive, systematic, integrated, and multi-tactic form of crisis intervention that is applied to manage critical incident stress after traumatic events (Everly & Mitchell, 2003). By the turn of the century, providing CISM-related interventions and services had become a significant cottage industry extending well beyond its fire service and EMS origins.

The "grass roots" approach to creating CISM teams, building their membership, and preparing those members to carry out the interventions contributed to two conditions that run contrary to the ways in which medical and psychological treatments typically enter mainstream practice: First, the vast majority of practitioners were "peer personnel," whose preparation might include little more than a weekend workshop presented by a trainer franchised through the ICISF. While teams were to have clinical supervision, those standards were also relatively amorphous (master's degree in a mental-health discipline and participation in ICISF-sanctioned workshops; see Mitchell & Everly, 1993). As a result, most information reaching CISM teams came to them through sources with vested interest in maintaining a "company view," and those applying the intervention remained effectively insulated from the venues of academic scrutiny and debate, typically associated with professional practice. Second, and perhaps more importantly, this insularity also shielded the practice from academic scrutiny until it had garnered an almost evangelical foothold in the fire service (see Gist & Woodall, 2000, or Gist, Woodall, & Magenheimer, 1999, for more extensive discussion).

The rapid spread of the technique, fueled by aggressive marketing and the facile simplicity of training (two-day workshops with no prerequisite for attendance and no testing of knowledge or skill at completion), ultimately took CISD well beyond fire service and EMS applications and brought it to the attention of the psychological research community. Sweeping claims of efficacy and proselytizing advocacy for prophylactic application in essentially any situation that could be construed as distressing led to progressively more refined efforts to assess its actual performance and impact. Though ostensibly quite consistent with prevailing wisdom regarding exposure, reactivity, and resolution, controlled study presented an escalating battery of concerns.

More Than a Failure of Technique

Incongruities between the outcomes and impacts claimed for debriefing and those actually observed in practice were evident to a number of independent observers very early in proliferation stages of the intervention movement. Gist, Lubin, and Redburn (1998) reported studies of debriefing-styled interventions following the crash of a wide-bodied airliner in which 112 passengers died. Their findings from a nearly complete sample of career firefighters engaged in body recovery and related operations showed no clinically significant impacts on personnel at 2 years postincident, no evidence of superior resolution for debriefed responders versus those who declined, a slight but statistically significant negative trend in resolution indices for those accepting debriefing, and a clear preference for informal sources of support and assistance that correlated strongly with effective resolution. Other studies have replicated and amplified these core conclusions in a variety of settings and populations (Bisson, Jenkins, Alexander, & Bannister, 1997; Carlier, Lamberts, van Uchelen, & Gersons, 1998; Deahl, Gillham, Thomas, Dearle, & Strinivasan, 1994; Griffith & Watts, 1992; Hobbs, Mayou, Harrison, & Worlock, 1996; Kenardy et al., 1996; Lee, Slade, & Lygo, 1996; Lohr, Hooke, Gist, & Tolin, 2003).

Meta-analysis by Van Emmerick, Kampuis, Hulsbosch, and Emmelkamp (2002) of seven outcome studies concluded that the effect size of CISD was not significantly greater than zero and included a range of negative values within its 95% confidence interval, indicating an intervention that held no effect on its intended outcome of preventing PTSD and indeed held the capacity to paradoxically inhibit natural recovery. Moreover, its effect size was generally less than either nonintervention control conditions or alternative interventions against which it has been compared. The short summary was, in effect, that CISD had no impact on PTSD, held the potential to make recovery more difficult for some, and performed less robustly than essentially any approach to which it had been directly compared. As a result, a growing range of guidelines for evidence-based practice, including the prestigious *Cochrane Reviews* (Rose, Wessely, & Bisson, 2007; the United Kingdom's [UK's] National Institute for Clinical Excellence [NICE], 2005; the World Health Organization [WHO], 2005; and the Australian Centre for Posttraumatic Mental Health [ACPMH], 2007) have offered specific recommendations contraindicating routine debriefing. A definitive review of psychological debriefing commissioned by the Association for Psychological Science (McNally, Bryant, & Ehlers, 2003) concluded that:

(a)lthough psychological debriefing is widely used throughout the world to prevent PTSD, there is no convincing evidence that it does so. RCTs [Randomized Controlled Trials] of individualized debriefing and comparative non-randomized studies of group debriefing have failed to confirm the method's efficacy. Some evidence suggests that it may impede natural recovery. For scientific and ethical reasons, professionals should cease compulsory debriefing for trauma-exposed people (p. 72).

Those most likely to be seen as negatively impacted by their experience, and hence those most likely to be encouraged to participate in debriefing, may well be those most likely to experience paradoxical outcomes. Mayou, Ehlers, and Hobbs (2000) reported a 3-year follow-up from a randomized controlled trial of debriefing following motor vehicle accident injuries wherein patients with heightened avoidance and intrusion symptoms who received the intervention remained strongly symptomatic while all others (including highly symptomatic patients in the control condition) had essentially recovered. Sijbrandij, Olff, Reitsma, Carlier, and Gersons (2007) reported a dismantling study of debriefing interventions comparing the emotional ventilation component without the psychoeducation elements to the psychoeducation component without the emotional ventilation features; these were also compared to non-intervention controls. Here, too, those showing fewer than two hyperarousal symptoms showed somewhat earlier achievement of remission from the education approach, while those displaying two or more hyperarousal symptoms fared better in the nonintervention control condition than from either style of intervention. It should be noted that all subjects achieved roughly equivalent resolution at 24 weeks regardless of the intervention employed, leaving the overall value of intervention a question very much in play.

A number of influential commentators have concluded that debriefing is not only ineffective but may indeed be harmful (Devilly & Cotton, 2003, 2004; Gist & Devilly, 2002; Lilienfeld, 2008). Defenders of the CISD rubric have published their own apologetics, typically criticizing fidelity to the *Mitchell model* and format of application (individual vs. group) as if these considerations alone were sufficient to negate the saliency of the various RCTs reported to date (Everly, Flannery, & Mitchell, 2000; Everly, Flannery, & Eyler, 2002; Hawker, D. M., Durkin, & Hawker, 2010; Mitchell 2004a, 2004b). Questions of fidelity to the Mitchell model and the use of occupationally intact groups were definitively addressed in a more recent longitudinal study, and again, no preventive benefit was found (Adler et al., 2008). This randomized controlled trial of peacekeeping soldiers deployed to Kosovo found no effect on reducing PTSD symptoms using CISD group intervention in intact deployment groups. The intervention did show a very small effect on reducing aggressive behavior,

but the effect size was said to be insufficient to warrant influence on policy decisions; and widespread use of the technique was discouraged.

Participants in this study and others, however, have consistently indicated positive receptivity toward group processing of reactions. Since CISD as a specific intervention shows no specific value with respect to prevention of PTSD and some propensity to induce complications in natural recovery, there can be no claim of preferential utility over other forms of incident review. Still, however, structured and consistently utilized review mechanisms may have use in facilitating group integration as well as beneficial impacts with respect to operational improvement and skill development. Accordingly, a U.S. Department of Defense/Department of Justice (DoD/DoJ)-sponsored consensus panel reviewing early interventions recommended against continued use of CISD per se but emphasized the importance of operational debriefing as an organizational development tool (National Institute of Mental Health [NIMH], 2002).

Synthesizing and Applying Current Best Evidence

The gap between research and practice has been a matter of increasing concern in all aspects of health-care practice (Waeckerle, Cordell, Wyer, & Osborn, 1997). A fundamental and critical aspect of the problem lies in what Cone (2007) referred to as *getting the evidence straight*: to wit, determining through systematic programs of research the most efficacious and productive approaches to treatment, refining those approaches through empirical analysis and testing, and organizing and communicating that evidence through productive meta-analyses and reviews. Substantial progress along this dimension has been achieved in areas critical to occupational behavioral health for fire services and EMS, but the more elusive and arguably the more significant challenge lies in what Cone described as *getting the evidence used*.

Knowledge translation is much broader and more encompassing than the production and dissemination of evidence and the creation of evidence-derived standards. The Canadian Institutes of Health Research defined *knowledge translation* as:

the exchange, synthesis, and ethically sound application of knowledge within a complex system of interactions among researchers and users to accelerate the capture of the benefits of research through improved health, more effective services and products, and a strengthened health care system (Davis et al., 2003, p. 33).

The objective is not accomplished simply by establishing the efficacy of specific interventions through rigorous empirical research or evaluating their effectiveness through clinical trials in clinical settings. Models and mechanisms that result in the appropriate application of effective and efficacious interventions by the

practitioners who ultimately provide patient care must emerge and gain momentum. This emergence is a complex matter that includes elements ranging from the sociology of knowledge within clinical professions to ethics and expectations respecting continuing education and continuing professional development, evolving communications technology, and the ongoing analysis of information-dissemination pathways available to and utilized by practitioners at various levels of expertise (Cabana, et al., 1999; Kilian, Binder, & Marsden, 2007).

The knowledge-translation process can be complicated even further where the dynamics of information exchange at critical decision levels are structurally, functionally, and pragmatically disjoined from the mechanisms that promote knowledge translation in any particular enterprise. In health care, knowledge translation has been a driving force in the activities of the Institute of Medicine (2001), the Cochrane Collaboration (Mowatt, Grinshaw, Davis, & Mazmanian, 2001), and the UK's NICE (Rawlins & Cuyler, 2004). Decision makers in fire services and EMS, however, cannot be expected to maintain acquaintance with highly technical literature in areas that fall well beyond their primary missions and responsibilities. Refereed technical journals are a relative rarity in fire services and EMS. Most leaders depend on trade conferences and trade magazines for the majority of their information flow, and the quality of information reaching them has been variable at best.

It is incumbent in such circumstances that scientists reach beyond the generation of scientific evidence and actively engage in knowledge-translation efforts that can create products consistent with the pragmatics and expectations of decision makers, their constituents, and the ultimate service consumers (Choi, McQueen, & Roolman, 2003). It is equally important that leaders in applied fields reach beyond their typical boundaries to engage those who generate theory and research its implications. Avenues by which information travels and the means by which it is understood and applied must be identified and mapped. Bodies that hold authority and influence in those exchanges must be engaged, their interests explored, and their concerns addressed. Evidence-based protocols must be proposed, refined, and ultimately endorsed. To this end, the National Fallen Firefighters Foundation (NFFF) launched a multifaceted strategy to support a systematic knowledge translation with respect to occupational behavioral health, one of the 16 Firefighter Life Safety Initiatives (FLSIs) advanced in support of its *Everyone Goes Home®* project.

The NFFF was chartered by the U.S. Congress to honor firefighters killed in the line of duty and provide support to their families and survivors. Its early work centered on memorial activities but grew systematically to encompass initiatives to prevent firefighter fatalities and enhance the health and safety of emergency response personnel. The Foundation established the *Everyone Goes Home®* project to develop strategic plans that could facilitate substantial reductions in firefighter line-of-duty mortality. The project's first Firefighter Life Safety Summit was convened in Tampa, Florida, in March, 2004; from that session emerged 16 FLSIs that would guide the program's advocacy efforts. Initiative 13 addressed the need for counseling and behavioral-health assistance for firefighters and their families.

The 16 FLSIs have stimulated a variety of research, development, and standards-making activity. A second Life Safety Summit was convened in Novato, California, in February, 2007, to review progress, incorporate emerging findings and directions, and refine the focus of activity respecting each of the initiatives. Established researchers and practitioners from relevant content areas were commissioned to develop white papers regarding the state of research, practice, and implementation in each content area. Those white papers (NFFF, 2007) were utilized to guide the deliberation of industry groups assigned to each initiative. Each group was charged to create an action agenda regarding its assigned initiative and to generate a strategic plan for its implementation.

The white paper regarding Initiative 13 (Gist & Taylor, 2007) broadened the scope of the initiative to include behavioral science and behavioral issues beyond the availability of counseling for personnel and their families. It was noted that the academic literature contained increasingly sophisticated and extensive research respecting conditions, interventions, and delivery systems relevant to firefighter health and safety; but it was also recognized that these studies were neither reflected in fire service training and protocols nor reliably recognized and applied by those typically involved in providing occupational behavioral-health services to firefighters and their families. Significant research related to effective strategies in these domains has been reported in the literature of several disciplines but has yet to find wide application in fire-service-related practice. Knowledge translation accordingly emerged as the principal issue in implementation of the initiative.

A Knowledge-Translation Process for Fire Service Applications

The strategic plan for implementation (Gist, 2007) proposed a consensus process that would begin by bringing together approximately a half dozen carefully selected researchers and academics closely affiliated with research programs examining areas important to occupational behavioral-health needs of the fire service. The initial meeting held in Baltimore, Maryland, on December 4–5, 2008, began with a focus on occupational exposure to potentially traumatic events. **Table 1** outlines the participating interests, with additional participant/observers on hand to bolster subject-matter expertise.

Table 1: First Baltimore Consensus Meeting

Research and Practice Interests	Fire Service Organizations
National Center for PTSD	International Association of Fire Fighters
National Institute for Occupational Safety and Health	International Association of Fire Chiefs
National Crime Victims Center	National Volunteer Fire Council
Center for Study of Traumatic Stress	National Fire Protection Association®
Employee Assistance Professionals Association	National Association of EMS Physicians
Firefighter Health Research Group	North American Fire Training Directors

Process

Following an introductory overview session regarding the project and its knowledge-translation objectives, participants were asked to consider the following agenda-item questions:

- What are the best data regarding the nature and manifestation of this problem in the industry?

- What is currently known regarding the nature of the behavioral risks involved?

- What programs are currently deployed or in development within the industry to impact the principal risk factors?

- What efforts should be undertaken to link current and planned program efforts to empirically supported or informed best practices for prevention and intervention?

- How might the products of these efforts best be developed, packaged, disseminated, and tested for efficacy and effectiveness in fire service applications?

- Who are the key players who need to be involved in developing and advancing an agenda of research, programs, and initiatives in this problem area?

- What specific products are reasonable to seek from such a set of collaborations?

Presentations from key researchers were introduced to establish a foundation respecting the current state of the art regarding theory, research, and evidence-informed best practices. The conversation regarding each domain was then focused on strategies for effective knowledge translation, following the agenda outlined previously.

Practical Considerations

Several elements were first noted by consensus of the constituency representatives to be essential in any effective knowledge translation effort for this industry:

- ***Resources developed should be readily accessible to the various personnel who will need to acquire information and skills*** — Behavioral-health programs typically require involvement of a number of personnel. Internal personnel are involved at many levels, but consultants, trainers, and professional service providers are also a major part of most equations. Knowledge translation needs to address all these groups in ways that reflect the needs, availability, and preparation levels of each.

- ***Time and expense required to acquire knowledge and skills must be manageable*** — Professionals providing services to fire service and EMS organizations are not ordinarily full-time employees of those agencies. These providers are often staff of contracted employee assistance programs (EAPs) who may themselves be private practitioners contracted to provide EAP services as a "sideline" or ancillary enterprise. Other providers may be employees of community mental health centers or similar agencies. Some providers may provide a substantial portion of their service on a volunteer or pro bono basis. Knowledge-translation activities that require extensive time away from their daily work or extensive investments of time beyond their principal responsibilities are unlikely to prove successful.

- ***Changes in services provided and/or methods of providing those services must have a minimal impact on the cost of service and benefits*** — Recommendations that would add substantially to costs are unlikely to be embraced in the current economic climate, no matter how strong the academic arguments for service enhancement. Changes that can be implemented without major cost, however, are likely to be well received.

- ***Recommended changes must be compatible with and adaptable to the wide range of organizations, staffing, and structure found in the American fire service*** — Rigid formulae and monolithic approaches are not reflective of the fire service or its personnel. Since utilization and impact of occupational behavioral-health strategies are strongly influenced by their congruity with values, practices, and pragmatics

of the organizations involved, approaches must be adaptable to a diverse array of settings and circumstances without sacrifice of efficacy or impact.

- **Mechanisms must be developed to facilitate the continued flow of information from credible sources of academic research through accepted venues of the fire service and EMS industries using information sources accessed and utilized by "journeyman" behavioral-health providers** — Effective bridges between information sources in the research realm and dissemination vehicles in the application and practice domains must become an ongoing and evolving feature of occupational behavioral health if the initiative is to provide lasting impact.

These stipulations led the group to concentrate specifically on resources that could meet several criteria:

- **Strong utilization of web-based technology** — This criterion was viewed as the most promising delivery mechanism with respect to access, cost, and adaptability.

- **Adaptation of existing web-based products** — This criterion would minimize the expense of development, limit the time required for deployment, and facilitate translation of existing knowledge bases.

- **Use of material currently in the public domain** — Material developed through publicly funded mechanisms, and specifically material where copyright status permits or can be arranged to allow adaptation for nonproprietary uses, exists in several areas of interest. This criterion can help minimize cost and accelerate translation.

- **Dissemination through multiple nonproprietary vehicles** — Specifically, web-based products and materials would be available through the websites of the *Everyone Goes Home*® project, the International Association of Fire Fighters, the International Association of Fire Chiefs, the National Volunteer Fire Council, and potentially through the websites of other nonprofit constituency organizations.

Adopting a Consensus Protocol for Occupational Exposure to PTEs

With respect to occupational exposure to potentially traumatic events, both academic and industry participants were, for the most part, acquainted with research regarding the limitations of debriefing and related approaches. The need for a model representative of current evidence and understandings was generally understood. A suggested protocol created as a component of recent revisions to the National Association

of Emergency Medical Services Physicians medical direction text set (Gist & Taylor, 2008, 2009) was presented as a starting point for discussion. This protocol was derived from current best-practices guidelines (e.g., ACPMH, 2007; NICE, 2005; Rose et al., 2007); consensus recommendations (e.g., NIMH, 2002); and systematic reviews (e.g., Devilly, Gist, & Cotton, 2006; Gray & Litz, 2005; McNally, Bryant, & Ehlers, 2003). The protocol reflected the following principles:

1. **Immediate assistance should be proximal, nonintrusive, and ecologically intact** — Where immediate intervention is requested or otherwise indicated, lower-key supportive contacts utilizing principles of psychological first aid (e.g., Brymer et al., 2006) represent the current standard for evidence-informed best practice. Extraordinary events requiring more focused support may benefit from more systematic visits involving "upward contacts" (cf. Taylor & Lobel, 1989; see also Gist & Taylor, 1996; Gist & Woodall, 1995), to wit, peer-level firefighters seen as having experienced and mastered similar challenges. This approach differs from the "peer counselor" concept common to CISM and similar approaches in that these contacts are conceived as informal supportive visits rather than as interventions with a formal preventive intent. These contacts are typically well received and provide much needed solace and solidarity. They can also help personnel to feel more comfortable in seeking further assistance if and when needed.

   — Previous approaches (principally CISM derivatives) had been driven by rigidly prescribed interventionist strategies. Halpern, Gurevicj, Schwartz, & Brazeau (2008) conducted a systematic study of help-seeking preferences among Canadian EMS providers. Paramedics, supervisors, and dispatchers were questioned in detail about favored coping strategies, resources, preferences, and preferred patterns. Systematic interviews in group and individual sessions were transcribed, coded, and analyzed for common themes.

   — Most provider suggestions concentrated on very practical workplace steps such as a half-hour to one hour "time-out" period to be spent alone or, at their option, with coworkers of their choosing; also valued were direct expressions of support and interest from supervisors. When more specific or detailed discussions were desired, most said they would choose to seek these at their own pace and in contexts of their own choosing (rather than having these imposed by organizational mandates).

2. ***Early, reliable, and nonintrusive assessment is essential to any effective protocol*** — Fire service and EMS personnel often experience some level of distress following difficult duty, but the greatest majority will not see that distress rise to levels that demand clinical treatment. Most persons respond to even deeply unsettling experiences with resilience rather than requiring recovery (Bonanno, 2004). Initial reactions vary greatly between individuals and between situations; current instruments and approaches have not shown efficacy in distinguishing those who will rebound from those who will need extra assistance to regain equilibrium in the immediate aftermath of exposure.

— The Trauma Screening Questionnaire (TSQ) is a simple, straightforward, and nonintrusive self-report instrument that has demonstrated efficacy at three to six weeks postexposure in distinguishing for whom resolution is progressing well and suggesting who may require fuller assessment for clinical treatment of PTSD (Brewin et al., 2002). The scale consists of 10 dichotomized queries regarding whether an indicated symptom has been experienced more than twice in the preceding week. Scoring is by rote count of affirmative responses with six or more affirmative replies indicating a positive screen.

— The TSQ accordingly provides an efficient screen in primary-care settings and lends itself to workplace and self-assessment applications. Initial trials showed sensitivity > 0.85 with specificity > 0.90; negative predictive power was reported as 0.93 with positive predictive power calculated at 0.86. Overall screening efficiency was computed to be 90%. Combined with a short depression screen such as that suggested by Henkel et al. (2003, 2004), the resulting combination can provide a simple but effective instrument for a primary screen.

3. ***Stepped care, providing treatment titrated to demonstrated clinical need, is now recommended in place of preemptive prophylaxis*** — Studies of cardiac patients following major coronary events have found that a significant minority actually do better if not enrolled in seemingly benign interventions such as psycho-educational support and symptom education (Frasure-Smith et al., 2002; Ginzburg, Solomon, & Bleich, 2002). Studies of early interventions based on debriefing techniques have also shown these sorts of paradoxical impacts (cf. Bisson et al., 1997; Mayou, Ehlers, & Hobbs, 2000).

— Cardiac patients who typically used repressive coping strategies fared as well or better than others left to their own devices but deteriorated when involved in ostensibly supportive interventions that challenged their normal patterns of coping. Given that it has often been claimed that emergency medical technicians (EMTs) and firefighters need prophylactic intervention because they tend to utilize repressive coping (cf. Mitchell, 1983 et seq.) and given that those who appear to cope repressively have often been among those targeted for and compelled to attend debriefings and similar interventions, it is imperative such approaches be reconsidered.

— Transient but subsyndromic discomfort that proves recalcitrant or troublesome may be addressed by referral to EAP providers. Self-help programs with demonstrated efficacy in bolstering symptom-management skills and addressing external stressors may also show utility, especially if they are made accessible to those reluctant to accept EAP referral (see Litz, Engel, Bryant, & Papa, 2007, for a pilot study of an online self-management program). Where symptom manifestation reaches clinical thresholds, referral to specialty providers for evidence-based treatment is warranted.

4. ***Evidence-based treatment of clinical conditions by competent and credentialed specialty providers should be considered the standard of care for cases that reach diagnostic thresholds*** — Evidence-based treatments consistent with current authoritative guidelines should form the basis for clinical intervention. Current treatment guidelines favor trauma-focused variants of cognitive behavior therapy (CBT), utilizing graded exposure (see also Institute of Medicine, 2007, for detailed overview of evidence regarding clinical treatment of PTSD). This approach has demonstrated efficacy in a range of applications, including treatment of PTSD in World Trade Center survivors (Levitt, Malta, Martin, & Cloitre, 2007). On the other hand, many treatments typically employed in routine therapy have been found to be relatively ineffective in treating conditions such as PTSD. Documented training and supervised experience in critical techniques such as CBT should therefore be considered imperative in formulating referrals.

The draft protocol for occupational exposures established a programmed sequence of decisions and indicators. It guides the organization through a series of actions beginning with evidence-informed instrumental assistance and support, evidence-based screening

when indicated, referral of clinically significant cases for specialist treatment using evidence-based interventions, and access to employee-assistance services to address additional issues aggravated or exacerbated by the exposure. The protocol is outlined as follows with a process diagram presented in **Figure 1**:

1. ***Experience of a potentially traumatic event (PTE)*** — A trauma for one responder may be a routine experience to another. The reaction is in large measure subjective — driven by individual experiences, sensibilities, and personal situations. The first question should be, "Does the provider desire assistance?" If so, the responder may request that the protocol be initiated; if not, expression of concern and the availability of help if needed may be all that is immediately required.

2. ***Time-out /hot wash*** — The "hot wash" is an element of the military after-action review (AAR) process (Baird, Holland, & Deacon, 1999) that, especially if flavored as indicated with principles of psychological first aid, can make the time-out advocated by Halpern et al. (2008) useful, helpful, and nonintrusive. Its basic structure is simple: What happened? What was successful? What could have gone better? How might we improve? Who should we tell about what we have learned? If that approach appears sufficient, the process may be complete; if serious issues are obvious, referral for assessment is prudent. If still unsettled, a quick and nonintrusive screen such as the TSQ may be employed at 3 to 4 weeks.

3. ***TSQ screening*** — As noted earlier, the TSQ is simple, straightforward, and easily scored. If fewer than six items are endorsed, resolution can generally be expected. If six or more items receive positive responses, referral for a more complete assessment is indicated. Should a given provider screen as subsyndromic but still need assistance with symptom regulation or compounding life issues, appropriate referral for basic EAP assistance should be considered.

4. ***Complete assessment*** — This assessment can typically be accomplished by a qualified EAP provider using appropriately validated instruments. Specialty treatment may not be indicated, but the EAP can help with symptom management or external stressors that might be complicating the provider's usual capacity to deal with the circumstance. Where clinical treatment is indicated, referral should be made to a competent specialist fully qualified in appropriate evidence-based techniques.

5. ***Treatment by specialty clinician*** — The specialist (typically a board-certified psychiatrist; a licensed, doctoral-level psychologist; or a certified clinical social worker) should have

advanced training and supervised experience in specific, evidence-based treatment models supported by current clinical guidelines (e.g., CBT for PTSD, anxiety disorders, and depression). Occupationally related PTSD has typically responded to relatively short treatment cycles (12 to 25 sessions in the Levitt et al., 2007, study) but is often accompanied by other issues that may benefit from further EAP assistance (e.g., family impacts). Accordingly, evaluation for other needed or desired assistance completes the protocol.

Figure 1: Process Model for Organizational Support and Intervention
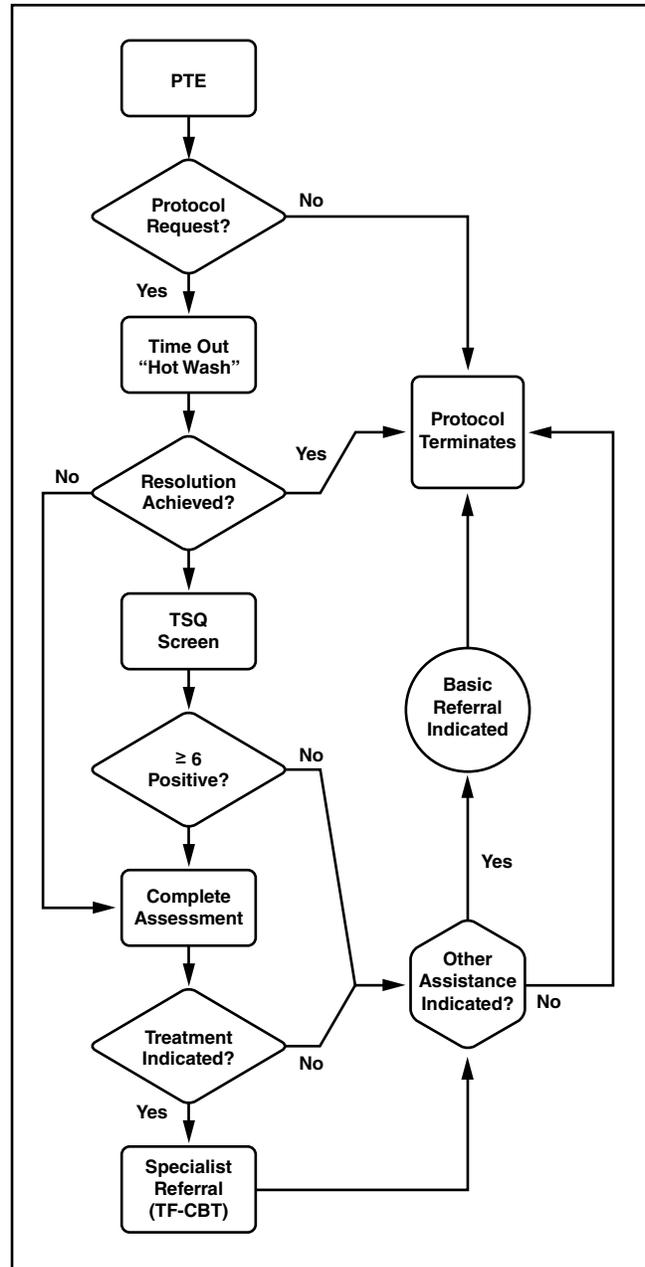
Note: PTE = potentially traumatic event; TSQ = trauma screening questionnaire; EAP = employee assistance program; TF-CBT = trauma focused-cognitive behavioral therapy.

This protocol, with limited modifications, was accepted by consensus as the recommended approach to occupational exposure to PTEs in fire service and EMS organizations.

Strategies for Implementation

Given the principles and strategies established for effective knowledge translation in this domain, the group identified the following questions for each step in the protocol:

- What is the current best evidence and best practice related to that step?

- Where is there existing material consistent with current best evidence and best practices that can be adapted for fire service and EMS implementation?

- What would be required to adapt current materials to a format and structure amenable to fire service and EMS applications?

The following materials were identified and translation strategies recommended:

1. ***Company level*** — AAR is the first step in the PTE flowchart, providing a context for the hot-wash discussion. Its function, however, is much more significant as a consistent element of everyday organizational activity than as an element of the PTE response. Accordingly, efforts to implement a systematic program of company level AAR was identified as a key element of implementing FLSI 1: *Define and advocate the need for a cultural change within the fire service relating to safety; incorporating leadership, management, supervision, accountability and personal responsibility.*

   — Ten years of systematic investigations identified maintenance of effective command and control as among the most critical factors in preventing firefighter line-of-duty deaths (Ridenour et al., 2008). The development of the contemporary Incident Management System (IMS) has given the American fire service a critical tool to ensure that every event we encounter, from the most basic and routine to the most complex and demanding, can be managed using a consistent template. That template can expand to accommodate the needs of major, rapidly escalating events and contract to provide safe and effective oversight of even the most ordinary situation or circumstance.

   — Consistent use of this system, everyday for everything, has been a vital part of making IMS successful as a safety tool. IMS allows those responsible for safety and execution to concentrate on those features of the

evolving event that make it unique and to turn their decisions into effective actions quickly, reliably, and efficiently. But IMS provides an answer to only part of the problem.

— Organizational subunits must also consistently capture and capitalize on that information that comes from the service-delivery activity at the level of primary contact and engagement. Done properly, this activity also facilitates movement from the hierarchical structure and interaction patterns of IMS back to the lateral discussions that characterize "local learning" around the firehouse table. It can also help ensure that safety becomes a central part of those everyday discussions.

— An important factor that facilitated integration of IMS in the fire service is found in its similarity to things the best commanders did almost by instinct. The evolution of the IMS model came about over a number of years as fire service leaders distilled those best practices into systematic principles that could be taught, learned, and applied consistently by officers at all levels of rank and experience. A system of operational review — indicated repeatedly as the major collateral benefit of CISD and recognized in the U.S. DoD/DoJ Consensus Report (NIMH, 2002) as a critical organizational element that needed to be separated from CISD and reformulated — is therefore a critical fundamental step for both organizational safety and efficiency and, as a collateral benefit, promoting natural resolution in situ.

— The military's system of AAR may be the best model yet for helping the fire service take this next step. Like IMS, it provides a template that is devilishly simple and easily adaptable. Like IMS, it can expand and contract to meet the needs of any event. Like IMS, it is useful for any encounter, large or small, exceptional or routine. And like IMS, its utility for the "Big One" is built on its daily utilization throughout the organization.

— A good operating summary of the AAR can be found in just a few basic questions to be asked and answered in any operating unit, whether it is a soldier or two handling a logistical function or a reconnaissance group coming back from patrol — whether it is a mission that has been fully completed or a component evolution that will be executed many more times to follow:

   • What was the objective of the engagement?

- What outcomes were achieved by the engagement?

- What was learned from this engagement?

- What went well? What should be done differently?

- Who needs to know what we have learned?

— The foundation for effective AAR is the unit-level hot wash in which these questions are consistently and reliably (even if informally) addressed at the end of every encounter. Larger and more structured formal reviews for more complex incidents are done by aggregation and analysis of unit-level AAR reports with findings and recommendations translated into procedural and training implications. But the crux of it all is the consistency with which those short, straightforward reviews are conducted at the company level — in large incidents and small encounters, day in and day out, everywhere in the organization. Even quality-management gurus like Peter Senge have described it as "arguably one of the most successful organizational learning methods yet developed" (Senge, 2001, p. 2).

— *Translation strategies and progress to date*: A training curriculum for company-level AAR has been developed and piloted as a *Fire Engineering University* continuing education offering (Siarnicki & Gist, 2010). A workshop model for delivery has also been developed and was pilot tested in two major trade-conference settings during the summer of 2011. Funding was sought for full production and circulation of a "hand-off" continuing education product as the centerpiece of a major industry-wide campaign in 2012.

2. ***Psychological first aid (PFA)*** — PFA is an evidence-informed best practices strategy for providing immediate support following PTEs (e.g., Brymer et al., 2006). More specifically, the National Center for Post-Traumatic Stress Disorder (NCPTSD), in conjunction with the U.S. Department of the Navy, produced a variation of these approaches for use by Navy and Marine units deployed into combat situations (Nash, Westphal, Watson, & Litz, 2010). The Combat and Operational Stress First Aid (COSFA) approach was identified as particularly well-suited to adaptation for fire service organizations.

— *Translation strategies and progress to date*: The NCPTSD was contracted to produce two versions of COFSA specifically for distribution to and utilization by first responders in fire

services and EMS. In addition to adaptation of the program for peer-support utilization (see below), a more basic derivative designed for daily use with typical civilian emergencies was envisioned to ensure that the fundamentals would become a practiced element of routine interactions. That product has been prepared for delivery as an in-service/continuing education (CE) curriculum package of 90 minutes (1.5 CEUs [continuing education units]) that would be compatible with state EMS CE requirements. The package is now slated for full release in late 2012.

— Dissemination strategy is to circulate widely in industry in partnership with other training organizations to promote daily use in citizen contacts. The skills to be applied in dealing with firefighter and EMT exposure are fundamentally the same to those required in civilian treatment; skills applied daily are therefore readily in command when required for application to firefighter/EMT encounters.

3. ***TSQ/WHO-5 screening instruments*** — The TSQ and the WHO-5 are screening instruments with established efficacy and utility in primary settings (Brewin et al., 2002; Henkel et al., 2003). The WHO-5 may also provide useful and reliable screening for depression when adapted to include as few as two queries (Henkel et al., 2004).

— Both screening instruments are in the public domain. Scoring for each is exceedingly direct, requiring no specialized training. No specific adaptation is therefore required.

— *Translation strategies and progress to date*: Existing information has been collated and presented in a web format for retrieval and utilization as indicated in protocol.

4. ***Resources for PTSD assessment*** — Qualified health professionals, including EAP providers and others serving fire service and EMS organizations, should be able to perform a complete assessment where indicated. Assessment is a critical part of professional training, and appropriately licensed practitioners should have substantial training in this general arena. Assessment for PTSD and related issues connected to occupational exposure to PTEs may not, however, be a frequently demanded aspect of practice for many practitioners and hence may not be a well-developed area of expertise. Accordingly, access to resources needed to inform and implement a comprehensive assessment should be available in a convenient and utilizable format for health professionals serving rescue personnel and organizations.

— There are resources accessible in the public domain that can be utilized to help address this need. The National Academy of Science, through the Institute of Medicine, has published a state-of-the-art review regarding diagnosis and assessment of PTSD (Institute of Medicine, 2006). This document is available on its website (http://books.nap.edu/openbook.php?record_id=11674&page=R1) for online review. The NCPTSD has dedicated a section of its website to assessment strategies and instruments (http://www.ncptsd.va.gov/ncmain/assessment). Instruments and strategies developed by NCPTSD are directly available, and information regarding access to other instruments is provided.

— *Translation strategies and progress to date*: These strategies are stable elements of publicly accessible websites. Access will also be provided from links on the *Everyone Goes Home®* website.

5. ***Enhanced specification of standards for behavioral health-assistance providers emerged as an unanticipated but critical concern*** — NFPA® 1500 mandates that every fire department make a "member-assistance program" available for fire department personnel and their families. This mandate has been an important element of the standard and has led to a very substantial increase in access to basic counseling and other assistive services. For many departments, this program represents the primary and sometime the only avenue for professional behavioral health care.

— The first work group tackling Initiative 13 quickly identified reliable access to fully qualified behavioral health professionals prepared to competently deliver evidence-based care as a critical element in moving the initiative forward. Accordingly, a second working group was convened in Baltimore in April, 2009, to consider issues involved with access to quality professional care. That group represented the same cadre of fire service organizations; but this time, it included academics, researchers, and practitioners with particular knowledge of occupational behavioral health.

— EAPs grew from an early interest of employers in reducing lost productivity due to alcoholism. Early approaches were often peer driven worker-to-worker models with underpinnings similar to self-help movements such as Alcoholics Anonymous (AA). Access to more professional intervention and resources became a central feature as these programs evolved, and their

focus expanded to include a much wider range of problems in living. Any number of different configurations for delivering an almost endless variety of services has emerged. No two systems are likely to be quite the same; and no clear guideline could be identified for what services should be delivered by what level of provider, according to what standards of care or outcome.

— Professionals from the field pointed out that employee-assistance programming was more a business model and marketing strategy than a distinct package of services with established standards of care. A series of changes was recommended for the next revision of NFPA® 1500 to establish clear guidance for fire departments in designing specifications for the professional services aspects of their behavioral health-assistance programs.

— *Translation strategies and progress to date*: Recommendations for alteration to Chapter 11 of NFPA® 1500 were developed and submitted for consideration in the ongoing revision process. These recommendations were adopted by the technical committee with only minor revisions and were in the public-comment phase for action late in 2011. Once adopted, NFFF will work with constituency groups to develop a user-friendly handbook on writing requests for proposals (RFPs) and specifications for behavioral health-assistance programs to be used by fire service and EMS organizations and also to provide training to potential providers on adapting their offerings to current best practices and standards. A pilot workshop was held for the Employee Assistance Professionals Association (EAPA) annual conference in late 2011.

6. ***Online clinician training in evidence-based treatments is a critical element in implementing the strategies proposed under Initiative 13*** — The National Crime Victims Research and Treatment Center (NCVRTC) at the Medical University of South Carolina, with support from the National Child Traumatic Stress Network, the Substance Abuse and Mental Health Services Administration, and the U.S. DoD has developed and implemented a web-based training program in Trauma Focused-Cognitive Behavior Therapy (TF-CBT) directed toward journeyman clinicians dealing with victims of child sexual abuse and another in Cognitive Processing Therapy (CPT) for clinicians serving military personnel.

— The training sites listed have developed wide subscription and boast an outstanding completion rate. These platforms are readily

adaptable to support a training directed toward adult treatment of occupational exposures.

— *Translation strategies and progress to date*: NFFF and NCVRTC have partnered to submit a fire-prevention and safety proposal under the federal Assistance to Firefighters Grants Program to develop a web-based training program specifically geared toward journeyman clinicians treating fire service and EMS personnel. Funding was secured, and the project was underway with a "go-live" date in late 2012. The program will instruct clinicians in the nature of fire service and EMS occupations and the exposures they present and will provide specific training in the application of CBT and exposure techniques in the treatment of fire service and EMS personnel.

7. ***Peer support role development and training resources were also recognized as an important aspect of both prevention and intervention*** — Much evidence and much experience demonstrate that peer participation can be critical in building success for occupational health programming. However, there is also a substantial body of research and experience that demonstrates risks for misadventure if the programs are not properly designed, carefully structured, well-supervised and supported, continuously evaluated, and strongly integrated with effective professional services.

— The diversity of the nation's fire service and EMS organizations and the people who elect to serve means that effective approaches must be closely attuned to the climate and culture of the individual organizations; no single approach will work for everyone. A subsequent consensus group set its focus on developing easily accessible and inexpensive ways to identify best practices, make them available to the diverse range of organizations providing fire service and EMS, and support their development and functioning in ways that enhance the capacity of peers to safely and effectively contribute to the health and safety of their coworkers and their organizations. The first strategies identified for actions included participation in an international project to establish consensus standards for peer-support programs and adaptation of military peer-support training for use in fire service and EMS settings.

— *Translation strategies and progress to date*: Members of the peer-support advisory group served as subject-matter experts in a Delphi project conducted on behalf of

the ACPMH (2011). The preliminary results have been reported and are awaiting formal publication; once published, they will provide a basis for developing recommendations on peer-support programming. The NCPTSD was also contracted to adapt its *Combat and Operational Stress First Aid* manuals and protocols developed for the U.S. Department of the Navy and used with Navy and Marine combat-stress programs. These adaptations have been reviewed by the peer-support advisory group and are now being prepared for web-based delivery. Pilot presentation of the finished product was conducted in September, 2012, with implementation of the "train the trainers" program to begin in early 2013.

8. ***Web-based self-help programs*** — These programs were identified as holding strong potential for improving resiliency support, symptom management, self-assessment, and self-referral where conditions are not perceived by the firefighter or EMT to warrant presentation for direct clinical assistance Much information can be found on the Worldwide Web that relates to health, safety, and behavioral wellness of firefighters and EMTs. What was clearly lacking was a trusted, noncommercial, well-focused, and easily recognizable site where firefighters and EMTs could look for well-organized, easily understood, and readily applicable resources to help themselves and their coworkers address the behavioral aspects of health, wellness, and safety in the workplace and beyond. The working groups sought models from related enterprises that might be adaptable for the fire service and explored how to make them available.

— Among the most well-developed approaches was a website developed by the U.S. Department of Veteran Affairs for military personnel returning from assignments. *After Deployment* (http://www.afterdeployment. org) is a multi-featured, highly interactive online resource that provides personnel and their families a wide range of information regarding areas identified as important by those returning from duty. There are self-screening quizzes ("Check How You're Doing") one can take to track his or her progress. There are a number of narrated short "video workshop" features on issues such as adjusting to war memories, dealing with depression, overcoming anger, controlling drugs and alcohol, improving relationships, succeeding at work, and balancing life. There are video stories from a range of actual veterans, describing their own experiences and those of their cohorts.

There are links to a variety of resources, including blogs, discussions, and podcasts. All content has been carefully developed to reflect the best information available from substantive research and recognized best practices. Members of its development team were participants in the working sessions and indicated that the platform could be easily adapted for fire service and EMS applications (similar to strategies for web-based training of clinicians outlined earlier).

— *Translation strategies and progress to date*: Preliminary exploration has begun to identify resources needed to create a fire service and EMS analog to *After Deployment*. Development of this project will commence in earnest as the peer-support working group completes the *Stress First Aid* adaptation and pilots.

Progress, Impact, and Future Directions

Outstanding progress has been made toward providing fire service and EMS organizations effective, accessible, and evidence-supported alternatives to behavioral-health programs that have shown limited efficacy and potential for paradoxical outcomes in controlled empirical research. Even more significant has been the development of an effective program for knowledge translation from academic, research, and professional-practice domains into practical applications for the fire service and EMS. In any applied domain, advancement is strongly dependent on such knowledge-translation mechanisms and can be seriously, even profoundly, inhibited by their absence. The FLSI 13 model presents an easily replicable approach for use in advancing the remaining FLSIs and, reaching further, to facilitate the future growth and development of fire service and EMS as professional occupations and an effective community service.

References

Adler, A. B., Litz, B. T., Castro, C. A., Suvak, M., Thomas, J. L., Burrell, L., . . . Bliese, P. D. (2008). A group randomized trial of critical incident stress debriefing provided to U.S. peacekeepers. *Journal of Traumatic Stress, 21*, 253–263.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., revised). Washington, D.C.: Author.

Australian Centre for Posttraumatic Mental Health (ACPMH). (2007). *Australian guidelines for the treatment of adults with acute stress disorder and posttraumatic stress disorder*. Melbourne, Victoria, Australia: Author.

Australian Centre for Posttraumatic Mental Health (ACPMH). (2011). *Development of guidelines on peer support using the Delphi methodology* (Unpublished report). Retrieved from ACPMH website: http://www.acpmh.unimelb.edu.au

Baird, L., Holland, P., & Deacon, S. (1999). Learning from action: Imbedding more learning into the performance fast enough to make a difference. *Organizational Dynamics, 27*(4), 19–32.

Bisson, J. I., Jenkins, P. L., Alexander, J., & Bannister, C. (1997). A randomised controlled trial of psychological debriefing for victims of acute harm. *British Journal of Psychiatry, 171*, 78–81.

Bonanno, G. A. (2004). Loss, trauma, and human resilience — Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*, 20–28.

Brewin, C. R., Rose, S., Andrews, B., Green, J., Tata, P., McEvedy, C., . . . Foa, E. B. (2002). Brief screening instrument for post-traumatic stress disorder. *British Journal of Psychiatry, 181*, 158–162.

Brymer, M., Jacobs, A., Layne, C., Pynoos, R., Ruzek, J., Steinberg, A., . . .Watson, P. (2006). *Psychological first aid: Field operations guide* (2nd ed.). National Center for Post-Traumatic Stress Disorder (NCPTSD). Retrieved from http://www.ncptsd.va.gov/ncmain/ncdocs/manuals/PFA_2ndEditionwithappendices.pdf (Accessed February 1, 2009).

Cabana, M. D., Rand, C. S., Powe, N. R., Wu, A. W., Wilson, M. H., Abboud, P. A., & Rubin, H. R. (1999). Why don't physicians follow clinical practice guidelines? A framework for empowerment. *Journal of the American Medical Association, 282*, 1458–1465.

Carlier, I. V. E., Lamberts, R. G., van Uchlen, A. J., & Gersons, B. P. R. (1998). Disaster related post-traumatic stress in police officers: A field study of the impact of debriefing. *Stress Medicine, 14*, 143–148.

Choi, B. C. K., McQueen, D. V., & Roolman, I. (2003). Bridging the gap between scientists and decision makers. *Journal of Epidemiology and Community Health, 57*, 327–333.

Cone, D. C. (2007). Knowledge translation in the emergency medical services: A research agenda for advancing prehospital care. *Academic Emergency Medicine, 14*, 1052–1057.

Davis, D., Evans, M., Jadad, A., Perrier, L., Rath, D., Ryan, D., & Zwarenstein, M. (2003). The case for knowledge translation: Shortening the journey from evidence to effect. *British Medical Journal, 327*, 33–35.

Deahl, M. P., Gillham, A. B., Thomas, J., Dearle, M. M., & Strinivasan, M. (1994). Psychological sequelae following the Gulf War: Factors associated with subsequent morbidity and the effectiveness of psychological debriefing. *British Journal of Psychiatry, 165*, 60–65.

Devilly, G. J., & Cotton, P. (2003). Psychological debriefing and the workplace: Defining a concept, controversies and guidelines for intervention. *Australian Psychologist, 38*, 144–150.

Devilly, G. J., & Cotton, P. (2004). Caveat emptor, caveat venditor, and critical incident stress debriefing/management (CISD/M). *Australian Psychologist, 39*, 35–40.

Devilly, G. D., Gist, R., & Cotton, P. (2006). Ready! Fire! Aim! Psychological debriefing services and intervention in the workplace. *Review of General Psychology, 10*, 318–345.

Everly, G. S., & Mitchell, J. T. (2003). *Critical incident stress management (CISM): Individual crisis intervention and peer support*. Ellicott City, MD: International Critical Incident Stress Foundation (ICISF).

Everly, G. S., Flannery, R. B., & Eyler, V.A. (2002). Critical incident stress management (CISM): A statistical review of the literature. *Psychiatric Quarterly, 73*, 171–182.

Everly, G. S., Flannery, R. B., & Mitchell, J. T. (2000). Critical incident stress management (CISM): A review of the literature. *Aggression and Violent Behavior, 5*, 23–40.

Frasure-Smith, N., Lespérance, F., Gravel, G., Masson, A., Juneau, M., & Bourassa, M. G. (2002). Long-term survival differences among low-anxious, high-anxious and repressive copers enrolled in the Montreal heart attack readjustment trial. *Psychosomatic Medicine, 64*, 571–579.

Ginzburg, K., Solomon, Z., & Bleich, A. (2002). Repressive coping style and adjustment following myocardial infarction (MI). *Psychosomatic Medicine, 64*, 748–757.

Gist, R. (2007). *Strategic implementation plan: Initiative 13*. (Unpublished internal document). National Fallen Firefighters Foundation (NFFF), *Everyone Goes Home® Project*.

Gist, R., & Devilly, G. J. (2002). Post-trauma debriefing: The road too frequently travelled. *The Lancet, 360*, 741–742.

Gist, R., Lubin, B., & Redburn, B. G. (1998). Psychosocial, ecological, and community perspectives on disaster response. *Journal of Personal & Interpersonal Loss, 3*, 25–51.

Gist, R., & Taylor, V. H. (1996). Line-of-duty deaths and their effect on co-workers and their families. *Police Chief, 63*(5), 34–37.

Gist, R., & Taylor, V. H. (2007). *Initiative 13.* Everyone Goes Home® project (NFFF White Paper). Emmitsburg, MD: National Fallen Firefighters Foundation (NFFF).

Gist, R., & Taylor, V. H. (2008). Occupational and organizational issues in emergency medical services behavioral health. *Journal of Workplace Behavioral Health, 23*, 309–330.

Gist, R., & Taylor, V. H. (2009). Prevention and intervention for psychologically stressful events. In R. Bass, J. H. Brice, T. R. Delbridge, & M. R. Gunderson (Eds.), *Medical Oversight of EMS* (Vol. 2, pp. 386–396). Dubuque, IA: Kendall/Hunt Publishing.

Gist, R., & Woodall, S. J. (1995). Occupational stress in contemporary fire service. *Occupational Medicine: State of the Art Review, 10*, 763–787.

Gist, R., & Woodall, S. J. (2000). There are no simple solutions to complex problems. In J. M. Violanti & P. Douglas (Eds.). *Posttraumatic stress intervention: Challenges, issues, and perspectives* (pp. 81–95), Springfield, IL: Charles C. Thomas.

Gist, R., Woodall, S. J., & Magenheimer, L. K. (1999). And then you do the Hokey-Pokey and you turn yourself about . . . . In R. Gist & B. Lubin (Eds.). *Response to disaster: Psychosocial, community, and ecological approaches* (pp. 269–290). Philadelphia, PA: Brunner/Mazel.

Gray, M. J., & Litz, B. T. (2005). Behavioral interventions for recent trauma: Empirically informed practice guidelines. *Behavior Modification, 29*, 189–215.

Griffith, J., & Watts, R. (1992). The Kempsey and Grafton bus crashes: The aftermath. East Lismore (Australia): Instructional Design Solutions.

Halpern, J., Gurevicj, M., Schwartz, B., & Brazeau, P. (2008). Interventions for critical incident stress in emergency medical services: A qualitative study. *Stress and Health*. Retrieved from http://dx.doi.org/10.1002/smi.1230 2009 (Accessed February 5, 2009).

Hawker, D. M., Durkin, J., & Hawker, D. S. (2010). To debrief or not debrief our heroes: That is the question. *Clinical Psychology & Psychotherapy.* Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/cpp.730

Henkel, V., Mergl, R., Coyne, J. C., Kohnen, R., Möller, H. J., & Hegerl, U. (2004). Screening for depression in primary care: Will one or two items suffice? *European Archives of Psychiatry & Clinical Neurosciences, 254*, 215–223.

Henkel, V., Mergl, R., Kohnen, R., Maier, W,. Möller, H. J., & Hegerl, U. (2003). Identifying depression in primary care: A comparison of different methods in a prospective cohort study. *British Medical Journal, 326*, 200–201.

Hobbs, M., Mayou, R., Harrison, B., & Worlock, P. (1996). A randomised controlled trial of psychological debriefing for victims of road traffic accidents. *British Medical Journal, 313*, 1438–1439.

Institute of Medicine. (2001). *Crossing the quality chasm: A new health system for the 21st Century*. Washington, D.C.: National Academies Press.

Institute of Medicine. (2006). *Posttraumatic stress disorder: Diagnosis and assessment*. Washington, D.C.: National Academies Press.

Institute of Medicine. (2007). *Treatment of posttraumatic stress disorder: An assessment of the evidence*. Washington, D.C.: National Academies Press.

Kenardy, J. A., Webster, R. A., Lewin, T. J., Carr, V. J., Hazell, P. L., & Carter, G. L. (1996). Stress debriefing and patterns of recovery following a natural disaster. *Journal of Traumatic Stress, 9*, 37–49.

Kilian, B. J., Binder, L. S., & Marsden, J. (2007). The emergency physician and knowledge transfer: Continuing medical education, continuing professional development, and self-improvement. *Academic Emergency Medicine, 14*, 1003–1007.

Landen, S. M., & Wang, C. C. (2010). Adult attachment, work cohesion, coping, and psychological well-being of firefighters. *Counseling Psychology Quarterly, 23*, 143–162.

Lee, C., Slade, P., & Lygo, V. (1996). The influence of psychological debriefing on emotional adaptation in women following early miscarriage: A preliminary study. *British Journal of Medical Psychology, 69*, 47–58.

Levitt, J. T., Malta, L. S., Martin, A., & Cloitre, M. (2007). The flexible application of a manualized treatment for PTSD symptoms and functional impairment related to the 9/11 World Trade Center attack. *Behavior Research and Therapy, 45*, 1419–1433.

Lilienfeld, S. O. (2008). Psychological treatments that cause harm. *Perspectives on Psychological Science, 2*, 53–70.

Litz, B. T., Engel, C. C., Bryant, R. A., & Papa, A. (2007). A randomized, controlled proof-of-concept trial of an Internet-based, therapist-assisted self management treatment for posttraumatic stress disorder. *American Journal of Psychiatry, 164*, 1676–1683.

Lohr, J. M., Hooke, W., Gist, R., & Tolin, D. F. (2003). Novel and controversial treatments for trauma-related stress disorders. In S. O. Lilienfeld, S. J. Lynn, & J. M. Lohr (Eds.), Science and pseudoscience in clinical psychology (pp. 243–272). New York: Guilford Press.

Mayou, R. A., Ehlers, A., & Hobbs, M. (2000). Psychological debriefing for road traffic accident victims: Three-year follow-up of a randomized controlled trial. *British Journal of Psychiatry, 176*, 589–593.

McNally, R. J., Bryant, R. A., & Ehlers, A. (2003). Does early psychological intervention promote recovery from posttraumatic stress? *Psychological Science in the Public Interest, 4*(2).

Mitchell, J. T. (1983). When disaster strikes . . . . *Journal of Emergency Medical Services, 8*(1), 36–39.

Mitchell, J. T. (2002). Critical incident stress management. In A. Kuehl (Ed.), *Prehospital systems and medical oversight* (2nd ed., pp. 914–921). Dubuque, IA: Kendall Hunt.

Mitchell, J. T. (2004a). Crisis intervention and critical incident stress management: A defense of the field. Retrieved from http://www.icisf.org/articles/Acrobat%20Documents/CISM_Defense_of_Field.pdf (Accessed February 1, 2009).

Mitchell, J. T. (2004b). Crisis intervention and critical incident stress management: A research summary. Retrieved from http://www.icisf.org/articles/cism_research_summary.pdf (Accessed February 1, 2009).

Mitchell, J. T., & Everly, G. S., Jr. (1993). *Critical Incident Stress Debriefing: An operations manual for the prevention of traumatic stress among emergency services and disaster workers.* Ellicott City, MD: Chevron Publishing.

Mitchell, J. T., & Everly, G. S., Jr. (1997). The scientific evidence for critical incident stress management. *Journal of Emergency Medical Services, 22*, 86–93.

Mowatt, G., Grinshaw, J. M., Davis, D. A., & Mazmanian, P. E. (2001). Getting evidence into practice: The work of the Cochrane Effective Practice and Organization of Care Group. *Journal of Continuing Education in the Health Professions, 21*, 55–60.

Nash, W. P., Westphal, R., Watson, P. J., & Litz, B. T. (2010). *Combat and operational stress first-aid training manual.* Washington, D.C.: U.S. Navy, Bureau of Medicine and Surgery.

National Biodefense Science Board (Disaster Mental Health Subcommittee). (2008). Disaster mental health recommendations. Retrieved from http://www.hhs.gov/aspr/conferences/nbsb/dmhreport-final.pdf (Accessed February 5, 2009).

National Fallen Firefighters Foundation (NFFF). (2007). *White paper series: Everyone Goes Home® 16 Firefighter Life Safety Initiatives.* Retrieved from http://www.everyonegoeshome.com/summit/whitepapers.pdf (Accessed February 1, 2009).

National Fire Protection Association® (NFPA®). (2007). NFPA® 1500: *Standard on Fire Department Occupational Safety and Health Programs*. Quincy, MA: Author.

National Institute for Clinical Excellence (NICE). (2005). *Posttraumatic stress disorder: The management of PTSD in adults and children in primary and secondary care*. Trowbridge, Wiltshire, UK: Cromwell Press Ltd.

National Institute of Mental Health (NIMH). (2002). *Mental health and mass violence: Evidence-based intervention for victims/survivors of mass violence* (National Institutes of Health [NIH] Publication No. 02-5138). Washington, D.C.: U.S. Government Printing Office.

Rawlins, M. D., & Cuyler, A. J. (2004). National Institute for Clinical Excellence (NICE) and its value judgments. *British Medical Journal, 329*, 224–227.

Rose, S., Wessely, S., & Bisson, J. (2007). Brief psychological interventions ("debriefing") for trauma-related symptoms and prevention of post traumatic stress disorder: Review. *The Cochrane Library, Issue 4*.

Ridenour, M., Noe, R. S., Proudfoot, S. L., Jackson, J. S., Hales, T. R., & Baldwin, T. N. (2008). *Leading Recommendations for Preventing Fire Fighter Fatalities, 1998–2005* (Publication No. 2009-100).Washington, D.C.: U.S. Department of Health and Human Services.

Senge, P. (2001). Introduction. In M. Darling & C. Perry (Eds.), *From post-mortem to living practice: An in-depth study of the evolution of the after action review*. Boston, MA: Signet.

Siarnicki, R. J., & Gist, R. (2010). Changing the culture of safety in the fire service. *Fire Engineering University*. (Pennwell Publications). Retrieved from http://www.fireengineeringuniversity.com/courses.aspx?cat=Health+and+Fitness

Sijbrandij, M., Olff, M., Reitsma, J. B., Carlier, I. V. E., & Gersons, B. P. R. (2007). Emotional or educational debriefing after psychological trauma: Randomized controlled trial. *British Journal of Psychiatry, 189*, 150–155.

Taylor, S. E., and Lobel, M. (1989). Social comparison activity under threat: Downward evaluation and upward contacts. *Psychological Review, 96*, 569–575.

Van Emmerick, A. A. P., Kamphuis, J. H., Hulsbosch, A. M., & Emmelkamp, P. M. G. (2002). Single session debriefing following psychotrauma, help or harm: A meta-analysis. *The Lancet, 360*, 766–771.

Waeckerle, J. F., Cordell, W. H., Wyer, P. C., & Osborn, H. H. (1997). Evidence-based emergency medicine: integrating research into practice. *Annals of Emergency Medicine, 30*, 626–8.

World Health Organization (WHO). (2005). Single session psychological debriefing: Not recommended (Advisory circular). Retrieved from http://www.who.int/mental_health/media/en/note_on_debriefing.pdf

About the Authors

Ronald Jon Siarnicki, Executive Director of the National Fallen Firefighters Foundation (NFFF), began his career as a firefighter with the Prince George's County Fire/EMS Department in 1978 and, over 24 years, progressed through the ranks to Chief of the Department. In this position, he served as the Chief Executive Officer responsible for the fire, rescue, and EMS of Prince George's County, Maryland. Prior to joining the Prince George's County Fire/EMS Department, he served as a volunteer firefighter with the Monessen Volunteer Fire Department, Hose House No. 2, in western Pennsylvania. In doing so, he followed a family tradition — both his father and grandfather were volunteer firefighters.

In July 2001, he retired from the Prince George's County Fire/EMS Department to take the position of Executive Director of the NFFF. In addition, he oversees the development and direction of the *Everyone Goes Home®* Program designed to reduce the number of firefighter line-of-duty deaths and injuries that occur each year in the United States. Chief Siarnicki delivers presentations at fire and emergency conferences and meetings across the country, increasing awareness of the Foundation, the efforts of its prevention work, and support for the families of the fallen. In recognition of his outstanding leadership with the Foundation and the fire service as a whole, he has been recognized by various groups and organizations to include The Fire Engineering Lifetime Achievement Award: 2010, Alan Brunacini Fire Services Executive Safety Award from the International Association of Fire Chiefs (IAFC): 2007, Metropolitan Fire Chiefs' Presidents Award of Distinction: 2007, and the 2012 Everett E. Hudiburg Award from IFSTA.

A strong proponent of higher education, he earned both his bachelor's and master's degrees from the University of Maryland University College (UMUC) and served as a UMUC faculty member for the Fire Science Curriculum.

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Dr. Gist was trained as a community psychologist (a public health-related specialty) and currently holds adjunct faculty appointments with the University of Missouri-Kansas City and the University of Kansas. He also maintains various teaching and research affiliations at other colleges and universities. He has been invited as a lecturer in a wide range of settings in the U.S. and abroad. He has assisted a great variety of public safety and social facilitation agencies throughout the U.S. and Canada in developing programs to address organizational and community needs. A widely known author and speaker, he edited (with Bernard Lubin) the classic text, *Psychosocial Aspects of Disaster* from John Wiley and Sons, and a more recent update, *Response to Disaster: Psychosocial, Ecological, and Community Approaches* from Brunner/Mazel. His work on rapid-response intervention in disaster and system-preparedness issues has appeared in venues ranging from *The Lancet*, *American Psychologist*, and the Association for Psychological Science's *Observer to Fire Chief, Police Chief*, and *Journal of Emergency Medical Services*.

Dr. Gist has served as lead consultant and facilitator for a three-year effort to bring top research programs and key fire service organizations together to build readily accessible, cost-effective, and evidence-based approaches for fire and emergency medical services agencies to address occupational behavioral-health needs of their organizations, their personnel, and their families. These innovative approaches proved easily learned, inexpensive best-practice solutions for employee assistance program (EAP) providers serving these critical populations.

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Fire Service Influence on Homeland Security Regionalism and Councils of Governments (COGs)

Abstract
The objective of this paper was to identify the elements necessary for Homeland Security-Councils of Governments (HLS-COGs) to be successful. The HLS-COG can be an effective mechanism for achieving homeland security initiatives if an overarching "shared vision" is created that is supported by defining the following three components: structure, culture of teamwork, and leadership.

Overview

Our nation is once again recalling the events of September 11, 2001 (9/11), following the justified death of Osama bin Laden and focusing on the brave sacrifice made by many of America's heroes. The tragic events of 9/11 resulted in a commitment by America's fire service to "never forget" the sacrifice so many made in the performance of their duties. As part of this commitment, fire service leaders need to be fully engaged in our regional homeland security efforts to prevent, protect, respond, and recover from similar incidents.

"Homeland security" entered the American vocabulary in 2003 as the result of the largest reorganization of the federal government since the creation of the U.S. Department of Defense in 1947 (U.S. Department of Homeland Security [DHS], 2010). Twenty-two agencies in the U.S. government were reorganized to create the U.S. Department of Homeland Security (DHS). The mission of DHS is to lead the unified national effort to secure the country and preserve our freedoms (DHS, 2008).

It is clear that local and state agencies are the bases for carrying out the very mission of homeland security. It is at this grassroots level where the tenets of homeland-security directives are put into practice. With such a crucial mission at stake and with so many stakeholders to account for, regionalizing the effort is a logical approach to mission management. Building coalitions and combining resources can yield an organizational structure that minimizes duplication of effort while maximizing utilization of resources. However, regionalizing the effort to create an organization to effect change yields several demanding questions, including: Why is it that some regional approaches are effective and successful in achieving their objectives while others flounder or fail? What is it that makes an organization effective? What elements are required to achieve success?

There is an intensifying dialogue at all levels of government about the rationale and benefits of working regionally…. However, the reality at the grass roots level is often more complex as governmental entities and first responder officials fear losing control, seek to protect their turf, have overlapping responsibilities or simply fail to recognize the benefits of pursuing regional solutions (National Association of Development Organizations [NADO], 2005).

Research reported here was driven by the concern that the collective successes of our homeland-security efforts at the local level of government are linked to regional structures that may not be capable of achieving the mission. This article explores and identifies the elements of regional structures called Homeland Security-Councils of Governments (HLS-COGs) that are foundational to success. In identifying these elements of success, it is our hope that regional HLS-COGs can more readily reproduce successes across our nation.

"A regional council is a multi-service entity with state- and locally-defined boundaries that delivers a variety of federal, state and local programs" (National Association of Regional Councils (NARC), 2006). These Councils of Governments (COGs), as they are locally known, have existed in various forms for over four decades (NADO, n.d.). We found that many of the COGs that existed prior to the era of homeland security were able to leverage their existing relationships and organizational efforts to provide for more effective regional use of homeland-security funding. More importantly, when we looked at successful HLS-COGs, we identified elements that were foundational to their successes. Other types of regional entities designed to provide efficiency in the use of regional homeland-security funding were not all successful. Our contention is that some form of HLS-COG is most often utilized to

assist local governments at the regional level in making and supporting homeland-security policies (and the distribution of funding), thus tying the success of our national homeland-security efforts to these councils. This linkage makes it imperative to have successful regional entities or HLS-COGs. Our findings provide four primary components — "shared vision" supported by three elements with defining detail — that provide a blueprint for building successful homeland security COGs.

Components of HLS-COGs

As shown in **Figure 1**, success in HLS-COGs is possible when an overarching shared vision is created and supported by three components:

- Structure
- Culture of teamwork
- Leadership

Figure 1: Components Required for Successful HLS-COGs
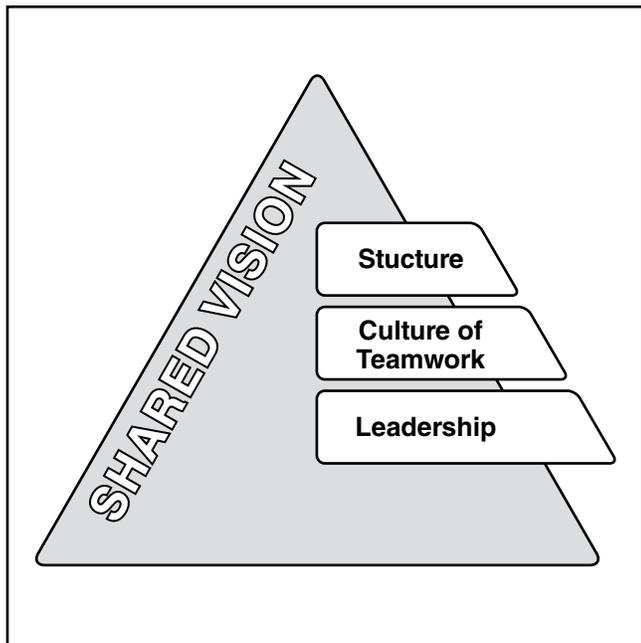
Structure

Representation of the key stakeholders in the area of homeland security would include law enforcement, fire services, emergency medical services (EMS), public health agencies, and emergency management. However, beyond those governmental entities, it is important to recognize the involvement of private enterprise, nongovernmental organizations, and the entire community in homeland security. If a HLS-COG represents a region within a state, then the state, the county, and other local and tribal governments must be represented. Nonetheless, the effectiveness of the HLS-COG can be negatively impacted by the size of its structure. An unwieldy number of participants can stifle progress in any area and thus must be routinely monitored. Rep-

resentation from participating agencies may necessarily be limited to ensure ongoing progress on key initiatives. A charter or similar governing document may help to identify the makeup and structure of the HLS-COG as well as establish its mechanism of operation.

Structures in a HLS-COG are defined as communication, processes and procedures, goals and objectives, partnership, neutrality, and all hazards. Each of these elements must be clearly outlined and understood by all those represented within the HLS-COG:

- **Communication** — An element that must be present throughout the entity is communication. This element includes the communications between the members of the HLS-COG itself as well as any staff and the members. This concept is inclusive — covering both verbal and written communications. The base element here is the ability to share information in a well-planned and organized effort. This information must be able to be captured and inputted into a collection system that is easily accessible. The context of the communication must be consistent to ensure that information sharing is occurring. This sharing enhances the value of the HLS-COG and validates the very purpose for which it was organized. The members of the HLS-COG must be kept informed regularly and consistently. The process has to promote information being available to the individual members in as transparent of a method as possible. The primary reason for a member not being aware of HLS-COG activities should be the failure of that member to participate in the system. Communication failures are generally the result of human, not system, failure.

- **Processes and Procedures** — Within the HLS-COG, processes and procedures need to be transparent, clearly defined, and understood by the constituent members. They need to support the shared vision that is at the heart of the reason for existence of the HLS-COG. Procedures can vary within an organization from nonexistent to overly complex and bureaucratic. Ideally, these processes and procedures for a HLS-COG will fall somewhere in the middle — complex enough to ensure thoughtful consideration of the issues but not so complex as to prevent progress from happening. In addition, the balance or "sweet spot" for the process/procedures needs to be uniquely defined for each location. What works on the West Coast may not work on the East Coast or the High Plains.

- **Clear Goals and Objectives** — Other necessary elements of structure are clear goals and objectives. In order to achieve the shared vision of the HLS-COG, goals and objectives must be agreed upon by the constituent members. Goals should be unambiguous and easily defined by

identifiable benchmarks. Objectives need to be *quantifiable* in terms of time and amount — some refer to this concept by the acronym *SMART* (Specific, Measurable, Achievable, Realistic, and Timely) (Straker, 2011). For example, achieving an 80-percent inspection rate for international cargo at a specified port within three years should be a realistic, achievable objective that is specific, measurable, and timely.

- **Partnership** — An essential element for achieving a shared vision is partnership. Each of the partners needs to view itself as an integral member of the HLS-COG. The contribution of a smaller entity is as vital to the process as that of a larger entity. Nonetheless, an entity's membership in the HLS-COG framework *transcends* its duty to the singular organization it represents.

- **Neutral Entity** — The use of a neutral entity to achieve all of these goals is a necessary element. Essentially, the members of the HLS-COG need to acknowledge that the entity itself has no competing interests with the stakeholders in the outcome of the process. The COG does, however, have a stake in making sure that the process takes place. In many respects, it is like saying the HLS-COG needs to serve as an organizational Switzerland — and provide "good offices" to all members. It needs to be the facilitative entity through which other agencies may achieve their regional goals.

- **All Hazards** — Last, but certainly not least, for the HLS-COG to be truly effective, it must be capable of encompassing an all-hazards approach. The foundational principle upon which homeland security operates by its very nature addresses all hazards — natural and human-caused. Thus, while the various disciplines of the HLS-COG traditionally operate in silos, homeland-security challenges that transcend all hazards engender cooperation across normative boundaries. Operational constraints that limit the capacity of the HLS-COG to operate in multiple arenas effectively become barriers to achieving the goals established by that entity. The credibility of the HLS-COG will be validated if it can overcome those constraints that marginalize its effectiveness.

Culture of Teamwork

The next component that is necessary to ensure the positive functionality of a HLS-COG is a culture of teamwork resident within the organization. Simply defined, *teamwork* is individuals working together toward a common goal (Matthew, 2007). In many respects, this notion embodies the shared vision of why the HLS-COG exists in the first place. This culture of teamwork can be described in the following four elements:

- **Engagement** — Engagement describes the constituent members being *actively* involved in the HLS-COG. It is, in some respects, the mechanism to make sure that the members are actively engaged in seeking and contributing information provided by the processes of the HLS-COG. Further, it encourages the members to be actively working toward creating a HLS-COG identity and making decisions with the good of that shared identity uppermost in their minds. Engagement can also be measured by member interaction in the community. Community engagement is an intentional interaction in which the HLS-COG seeks out representation from all segments of a community potentially impacted by its policy directives. These segments include not only the emergency services community but also the medical community, the religious community, educational leaders, activists, lobby groups, and political representatives that engage community members in substantive dialogue surrounding an initiative. Such an engaged and inclusive process results in a shared awareness of community problems. As a result, the group focuses on proposed solutions to the initiatives with which they are engaged. It also minimizes potential pitfalls that can occur as a result of disengaged groups or those who might potentially feel marginalized.

- **Collaboration** — For community engagement to be sustained and perceived as effective, there must be an emphasis on collaboration. *Collaboration* is a journey that starts with a spirit of *cooperation*, which leads to *coordination*, and is accomplished when there is a *sharing of resources*. Collaboration comes from the shared (not hierarchical) effort of the engaged groups coming together over issues of importance. There should be an interest in working together to generate a single voice despite what may begin as unfocused or divergent views. It is consensus building that gets the organization to work. By collaborating and sharing resources and ideas, a unity of effort is forged that fosters a culture in which objectives may be achieved that serve the mission of the HLS-COG. The collaborative effort also ensures that all the interested parties have the opportunity to become stakeholders and share in the effort and the outcome of the initiative. The shared vision created by the collaborative effort yields a strong sense of mission that will hold a project together even if certain pieces fall out of place.

- **Transparency** — For collaboration to be effective and for community engagement to be realized, the HLS-COG must create an environment of transparency. The element of *transparency* is crucial to finding commonalities and building trust. It needs to be clear to members that all initiatives proposed

by HLS-COG members further the aim of the region and not particularly the individual agency or entity that they represent. There must be regular reporting of all activities surrounding an initiative, and it should be readily accessible to each constituent of the HLS-COG. The establishment of benchmarks and progress, or lack thereof, toward a goal ensures that each entity is perpetually aware of the status of the project and ultimately how it impacts the region. Funding streams, goals, objectives, timelines, committee membership, and open dialogue — each of these elements requires transparency in order to allow HLS-COGs to dispel rumors and allay fears of hidden agendas and secrecy. Because the work of the HLS-COG is generally the work for the citizenry, there is an expectation both internally and externally that operations be transparent. Organizations need to recognize that there is, however, potential for loss of transparency if the entity becomes too large. The result of transparency is that the gauge of success or failure can be measured in an open forum in which biases or interpretations are not hidden but understood on the part of all the parties and actively included in the discussions and decisions of the body.

- **Commitment** — The final element of culture that a COG must obtain and sustain is commitment. *Commitment* is demonstrated by the actions of the HLS-COG members. Do the actual members participate in the meetings? Alternatively, do they continually send designated alternates? The commitment of the members of the HLS-COG is directly proportional to the success of its initiatives. To paraphrase Helmuth von Moltke the Elder, "No plan survives contact with the enemy" (Barnett, 1963, p. 35). To see the plan through to the end requires commitment. If the COG is able to engage key regional leaders with a vision to see the initiatives through, the commitment becomes "contagious." Key leaders across a broad spectrum of disciplines are an enabling element of commitment. Sometimes it is not what is being said, but who is in the room. It is these service-minded leaders and engaged members that will embrace the commitment to battle through the tough challenges and persevere to ensure the final result. The engaged members will seek consensus even if it extends the process. This process allows members to build their visions, thus promoting ownership and solidifying commitment.

Leadership

Within the framework and context of homeland security, the definition of leadership used here is "… an influence relationship among colleagues … a dynamic owned by no one, yet shared among and between collaborators who intend changes reflective of their mutual interests and values" (Maloney, 2010).

Leadership is an expanding academic field that has yet to be adequately defined. An in-depth discussion on the varying types of leadership (transformational, transactional, collective, etc.) is beyond the scope of this article. However, the active support of those in leadership positions is critical to the success of any HLS-COG. The following subelements identify critical areas that must be addressed with respect to leadership in any successful HLS-COG:

- **Policy Level** — This element is extremely important in the HLS-COG. Defined clearly, *policy level* means appropriate representation (someone with the ability to commit resources and set policy priorities within his or her organization) is present at the HLS-COG table. Illustrations appropriate within the context of homeland security would include Public Safety Directors, City/County Managers, Chiefs of Departments, and so on. As previously stated, sometimes it is not what is said at that table that is as important as who is in the room. The importance of this component cannot be overstated. Absent this element, progress on initiatives may become stalled because authority to make critical decisions is not available. Slowed progress can yield frustrated participants who disengage from the process, which ultimately results in its failure to be effective.

- **Political Support** — This element of leadership is also extremely important to the COG. The legitimacy that comes from the support of elected political officials (City/County Commissioners, etc.) is essential. Nevertheless, a 2005 survey of councils of homeland security suggests such support is often not present: "The majority of state and local officials with responsibility for homeland-security preparedness remain slow and resistant to embracing regional approaches" (NADO, 2005, p. 3). Leaders in key positions offering public support can go a long way to ensure the success of an initiative by the HLS-COG. Conversely, lack of political support can doom the process. Lack of buy-in and ownership of the homeland-security efforts by political leaders can cause projects to be derailed and hurt the credibility of the HLS-COG. Thus, a HLS-COG will do well to ensure its direction/initiatives will not generate any negative political impact and will seek a political climate of public support that enhances its mission.

- **Relationships** — The essence of the HLS-COG is relationships. In the absence of the ability to develop relationships and networking with the appropriate people, the HLS-COG will not be functional. This situation holds true both internally

and externally. As was alluded to earlier, functional relationships can foster collaboration and enhance teamwork. Internally established relationships within the HLS-COG allow for effective member interaction with far fewer barriers to collaborative efforts. The communication links established by these relationships and networking facilitate rapid execution of HLS-COG initiatives. External relationships allow members to foresee roadblocks that may impede the progress of the HLS-COG and provide an avenue for mitigating challenges before they become insurmountable.

- *Accountability* — The final element of leadership is accountability, which must be inherent to the HLS-COG. This component fits within the context of leadership because one legitimate form of leadership is to lead "by example." If leaders hold themselves accountable, the other members of the HLS-COG are more likely to follow suit. Accountability ensures that assignments are completed on time, and work products are provided as promised. The challenge comes to the HLS-COG when someone does not perform according to the expectations of the group. Processes must be put in place where those continually failing to meet expectations are held accountable. Establishing these ground rules "up front" will go a long way towards fostering an environment of accountability within the organization.

The core elements of structure, culture of teamwork, and leadership are qualities that are already engrained in the American fire service. In some respects, these components are in fact hallmarks that define these organizations. Throughout the nation, career, volunteer, and combination departments have embraced these qualities as foundations for their collective successes. By lending itself as a principal party in the formation of HLS-COGs, the fire service brings with it tradition and experience that invariably encompasses these key attributes. Supporting a shared vision that fosters relationship building in an effort to define homeland security initiatives should be an effort undertaken by every fire chief.

Conclusion

Success in a HS-COG is possible when an overarching shared vision is created and supported by the components of structure, a culture of teamwork, and leadership. In the case of homeland security, a shared vision is "A nation prepared with coordinated capabilities to prevent, protect against, respond to and recover from all hazards in a way that balances risks with resources and need" (DHS, 2008). An effective HLS-COG wielding a shared vision is an achievable reality. The fire service has a lot at stake in getting involved in and remaining engaged with an effective HLS-COG. Several effective HLS-COG entities exist today throughout the country.

Their successes are based in the foundational elements posited within this article. All that is required is a willingness and concerted effort to affect the changes to make the HLS-COG productive within a vibrant framework capable of achieving our national vision of homeland security.

References

Barnett, Correlli (1963). *The Swordbearers: Studies in Supreme Command in the First World War* (paraphrased quote by Helmuth von Moltke the Elder, p. 35). Retrieved from http://en.wikiquote.org/wiki/Helmuth_von_Moltke_the_Elder (Accessed August 16, 2012).

Maloney, T. (2010). Unpublished email communication to David Matthew, followed by a formal letter to the authors.

Matthew, D. (2007). *Measuring the foundation of homeland security.* (Master's thesis). Retrieved from https://www.hsdl.org/?view&doc=73809&coll=limited (Accessed January 21, 2011).

National Association of Development Organizations (NADO). (n.d.). *NADO home page.* Retrieved from NADO website: http://nado.org/ (Accessed January 21, 2011).

National Association of Development Organizations (NADO). (2005). *Regional approaches to homeland security planning and preparedness: Survey of the nation's regional development orgnizations.* (Report). Retrieved from NADO website: http://www.nado.org/wp-content/uploads/2011/08/hssurvey.pdf (Accessed January 21, 2011 and August 15, 2012).

National Association of Regional Councils (NARC). (2006). *What is a regional council?* Retrieved from NARC website: http://narc.org/resource-center/cogs-mpos/what-is-a-council-of-government/ (Accessed January 21, 2011 and August 15, 2012).

Straker, D. (2011). *SMART objectives.* Retrieved from Changing Minds.org: http://changingminds.org/disciplines/hr/performance_management/smart_objectives.htm (Accessed January 21, 2011).

U.S. Department of Homeland Security (DHS). (2008). *Strategic plan — One team, one mission, securing our homeland.* Retrieved from DHS website: DHS: http://www.dhs.gov/xabout/strategicplan/ (Accessed January 21, 2011).

U. S. Department of Homeland Security (DHS). (2010). *Department celebrates five years.* Retrieved from DHS website: http://www.dhs.gov/xabout/history/gc_1206633633513.shtm (Accessed January 21, 2011).

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An Examination of Fire Safety Perceptions and Behaviors Among Students at a Regional Midwestern University

Abstract
In this study, we use data from 223 undergraduate students at a regional Midwestern university to examine students' behaviors and perceptions of fire safety on the university campus. The findings presented here indicate that the vast majority of students feel safe from fire, although a significant number engage in behaviors that make them more likely to be injured by fire. These behaviors are most prevalent among students living off-campus. Implications for university policy and future research are discussed.

Introduction

Most people have their own perceptions about fire safety, fire danger, and the risk that fire poses to them in their daily lives. Little is known, however, about how these perceptions impact decisions regarding daily activities, either on college campuses or in other settings. The extant research regarding college students and fire is generally related to on-campus fires, and even that body of research is limited. Almost nothing is known about students' perceptions and behaviors in the area of fire safety off-campus.

The research reported here adds to the body of knowledge in this area by answering two important research questions: First, do university students have attitudes and engage in behaviors that make them more likely to be fire victims than the general public? Second, do students living off-campus have different attitudes and behaviors than students living on-campus? We use survey data from approximately 200 undergraduate students at a Midwestern university to answer these questions.

Fire Safety on College Campuses

In this article, the terms *student residence hall* and *dormitory* are used interchangeably. According to the National Fire Protection Association® (NFPA®), the word dormitory is defined in the life-safety code as a:

> building or space in a building in which group sleeping accommodations are provided for more than 16 persons who are not members of the same family in one room, or a series of closely associated rooms, under joint occupancy and single management, with or without cooking facilities, but without individual cooking facilities (National Fire Protection Association®, 2012, p. 101–29).

In June 2010, the United States Fire Administration (USFA) released a report that examined data gathered from the National Fire Incident Reporting System regarding the approximately 3,800 university housing fires (e.g., residential buildings on university campuses) (USFA, 2010). One of the most surprising findings from the report was that more than half (57%) of university housing fires occurred in buildings with no automatic extinguishing system in operation (USFA, 2010).

Isner (1996) wrote about a fatal fire in Chapel Hill, North Carolina, at a fraternity house. He listed four contributing factors to the severity of the fire: (1) lack of automatic fire-detection and fire-alarm systems, (2) presence of combustible interior finish materials throughout the building, (3) lack of automatic sprinkler-system protection, and (4) improper use or disposal of smoking materials. The NFPA® also states that these four factors were present when they studied four fatal fires that occurred: three in the 1970s and one in 1990 at a fraternity house.

In written testimony concerning the need for enhanced fire safety in off-campus housing, Comeau (2003) reported that between 1994 and 1998, an average of 141 fires per year occurred in Greek housing, causing $2.8 million annually in property damage and the deaths of 18 students. Comeau stressed that fire safety cannot rely solely on one component. He stated that fire safety involves three mechanisms: (1) prevention — the need to ensure that protocols are in place that will help reduce the likelihood of fires occurring; (2) detection — smoke detectors are a necessary factor in alerting occupants of fire and giving the fire department early warning; and (3) suppression — if a fire does occur, it must be controlled. In most cases, by the time the fire department arrives, it is too late to prevent fatalities. Comeau suggested that the use of sprinkler systems is the only viable suppression solution.

Most scholars agree with Comeau. In fact, there is a strong consensus among fire-prevention experts that buildings used to house students at higher education institutions should be required to have sprinkler systems. The sprinkler-system recommendation is

also extended to apartment buildings, condominiums, and fraternity and sorority houses that house students (Comeau, 2003).

Although the enforcement of fire-safety policies and procedures in residence halls varies from state to state, this expert advice is not always followed. For example, an alleged arson fire on the third floor of a Michigan State University dormitory seriously burned one student and put several other students suffering from smoke inhalation in the hospital in the late 1990s. After years of debate, however, Michigan still lacks a standard code that addresses fire-safety issues in student housing. Those close to the code-adoption process say that the cost of implementing a fire-safety code is the major factor preventing passage. New Jersey (Gold, 2000) and New York (New York Governor's Task Force, 2000) both face similar difficulties. In fact, the New York Governor's Task Force report on campus fire safety (2000) argued that even though findings from annual fire inspections are reported to both the university and the state education department, no follow-up mechanisms are in place to ensure compliance with the inspectors' recommendations. Thus, campus fire safety is often reliant on decisions made by individual campus administrators.

Mowrer (1999) argued that it is easy to underestimate the risk of fire in student housing because of the many fires that do not make the headlines. He believes that college students should be afforded the same protection that the hospitality industry gives to those who travel throughout the nation, citing the 15-year program that has installed sprinkler systems in lodging facilities across the country. He suggested that in addition to the lasting physical impact campus fires have on university physical structures, campus fires have tremendous emotional impacts on the student body and university as a whole. Empirical data support his claim. The College Fire Prevention Act makes note that the NFPA® has no record of a fire killing more than two people in a public assembly, educational, institutional or residential building that had a complete sprinkler system installed and operating properly (United States House of Representatives, 2005).

Mowrer (1999) has studied factors that contribute to fires in the university environment. Alcohol was cited as a significant factor in most college fires; however, Mowrer also mentioned the "sense of immortality" that young adults often feel. This sense of immortality, coupled with alcohol, freedom, and a lack of education when it comes to dealing with fire, all contribute to the dangers presented to campus-housing administrators when dealing with student housing.

Mowrer (1999) addressed the duties that should be assigned to administrators of campus dormitories, fraternities, and sororities. He identified four primary elements of fire safety in student housing as (1) prevention, (2) occupant awareness and training, (3) detection and alarm, and (4) suppression. Mowrer highlighted the fact that college students generally have a high amount of easily combustible materials in their housing.

Items such as paper products, materials, and clothing have the potential to aid in the rapid development of a fire if they are not appropriately stored or protected. He further stressed that smoke detectors and fire sprinklers are essential elements in a successful fire-protection program for residential buildings as well as off-campus student housing. He concluded the guide by arguing that the cost of a sprinkler system is minuscule when compared to the potential costs (both financial and emotional) that a university will incur in a severe fire.

Smoke alarms continue to be a critical element when dealing with fire safety. According to the USFA (2010), smoke alarms operated and alerted occupants in 83 percent of fires; in an additional 13.3 percent of fires, the effectiveness of the smoke detectors was unknown. The data clearly show that smoke alarms are a critical component in early notification and evacuation.

These risks are not limited to students living in on-campus housing. According to the USFA (2005), for every student who dies in a fire on-campus, five students die in off-campus housing. In a residential setting (whether on- or off-campus), students often underestimate the danger of a fire and frequently make decisions that place themselves at risk. College students (whether housed on- or off-campus) have sleeping patterns that are often different than those of most other demographic groups. According to the USFA (2010), the peak time for university housing fires was between 8 p.m. and 9 p.m., which the study asserts corresponds to when students are most active. Fires were least likely to occur during the early morning hours (USFA, 2010). Furthermore, approximately 23 percent of all university housing fires occur during the months of September and October, which corresponds to the beginning of the academic year.

The second area of interest is the cause of fires. According to the USFA (2010), the primary cause of confined fires (those extinguished before causing severe damage) was cooking mishaps (83.1%), while unconfined fires were largely due to open flames, other heat-inducing devices, and other unintentional or careless causes (34.6% of the uncontained fires). The results of a similar USFA report that was published in 2001 reaffirmed the data presented earlier and further demonstrated that 33% of dormitory fires are the result of arson (USFA, 2001). The USFA study also reported that smoke alarms were present in 93% of all dormitory fires and operated in 79% of these fires. This report was published shortly after a fatal fire occurred at Seton Hall University and put universities in the spotlight for installing sprinkler systems. This study was revealing in that it represents the time when significant attention began to be given to the importance of the installation of sprinkler systems in dormitories.

A study entitled *Fatal Fires* (USFA, 2005) examined the data from the estimated 3,300 fatal fires that accounted for the loss of 3,380 lives in 2002. The data show that 74% of fatal fires occurred in structures, with 94% of structures being residential properties.

Because college students moving off-campus generally rent apartments or homes that have been converted to apartments, the fact that fatal fires are overwhelmingly residential fires is particularly relevant to this effort. The next major finding from the data is that smoke alarms were not present in 42% of fatal residential fires and in an additional 21% of fires, the alarms failed to operate. Furthermore, the study showed that 50% of all fatal residential fires start in the sleeping or lounge areas of the residence, and 57% of fatalities occurred in the area of origin.

In 2002, the USFA produced a report that dealt specifically with fires in fraternity and sorority houses (USFA, 2002). The findings from this research are similar to those of studies using students living in dormitories but are closer to those that might be found in off-campus housing. Aside from incendiary or suspicious fires, the top three causes of fire in fraternity and sorority houses were (1) open flames, (2) cooking mishaps, and (3) smoking. These three factors accounted for approximately 45% of all fires. The data further reveal that weekends and Wednesdays were the peak times when fire incidents occur, which the authors suggested correspond well with times when activity in these houses increases. The data also revealed that smoke alarms activated in 71% of all fraternity and sorority house fires as opposed to a mere 38% of residential structure fires. The most logical reason for this finding was that, in most cases, the university was responsible for the maintenance of smoke alarms once installed (USFA, 2002). The final recommendation of the study was that more stringent regulations need to be imposed to require the installations of smoke alarms and sprinkler systems.

Installation of smoke alarms and sprinkler systems is not enough, however. Sactor (2002) stressed the need for fire-safety inspection programs in all off-campus housing. While conducting fire drills, personnel from the university's department of public safety observed deteriorated conditions within the off-campus facilities, which could lead to disaster in the event of a fire. According to Sactor (2002), universities should enter into a partnership with local and county inspectors to report any off-campus infractions to help ensure proper fire safety and enforcement within these properties. Flanagan (2003) supported this suggestion and stated that an amendment to a proposed sprinkler ordinance that would include apartments and condominiums in its jurisdiction would provide protection to more than 1,000 students who occupy these facilities.

Nevertheless, codes are not the only way to ensure increased fire safety of students living in residential housing off-campus. Diment (2008a) addressed some of the ways that apartment owners could provide for the safety of their tenants. Diment demonstrated how the "Three Es" (education, engineering, and enforcement) utilized by fire-safety educators can be applied by landlords to ensure tenant safety. Diment argued that tenants should be educated about the importance

of smoke alarms and detectors as well as the ways to reduce and prevent false alarms, and this education should occur when a tenant moves into a residence. He also demonstrated how practical engineering changes can go a long way to help ensure working smoke detectors, including changing the type of detectors available and using more diverse battery types in available detectors.

Diment (2008a) also stressed the important of enforcement. Enforcement can be accomplished by landlords who schedule regular inspections of their properties to ensure that tenants are appropriately utilizing fire-detection equipment and have not disabled it. Diment concluded by suggesting that the most effective fire-prevention programs use all the aforementioned elements together.

In Part 2 of his series, Diment (2008b) elaborated on his first article and wrote about creating escape plans for each apartment unit. He also addressed installing sprinkler systems in the apartment units and argued that landlords should seek the help of the local fire department or other professionals in developing plans and inspection criteria. While many jurisdictions do not require this type of monitoring, the author made the case that it is important that landlords do "everything reasonable and prudent" for the safety of one's tenants.

Denker and West (2009) posited that administrators should take a new look at fire-prevention efforts. They suggested that fire prevention involves far more comprehensive planning than posting rules about residence-hall living and argue that insurers provide an excellent source of expertise when it comes to fire protection. Denker and West (2009) supported the research in this area that recommends the use of smoke detectors, escape plans, enforcement and, more importantly, the installation of automatic sprinkler systems to protect students. They also cited alcohol as a major contributing factor to fire and suggested that administrators educate staff members on the role that alcohol plays in fires.

Despite the recommendations reviewed previously and the general acceptance that these recommendations are important for campus fire safety, a number of fatal campus fires still occur on- and off-campus. Since January, 2000, Campus Firewatch (2012) has tracked fatal campus-related fires, including off-campus fires. According to the records, there have been over 130 off-campus fire fatalities and a large number of other fires that did not result in fatalities. Analysis of the Campus Firewatch data reveals that several of the assumptions from other studies prove to be true. For example, in most of the fatalities, a smoke detector was either not present or had been disabled in some way. The use of alcohol also proved to be a factor in a number of the off-campus fire fatalities. Data from a Federal Emergency Management Agency (FEMA) report (1999) supported this finding when the authors highlighted the fact that drinking patterns have more to do with alcohol's relationship with fire danger than the total amount of

alcohol consumed. The study also found that drinking and smoking seem to go hand-in-hand. Adults 18 to 24 years old tend to smoke socially when binge drinking, a phenomenon more prevalent in this age group than older age groups. This finding is significant because of the high percentage of fires started by smoking materials.

Calderwood (2004) cited data by Campus Firewatch that indicated that 73% of all fires involving college students occur in off-campus units. Calderwood proposed that universities create inspection task forces with the help of the community and others who know what to look for when inspecting a home. Calderwood further argued that it is the responsibility of the university to educate students via some sort of class on what to expect when living off-campus, with the main focus being on safety but also covering other topics. He further argued that local jurisdictions should require that sprinkler-system codes be enacted for apartments. Additionally, he advocated that fire departments educate themselves on problem housing areas and make every effort to enforce codes and punish landlords who are not following those codes.

Statement of the Problem

The research reviewed previously suggests that we currently know how to reduce the likelihood of fatal fires. As the studies suggest, reducing drunkenness and tobacco use will reduce the number of fires, particularly among college-age adults. Additionally, properly installed and maintained smoke detectors and sprinkler systems significantly reduce the likelihood of fatal fires as well. Furthermore, the extant research suggests that, in general, most university residence halls are designed and maintained in such a way that students living in university residential settings live in environments that are relatively safe settings.

Nevertheless, the extant research reveals almost nothing about student safety in off-campus residential housing. We were able to uncover only one study that directly addressed this issue (USFA, 2005). Consequently, it is essential that a knowledge base be developed about university student safety from fire in off-campus settings. In this study, we attempt to lay that foundation in an exploratory manner. Using data from 221 students at a Midwestern university, we attempt to understand their perceptions of fire safety (both on- and off-campus) along with the behaviors in which they participate that make them more or less safe. In doing so, we explore two research questions: First, do university students have attitudes that cause them to engage in behaviors that make them more likely to be fire victims than the general public? Second, do students living off-campus have different attitudes and behaviors than students living on-campus?

Methods

In this section, we describe the study participants and discuss the process through which research data were collected. We close with data analyses using descriptive statistics to demonstrated differences in perceptions and behaviors of students living in on- and off-campus housing.

Participants

The sampling frame for this study was 1,200 students enrolled in classes at a Midwestern university in either the honors program or the fire and safety program in the Spring 2011 semester. Students were chosen from these two programs for two reasons. First, the lead author was a student in both of those programs at the time and had access to all email addresses of students enrolled in both programs. Second, given the interests and education of students with fire-safety majors and the generally more responsible personalities of honors students, we believed these groups would provide the perspectives of the most conscientious students in the area of fire safety. Thus, we intentionally took a conservative approach to this endeavor.

Procedures

After obtaining permission to conduct the research from the University Institutional Review Board, participants were solicited via email using two separate email lists. One list contained email addresses of all students with fire safety majors and another list contained email address of all honors students. The instrument used was an online survey created through "Survey Monkey," an online survey generator. The lead researcher then sent an email containing a description of the research effort and a link to the survey to each of the 1,200 students in the two programs. Approximately one in five (18.4%) of the 1,200 students contacted by the lead researcher responded to the survey for this study; thus, the data analyzed here came from 221 students. Although the response rate is certainly a low-response rate and thus limits the generalizability of the findings contained herein, we believed that the exploratory nature of this research still made this endeavor important, despite its limited generalizability.

Participants were asked for basic demographic information and then asked a series of questions designed to discover (1) how safe they perceived themselves to be from a fire, (2) the behaviors of participants in their residences as they related to behaviors that are known contributors to fire deaths, and (3) what types of appliances the students maintained in their residences.

Results

The results presented in **Table 1** indicate that slightly over half (54%) of the respondents were male and

Table 1: Demographic Characteristics of Respondents

Variable	Attribute	Number	Percentage
Gender:	Male	121	54%
	Female	101	46%
Age:	18-19	45	20%
	20-21	64	29%
	22-25	54	24%
	26-40	31	14%
	41+	21	10%
Grade:	Freshmen	27	12%
	Sophomore	41	19%
	Junior	61	28%
	Senior	84	38%
	Graduate Student	5	2%
Type of Student:	Full-Time (12+ hours/semester)	170	77%
	Part-Time (<12)	49	22%
Living Situation:	On-Campus	95	43%
	Off-Campus	125	57%
Number of Roommates:	0	54	24%
	1	112	51%
	2	18	8%
	3	25	11%
	4	6	3%
	5	4	2%

approximately three in four were between 18 and 25 years of age (73%) and full-time students (77%). The majority of the students (57%) lived off-campus and most respondents were seniors (38%) or juniors (28%). Half of the respondents had one roommate (51%); one in four lived alone (24%). The remainder had two or more roommates, with only 10 respondents (5%) having more than three roommates.

A series of questions designed to gauge participants' involvement with fire safety, training from their university, and perceptions of fire safety was then presented to the respondents. The responses to these questions are presented in **Table 2**. We divided the sample into students that lived on-campus and students that lived off-campus to determine if perceptions and behaviors differed by the place of residence of the student.

Students were first asked if they had received fire-safety training from their university. Responses were nearly identical for both on- and off-campus students; almost three in five students in each group had

received fire-safety training from their university. This result was somewhat surprising because as part of their orientation to residence-hall living, students were supposed to receive some kind of training regarding fire safety.

The next question asked participants how safe they felt from fire. Students were asked to provide their responses using a Likert-style series of responses (ranging from Very Safe to Very Unsafe). Approximately three in five students from each group (60.1% of those living on-campus and 63.4% of those living off-campus) felt either safe or very safe from fire. This high proportion of students feeling safe from fire was unexpected, particularly given the fact that just over half had received training in fire safety and (in results not presented here) approximately 70% of the students in each group knew someone who had been injured or killed or who had lost property in a fire. This false sense of security has been cited in a number of tragic fires and only reiterates the university's duty to offer better

Table 2: Experiences with and Perceptions of Fire Safety

Have you received any fire safety training from your college or university?	On-Campus N (% of Sample)	Off-Campus N (% of Sample)	Total N (% of Sample)
Yes	53 (55.8)	72 (57.1)	125 (56.6)
No	38 (40.0)	51 (40.5)	89 (40.3)
Did not answer	4 (4.2)	3 (2.4)	7 (3.1)
How safe do you feel from fire?	**On-Campus N (% of Sample)**	**Off-Campus N (% of Sample)**	**Total N (% of Sample)**
Very Safe	14 (14.8)	37 (29.1)	51 (23.0)
Safe	43 (45.3)	44 (34.6)	87 (39.2)
Somewhat safe	27 (28.4)	31 (24.4)	58 (26.1)
Somewhat unsafe	3 (3.2)	4 (3.2)	7 (3.2)
Unsafe	3 (3.2)	4 (3.2)	7 (3.2)
Very unsafe	0 (0.0)	2 (1.6)	2 (0.9)
Missing	5 (5.2)	5 (3.9)	10 (4.5)
Do you have an escape plan out of your home in case of a fire?	**On-Campus N (% of Sample)**	**Off-Campus N (% of Sample)**	**Total N (% of Sample)**
Yes	73 (76.8)	96 (75.6)	169 (76.1)
No	19 (20.0)	27 (21.3)	46 (20.7)
Missing	3 (3.2)	4 (3.2)	7 (3.2)
Do you have smoke detectors installed in your residence?	**On-Campus N (% of Sample)**	**Off-Campus N (% of Sample)**	**Total N (% of Sample)**
Yes	91 (95.8)	118 (92.9)	209 (94.1)
No	1 (1.1)	4 (3.1)	5 (2.3)
Missing	3 (3.2)	5 (3.9)	8 (3.6)
How often do you test your smoke detectors?	**On-Campus N (% of Sample)**	**Off-Campus N (% of Sample)**	**Total N (% of Sample)**
Once a week	0 (0.0)	2 (1.6)	2 (0.9)
Once a month	12 (13.0)	27 (20.9)	39 (17.6)
3-4 times per year	16 (17.4)	29 (22.5)	45 (20.4)
Twice a year	18 (19.6)	23 (17.8)	41 (18.6)
Once a year	17 (18.5)	16 (12.4)	33 (14.9)
Less than once a year	6 (6.5)	7 (5.4)	13 (5.9)
Never	21 (22.8)	19 (14.7)	40 (18.1)
Did not answer	2 (2.2)	6 (4.7)	8 (3.6)

fire-safety training to its students. If nothing else, the dangers of fire must be presented in a way to make the threat real so that students will take effective measures to protect themselves, their property, and those around them.

Students were next asked about the preventative fire measures they had in their residences. Three in four students in each group had a fire-escape plan and almost all of the students had a smoke detector in their residence. Nevertheless, almost half of the students liv-

ing on-campus (47.5%) and one in three students living off-campus (32.5%) checked their smoke detectors less than twice a year; in fact, one in four students living on-campus and one in seven students living off-campus never checked their smoke detectors. This fact provides further evidence to support the false sense of security students feel from fire.

Students were lastly asked about behaviors that might put them at greater risk of fire and the types of appliances and other devices in their residences. Whereas the student's place of residence made little difference in their training and perceptions of safety from fire, whether a student lived on- or off-campus significantly influenced their behaviors and the types of appliances and devices they had in their residences. The responses to these questions are presented in **Table 3**.

Students were first asked whether they had drunk five or more drinks during the 30 days prior to taking the survey. One in four students (25.3%) living on-campus and almost half (43.3%) of student living off-campus had drunk more than five drinks in one sitting in the past 30 days. Additionally, while only 1.1% of those students living on-campus had smoked in their residence, 14.6% of the students living off-campus had smoked in their residence. Thus, as expected, students living off-campus were far more likely to engage in two behaviors (binge drinking and smoking) that have a strong association with accidental fires in residential settings.

Students were next asked about two other behaviors that are known to contribute to fatal fires. Students were asked whether they used candles or incense in their

residence. Only 1 in 10 on-campus students (9.8%) burned candles or incense in their residence, while the vast majority (70.7%) of students living off-campus did so. This large discrepancy is likely due to university regulations that prohibit students from burning candles and/or incense in their residences. The results presented here suggest that when students leave campus, the vast majority choose to burn them.

Students were also asked whether they had a fire extinguisher in their residence. The vast majority of on-campus students (82.4%) indicated that their residence contained a fire extinguisher, while a much smaller proportion (57.9%) of off-campus residences had fire extinguishers. Although almost one in five on-campus students indicated they did not have a fire extinguisher in their residence, the presence of fire extinguishers in the majority of on-campus residences is likely due to university regulations requiring them. When students move off-campus, it appears that fire extinguishers become less important than other appliances and devices.

The last questions presented to the students focused on determining the types of appliances that students used in their residences. For example, because of the numerous fires that electric space heaters have caused during the winter months, students were asked if they used these heaters. Because of the large number of fires due to cooking mishaps that occur on college campuses, students were also asked about their cooking appliances. Students living off-campus were more likely to have each type of appliance in their residence. In general, the more closely the appliance was linked to causing fires, the greater the difference between

Table 3: Respondent Behaviors by Residential Location

Behavior	On-Campus N (% of Sample)		Off-Campus N (% of Sample)	
In the past 30 days, have you had more than five drinks in one sitting?	24 (25.3)	71 (74.7)	55 (43.3)	72 (56.7)
Do you or your roommates …	**Yes**	**No**	**Yes**	**No**
Smoke cigarettes or cigars in your residence?	1 (1.1)	91 (98.9)	18 (14.6)	105 (85.4)
Use candles or incense in your residence?	9 (9.8)	83 (90.2)	87 (70.7)	36 (29.3)
Have a fire extinguisher(s) in your residence?	75 (82.4)	16 (17.6)	70 (57.9)	51 (42.1)
Use a microwave oven in your residence?	79 (86.8)	12 (13.2)	110 (90.2)	12 (9.8)
Use a toaster in your residence?	9 (9.9)	82 (90.1)	105 (86.8)	16 (13.2)
Use an electric range in your residence?	15 (16.5)	76 (83.5)	90 (75.6)	29 (24.4)
Use a hair dryer in your residence?	55 (59.8)	37 (40.2)	88 (72.1)	34 (27.9)
Use a straightener or curling iron in your residence?	53 (57.6)	39 (42.4)	73 (59.8)	49 (40.2)
Use an electric space heater in your residence?	5 (5.4)	87 (94.6)	43 (35.5)	78 (64.5)
Use a clothes iron in your residence?	33 (35.9)	59 (64.1)	84 (68.9)	38 (31.1)
Have firecrackers, explosives, or ammunition in your residence?	3 (3.3)	88 (96.7)	64 (52.5)	58 (47.5)

on- and off-campus students in possessing those appliances. For example, students living off-campus were seven times more likely than students living on-campus to have electric space heaters in their residences (35.5% v. 5.4%) and were almost five times more likely to have electric ranges in their residences (75.6% to 16.5%). Thus, regulations prohibiting appliances that are most likely to cause fire reduce the likelihood that students will have those appliances in their residences and, accordingly, reduce the likelihood of residential fires.

Discussion and Conclusion

This research attempted to answer two important questions. Within the limitations of the sample data, we believe that we now have evidence that addresses each question. The first question was: "Do university students have attitudes and engage in behaviors that make them more likely to be fire victims than the general public?" Results presented here suggest that university students do engage in behaviors that make them more susceptible to fire injury, whether on- or off-campus. One in four students living on-campus and two in five students who lived off-campus had engaged in binge drinking in the past 30 days. Given the strong relationship found between excessive alcohol use and accidental fires, this finding is troubling and reiterates the responsibility of university staff to educate students about the harms of excessive drinking, including its relationship with fire.

Additionally, the results presented here suggest that students should be informed in those same training sessions about their own actions and how those actions make them more or less likely to be harmed by fire. Despite the fact that only about half of the students had fire-safety training, the vast majority felt that they were safe from fire. The unfounded nature of this confidence is revealed in the fact that most students, whether living on- or off-campus, had smoke detectors in their residences but many did not check them more than once a year. Given that the general message is that homeowners should "check their smoke detectors when they change their clocks" twice a year, this finding is particularly surprising. The aforementioned fire-safety training should strongly suggest to students that while having a smoke detector is an essential part of fire prevention, having an inoperable smoke detector is not only dangerous but inexcusable, given the ease with which they are checked for serviceability.

The data analyzed here also provide insight into differences in students by residence that heretofore have not been examined. Findings allow us to address our second research question: "Do students living off-campus have different attitudes and behaviors than students living on-campus?" The answer is yes. Students living off-campus were much more likely than students living on-campus to engage in behaviors that increased their chances of being victimized by fire. Students living off-campus were substantially more likely to use electric space heaters, candles and incense, and electric ranges in their residences than their on-campus counterparts. Additionally, off-campus students were much more likely to have fire crackers and other explosives in their residences and to smoke in their residences. Intuitively, these findings are likely due to university regulations that prohibit these items in campus residence halls. Nevertheless, an important realization is that these university regulations make students safer from fire because these data suggest that, upon moving off-campus, the prevalence (and thus the increased fire risk to residences) of these items increases dramatically. Thus, it is imperative that universities not only continue to have these regulations but enforce them as well.

The findings presented here also suggest that it is essential for universities to find ways to convince off-campus students of the importance of abiding by regulations designed to enhance residential fire safety. Surprisingly, the residential location of the students had little impact on their views of their safety from fire or their fire training. This finding was somewhat surprising, given the regulations and equipment found in university residence halls. We expected that on-campus students would feel safer from fire injury (because of the enhanced fire-safety steps on university campuses). Nevertheless, this expectation was not the case.

Study Limitations

The research reported here has several limitations. First, and most importantly, the results from this sample have limited generalizability. Given the low response rate and the selective sample frame used here (honors students and fire-safety students at a public Midwestern university), this effort will need to be replicated in other universities with more representative samples before policy changes based on these findings should be considered.

Second, we believe that the findings presented here represent a conservative view of the attitudes and behaviors of college students in the area of fire safety. If anything, the students providing data for this research should be better trained, more responsible, and more cognizant of fire safety than their counterparts in different programs at different universities.

Finally, we are also aware of the limitations of the measures used here; better measures of attitudes and behaviors around fire safety can probably be developed. Given the findings presented earlier, future research should use these findings as a foundation and a springboard for their own research efforts.

Suggestions for Future Research

In addition to collecting data from larger, more representative samples, researchers should also expand the literature in this area by conducting postfire analyses of both on- and off-campus fires involving university stu-

dents in order to collect both qualitative and quantitative data regarding behaviors that lead to residential fires where college students live. For example, researchers could monitor the fire calls of the jurisdiction where they live and work and interview university students living in residences damaged by fire to provide more detailed information about behaviors that may have led to the fire and the prevention measures available in their residences that might have prevented the fire. Researchers could also ask students whose residences were impacted by fire whether they received fire-prevention training from the university and if so, the nature and extent of that training. These efforts should provide more knowledge about the causes and consequences of residential fires for university students.

Despite the fact that further work is required to understand more fully how fire affects college students, the present study did provide empirical evidence concerning perceptions and behaviors of university students in the area of fire safety. Based on the results of this study, it is apparent that universities must take seriously their duties to train and foster safe habits in their students. Nevertheless, it is not the responsibility of university personnel alone. As the literature review has suggested, landlords in residences where students live off-campus should use university regulations, equipment, and training as models for the residences that they supervise. Thus, while not directly related to this study, the community also has certain obligations to ensure that students have safe off-campus housing to live in while they attend the college of their choosing. When universities and communities work together to increase the fire safety of their inhabitants, positive steps in fire safety can occur. Until that situation happens, the evidence presented here suggests that students will be safer living on-campus, despite its inconveniences.

References

Calderwood, P. (2004). College fire safety: Off-campus housing problems. *Fire Engineering, 157*(1), 75–78.

Campus FireWatch. (2012). *Campus fire safety information sheet*. Retrieved from http://www.campus-firewatch.com/wp-content/uploads/downloads/2012/06/information-sheet.pdf

Comeau, E. (2003). *Written testimony on the need for enhanced fire safety at off-campus housing*. College Park, MD: University of Maryland.

Denker, D., & West, L. (2009). Fire power. *American School and University, 82*(2), 24–28.

Diment, E. (2008a). A practical guide to tenant fire safety: Part 1. (Cover Story). *Journal of Housing and Community Development*, pp. 6–9.

Diment, E. (2008b). A practical guide to tenant fire safety: Part 2. *Journal of Housing and Community Development, (5)*, 34–36.

Federal Emergency Management Agency (FEMA). (1999). *Fire in the United States*. Emmitsburg, MD: Author.

Flanagan, J. (2003, February 20). City adds apartments to proposed sprinkler bill. *The Dimondback,* p. 1.

Gold, J. (2000, February 1). Fire violations found at Seton Hall. *Associated Press, AOL, News*, p. 1.

Isner, M. (1996). *Fraternity house fire, Chapel Hill, North Carolina.* Quincy, MA: National Fire Protection Association® (NFPA®).

Kimberly, R. (2000). *School, college, and university dormitories, fraternities and sorority house fires.* Quincy, MA: National Fire Protection Association® (NFPA®).

Mowrer, F. (1999). *Fire safe student housing: A guide for campus housing administrators.* Quincy, MA: United States Fire Administration (USFA). Retrieved from http://www.usfa.dhs.gove/downloads/pdf/publications/9-1624.pdf

National Fire Protection Association®. (2012). *NFPA® 101: Life safety code: 2012 edition.* Quincy, MA: Author.

New York State Governor's Task Force. (2000). *Report of New York State governor's task force on campus fire safety.* Albany, NY: Author.

Sactor, A. (2002). *Fire inspection program for Greek facilities at the University of Maryland, College Park.* College Park, MD: University of Maryland.

United States Fire Administration (USFA). (2001). *Dormitory fires.* (Topical Fire Report Series). Retrieved from http://www.usfa.dhs.gov/downloads/pdf/tfrs/v1i14.pdf

United States Fire Administration (USFA). (2002). *Fraternity and sorority house fires.* (Topical Fire Report Series). Retrieved from http://www.usfa.dhs.gov/downloads/pdf/tfrs/v2i12.pdf

United States Fire Administration (USFA). (2005). *Fatal fires.* (Topical Fire Report Series). Retrieved from http://www.usfa.dhs.gov/downloads/pdf/tfrs/v5i1.pdf

United States Fire Administration (USFA). (2010). *University housing fires.* (Topical Fire Report Series). Retrieved from http://www.usfa.dhs.gov/downloads/pdf/tfrs/v10i1.pdf

United States House of Representatives. (2005). *H.R. 128: College fire prevention act.* Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-109hr128ih/pdf/BILLS-109hr128ih.pdf

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The Academic Workshop

"The Academic Workshop" is a new section of the "Red Journal." This section features articles written by **masters and doctoral students** from domestic or international universities that highlight the use of a method, research design, and/or conceptual framework applied to the fire service. With the growth of graduate programs in fire leadership and management, more and more students will prepare papers that can guide research efforts **even if the student has not taken the project to the field and gathered data or directly tested her or his research questions**. In essence, these papers represent solid research designs that can help others conceptualize and formulate how to study fire leadership and management problems.

Articles in The Academic Workshop are peer-reviewed. As editor of the *IFSJLM*, I first screen an article for possible inclusion in this section. Next, two peer reviewers, one a fire professional with 30 years of experience in fire leadership and management and the other a university professor who teaches research design and methodology, review the article. If all three individuals agree that the manuscript represents a solid learning tool, I invite the author to publish the manuscript in the *IFSJLM*.

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Using an Action Research Methodology for Developing an Archetype Fire Officer Development Program

Abstract
Technological and societal changes constantly challenge the profession to reevaluate how it collectively delivers services in the safest and most efficient manner. The myriad of emergency incidents encountered daily conjoined with an ever-changing workforce, compels fire service professionals to, likewise, hone their skills. Unfortunately, the fire service relies on an outdated means of developing officers. Recognizing that its officer candidates increasingly lack vital fireground experience, senior management personnel in the South Metro Fire Rescue Authority (SMFRA) located in Centennial, Colorado, engaged in an action research methodology to develop a prototype firefighter-exchange program. The primary purpose of the proposed program was to develop officer candidates that were experienced, well-trained, and highly educated. This improved skills set would further enhance the ability of the personnel to manage today's highly complex, diverse, and perilous fire service. This article describes the process used to develop the firefighter exchange program. Although political and organizational factors prevented the initiative from reaching the implementation phase, the design process proved valuable and offers a model other departments can draw upon.

Introduction

Presently the United States (U.S.) fire service faces perhaps its most daunting task, filling leadership positions vacated by an increasing number of retiring Baby Boomers (Dohm, 2000; Murphy, 2005). The loss of these leaders results in a workforce gradually becoming more deficient in the experience necessary for safe and efficient emergency operations (Fiedler, 1994). Contributing to this dilemma as communities gentrify or build into undeveloped areas, there has been a corresponding national decline in structure fires due to enhanced fire-safety features (Fahy, 2002). As firefighters encounter structure fires more infrequently and have less practical experience, they increasingly lack the intuitive knowledge to function safely and competently on these types of high-risk incidents. As a result, fire and rescue agencies must manage service demands without the benefit of retiring firefighters' knowledge and experience. This lack of expertise is problematic in a profession where situational awareness, developed primar-

ily through extensive practical experience, is vital for incident safety (Agor, 1986; Fahy, 2002; Klein, Calderwood, & Clinton-Cirocco, 1986; Klein & Weick, 2000; Moore-Merrell, Zhou, McDonald-Valentine, Goldstein, & Slocum, 2009).

Fahy (2002), in her study of line-of-duty deaths from 1977–2000, determined that fire officers did not receive adequate training nor did they have the experience necessary for properly assessing fireground hazards. Fahy (2002) advances the question most relevant for the project: "If the number of structure fires is decreasing, how in fact do firefighters and fire officers gain the experience to understand fire progression, fire behavior, and what happens to the structural integrity of a building under fire conditions?" She states that while training is integral for educating officers in the inexact science of fire fighting, it, nevertheless, inadequately prepares them to make certain value-driven decisions (Fahy, 2002). She concludes with the following insight:

It is incumbent upon today's fire service leaders to provide the training as well as the proper promotional assessment processes to ensure company and chief officers understand the environment their firefighters are exposed to and the proper operational procedures to deal with that environment so the safety of everyone on the fire ground is improved. The fire ground is a very unforgiving learning environment! (p. 4)

The ideal situation combines formal training and education with responses to a multitude of calls in real-time emergent conditions while under the tutelage of more experienced officers (Goodson, 1998; Insurance Service Office [ISO], 1998; National Fire Protection Association® [NFPA®], 2003; International Association of Fire Chiefs [IAFC], 2003, 2010). Rothwell (2010) succinctly describes this process as succession planning.

Simply put, *succession planning* is any systematic effort to ensure continuity in key leadership positions, which, in turn, encourages individual advancement (Rothwell, 2010). Most fire departments rely on one or a combination of three succession-planning methods: formal training, outside hiring, and practical experience (IAFC, 2003, 2010; Roberston, 2005; Starling, 2010).

Formal Training

The most common officer-development approach is through formal training. The main advantage of implementing a rigorous training program is that it can be tailored to meet a department's unique challenges (Goodson, 1998). Comprehensive training also allows an organization to groom personnel in a manner consistent with its values and goals (Edwards, 2000; Goodson, 1998; NFPA®, 2000). There are, however, disadvantages when relying solely on this approach.

One drawback is the immense investment in time, personnel, and money (Goodson, 1998). Unfortunately, increasing service demand also makes it difficult to train a workforce in a timely and thorough manner. Furthermore, no matter how inclusive a training program may be, it cannot provide firefighters with the same valuable applied experience gained through repetitive responses as actual emergencies can (Edwards, 2000; Goodson, 1998; NFPA®, 2000).

Outside Hiring

A second alternative is to hire officer candidates from outside the organization who have technical knowledge as well as practical experience. The advantage of hiring experienced personnel is their ability to function at a high level almost immediately. They also have the ability to bring different perspectives and ideas to current operational practices (Starling, 2010). The downside is the resistance of existing members who view these new hires as unwanted competition. Anyone, then, brought in from the outside to fill a position of authority has difficultly assimilating into the organization (Daly, 2006).

Practical Experience

The final option for gaining experience is to simply allow members to acquire practical knowledge through the natural course of time on the job (Goodson, 1998). This option gives members the practical experience that cannot be taught in a classroom or through books. The obvious downside is the steep learning curve that jeopardizes the health and safety of crew members.

Given today's fiscal realities, however, most fire agencies lack the means to create comprehensive development programs necessary for effectively managing the transition from inexperienced to experienced leaders (Forsman, 2002). Moreover, no cost-efficient prototype exists that combines formal training with mentored functional experience. This factor led the South Metro Fire Rescue Authority (SMFRA) to explore creating an officer-development program that meets the unique needs of the agency.

Case Study Problem Identification

In 2007, the study period, SMFRA was a moderately sized fire department employing 177 emergency response personnel from ten stations (SMFRA, 2003). An influx of residents was causing rapid development within the district, which necessitated the building and staffing of additional fire stations (SMFRA, 2003). As the district grew and the community's expectations increased, SMFRA's officers were expected to become proficient in a wide range of operations. These included basic fire fighting, emergency medical, wildland, technical, aircraft, and dive rescue (SMFRA, 2003). The department, however, had little capacity to give officer trainees the breadth and depth of experience needed to manage these types of incidents. Compounding the problem, SMFRA's executive leadership, collectively referred to as *Command Staff*, anticipated the retirement of numerous fire officers. These two conditions would result in promoting a large cadre of inexperienced officers. The Command Staff also recognized that the organization did not have a sufficient volume of incident calls to give officer candidates the necessary experience to operate safely and efficiently. As such, the Command Staff wanted to create a partnership with other fire agencies to expose trainees to a diversity of calls under the mentorship of experienced officers. The department initiated the action research project by entering into a contract with the author to design the program.

As an agent of change, the author was aware of the potential repercussions transformational change has on an organization (Starling, 2010). SMFRA, like many mature organizations, had an uneven history of accepting change perceived as "radical." In part, this attitude originates from a fear of the unknown and a pervasive attitude that "if it ain't broke, why fix it" (Starling, 2010, p. 550). Given these potentially detrimental attitudes, the author used an action research methodology to facilitate creation of an officer-development program.

Action Research Methodology

Action research is a dynamic values-based methodology that seeks system-wide, sustainable changes within an organization through a humanistic approach (Cummings & Huse, 1989). Simply put, action research is the process by which an organization or an outside agent systematically collects and analyzes data, develops and implements an action, and evaluates results in order to make corrections or offer new measures (French & Bell, 1999). The action research model for this project took into account that SMFRA had previously identified the system deficiency and mandated a course of action. The author's task was to recommend the most appropriate solution based on the research and find the best method of implementing and evaluating the change initiative.

For the SMFRA case study, the author used a modified version of Pearce and Robinson's six-step process (as cited in Regis University, 2004). The action research project facilitated the use of a collaborative team to: collect and analyze data, evaluate alternatives, recommend an action, develop an evaluation plan, and develop an implementation plan (see **Table 1**). Each step is elaborated in the sections that follow.

Table 1: Pearce and Robinson's Modified Action Research Model

Step Number	Activity
1	Assemble the collaborative team.
2	Collect and analyze data.
3	Evaluate alternatives.
4	Recommend an action.
5	Develop an Evaluation Plan.
6	Develop an Implementation Plan.

Assemble the Collaborative Team

The most critical aspect of assuring the success of a new program is garnering support from the onset. As a result of the consultant being an inside agent for change, the perception of the problem has to be clearly defined in order for the solution to gain credibility (French & Bell, 1999). Although the organization had identified the problem, the change initiative still needed high-level support in the form of a "champion."

A *champion* is typically a recognized leader within the organization who is held accountable for implementing the selected action (Cross & White, 1996). Cross and White (1996) assert that a champion is vital for providing the vision for the change and is endowed with the responsibility for shepherding the transition process. As such, the Operations Chief served in this capacity.

Additionally, to solidify backing for the program, stakeholders from all levels of the organization were represented on the collaborative team (French & Bell, 1999; Huszczo, 1996). The stakeholders included a human-resource specialist and representatives from each rank in the department (fire officer, engineer, paramedic, and firefighter).

Despite the diversity of stakeholders, the group still required a sense of purpose and an unmistakable direction to successfully operate within the action research framework (Huszczo, 1996). As such, the group needed to establish clearly articulated goals and measures of progress (Huszczo, 1996). Accordingly, initial meetings of the collaborative team were devoted to explaining the problem and establishing member roles and responsibilities as determined by areas of expertise or interest. This process ensured that all members were given opportunities to contribute, which is essential for establishing trust and cultivating a sense of ownership in the solution (Huszczo, 1996). Each member was responsible for researching one of three areas: (1) data collection within the organization (interviews and questionnaires), (2) inquiries into prospective collaborating fire departments, and (3) exploration of the legal and administrative considerations.

Collect Data

Once the collaborative team is assembled, the group begins the critical task of compiling all relevant data. For this research project, data collection was both quantitative and qualitative in nature and originated from primary and secondary sources. The data helped define the program's desired outcomes and parameters, legal constraints, and administrative requirements. The data was derived from chiefs' interviews, firefighter questionnaires, prospective partnering agencies, and legal and administrative research.

Chiefs' Interviews. One source of qualitative data came from the author's interviews of SMFRA's chief officers (e.g., the Fire Chief, Operations Chief, Emergency Medical Chief, and Training Chief). The author used established interview protocols to accurately and reliably collect data, which was necessary for determining expectations and garnering support for the recommended action (Kvale, 1996). The author formulated the "relevant" questions to meet two fundamental criteria: First, they had to be relevant to the interview objectives. Second, they had to maximize the respondent's desire to answer the questions (Gorden, 1992). Meeting these two criteria lead to a deeper understanding of the relevant issues (Lofland, J., Snow, Anderson, & Lofland, 2006; Rubin, H. J. & Rubin, 2005; Weiss, 1994). Of these interviews, the thoughts of the Operations Chief held considerable importance because he will ultimately be responsible for the program's implementation. His specific requirements were important for creating the program's evaluation measures. All interviewed chief officers, however, concurred that the program needs to

demonstrate an increased level of experiential learning. The assessments that will be used to measure this dimension are detailed in the fifth phase of the action research project: *Develop Evaluation Plan*.

Firefighter Questionnaire. The firefighter survey focused on questions pertaining to an experimental exchange program and the parameters that appealed to the greatest number of prospective participants. The questionnaires were emailed to 55 firefighters whom the Operations Chief believed were eligible to participate in the archetype program. Of the 55 distributed questionnaires, only 12 responses were returned. Consequently, the information was not as robust for defining the specific parameters of a program as the group had originally hoped. Despite the disappointing response rate, a number of general observations were drawn from the data.

Respondents expressed overwhelming interest in participating in an exchange program rather than in short-term ride-alongs. This finding confirmed that prospective candidates value longer duration programs that integrate them as fully functioning crew members of other departments. Conversely, as the length of an exchange exceeded three months, fewer firefighters were willing to participate. This data was significant for determining the optimal time for the exchange, which is expanded on in the *Recommend Action* section.

Fire Department Research. The collaborative group also collected and analyzed data about potential exchange departments that met all of the department's prerequisites as identified during the chief officers' interviews. Data such as volume of incident calls, types of emergency responses, sizes of the departments, and locations of the departments were gathered from secondary sources such as websites, annual reports, and strategic plans.

The collaborative group also decided to focus on regions of the country that have fire departments of equivalent size and are organized similarly to SMFRA. The search for suitable partners was, consequently, restricted to the western U.S. where construction features, tactics, and organizational cultures are most compatible with SMFRA. This expanse of the country was further segmented into four regions: (1) Southern California, (2) Northern California, (3) Pacific Northwest (Oregon and Washington), and (4) the mountain states (Idaho, New Mexico, Utah, and Colorado). The group then determined that the most efficient research method was to assign each person a region. Each person then selected between four to six prospective partnering departments that met the previously established selection criteria. In those instances where the group did research larger departments, it was done where SMFRA had a well-known contact within that department (e.g., the Operations Chief for the Portland Fire Department was a former SMFRA firefighter). These contacts helped the group navigate the cumbersome bureaucracies of larger metropolitan organizations.

The final, and arguably most critical, criterion is that all potential exchange departments selected must have had consistently higher volume of incident calls than SMFRA. This factor was necessary because the primary goal of the program was to expose officer candidates to more incidents than they could at SMFRA.

Successive meetings centered on narrowing the prospective list down to one to three departments per region that were collectively deemed "highly desirable." From that juncture, the group began making initial contacts with each department selected from the list to determine if it had an interest in participating in the program. **Table 2** lists the departments that aligned with the chief officers' goals and expectations, legal requirements, and firefighters' needs.

Table 2: Selected Prospective Exchange Fire Departments

Region	Department
Pacific Northwest	Portland Fire Department
	Salem Fire Department
	Vancouver Fire Department
Northern California	Santa Clara County Fire Department
Southern California	Ventura County Fire Department

Legal and Administrative Considerations. The team member who was a human-resource specialist was assigned to research all the legal restrictions that could undermine successful implementation of the program. The focus was primarily on employee benefits and workers' compensation issues. The specialist used content analysis to examine state and federal regulatory websites and literature. Conversational interviews with the department's attorney, health-care provider, and workers' compensation insurance carrier were conducted to collect this data. These findings are described in more detail in the *Recommend Action* section. Not only did the mixed-methods approach allow the group to understand the nature of the problem, it facilitated identifying alternatives and selecting the most appropriate solution.

Evaluate Alternative Actions

The workgroup identified three potential solutions for providing prospective officer candidates more "real world" experience: (1) expand ride-along opportunities, (2) conduct short-term exchanges with local fire departments, or (3) implement one-to-three-month exchanges with fire departments outside of Colorado.

Expanded Ride-Along Program. The first alternative evaluated by the group was expanding existing short-duration ride-along opportunities. This program would be similar to one several SMFRA personnel had participated in with the Los Angeles City Fire Department (LAFD) in 2005. During this time, several SMFRA firefighters were permitted to ride along and observe LAFD fire crews during their 24-hour shifts. While SMFRA members were not permitted to enter hazardous zones, they were allowed to assist crews with ancillary operational tasks from safe locations. The ride-alongs also permitted firefighters occasions to observe the organization's culture firsthand. Expanding on a similar program locally has several advantages.

Expanding the current program increases the pool of prospective applicants as 24-hour ride-alongs reduce the overtime necessary for "back-filling" an employee's position. The negligible costs will also allow other higher salaried ranks such as paramedics, engineers, and officers to participate in the program. Additionally, by limiting firefighters' activities, it ostensibly reduces the department's legal exposure. These advantages, however, are not as beneficial as they appear on the surface.

Foremost, despite the reduced potential for lawsuits and workers' compensation claims, it does not entirely insulate the department from these issues. Firefighters, while not directly participating in hazardous activities, can still be injured in nonfire fighting activities (TriData, 2002). Moreover, given today's litigious environment, there is no guarantee that an injury or fatality, regardless of how benign the activity is, will not lead to a lawsuit (IAFC, 2006). Ride-alongs are also only marginally effective for gaining valuable fireground experience. A firefighter's ability to experience the host department's culture and operational activities is limited due to the restrictive nature of ride-alongs. Firefighters who participated in the LAFD ride-alongs similarly expressed this frustration. All respondents indicated they felt crew members were reluctant to share intimate operational and cultural details of their departments. This barrier is expected to be minimized in a longer-term exchange where firefighters fully assimilate with a crew rather than being relegated to observer status.

Given the aforementioned issues, the benefits of a ride-along experience are not nearly as prodigious as an exchange program that operationally integrates firefighters. In this respect, two types of exchanges have the potential to give firefighters experience that is more inclusive: local short-term and out-of-state long-term exchanges.

Local Exchanges. The second option researched by the workgroup was limiting exchanges to departments within the Denver metro area. The primary advantage of this alternative is that firefighters would still experience working as fully functioning members of the exchange department. It would also expand the pool of potential exchange participants, because they would not be dislocated from their families for long durations. They also would not be burdened with additional housing expenses.

The major drawback is that departments in the Denver metro region all have very similar tactics, cultures, and volume of incident calls as SMFRA. Any participation in local exchanges, then, would not exposure firefighters to significantly different organizational philosophies and procedures or give participants substantially more experience. This situation leaves the last option, which is the recommended action: out-of-state, long-term exchanges.

Recommend Action

The collaborative group identified the development and implementation of an out-of-state exchange program as the most effective solution for addressing the needs of the department and individual firefighters.

An employee-exchange program falls into the category of a strategic alliance, which is a partnership between two organizations where skills and expertise contribute to a joint project for a predetermined period (Pearce & Robinson, 2003). Private-sector companies successfully utilize strategic partnerships to minimize weaknesses while improving performances (Pearce & Robinson, 2003). Public-sector organizations, likewise, can use this same approach for developing personnel. In order to do so, however, the proposed exchange program must address all legal requirements, regulatory standards, and federal mandates and meet the needs of the department and firefighters. The specific elements of the program are detailed in the sections that follow.

Exchange Duration. After collecting data from the questionnaires, more firefighters were willing to participate in an exchange if the duration was less than three months. However, firefighters also indicated that anything less than one month is insufficient for fully immersing into the department. The ideal duration of an exchange, then, is between one to three months.

Benefits. Exchange firefighters will remain employees of their originating home department, which maintains all of their benefits including health care, pay, and vacation/sick time accruals. One area of concern that will require further research is the issue of workers' compensation insurance. Most interviewed insurance carriers indicated employees could remain on their respective agency's policy for durations less than three months. Other carriers indicated that stringent requirements limit the length of time and activities a firefighter can participate in during his or her exchange. Before implementation, the participating departments will need to seek legal opinions to determine the duration and scope of activities that firefighters can participate in during their exchanges.

Disciplinary Procedures. Another area of concern was establishing clearly defined disciplinary

procedures. The chief officers expressed apprehension that potential firefighter misconduct could manifest due to the perception that an exchange is a "vacation." As such, all exchange firefighters will be subject to the policies and procedures of, not only their originating agencies, but those of the host departments. In the event an exchange firefighter fails to follow a significant policy or procedure, the department in which the violation occurred will have the option to terminate the exchange. The two departments will outline contingencies for such a termination during contractual negotiations.

Required Certifications. One of the most problematic issues jeopardizing successful implementation of the program centered on certification requirements. The emergency medical technician (EMT) licensing process was particularly challenging as significant regulatory and bureaucratic obstacles exist. Ultimately, the state in which the exchange occurs will dictate the necessary steps for meeting the EMT certification requirements. Of the states researched by the group, Oregon had the most compatible reciprocal arrangement for EMT licensure. Oregon recognizes, as does Colorado, the national-level certification (National Registry), which makes the process more streamlined than in other states.

Housing. Another significant hurdle for firefighters was the issue of housing. The group decided that the program, to be cost-effective, would require participating firefighters to be responsible for securing their own housing. Options are available, nevertheless, that will facilitate securing affordable housing for the duration of the exchange. The first is to assign incoming firefighters a mentor to assist with obtaining housing as well as provide guidance and support throughout the duration of the exchange. The mentor and host department will

make every effort to find suitable alternatives such as department members sponsoring incoming firefighters or, when feasible, permitting residence in a station. If no free or modestly priced housing is available, the firefighter will be expected to pay for said expense out-of-pocket.

Cost Estimates. The group was also tasked with identifying the least-expensive-cost alternative for program implementation. The group, acutely aware of the department's fiscal environment, utilized Starling's (2010) "foot-in-the-door" financing strategy, which allows new programs to start on a shoestring budget (p. 513).

Starling (2010) maintains new public-sector programs often encounter resistance that makes implementation difficult, if not impossible. Starling's (2010) strategy, by contrast, allows new programs to slowly build organizational momentum and support for future budget allocations. Accordingly, the estimated implementation and first-year operating costs for the exchange program are relatively small and are expected to run approximately $10,300 (see **Table 3**). Of these expenses, the one-time implementation costs will be approximately $6,000, which includes expenditures for out-of-state visits by representatives of SMFRA, legal consultation, and indirect expenses. Most of the operational costs for sustaining the program are fixed and thus are easily accounted for in successive years' budgets. These ongoing expenses are estimated to be approximately $4,300 per year per exchange. These expenses include office supplies, uniforms, fire-fighting gear, and miscellaneous administrative expenses.

Oversight. The group determined that once operational, the Training Chief, who reports directly to the Operations Chief, is ideally suited to assume responsibility for the daily operation of the program. Additionally, because the Training Chief is responsible for officer

Table 3: First Year Implementation and Operational Costs

Implementation Costs		
Item	**Description**	**Estimated Cost**
Conferences and Meetings	Out-of-State Visits to Exchange Departments	$1,000
Contractual Services	Legal Consultations	$5,000
	Subtotal	$6,000
Operational Costs		
Item	**Description**	**Estimated Cost**
Office Supplies (Fixed Cost)	Miscellaneous Office Supplies	$300
Printing Costs (Fixed Cost)	Applications, Exchange Packets, etc.	$500
Other Expenses (Fixed Cost)	Uniforms and Miscellaneous Gear	$2,500
Other (Variable Cost)	Miscellaneous/Unanticipated Expenses	$1,000
	Subtotal	$4,300
	First Year Total Costs	$10,300

development, he or she is in the best position to gauge the overall success of the program. As such, the Training Chief will select the exchange firefighters, provide administrative support, and evaluate outcomes.

Develop Evaluation Plan

The next phase of the action research model entails creating the evaluation plan (Pearce & Robinson, 2003; Schein, 1992). The collaborative group identified several long- and short-term measures that will assess the program's success or failure.

One effective short-term assessment is a skills test that will be administered prior to and following a candidate's exchange. If the program works as designed, the candidate will return with an increased skill level, which should translate into a higher score on the post-exchange skills test (Edwards, 2000). Additionally, the candidate's immediate supervisor will evaluate the candidate's skill level upon returning to SMFRA. These two measures will provide immediate feedback on the program's impact on the individual.

Since development of officers is a continuous process, it is also imperative to develop long-term measures of success (Nadler, 1977). Instruments such as surveys and individual development plans (IDPs) can gauge a program's long-term success and give an organization a better understanding of where modifications are needed (Rothwell, 2010). As such, surveys of the Operations Chief and firefighters over the course of several years will assist in determining the effectiveness of the program. Firefighters entering the program will also be required to develop IDPs as part of their progression into the officer ranks.

An IDP is an amalgamation of a learning strategy, a performance contract, and a career-planning document (Rothwell, 2010). A learning strategy outlines the specific education and training a person needs to advance within an organization. A performance contract is an agreement to achieve specific performance indicators and is typically coupled with the employee's performance appraisal. The emphasis, however, is on future improvement rather than past outcomes. Finally, a career-planning tool is used to identify an employee's career goals and establish effective strategies for realizing them. Career-planning tools frequently link to an organization's succession-planning process. As the IDP is prepared, it progressively narrows the gap between an individual's skills and what is needed to meet future work requirements for key leadership positions. Developing an IDP requires a systematic comparison of the individual's present abilities (as indicated by job descriptions and performance appraisals) and future capabilities (as revealed through individual potential assessments) (Rothwell, 2010). Once developed, these measurement tools will be incorporated into the implementation plan and made available to the Training Chief.

Develop Implementation Plan

The final step in the action research model is the creation of an implementation plan for the selected action. The collaborative group established a tentative timeline for full implementation within a year of approval. Upon presentation of the final recommendation, SMFRA's Command Staff approved the implementation of the program. The Fire Chief authorized the group to proceed with formal negotiations and enter into interagency agreements with select departments. Although the Fire Chief was supportive of the recommended action, he acknowledged the initiative represented a low priority. This position was held due to a forced third-party organizational evaluation for what the union membership perceived as inadequate leadership and underlying structural flaws within the organization (Emergency Services Consulting International [ESCI], 2007). This state of affairs created profound anxiety within the Command Staff members who were paralyzed to make major decisions that could be construed in a negative manner. Consequently, the Fire Chief was unwilling to provide resources to fund the program's implementation and ongoing operation, which effectively placed the program on indefinite hold. The lessons learned from these political dynamics, which eventually derailed implementation of the program, were not accounted for by the collaborative group and warrant further research.

Recommendations for Future Research

Perhaps the greatest lesson learned from this research is the impact that an organization's internal political dynamics can have on change. This phenomenon is more commonly referred to as *organizational politics* (Albrecht, 2006; Coghlan & Brannick, 2001; Kanter, Stein, & Jick, 2003).

Mintzberg asserts that organizational politics are "typically divisive, and above all in a technical sense, illegitimate — sanctioned neither by formal authority, accepted ideology, nor certified expertise" (as cited in Miller, Rutherford, & Kolodinsky, 2008, p. 210). Inherent in this definition is the notion that individual members or groups use power, influence, and partisan maneuvering to achieve their goals. Scholars, unfortunately, have not analyzed how organizational politics affects policy formulation and implementation within the fire service. Future research will help industry practitioners develop specific coping and mitigation strategies. In so doing, change agents will minimize the negative influences organizational politics can have on the most deliberative transformation processes. In retrospect, there was little the group could have done to alleviate this phenomenon, but earlier recognition might have avoided consternation and changed the focus of the group.

Conclusion

The Greek philosopher Heraclitus once remarked, "Nothing endures but change" (540 BC–480 BC), and the fire service is no exception. In the nearly 250 years since the fire service's existence in the U.S., many changes have occurred that have transformed the profession (IAFC, 2006, 2010; Rhodes, 2006; Smith, 1978). Technological and societal changes constantly challenge the profession to reevaluate how it collectively delivers services in the safest and most efficient manner. The myriad of emergency incidents encountered daily, conjoined with an ever-changing workforce, compels fire service leaders to, likewise, hone their skills. Unfortunately, the fire service relies on an outdated means of developing its officer candidates.

The action research methodology used for this project created a program that is designed to give SMFRA's well-trained and highly educated officer candidates more actual experience. If the program succeeds, it can be used by other fire agencies to give their officer trainees the practical experience necessary for managing highly complex, diverse, and perilous incidents. Ultimately, this program will better prepare these organizations to meet the challenges of today's modern fire department. Of greater consequence for the profession is the increased situational awareness of its front-line officers gained mostly through experiential learning that will, in turn, lead to fewer fireground injuries and fatalities.

References

Agor, W. H. (1986). The logic of intuition: How top executives make important decisions. *Organizational Dynamics, 14*, 5–18.

Albrecht, S. (2006). *Handbook of organizational politics*. E. Vigoda-Gadot and A. Drory (Eds.). Northhampton, MA: Edward Elgar Publishing, Inc.

Coughian, D., & Braimick, T. (2001). *Doing action research in your own organization*. Thousand Oaks, CA: Sage Publications.

Cross, E. Y., & White, M. B. (1996). *The diversity factor*. Boston, MA: McGraw-Hill.

Cummings, T. G., & Huse, E. F. (1989). *Organizational development and change* (4th ed.). St. Paul, MN: West Publishing Company.

Daly, P. H. (2006). *The first 90 days in government: Critical success strategies for new public managers at all levels*. Boston, MA: Harvard Business School Press.

Dohm, A. (2000). Gauging the labor force effects of retiring Baby Boomers. *Monthly Labor Review, 123*(7), pp. 17–25.

Edwards, S. T. (2000). *Fire service personnel management*. Upper Saddle River, NJ: Prentice-Hall, Inc.

Emergency Services Consulting International (ESCI). (2007). *South Metro Fire Rescue data review, observations and recommendations*. (Unpublished report). Wilsonville, OR: Jack Snook.

Fahy, R. F. (2002, July). *U.S. fire service fatalities in structure fires, 1977–2000*. Quincy, MA: National Fire Protection Association® (NFPA®). Retrieved from http://www.nfpa.org/PDF/FFFStructure.PDF?src=nfpa (Accessed May 24, 2004).

Fiedler, F. E. (1994). *Leadership experience and leadership performance*. (Report). U.S. Army Research Institute for the Behavioral and Social Sciences. Retrieved from http://www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA387958

Forsman, D. (2002). Training for fire and emergency response services. In D. Compton and J. Granito (Eds.) *Managing fire and rescue services*. Washington, D.C.: International City/County Management Association.

French, W. L., & Bell, C. H., Jr. (1999). *Organization development: Behavioral science interventions for organization improvement* (6th ed.). Upper Saddle River, NJ: Prentice Hall, Inc.

Goodson, C. (1998). *Fire department company officer* (3rd ed.). Stillwater, OK: Fire Protection Publications, Oklahoma State University.

Gorden, R. L. (1992). *Basic interviewing skills*. Prospect Heights, IL: Waveland Press, Inc.

Heraclitus (540 BC–480 BC). *Diogenes Laertius: Lives of eminent philosophers*. Retrieved from http://www.quotationspage.com/quotes/Heraclitus/ (Accessed January 20, 2004).

Huszczo, G. E. (1996). *Tools for team excellence*. Palo Alto, CA: Davies-Black Publishing.

Insurance Service Office (ISO). (1998). *Fire service training requirements*. Jersey City, NJ: Author.

International Association of Fire Chiefs (IAFC). (2003). *Officer development handbook*. Retrieved from www.iafc.org/files/OffrsHdbkFINAL3.pdf (Accessed October 5, 2011).

International Association of Fire Chiefs (IAFC). (2006). *Chief fire officer's desk reference*. John M. Buckman (Ed.). Sudbury, MA: Jones and Bartlett Publishers.

International Association of Fire Chiefs (IAFC). (2010). *Fire officer: Principles and practice*. Sudbury, MA: Jones and Bartlett Publishers.

Kanter, R. M., Stein, B. A., & Jick, T. D. (2003). *Challenge of organizational change: How companies experience it and leaders guide it*. New York: Free Press.

Klein, G. A., Calderwood, R., & Clinton-Cirocco, A. (1986). Rapid decision making on the fireground. *Proceedings of the Human Factors Society 30th Annual Meeting* (pp. 576–580). Santa Monica, CA: Human Factors Society.

Klein, G. A., & Weick, K. E. (2000). Decisions: Making the right ones. Learning from the wrong ones. *Across the Board, 37*(6), 16–23. Retrieved from http://web.ebscohost.com.argo.library.okstate.edu

Kvale, S. (1996). *Interviews: An introduction to qualitative research interviewing.* Thousand Oaks, CA: Sage Publications.

Lofland, J., Snow, D., Anderson, L., & Lofland, L. H. (2006). *Analyzing social settings: A guide to qualitative observation and analysis.* Belmont, CA: Thomson/Wadsworth Learning.

Miller, B. K., Rutherford, M. A., & Kolodinsky, R. W. (2008). Perceptions of organizational politics: A meta-analysis of outcomes. *Journal of Business Psychology, 22*, 209–222.

Moore-Merrell, L., Zhou, L., McDonald-Valentine, S., Goldstein, R., & Slocum, C. (2009). Contributing factors to firefighter line-of-duty injury in metropolitan fire departments in the United States. *International Fire Service Journal of Leadership and Management, 3*(1), 25–33.

Murphy, K. (2005). Aging to take toll on state workforces. Washington, D.C.: Stateline website. Retrieved from <http://www.stateline.org/live/ViewPage.action?siteNodeId=136&languageId=1&contentId=22518> (Accessed April 9, 2005).

National Fire Protection Association® (NFPA®) (2000). *Fire service professional qualifications accreditation and certification system* (2000 ed.). Quincy, MA: Author.

National Fire Protection Association® (NFPA®) (2003). NFPA 1021: *Standard for fire officer professional qualifications* (2000 ed.). Quincy, MA: Author.

Nadler, D. A. (1977). *Feedback and organization development: Using data-based methods*. Reading, MA: Addison-Wesley Publishing Company.

Pearce, J. A., & Robinson, R. B. (2003). *Formulation, implementation and control of competitive strategy* (8th ed.). New York: McGraw-Hill. (pp. 60–61)

Regis University. (2004). *Applied action research: MSM 696*. (Course Learning Module). Denver, CO: author.

Rhodes, J. (2006). *The fire service: History, traditions & beyond*. Bangor, ME: Booklocker.

Robertson, J. (2005). *Succession planning in governmental organizations: Why does it matter? What is the role of human resources personnel?* Salt Lake City, UT: University of Utah. Retrieved from http://cppa.utah.edu/_documents/publications/aging/succession-planning.pdf (Accessed February 12, 2012).

Rothwell, W. J. (2010). *Effective succession planning: Ensuring leadership continuity and building talent from within* (4th ed.). New York: American Management Association.

Rubin, H. J., & Rubin, S. R. (2005). *Qualitative interviewing: The art of hearing data* (2nd ed.). Thousand Oaks, CA: Sage Publications, Inc.

Schein, E. H. (1992). *Organizational culture and leadership* (2nd ed.). San Francisco: Jossey-Bass.

Smith, D. (1978). *Dennis Smith's history of firefighting in America: 300 years*. New York: Dial.

South Metro Fire Rescue Authority (SMFRA). (2003). *South Metro Fire Rescue strategic plan*. Centennial City, CO: Author.

Starling, G. (2010). *Managing the public sector* (9th ed.). Belmont, CA: Wadsworth/Thomas Learning.

TriData. (2002). *Firefighter fatality retrospective study*. (Report conducted for the National Fire Data Center). Emmitsburg, MD: United States Fire Administration (USFA). Retrieved from http://www.usfa.fema.gov/downloads/pdf/publications/fa-220.pdf (Accessed February 12, 2012).

Weiss, R. (1994). *Learning From strangers: The art and method of qualitative interview studies*. New York, NY: The Free Press.

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